Tell Me About Your Experience: How Consumer Narratives Persuade

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ABSTRACT

My dissertation explores how people are persuaded by narratives. The first essay is a review of the literature over the past decade where I develop and then apply an overarching framework to synthesize the empirical work that examine antecedents and consequences of narrative persuasion as well as moderators and mediators that are involved in this process. In the second essay, I adopt a structural equations approach to examine the process through which consumers are persuaded by online consumer reviews, a common form of consumer narrative. A review that reads like a narrative (story) is likely to evoke transportation into that review, which affects persuasion-related outcomes. Across three studies, I explore how variables identified in essay 1 and important to the persuasion-related literature affect this process. In the third essay, I adopt an experimental approach to further explore the process of reflection, which is introduced in essay one. I demonstrate that this process is distinct from transportation, and that mediates the relationship between transportation and persuasion-related outcomes.

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OVERVIEW

1.1 Introduction

A substantial body of work has examined factors that enhance or diminish the effectiveness of argument-driven persuasive communications (Hovland and Weiss 1951; Petty, Cacioppo, and Schumann 1983). Carl Hovland and colleagues developed the influential first set of studies on persuasion which examined cognitive responses to argument-driven messages (Hovland, Janis and Kelley 1953; Hovland and Weiss 1951). This emphasis on rhetoric has continued to the present, where contemporary research on attitude change has been dominated by dual route perspectives (e.g., Petty and Cacioppo 1986). As a consequence, a great deal is known about the factors that enhance or diminish the effectiveness of argument-driven persuasive communications. This overwhelming focus on an information processing approach, with its emphasis on integrating information presented as discrete arguments, stands in contrast with daily reality where consumers exist in, readily engage with, and learn from an environment saturated with narratives.

Over the past decade, scholars across fields such as psychology (Green and Brock 2000), communication (Hinyard and Kreuter 2007), advertising (Phillips and McQuarrie 2010) and marketing (Escalas 2007) have begun to recognize the powerful influence of narratives, which persuade through the depiction of events and consequences rather than arguments, and evoke a distinct form of processing. Green and Brock (2000, 702) explain that "a person engaged in elaboration might be accessing his or her own opinions, previous knowledge, or other thoughts and experiences in order to evaluate the message at hand. In contrast, under high transportation [the processing invoked by a narrative] the individual may be distanced temporarily from current and previous schemas and experiences." Whereas the ELM suggests that issue involvement or

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personal relevance determines a person's motivation to process information (Petty and Cacioppo 1986), narratives engage the audience through identification with characters and elicit less resistance, in part, because they are perceived to be less overtly persuasive (Moyer-Guse 2008; Slater and Rouner 2002).

A number of studies have shown that reading or listening to a story can alter beliefs about the narrative topic (Fazio and Marsh 2008; Gerrig and Prentice 1991; Strange and Leung 1999), the world in general (Appel 2008), change attitudes (Adaval and Wyer 1998; Green and Brock 2000), and induce behavior consistent with messages contained the narrative (Durkin and Wakefield 2006; Morgan, Movius, and Cody 2009). This is noteworthy given that people are often aware the characters and events described in a narrative are fictitious. Narratives are clearly a force that shapes our understanding of ourselves and the world around us. The fact that individuals enjoy and actively seek narrative-based messages, coupled with their potential for influence, highlights narrative persuasion as a process that warrants further research attention.

Narrative persuasion in the consumer field. Narrative influence has long been broadly recognized by writers and in scholarly fields such as literary analysis and anthropology, but has only recently gained attention in the field of consumer psychology. There is a growing level of consumer-relevant narrative persuasion research, which has been examined from two main perspectives. From a qualitative standpoint, for example, Scott (1994) examined the process of reading as a link between advertising text and consumer response. Phillips and McQuarrie (2010) also applied qualitative methods to examine how narrative transportation is prompted by fashion advertisements when specific aesthetic properties (such as grotesque imagery) are present. Other qualitatively-oriented work has examined the role of imagery in consumers' interpretation of

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advertisements (Mick and Politi 1989) and how consumers use their autobiographical experiences to help interpret an advertisement's meaning (Mick and Buhl 1992).

From an experimental perspective, Escalas (2007) found narrative self-referencing persuades through absorption in narrative thoughts, whereas analytical self-referencing persuades through traditional, cognitive elaboration processes. Chang (2009) examined the level of cognitive capacity required to transport and "hook" readers when processing narratively-based advertisements. Wang and Calder (2006; 2009) examined how an advertisement's intrusion on a transportation experience affects the way the advertisement is evaluated. Thus, there is growing attention in terms of research related to narrative persuasion in a consumer context.

A decade of narrative persuasion research in the consumer field and related areas has yielded general agreement that narratives can be effective persuasive tools, and that these influence-related outcomes are achieved through a form of processing that is unique to narratives. Research in the field of narrative persuasion seems to be entering a new phase of exploring the underlying mechanisms and boundary conditions that enhance/constrain this process. This dissertation work provides a focused examination of the narrative persuasion process, and its goal is to provide insight into *how* narratives persuade, and *when* this persuasion is more likely to occur.

1.2 Dissertation Outline

I structure my dissertation as three distinct essays. The first essay is a review of the narrative field. During the past decade, a different approach, described as narrative persuasion, has received considerable attention as an alternative to the more traditional persuasion research. The rapid, almost exponential, increase in empirical studies on narrative persuasion in consumer behavior and related disciplines makes evident the value of a review paper that provides an

overarching framework to organize the diverse, extant literature, synthesizes the empirical findings, and provide direction for future research. The proposed framework in the current paper integrates the antecedents and consequences of narrative persuasion, identifies moderators and mediators within this process, and develops a range of research propositions for the next chapter of research on narrative persuasion.

The findings from essay one informs the development of models evaluated in essay two, which is an inquiry into the process of narrative persuasion in an online consumer review context. I examine this process in three studies using a structural equations approach, exploring how electronic consumer reviews written in a narrative format evoke narrative processing, which leads to reflection on the transportation experience and ultimately affects intent to try the reviewed product. I also examine the moderating impact of contextually-relevant variables from the traditional, argument-based processing literature (i.e., source, message, and audience characteristics) and demonstrate that some constructs operate the same way in a narrative context (e.g., credibility), while others do not (e.g., product type).

In the third essay, I adopt an experimental approach to further explore the process of reflection, identified in the first essay. The articulation of reflection as an additional mediator between narrative processing and persuasion-related outcomes provides insights into *how* this "magical" persuasion process occurs. In this essay, I articulate a clear conceptual definition of reflection, and explore manipulations that affect reflection but not transportation (and vice versa) by enhancing/reducing one but not the other. I explore the possibility that reflection moderates the relationship between transportation and persuasion-related outcomes such that persuasion occurs as a result of transportation only when people reflect on what they experienced while transported.

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Overall, this dissertation adds to the narrative persuasion literature by first developing an overarching framework of the narrative persuasion process, applying that structure to synthesize the extant work on narrative persuasion, and then present research propositions derived from this review. I apply evaluate this framework and some additional moderators, using a structural equation paradigm. Finally, I conduct three experiments to introduce and evaluate the process of "reflection" in narrative persuasion.

ESSAY 1: CONNECTING ALL THE STORYLINES: A REVIEW OF NARRATIVE PERSUASION

2.1 Abstract

This article reviews empirical results from several literatures to provide a synthesis and foundation for research on narrative persuasion. A framework is provided to organize the research in this growing, diverse field, conceptualizing narrative persuasion as a process in which characteristics of a message foster a process unique to narratives, transportation (Green and Brock 2000). The level of this processing then affects persuasion-related outcomes, such as attitude and intention. The present work also identifies a potential secondary process, reflection, which mediates the relationship between transportation and persuasion-related outcomes. A range of individual and contextual variables moderate this process. The empirical findings related to each relationship are reviewed, and specific areas for future research are suggested.

2.2 Introduction

Research on persuasion has focused on how an individual processes expository, argument-based messages, yielding a literature focused on cognitively-oriented, dual process models of influence (Petty and Cacioppo 1986). This stands in contrast to work that suggests we think in terms of narratives rather than arguments (Schank and Berman 2002), and that we store most knowledge as stories about our own and others' experiences (Schank and Abelson 1995). Our daily lay experience supports this affinity for stories; we seek out entertainment such as movies and books that present a story or when we describe (narrate) details of recent incidents to others. Practitioners, too, recognize the power and appeal of narratives; Columbia University's program in Narrative Medicine and many businesses' articulation of their "Brand Story" illustrate how narratives can be used as a valuable mode of communication.

There is a growing recognition across consumer researchers (Wang and Calder 2006; Escalas 2007) and related fields such as psychology (Green and Brock 2000; Strange and Leung 1999), communications (Bilandzic and Busselle 2011), education (Slater and Rouner 2002), and advertising (Chang 2009) that narratives are an effective vehicle to persuasion. This work has resulted in an increased interest in a better articulation and understanding of the mechanisms underlying the effect of narratives on knowledge, beliefs, attitudes, intention, and behavior.

The term "narrative" encompasses communication efforts that vary across a number of facets such as modality, format, length, emotional depth, and plotline complexity. This diversity is reflected in lay observation of narratives, but also in the multiple ways that researchers have operationalized narratives. Hinyard and Kreuter (2007, 778), for example, described a narrative as, "any cohesive and coherent story with an identifiable beginning, middle, and end that provides information about scene, characters, and conflict; raises unanswered questions or unresolved conflict; and provides resolution." Bruner (1991) described narratives as a sequence of events that imply, through the consequences of events and actions, cause and effect relationships.

Narrative persuasion occurs when an audience accepts the implied relationships or translates statements about the narrative world into beliefs about the real world. This effect is related to work in cognitive psychology on causal mental models which suggests that we map the exterior world into an internal mental representation; we generate expectations and explanations from given, causally-related narrative information (Kluwe 1993). In a narrative, an audience progressively constructs a model of meaning that represents the people, places, and problems of a story, which is updated as the narrative moves forward (Zwaan, Langston and Graesser 1995). Thus, an audience obtains meaning through a mental model of narratives in a less direct way

than one obtains meaning from active consideration of arguments. The differences between narrative and argument-driven messages in format and initial mental approach prompt distinct ways of processing their content.

2.3 Objectives and Organization

The narrative persuasion literature remains fragmented both in terms of its conceptual breadth and its empirical findings, perhaps due to the rapid growth of research in parallel fields. The lack of conceptual or empirical convergence in narrative persuasion findings underscores the need for a comprehensive synthesis that can integrate and advance the field. The present review pursues the objective of developing a framework that integrates the antecedents and consequences of narrative persuasion across several related fields. First, I review the mechanisms hypothesized to mediate the narrative persuasion process contained in figure I then organize the review using the relationships described in this process by examining characteristics associated with the format, structure, and content of the narrative, the transportation evoked when reading or viewing a narrative, and the impact on persuasion-related outcomes. A growing body of research indicates that a second process, related to reflection on the transportation experience, mediates the relationship between transportation and persuasion related outcomes. I describe the research that incorporates this second mediator. Finally, I examine the role of individual differences and context factors that moderate relationships in the narrative persuasion process. This review serves the additional function of identifying areas that merit further research attention by consumer psychologists.

Figure 1 – The Narrative Persuasion Process

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┌──────────┐     ┌──────────────┐     ┌──────────┐     ┌──────────────┐
│  Input   │ ──> │  Narrative   │ ──> │          │ ──> │ Persuasion-  │
│ Factors  │     │Transportation│     │Reflection│     │   related    │
│          │     │              │     │          │     │  Outcomes    │
└──────────┘     └──────────────┘     └──────────┘     └──────────────┘
      ↑                 ↑                   ↑                  ↑
      │                 │                   │                  │
┌─────────────────────────────────────────────────────────────────┐
│              Individual and Contextual Factors                    │
└─────────────────────────────────────────────────────────────────┘
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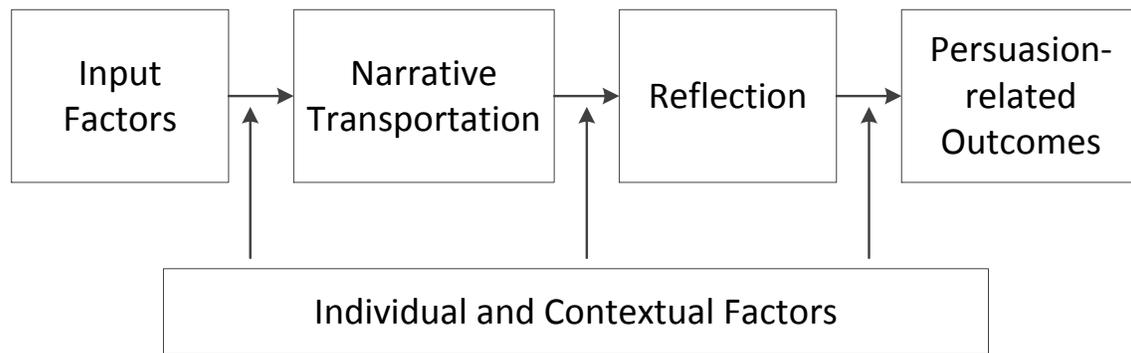
2.4 Mechanisms Underlying Narrative Persuasion

Literary scholars have contributed to a rich literature on narratology, a branch of literary criticism that examines the structure and function of narrative themes, conventions, and symbols (Todorov 1969). Social scientists have recently explored this metaconcept of "narratology" to understand and describe how the components of narrative processing affect persuasion-related outcomes. Several authors have proposed models of narrative persuasion which articulate the components of narrative processing and allow for an examination of how the extent to which one engages in this processing directly affects the extent to which one is persuaded.

2.4.1 Conceptualizing and measuring transportation. One recognized conceptualization of narrative engagement is the transportation-imagery model of persuasion, a distinct mental process involving "an integrative melding of attention, imagery and feelings" (Green and Brock 2000, 701). This model has three components: cognitive engagement, emotional engagement, and generation of mental imagery. All three components collectively produce the experience of transportation, in which audience members allocate mental capabilities to process a narrative and which precludes critical assessment of content. This temporary

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"suspension of disbelief" allows for a subtle form of influence akin to flying under one's persuasion-resistance radar.

The experience of transportation is similar to flow (Csikszentmihalyi 1982) and absorption (Tellegen and Atkinson 1974); individuals become single-mindedly focused on what they are doing at the present moment and may lose track of a sense of self. The constructs differ in that flow and absorption are more general concepts that can occur in response to a variety of activities, whereas transportation occurs specifically in response to narratives. In addition, the experience of emotional engagement and the generation of mental imagery may not occur during the experience of flow or absorption.

An additional distinguishing feature of transportation theory is the link between the world as described in the narrative world and persuasion-related outcomes; flow and absorption do not posit any lingering effects following the experience. Transported individuals are more likely to adopt attitudes and beliefs implied by a narrative, despite knowledge that the narrative is fictional (Dal Cin, Zanna, and Fong 2004; Escalas 2004; Green 2004; Green and Brock 2000; Wang and Calder 2006).

Green and Brock (2000) present an instrument to measure an individual's level of transportation by assessing cognitive engagement, emotional engagement, and generation of imagery. Example scale items (pertaining to each component) include "While I was reading the narrative, I could easily picture the events in it taking place," "I was emotionally involved in the narrative," and the reverse-scored item, "I found my mind wandering while reading the narrative." Subsequent measures of change in story-related beliefs and attitudes are used to determine the effect transportation on persuasion-related outcomes. This instrument is used

extensively to measure the mechanism of transportation, though many authors have adapted it and only used portions of the scale.

2.4.2 Conceptualizing and measuring narrative engagement. Although the transportation model is applied most frequently in the narrative persuasion literature, Busselle and Bilandzic (2009) argued this conceptualization is ambiguous and that the measurement is imprecise. At the theoretical level, they point to the overlap with related constructs such as perceived realism. At a measurement level, they point to the discrepancy between a uni-dimensional scale and proposed components of attention, imagery, and emotion. Other authors (Slater, Rouner and Long 2006) have found the factor structure of the transportation scale to be multidimensional.

Busselle and Biladzic (2009) developed an alternative measure of transportation by identifying a comprehensive list of constructs and measures that represent different aspects of experiencing a narrative and then examined the underlying factor structure of these measures. The resulting narrative engagement scale contained 4 dimensions; narrative understanding (ease in comprehending a narrative), attentional focus (a *lack* of distraction), narrative presence (the sensation that one has left the actual world and entered the story), and emotional engagement (feeling for and with characters). Each dimension is measured by 3 questions (for a total of 12 items). Narrative engagement is defined more broadly than transportation through its inclusion of narrative understanding (transportation theory treats this condition as given). The three other components relate to experiential states (attentional focus, emotional engagement, and narrative presence) and correspond to aspects of transportation. Busselle and Bilandzic (2009) acknowledge the overlap of these two constructs, reporting high correlations of their narrative engagement scale (including all four components) with the transportation scale (ranging from .73

to .82). In addition, the bivariate relationships of narrative engagement and transportation with story-related attitudes are similar for both scales. De Graaf, Hoeken, Sanders, and Beentjes (2009) found support for the four dimensional structure.

Though work in the field of narrative persuasion has yet to establish whether the dimensions contribute differently to persuasion related outcomes, these studies provide initial evidence that this may be the case. Busselle and Biladzic (2009) found emotional engagement, attentional focus, and narrative presence predicted story-related attitudes (social assistance for victims of tragedy), and not narrative understanding. De Graaf, Hoeken, Sanders, and Beentjes' (2009) found the emotion dimension in response to the story predicted attitudes about specific rules regarding an asylum request procedure. The other dimensions of engagement were not significant predictors of this attitude.

2.4.3 Identification as a component of transportation….Or is it? Authors have discussed identification as a mechanism through which narratives can change attitudes (Green 2006; Slater and Rouner 2002). When readers imagine events in a narrative from the perspective of a specific character, they experience the described events as the character does, and their attitudes may become more consistent with this vicarious perspective (Mar and Oatley 2008, 182). In this sense, identification is similar to parasocial interaction (Cohen 2001); although, identification leads to greater self–other convergence than parasocial interaction, where media characters are still viewed as ''others,'' (e.g., Horton and Wohl 1956). In media psychology, identification is described as a process in which readers adopt the perspective of a character and see the narrative events through the character's eyes (Busselle and Bilandzic 2008; Cohen 2001).

Initial narrative persuasion research conceptualized and examined identification as part of narrative processing, although recent work has suggested the two processes are conceptually

distinct. Both transportation and identification theory describe how audiences become engaged and involved with media texts. Transportation theory focuses on the degree of absorption and does not specify what elements of the narrative engage a reader or viewer, whereas identification describes a strong attachment to a character (Cohen 2001). One can be transported into a text through close attention to the plot and a sense of suspense about how it will be resolved without necessarily identifying with a character; in contrast, "to identify" means to develop a strong connection with a character, or to care about this character.

Recent research on narrative persuasion has distinguished the two conceptually and in their persuasion-related effects. Tal-Or and Cohen (2010) manipulated information about the hero of a film and about the plot to affect how viewers respond to the film and character. The valence of information about the hero affected the level of identification (but not the level of transportation), and the time of deeds affected the level of transportation (but not the level of identification), suggesting that identification and transportation are distinct processes.

The authors conducted a factor analysis of items from an identification scale (Cohen 2001) and transportation scale (Green and Brock 2000). The initial analysis constrained results to two factors, which corresponded to the transportation and identification constructs. A second, unconstrained analysis of the transportation items yielded three factors: one for all of the identification items and two for transportation. One transportation factor included an experience sub-dimension consisting of four items related to experiencing the narrative from within and the second was an attention sub-dimension concerned with paying close attention to the narrative. Thus, the factor analysis was largely supportive of the existing definitions of both concepts, though it did suggest the transportation scale captures both the degree to which viewers were absorbed by the narrative and the extent to which they paid attention to the film.

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Sestir and Green (2010) examined how transportation and identification differentially contribute to self-relevant beliefs. They manipulated levels of identification and transportation (through processing instructions) and found individuals in high-identification conditions responded more quickly in a response-latency task to character-relevant personality traits that were also self-descriptive. This did not happen for traits either not displayed by the character, or traits not identified as self-descriptive. The authors suggest that transportation's influence may not translate directly into character trait activation since it is experienced as a general cognitive state whereas the process of identification is character specific. The authors also note that the nature of the (character specific) dependent measures may have been more conducive to eliciting identification rather than transportation effects.

De Graaf, Hoeken, Sanders, and Beentjes (2012) used perspective from which a story is told to manipulate identification experimentally and test effects on attitudes; in two studies, participants read a story about the same scenario that was told from the perspective of one of two characters, with both characters having opposing goals. Results showed that perspective influenced identification and story consistency of attitudes (despite having an equivalent influence on the different facets of narrative engagement).

Emerging research suggests that identification and transportation are distinct processes. My focus in this review will be on transportation as the mechanism underlying narrative persuasion because too few studies have empirically assessed the distinctions between identification and transportation. Future work to examine when these processes are more or less likely to be evoked and which is more influential in terms of persuasion-related outcomes, remains to be conducted.

2.5 Narrative Input - Transportation

Narratives, as a type of message format, differ across a range of facets and research has examined how factors external to the semantics and related to content of the text lead to different levels of narrative processing (See figure 2).

Figure 2 – Narrative Input - Transportation

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┌─────────────────────┐
│ Factors internal    │
│    to text:         │
│  ·  Message content │ ─────────┐
│  ·  Craftsmanship   │          │      ┌─────────────────────┐
│  ·  Realism         │          └────► │     Narrative       │
└─────────────────────┘                 │   Transportation    │
                                         │  ·  Imagery         │
┌─────────────────────┐          ┌─────►│  ·  Emotion         │
│ Factors external    │          │      │  ·  Cognitive       │
│    to text:         │          │      │     Engagement      │
│  ·  Format          │ ─────────┘      └─────────────────────┘
│  ·  Modality        │
│  ·  Paratext        │
└─────────────────────┘
```
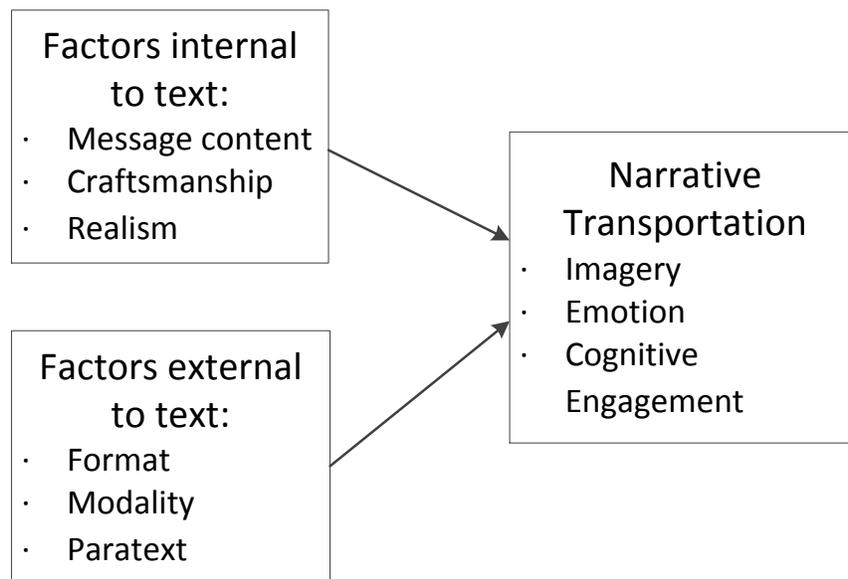
2.5.1 External to text. We organize research on factors external to the text that affect level of narrative processing into three areas: Format, modality, and paratext.

Format: rhetorical versus narrative*. Early research (Adaval and Wyer 1998; Deighton, Romer, and Mcqueen 1989; Slater and Rouner 1996) examined whether a narrative message evoked a form of processing distinct from argument-driven messages (which were often operationalized in the form of listed, statistically-based arguments), and whether narratives were more (or less) effective in affecting beliefs, attitudes, intention, and behavior. For example, Deighton, Romer, and Mcqueen (1989) found the processes through which the alternative

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formats affected persuasion-related outcomes did differ, although there were no significant differences in advertisement-consistent beliefs and attitudes. Narrative advertisements, however, did reduce levels of counter-arguing, increased perceived verisimilitude, and increased emotional engagement relative to argument-based advertisement. These findings have been replicated across content areas (e.g., skin cancer prevention, Dunlop, Wakefield, Kashima 2010, study 2; affirmative action, Mazzocco, Green, Sasota, Jones 2010), format style (Mcqueen, Kreuter, Kalesan, and Alcaraz 2011), and modality (Braverman 2008).

Several studies, however, did not find processing differences between narrative and argument-based messages. For example, Braverman (2008) found level of transportation varied by format in one study, but in a second study, there were no differences in transportation based on testimonial (narrative) or informational format. Similarly, Dunlop, Wakefield, and Kashima (2010) did not find a relationship between format and transportation. In both studies, participants experienced transportation in response to the advocacy (informational) messages, which were similar to a narrative message in their use of temporal sequence, vivid imagery, and emotional arousal.

Generally, research contrasting narrative and argument-based messages find both approaches lead to changes in persuasion-related outcomes, but through different mechanisms; narrative-based formats are processed consistent with transportation (Green and Brock 2000) or narrative engagement (Busselle and Bilandzic 2009) and argument-based formats are processed consistent with dual-route models of persuasion.

Format: different types of narrative format (modality). The term "narrative" encompasses wide-ranging formulations, such as a first-person testimonial in front of a jury or a third-person science fiction movie. Though much of the work on transportation has used written

texts, transportation can occur across media and using narratives that would not be traditionally considered literary (e.g. advertisements). Several studies have compared how differences in format affect narrative processing.

Escalas and Stern (2003) and Escalas (2004) found classical drama advertisements (the traditional form, characterized by a unified linear plot leading toward a resolution, causality, and characters who interact and change) elicited higher levels of sympathy and empathy compared to vignette ads (multiple unconnected episodes, repetitive rather than linear organization, and characters contained within each episode rather than interacting with those in other episodes). Van den Hende and colleagues (2007) found photos and drawings of breakthrough technology lead to higher levels of narrative processing compared with animations of identical subject matter. The authors cite two possible reasons for this unexpected finding; an audience can process information featured in the narrative more easily if they are able to define their own pace of processing (rather than follow the pre-determined pacing of an animated concept). Alternatively, the greater level of detail found in the drawing format versus the photo and animation formats may explain this finding; highly-detailed visuals may increase the level of realism of a narrative, but at the same time, they may also draw customers' attention away from the main storyline.

Several authors have examined the effect of modality on narrative processing and persuasion. For example, Green and colleagues (2008) examined how repeated *viewing* or *reading* a narrative influences level of transportation. Participants either read or watched an (otherwise identical) narrative, and then read or watched the narrative three days later, yielding 4 exposure combinations (read/read, read/watch, watch/read, watch/watch). Their results indicate that reading a story (versus watching) generate higher levels of transportation into subsequent

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exposures, and reading followed by watching generated higher levels of transportation at time 2 than any other exposure pattern.

In contrast, other researchers (e.g., Rowe Stitt and Nabi 2005) found level of transportation did not differ across narrative instantiations (a film, the written transcript of the film, and a shortened version of the written transcript). Similarly, Lamarre and Landreville (2009) did not find differences in engagement between a documentary and fictional film that focused on the Rwandan genocide (though the documentary group did experience higher levels of negative affect, specifically guilt, than the fiction group). Across 2 studies, Braverman (2008) did not find differences in transportation between an audio format and a textual modality. These studies did, however, yield an interaction between message format and modality on persuasion, such that message delivered by voice were more persuasive for narrative testimonials, whereas the textual format was more effective for argument-based messages.

Paratext. A lay understanding of narratives stems from daily fictional experience, such as movies and novels, which contain greater levels of imagery and emotion-conjuring textual elements than expository nonfiction. However, the term "narrative" denotes a type of format rather than the factuality of a message. Based on the common perception that a narrative is fiction (rather than fact), research has examined whether altering the paratext – that is, the label of a message as fact or fiction – affects level of narrative processing. Although Appel and Maleckar (2012) found individuals may expect messages labeled as "fact" to be more useful and trustworthy than messages labeled as "fiction," and that participants presented with a passage labeled as fiction spent more time reading than those who thought they were reading a piece of news (Zwaan 1994), paratext ultimately does not differentially affect level of narrative processing or story-consistent beliefs (Green and Brock 2000; Strange and Leung 1999). This

suggests the tendency to become immersed in a narrative is sufficiently robust to compensate for the initial effect of the expectations based on paratext.

Extra-textual factors: Summary. Though messages are often evaluated based on content, factors external to the semantics of the text can directly influence narrative processing. Research suggests that messages written as stories evoke a different kind of processing from messages written as arguments. The effect of narrative modality (written, film, visual) is inconsistent; transportation is affected by modality in some studies and not in others. Paratext labels (fact versus fiction) affect expectations about a text, but ultimately do not differentially affect level of transportation into a narrative.

2.5.2 Narrative Content.

Message content and plot elements. Elements of narrative content – most notably, plot elements – affect level of transportation. Most narrative persuasion research has manipulated the framing of the narrative (such as reading instructions) while holding the message content constant, or allowed message content to vary without examining it as a source of influence. Little is known about which intrinsic message features shape narrative engagement. One exception can be found in work conducted by Kim and colleagues (2012), who exposed smokers to news articles including an exemplar (a concrete, named individual) or without (vague statements such as "people"). The results from demonstrated that messages containing an exemplar enhanced levels of narrative engagement. The authors reference exemplification theory (Zillman 2006), which suggests that exemplars draw more attention, are more easily comprehended and recalled, and evoke greater emotional than messages without exemplars.

Narratives also vary in the extent to which they feature emotional content. Appel and Richter (2010) tested two stories that differed in their emotional appeal, but provided the same

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factual information; in one version of the story the protagonist was killed in an accident (high emotional content) whereas in a second version the protagonist only thought about the possibility of being killed in an accident (low emotional content). The authors examined whether transportation moderated the effect of emotional content on story-consistent attitudes and beliefs and found an increase in transportation was associated with persuasive effects when participants read the narrative with high emotional content, but that these effects were not present when participants read the narrative with low emotional content.

Tal-Or and Cohen (2010) instructed participants to watch a film in which characters committed good or bad deeds in the past or in the future. The authors hypothesized that a narrative which features a negative hero may create strong transportation because it enhances suspense, but a viewer/reader may resist identification with the negative character. In addition, they predicted the transportation-enhancing experience of suspense would increase when there is an expectation of a future event that had a high chance of occurring as compared with providing information about the past. As predicted, the valence of the deeds did not affect level of transportation, but participants were more transported into scenes when receiving information regarding future rather than past events (the valence did, however, affect level of identification, whereas timing of the deeds did not). In a related manipulation of story ending, Banerjee and Greene (2012) found participants were more transported into a drug related story with a progressive (I'm glad I quit…) than a regressive ending (I wish I hadn't used).

Visually-based narratives may differ in the types of images they employ to illustrate a story, and research suggests that different images lead to different levels of narrative processing. Phillips and Mcquarrie (2010) conducted qualitative interviews with avid readers of fashion magazines and found these women were more likely to engage in the ad's narrative and be

transported when an ad contained elements of the grotesque (e.g., a woman in a leopard print bathing suit fishing a Jimmy Choo purse out of a pool containing a tuxedo-clad corpse); this was less likely to occur in response to beautiful, stereotypically pretty images. This suggests that shocking or unexpected narrative elements are more likely to pull an audience "into" a narrative.

Craftsmanship. Green and Brock (2000) indicate that narratives judged by external standards as "better" (inclusion in the literary canon, bestseller status) elicit higher levels of transportation than their less acclaimed counterparts. Dal Cin, Zanna, and Fong (2004) presented participants with four narratives that varied in storyline and format (written stories vs. video clips) and found the stories led to different levels of transportation. The authors suggested differences in story quality contributed to differences in transportation. In an ad context, Escalas, Moore and Edell (2003) found that well-developed stories elicit higher transportation than poorly developed stories.

Realism. Perceived realism is the audience's judgment of the degree to which the narrative world is reflective of the real world (Gerbner and Gross 1976). Research has identified narrative realism as an element that predicts level of transportation (Bilandzic and Busselle 2011). Bruner (2009) claimed that stories are treated differently from scientific or logical argument and may be held to different truth standards than rhetorical messages; thus, perceived realism should not be confused with real-world truth value of a story. Green and Brock (2000) asked participants to review the story after they had finished filling out the dependent measures and circle any "false notes," or parts of the story that did not ring true to them. Highly transported participants circled fewer false notes, suggesting that perceptions of authenticity and transportation are related. Green (2004) measured the realism of a narrative by equating it with

believability of characters, setting, dialogue, and other aspects of the communication and found that transportation levels were positively correlated with perceived realism.

Cho, Shen, and Wilson (2012) explored types of realism that may pertain in a narrative context. The authors evaluated several models with different configurations of 5 proposed factors; *plausibility* (the degree to which narrative presentations of behaviors and events could possibly occur in the real world); *typicality* (degree to which narrative portrayals appear to fall within the parameter of the audience's past and present experiences); *factuality* (degree to which a narrative is perceived to portray a specific individual or event in the real world); *narrative consistency* (degree to which a story and its elements are judged to be congruent and coherent, and without contradictions), and *perceptual quality* (the degree to which the audio, visual, and other manufactured elements of a media narrative comprise a convincing and compelling portrayal of the reality, independent of the consideration whether the content of the narrative is related or relevant to the audience's real-world experience). All factors except typicality predicted emotional involvement with the narrative, whereas all factors except plausibility predicted identification with narrative characters.

Narrative content-based factors: summary. Research on plot elements indicates narratives containing higher levels of emotion-evoking elements and atypical, visually-arresting images elicit higher levels of transportation. This is also the case for narratives that feature specific exemplars, as opposed to vague groups of "people."

Elements of narrative quality also affect transportation. The influence of craftsmanship is analogous to argument strength in dual-route persuasion models; "better" narratives lead to higher levels of transportation, just as "stronger" arguments affect elaboration. Narrative realism (which can be understood in terms of typicality, plausibility, factuality, narrative consistency,

and perceptual quality) is an important determinant of perceived narrative quality, and is an element that predicts transportation.

2.5.3 Narrative inputs – transportation: future directions. Current research on narrative persuasion has focused more on the mechanism of transportation and has taken a holistic, abstract view on what comprises a narrative. Narratives, however, differ widely in their format and content. The lack of consistency across what is meant by the term "narrative" is a source of confusion in the literature, producing a number of results that are seemingly inconsistent. For example, Allen and Preiss (1997) find in a meta-analysis that statistically based arguments are more persuasive that narratively-based arguments; however, they operationally define narrative as any messages that are not quantitative. Future work would benefit by focusing on the components of narratives; that is, to disaggregate the construct of "a narrative" to examine how factors external to the semantics and related to content of the text effect transportation differentially.

Format. Research on narrative format has focused on contrasting it with argument-based formats and the processing that occurs after exposure to the message. The term "narrative format" is broad and a meta-concept; it includes messages that differ widely in regards to sequence, perspective, and complexity. A more thorough articulation and examination of these components is valuable to determine under what conditions each (or what combinations) signal narrative format and influence subsequent narrative processing; that is, what characteristics of a message evoke narrative or argument-based processing? Specific research questions include:

- What modifications are necessary to transform an argument-based message to evoke narrative processing? For example, does creating an explicit sequence evoke

transportation, and can narratives be transformed into the logic-based, argument style formats that evoke dual-route types of processing?

- Although an instrument has been developed to measure narrative format (Escalas 1998), it was designed to apply in an advertisement context and may not capture "narrativeness" in longer stories. The development of a broadly-applicable scale to assess extent of narrative structure would be useful. An analogous instrument is not available to assess the format of argument-based messages, and future work can focus on the development of this measure.

- The nature of the relationship between the assessed narrative structure and transportation remains to be evaluated. For example, future research can determine whether the relationship between "narrativeness" and transportation can be described as more linear or a step function in which transportation is "turned on" at a certain level of "narrativeness."

Modality. The inconsistency in the findings across narrative modality and focus of extant work on a limited range of modalities highlights an area of future research. Narrative modalities differ in the manner in which they are encoded (visual, audio), the extent to which they cause the audience to generate imagery (versus provide the images for them), and allow for control over the rate of incoming information. As noted on future research narrative format, more thorough articulation and examination of the specific features that distinguish modalities is needed. For example,

- Research that examines how the subcomponents of narrative processing (emotion, imagery, cognitive engagement) interact with specific modalities can provide insight into which combinations lead to highest level of transportation.

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- The role of viewer control over the timing and narrative sequence, a feature that differentiates traditional video presentation from more interactive media (e.g., allowing the viewer to control sequence and outcomes of the narrative), is a relevant and likely important variable that remains to be examined.

Paratext. Extant research indicates that a fact or fiction label does not affect level of transportation. Future research might explore:

- Conditions under which these labels do matter. As demonstrated by Zwaan (1994), people spend less time reading passages labeled as "news" than identical passages labeled as fiction. Do consumers know (or think they know) when they are more likely to be transported, which prompts an investment of time to attain this enjoyable state?

- Whether the labels of "fact" and "fiction" can be broken into finer distinctions, and perhaps a continuum. For example, how might one classify a reality TV program, and what influence does this have on narrative processing?

Message content and plot elements. Most narrative persuasion research has either manipulated the framing of the narrative (such as reading instructions or introductory descriptions) while holding the message content constant, or allowed message content to vary without examining it as a source of influence. The general label of a "narrative message" masks differences of plot, characterization, atmosphere, point of view, and types of conflict and may account for conflicting findings in research on narratives. Future research can examine how:

- Elements of message content or plot increase or decrease transportation. Scholars of literature and film have identified specific textual or visual elements that contribute to the reading or viewing experience, and social scientists can draw from these considerations.

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For example, are certain plot structures (e.g., an archetypal good versus evil storyline) more transporting than unfamiliar plotlines?

- The use of construal theory (Trope and Liberman 2010) can provide insights into the effectiveness of narratives as a persuasive device. For example, will the use of concrete description be more effective in generating imagery, or are there conditions under which abstract framing engenders higher levels of transportation because it prompts readers to draw their own conclusions or "fill in the gaps?"

- Variables examined in the traditional persuasion literature, such as expertise and trustworthiness, function in a narrative context. If a character in a story is a doctor and makes an assertion, are people more likely to believe the doctor than a lay-person character?

Craftsmanship. "Good" stories lead to higher levels of engagement, but the facets that determine what comprises "better" stories warrant a finer examination. For example, good stories evoke emotion, but the nature of the emotions (e.g., valence, whether they are more cognitive, or whether they are experienced via sympathy versus empathy) may affect level of transportation. Future work can examine:

- The relationship between the relative effect of positive and negative emotion on transportation; is the relationship linear or curvilinear? And, does it differ by valence of emotion?

Perceived realism. Cho, Shen, and Wilson's (2012) work articulated five different types of realism. Research is needed to assess whether:

- The types of realism affect the likelihood of transportation differentially. For example, higher levels of typicality may enhance transportation whereas less typical narratives may reduce or diminish transportation.

- Specific narrative content, such as the story genre (crime, romance, sci-fi) moderates the importance of narrative realism on transportation and enjoyment.

Transportation and its components. Most work on transportation has used Green and Brock's (2000) self-report transportation scale, which was developed based on written narratives. No scale is available to examine transportation using video, graphics, or audio modalities. Future scale development work is needed to determine whether:

- The current transportation scale is robust across presentation modality.

- Whether the use of measures other than self-reports can assess transportation. For example, using FMRI studies to track real-time brain activity as participants read and process stories may provide insights into the subcomponents of transportation and how differences in format and content influence this process. Other alternate measures, such as reaction time or eye tracking, might also provide convergence (or potential boundaries) to our current understanding of transportation.

Despite its description as a multidimensional construct, the process of transportation has largely been examined as unidimensional. Understanding how different aspects of narrative inputs affect the components of transportation or narrative engagement, or the conditions under which input factors have more of an effect on certain components, is a valuable area for future research. For example,

- Are different modalities better at fostering a sense of cognitive engagement (or imagery, emotion) than others?

- Do the components of transportation differ in their sensitivity to changes in format or narrative quality? For example, do "better" narratives generate more imagery, whereas format aspects such as chronological sequence are more likely to influence cognitive engagement?

- Do the elements of realism have unique effects on the components of transportation? Whereas plausibility may have a stronger relationship with imagery, narrative consistency may only influence the cognitive engagement or attention component of narrative processing.

2.6 Transportation – Persuasion Related Outcomes

The outcomes examined in the narrative persuasion literature have been drawn from the traditional work on persuasion, such as belief, attitudes, knowledge, and behavioral intention. As posited by transportation theory (Green and Brock 2000) and narrative engagement theory (Busselle and Bilandzic 2009), the extent of narrative processing predicts the extent of change in persuasion-related outcomes. Though not examined in the traditional persuasion literature, emotion has also been examined as an outcome of narrative processing (See figure 3).

Figure 3 – Transportation – Persuasion Related Outcomes
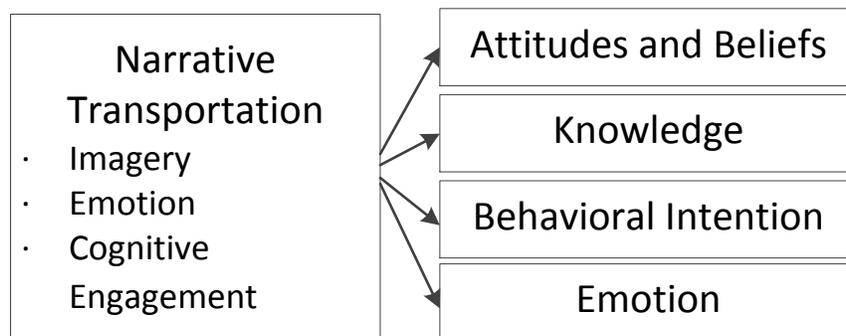
2.6.1 Attitudes and beliefs. A large body of empirical evidence across multiple substantive areas has demonstrated that higher levels of narrative processing enhance story-consistent beliefs and attitudes (e.g., related to mental health, Appel and Maleckar 2012; organ donation, Appel and Richter 2010; anticocaine beliefs, Banerjee and Greene 2012; alcohol abuse, Braverman 2008; and breast cancer, McQueen, Kreuter, Kalesan, and Alcaraz 2011), entertainment context involving fictional stories (Dal Cin, Zanna, and Fong 2004; Green and Brock 2000), public policy (Landreville and Lamarre 2011; Strange and Leung 1999), and consumer behavior (Chang 2009; Deighton, Romer and Mcqueen 1989). For example, transportation into a narrative advertisement is positively related with attitude towards the ad and brand (Escalas 2004; Escalas 2007, Neilson and Escalas 2010), and self-brand connections (the extent to which consumers have incorporated the brand into their self-concepts; Escalas 2004).

This relationship between transportation and persuasion-related influence also occurs for strongly held beliefs, such as values: highly transported viewers of a video exhibiting a high level of materialism demonstrated elevated scores on the material values scale (in contrast to highly transported viewers of a low-materialism version of the film; Shrum, Lee, Burroughs, and Rindfleisch 2011). Research has also demonstrated that reducing the level of transportation into a narrative results in a corresponding reduction in story-relevant beliefs (De Graaf, Hoeken, Sanders and Beentjes 2009; Escalas 2007; Green and Brock 2000, Wang and Calder 2006).

As described previously, narrative processing is conceptualized as multi-faceted. Some authors have focused on specific components of transportation. For example, Schlosser (2003) found increased level of mental imagery enhanced attitude toward a product when experienced through a product interactive site. Escalas (2007) prompted transportation by asking participants to *imagine* using a particular product.

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Other authors have found the emotional facet of transportation to be an important determinant of attitude. For example, Lamarre and Landreville (2009) found emotions experienced while viewing documentaries about the Rwandan genocide (specifically guilt and disgust) predicted changes in outcome variables. De Graaf, Hoeken, Sanders, Beentjes (2009) examined the impact of the attentional focus, telepresence, imagery, and emotional facets and found the experience of emotion was the only predictor of story-consistent attitudes. Cho, Shen, and Wilson (2012) found emotional involvement with a narrative and identification with characters significantly predicted attitude toward the focal topic of a narrative.

Overall, research indicates that higher levels of transportation lead to enhanced levels of story-consistent attitudes and beliefs, and more recent research is investigating which components of transportation have a stronger relationship with persuasion-related outcomes. Although the number of studies is limited, the emotional component of transportation appears to be an important determinant of attitude and belief change.

2.6.2 Knowledge. Narratives contribute to our understanding of the world irrespective of the narrative's fictional status, and extent of transportation into a story enhances the level of knowledge retained following reading. Chang (2008) found that higher levels of narrative processing increased the reader's self-rated ability to identify friends or family who suffer from depression. Lamarre and Landreville (2009) examined how emotion engagement affects the amount learned from a narrative, and found participants who experienced higher levels of disgust had greater knowledge than a control group. Similarly, Morgan, Movius, Cody (2009) found viewers of health-related TV dramas who were emotionally engaged indicated higher levels of knowledge about the organ donation process.

Narrative research has examined the retention of knowledge gained during transportation

beyond immediate post-test. For example, McQueen, Kreuter, Kalesan, and Alcaraz (2011) found narrative engagement led to higher levels of retention at a 6 month follow up about cancer in general, risk of getting breast cancer, or talking about breast cancer. Interestingly, the experience of negative emotional engagement had a significant negative impact on retention, pointing to the differential impact of transportation's components on persuasion related outcomes. Brodie and colleagues (2001) conducted a national random sample telephone survey of 3,500 ER viewers in several waves; pre-episode, post-episode (immediate), 2 month delay, measuring the level of knowledge about birth control (as it had been discussed in an episode of ER). The authors did not measure level of transportation into the episode, so it is not possible do draw conclusions about the relationship between transportation and knowledge retention, but their results are suggestive; awareness and knowledge about birth control increased following exposure to a target episode, but awareness fell to pre-episode levels 2 months later.

Appel and Richter (2007) proposed that knowledge gained from exposure to fictional narratives is persistent, and that the certainty with which it is held may increase over time (sleeper effect). They instructed participants to read a fictional story that contained embedded true and false assertions (which varied between participants) about real-world topics. There were large short-term persuasive effects of false information, and these effects were even larger for a group with a 2-week assessment delay. Expressed certainty about focal factual statements was lower immediately after reading but returned to baseline level after 2 weeks, indicating that beliefs acquired by reading fictional narratives are integrated into real-world knowledge. Again, these authors did not measure the level of narrative processing, so it is not possible to draw conclusions about the relationship between transportation and knowledge retention.

2.6.3 Behavioral intention. Narrative messages also influence an audience's behavioral intention in ways consistent with the narrative message. Transportation into smoking-related narratives has been linked to higher levels of intention to quit smoking (Dunlop, Wakefield, and Kashima 2010; Kim et al. 2012) and protect one's skin to avoid cancer (via perceived risk and attitudes; Dunlop, Wakefield, and Kashima 2010). Increased levels of emotional and cognitive engagement in a political entertainment film predicted increased intention to engage in political discussion (Landreville and Lamarre 2011). Strange and Leung (1999) assigned participants to read one of two narratives about a high school student who drops out of school that differed in terms of a situational or dispositional explanation for the student's decision. The more engaged the readers, the more likely they were to generate causes of the behavior and solutions consistent with the causal focus of the story they read. Moyer Guse and Nabi (2010) found that engagement with a message intended to foster safe sex-practices increased safe sex intentions through perceived vulnerability both at the post test and a follow up test 2-weeks later (Moyer Guse and Nabi 2010).

Other authors have explored which aspects of engagement are most influential in terms of behavioral impact. Morgan, Movius, and Cody (2009) examined the impact of organ donation storylines of 4 U.S. television dramas (CSI: NY, Numb3rs, House, and Grey's Anatomy) on organ donation and found emotional involvement, amount of learning and perceived accuracy of the message predicted the motivation to become an organ donor. Schlosser (2003) found that transportation into an interactive product website predicted purchase intention, specifically via the use of mental imagery while processing the message. Landreville and Lamarre (2011) found that both negative emotion and the experience of telepresence increased intention to engage in political discussion. Overall, research suggests that the experience of transportation can influence

an audience's behavioral intention in ways consistent with the narrative message, and that the different facets of transportation may each contribute.

2.6.4 Emotion. Although emotional engagement is a conceptual component of transportation (the more emotionally engaged one is, the higher the level of overall transportation), some authors have measured the experience of emotion as an outcome variable. This can be understood as the distinction between sympathy and empathy – "feeling with" a character is more associated with the process of transportation, whereas "feeling for" a character is more consistent with emotion's examination as an outcome. An audience's experience of the enjoyment resulting from transportation is distinct from the emotion experienced while transported. Audiences experience enjoyment even when, and perhaps actively seek, story content that is dark or upsetting. Escalas, Moore, and Edell (2004) found transportation into an advertisement had a positive relationship with upbeat and warm feelings, and a negative relationship with negative or disinterested feelings. Emotion was also treated as a mediator in the relationship between transportation and attitude toward the ad and brand evaluation, which I discuss as a secondary process in narrative persuasion in the next main section.

Higher levels of transportation consistently predict how much an audience enjoys a narrative (Tal-Or and Cohen 2010). Bilandzic and Busselle (2011) found that each dimension of narrative engagement (narrative understanding, attentional focus, narrative presence, and emotional engagement) each contribute to the experience of enjoyment. Chang (2008) found that higher levels of transportation into a message about mental health increased levels of sympathy toward those suffering from depression. Mazzocco, Green, Sasota and Jones (2010) demonstrated that higher levels of transportation into a story promoting tolerance toward homosexuals (study 1) or focusing on affirmative action (study 2) increased levels of empathy

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(which mediated the link between transportation and attitudes). Transportation into narratives can lead viewers to feel less lonely (Derrick, Gabriel, and Hugenberg 2009), and can improve mood through a sense of belongingness to the group described in the narrative (Gabriel and Young 2011).

This research suggests that, while the experience of emotion is a component of transportation into a narrative, one may also experience emotion after exposure to message. This experience of emotion as an outcome, most notably that of enjoyment, may explain in part why narratives, in contrast to their argument-based counterparts, are actively sought by individuals.

2.6.5 Transportation to persuasion related outcomes: summary and future directions. Research indicates that higher levels of transportation into a narrative lead to an increase in story-consistent beliefs and attitudes, knowledge, behavioral intention, and emotional reaction. Correspondingly, manipulations that reduce level of transportation into a narrative lead to lower levels of endorsement of story-consistent beliefs and other persuasion-related outcome variables. Future work on the relationship between transportation and persuasion-related outcomes would benefit by shifting focus to examine more nuanced questions pertaining to each outcome, the role of the components of transportation in the persuasion process, and the differences in the strength of relationship between transportation and the various outcomes.

Attitudes and beliefs. Narrative persuasion research has established that transportation predicts extent of story-consistent attitudes and beliefs. A number of related questions remain to be explored. For example:

- Little is known about the resistance and persistence of beliefs and attitudes formed through narrative persuasion. How do they differ from those formed via

dual process models? Are these persuasion-related outcomes as resistant as those formed through central processing? Also, examining changes in response to ongoing narratives (such as books or TV shows in a series) could advance understanding of how narratives experienced over time influence attitudes (and their corresponding change over time).

- Lay experience suggests that beliefs and attitudes vary in their amenability to change; one does not leave a Harry Potter film believing that it is possible to do magic. However, we may emerge from fantasy narratives with beliefs about the meaning of friendship or the importance of science. Most narratives used in the examination of transportation to date are chosen because they clearly imply specific attitudes or beliefs. In less controlled situations, it is less clear what conclusions an audience may draw from a narrative. What types of beliefs and attitudes are more likely to be affected through narrative persuasion? For example, beliefs that we hold strongly may prove resistant to any persuasive impact of narratives, whereas topics about which we are less certain may yield to narrative suggestion. Relatedly, to what extent does individual interpretation of a text determine the type and amount of attitude change?

- Work has not explored conditions under which narrative processing does *not* lead to story consisted beliefs and attitudes. Is the relationship between transportation and persuasion-related change an inverted-U function? i.e., can an individual be "over-transported", resulting in reactance?

- Similarly, are there situations in which reducing transportation – at least temporarily – enhances persuasion related outcomes? For example, the Zeigarnik

effect (Schiffman and Greist-Bousquet 1992) describes a situation where interrupting or obstructing pursuit of a goal prompts greater intensity of effort to seek that goal upon resuming pursuit.

Knowledge. "Knowledge" is a broad term that covers any information acquired through education or experience. However, there are different kinds of knowledge, and it can be communicated in a variety of ways within a narrative. Future research should address these more focused questions. For example,

- What types of knowledge are more (or less) likely to be retained. For instance, is one more likely to retain information about the culture and customs of ancient Greece versus information about how to screen oneself for skin cancer?
- Does the process affect how factual elements are learned – either through incidental transfer and an understanding of the setting and sequence of events or through verbal statement by characters? Is target knowledge inserted in climactic scenes more likely to be retained due to the intensified level of narrative processing or less likely to be retained due to the focus of mental resources on updating their mental model?
- Is retained knowledge due to the sleeper effect (forgetting the source of transferred information) as suggested by Appel and Richter (2007), or does extent of transportation predict acceptance and integration of facts due to the reduced counter-arguing and scrutiny of information engendered by this state?

Behavioral intention. Nearly all narrative persuasion research examining transportation's

impact on behavioral outcomes has examined behavioral intention rather than actual behavior or choice. Though transportation may have a strong linear relationship with persuasion-related outcomes such as attitude and belief, it seems likely that examining transportation's influence on behavior is an important step in exploring how robust its effects are. For example, Morgan, Movius, and Cody (2009) found that narrative engagement *as well as* perceived accuracy of the message had an impact on behavioral intention. Exploring the influence of transportation relative to other (argument-based) persuasion-related influences is an important step in building an overall model of persuasion, as well as understanding the scope and limits of how narratives impact actual behavior.

Emotion. The inclusion of emotion as an outcome variable is unique to a narrative persuasion-related context, but has received less formal attention in narrative persuasion research. As such, a number of questions remain to be explored.

- What is the nature of the relationship between the emotion experienced while transported and the emotion experienced as a consequence of transportation? For example, is the outcome of disgust a result of sadness while transported?
- Does transportation always enhance enjoyment, or are there contexts in which transportation produces discomfort?
- How does the experience of enjoyment relate to other persuasion-related outcomes? Research indicates that one may enjoy an advertisement, but reflect no change in attitude toward the brand. Does narrative enjoyment transfer positively to other persuasion-related measures?

Transportation and its components. As mentioned in the previous section, transportation

has often been examined as a unidimensional construct. Future research should examine which components (and under what conditions) narrative processing are most likely to influence persuasion-related outcomes; for example, cognitive engagement may be an important factor in the process of transportation, but perhaps less important than emotion in determining belief change. And, do positive and negative emotions have equal levels of influence, or does a transportation experience involving negative emotion have a stronger impact on persuasion-related outcomes?

Finally, research examining the impact of imagery on attitudes, beliefs, knowledge and intention may have confounded the process with mental simulation. These two processes are conceptually distinct; mental imagery is more future-focused and internally generated, whereas narrative processing is an understanding of past events that evoked by elements of the narrative. Manipulations intended to prompt transportation may elicit mental simulation instead. For example both Schlosser (2003) and Escalas (2007) asked participants to imagine themselves using a particular product (mental stimulation) rather than mental stimulation (via transportation into a narrative). Future work should examine whether this confounding has a differential impact on persuasion-related outcomes.

Beyond attitudes as an outcome. The narrative persuasion literature has examined many of the cognitively-oriented outcomes measures considered by the traditional, dual-route process literature. I have included the outcome of emotion in this review, as many authors have noted emotional consequences as an outcome of narrative engagement. Narratives "feel" real in part because the emotion we experience while reading them *is* real. However, emotion has not been explicitly hypothesized as part of transportation theory as an outcome.

Audiences learn from narratives in ways that have remained largely unexamined from a scientific perspective. One notable example is research suggesting that people who are heavy readers of fiction may have better social skills than non-readers in terms of recognizing subtle aspects of interpersonal interaction (Mar, Oatley, Hirsch, de la Paz, Peterson 2006). Other outcomes of the experience of narrative transportation remain to be articulated, as well as their interrelationships.

2.7 Reflection: An Additional Mediator?

Transportation (Green and Brock 2000) and narrative engagement theory (Busselle and Bilandzic 2009) posit that narrative processing affects persuasion-related outcomes such as beliefs, attitudes, and behavioral intentions directly. These theories are silent on *how* the transportation experience leads to changes in expected outcome measures; as Appel and Maleckar (2012, 26) observe, "what is still lacking… are answers to the question of how transportation affects persuasion." Several authors have posited that transportation should lead to less counter-arguing with the premises of the story (Green and Brock 2002) and greater elaboration on story-related information (Slater 2002; Slater, Rouner, and Long 2006), but these processes have not been formally examined as secondary mediators of the narrative persuasion process.

An analogous process is suggested in the attribution and inference formation literature. Liberman, Gaunt, Gilbert and Trope (2002) differentiate between the X-system (for the "x" in reflexive) and the C-system (for the "c" in reflective). The X-system is characterized by parallel-processing that produces a continuous stream of consciousness that each of us experiences as "the world out there." The C-system is a serial system that uses symbolic logic to produce the conscious thoughts that we experience as "reflections on" the stream of consciousness. While the

X-system produces our ongoing experience of reality, the C-system reacts to the X-system, and uses the input to make inferences and attributions about the real world. The experience of transportation resembles the X-system, which highlights the conceptual lack of an explicit corresponding "C" process to integrate the information obtained into understanding of the real world.

Despite the lack of formal conceptualization, a number of studies have examined a secondary process between transportation and persuasion-related outcomes. I group these variables under the term "reflection," which is a process related to integrating elements encountered in the story world into one's understanding of the real world. The specific content of the reflection is contingent on the context into which one is transported. In the domain of health, for example, an individual's susceptibility or vulnerability to health risk is a key salient attribute. After an individual reads a narrative that makes risk salient, reflection on the transportation experience prompts an individual to re-evaluate his (or her) position on risk perceptions or attitudes. For example, de Wit, Das, and Vet (2008) compared narrative versus statistical evidence and found that reflection about personal risk was highest after presentation of narrative evidence, and that reflection about this risk mediated the effect of message evidence on intention. In the following section, we describe studies incorporating processes that are consistent with the process of reflection as a secondary mediator in narrative persuasion.

2.7.1 Cognitive response. Counter-arguing, or the generation of thoughts that dispute an argument, reduces the persuasive impact of a message (Petty and Cacioppo 1986). Some authors have argued that absorption in a narrative precludes counter-arguing (Slater and Rouner 2002); transportation requires a high level of cognitive resources, and an audience member who

generates rebuttals or counter examples while reading is diverting cognitive resources away from maintaining this state.

Research has examined the extent of counter-arguing as an outcome of transportation and has found higher levels of transportation lead to lower levels of critical thoughts or counter-arguing (Escalas 2007; Rowe Stitt and Nabi 2005). McQueen, Kreuter, Kalesan, and Alcaraz (2011) found higher levels cognitive engagement with a narrative (component of transportation) did lead to decreased levels of counter-arguing, but the experience of negative emotion increased counter-arguing. These authors suggest that, in the context of breast cancer, negative emotions may elicit defensive responses, which manifest in the form of counter-arguing; further examination of the content of what was "counter-argued" would provide evidence for this explanation. In contrast, Moyer Guse and Nabi (2010) found identification with characters in a dramatic narrative focusing on safe-sex behavior reduced counter-arguing, but level of transportation increased it. These authors suggest the unexpected relationship was methodologically-driven by the use of a closed-ended measure of counter-arguing, and again, that the content of the counter-arguments may provide clarification; that is, participants may have counter-argued with the underlying persuasive content, the realism of the presentation, or a character's decisions or actions, rather than with the underlying message about teen pregnancy.

Escalas (2004; 2007) extends the role of counter-arguing and treats this construct as a mediator between transportation and other outcome variables; i.e., reflection about the transportation experience. A reduction in critical thoughts (measured by counter-arguing and source derogation) mediated the relationship between narrative transportation and attitude toward ad and brand evaluation. Increased counter-arguing as the result of transportation into a narrative had a negative effect on attitude toward an entertainment narrative featuring a hearing-protection

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storyline (Brusse, Neijens, and Smit 2010).   Counterarguing represents negative cognitive responses. Positive cognitive responses can occur in response to a narrative, as well. Dunlop, Wakefield, and Kashima (2010) asked participants to view a narrative message related to smoking and then list all the thoughts that came to mind while watching. Positive thoughts were responses that expressed agreement with the ad's message or positive thoughts about the advertisement, the source, or the message (e.g., "makes me think about giving up smoking for good"). Negative thoughts were defined as responses that expressed disagreement with the ad's message, negative intention to comply with the recommendations, or derogations of the advertisement, the source, or the message (e.g., "yet another antismoking advertisement"). Across two studies participants who were more transported experienced more positive cognitive response.

Counter-arguing or cognitive response is an important process in argument-based models of persuasion and plays an influential, albeit different, role in the context of narrative persuasion. Generating counter-arguments while processing a narrative appears is inversely related to transportation; the more one is transported, the fewer counter-arguments are likely to be produced. One study indicates that positive cognitive responses generated after the transportation experience mediate the relationship between transportation and persuasion related outcomes, but more work is needed to establish this relationship.

2.7.2 Perceived risk. Risk perception is a subjective judgment that people make about the likelihood of certain negative states or the probability and severity of negative outcomes based on a certain course of action. This occurs in a narrative context when one reflects on, or makes personally-related inferences about, what happened to characters that experienced some adverse health-related outcome. Dunlop, Wakefield, and Kashima (2010) viewed perceived risk

as a mediator and found individuals who were more transported into a narrative focusing on skin cancer experienced higher levels of perceived risk and risk likelihood (similar to what other authors have termed perceived susceptibility), which led to more positive attitudes about skin protection. Similarly, Banerjee and Greene (2012) found greater levels of transportation led to stronger anti-cocaine expectancies, which then resulted in lower cocaine use intentions.

Moyer-Guse and Nabi (2010) examined how cognitive and emotional engagement with characters in a narrative affects perceived personal risk of outcomes related to birth control use. At a two-week follow up, narrative engagement predicted perceived vulnerability, which predicted intention to engage in safe-sex behaviors.

Several authors have pointed to narratives' ability to attract attention of audiences that are traditionally the most difficult to reach (Green 2006; Slater and Rouner 2002); audience members who are most at risk are those who are most likely to guard against argument-based messages with persuasive intent. Narratives, through the process of transportation, have a unique advantage in prompting reflection about one's risk perception, which may then motivate positive health-related behavior change.

2.7.3 Self referencing. Self-referencing occurs when one processes information by relating it to one's self or personal experiences (Burnkrant and Unnava 1995). Several authors have examined self-referencing a part of the narrative persuasion process (Dunlop, Wakefield, and Kashima 2010; Escalas 2007).

Self-referencing mediates the relationship between transportation and persuasion-related outcomes. Across several studies, Dunlop, Wakefield, and Kashima (2010) found self-referencing mediated transportation and behavioral intention (to quit smoking). Strange and Leung (1999) found the extent of self-referencing influenced participants' judgments of a character's actions

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(level of responsibility for outcome), consistent with the causal focus (dispositional or situational cause) of the story. Convergent evidence was found in a qualitative companion study, where the authors determined that narratives did evoke self-relevant, story-consistent memories (e.g., participants in the situational condition were reminded of a poorly funded school they had attended, participants in the dispositional condition were reminded of friends who "just quit working").

Relatedly, Gabriel and Young (2011) found narrative processing influenced audience's self-concept in ways consistent with the narrative. This suggests that, not only do we relate elements of a narrative to our own life, but narratives may provide us with a frame through which we view aspects of our selves. The extent to which our experiences shape our reflection on narratives, and the extent to which narratives change how we reflection on ourselves, is an interesting area for future research.

2.7.4 Reflection: summary and future directions. The articulation of reflection as an additional mediator between narrative processing and persuasion-related outcomes provides insights into *how* this "magical" persuasion process occurs. If narrative transportation is, as the popular analogy describes, traveling into the story world, reflection is the equivalent of traveling out of it – the return trip to the "real world." Extant research examining counter-arguing, perceived risk, and self-referencing indicates they occur in a sequence (i.e., after transportation) that would support the role of a second mediator, consistent with Appel and Maleckar's (2012, 26) call to address the question of how transportation achieves its persuasion related effects.

A great deal of future work remains to establish and explore the role of reflection as a secondary mediator. Future work can be classified in two broad areas:

Establishing reflection. First, research is needed to articulate a clear conceptual definition of reflection. Just as transportation is comprised of several components, future work should delineate facets of reflection; the present work has identified several aspects that represent only a portion of this process. A related undertaking involves developing an instrument to measure the psychometric properties of reflection and to distinguish it from transportation. One approach to determine the unique contributions of each construct is to create a change in reflection but not transportation (and vice versa) by enhancing/reducing one but not the other and then examining the effect of this manipulation on persuasion-related outcomes.

Also, future work examining reflection should establish whether it occurs in a linear sequence (directly following transportation), in more of an iterative process (with an audience tacking between the two), or whether both are possible and determined by contextual factors.

Reflection as part of narrative persuasion. Additional work is also needed to explore the role of reflection in the narrative persuasion process. How do the components of transportation relate to the components of reflection? For example, experiencing higher levels of the emotional component of transportation may prompt a reflection on this felt emotion (noticing how one feels in response to the emotion engendered by the narrative, making sense of why one is feeling that way). Is this emotionally-based reflection (affect-as-information) more likely to influence some persuasion-related outcomes than others?

Alternatively, reflection may moderate the relationship between transportation and persuasion-related outcomes such that persuasion occurs as a result of transportation only *when* people reflect on what they experienced while transported. For example, transportation into a health-related narrative may only affect health related behavior in a meaningful way *if* an

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audience thinks about what it means with regards to their perceived risk (as opposed to experiencing the narrative as entertainment).

2.8 Moderators of Relationships in the Narrative Persuasion Process.

Transportation theory developed in response to the text hegemony hypothesis (Bloom 1994), according to which textual factors alone (i.e. independent of situational and individual factors) are responsible for drawing the reader into a state of absorbed processing. In contrast, Green and Brock (2000, 703) propose transportation and persuasion may vary with regard to the individual differences among the audience and the situational context. See figure 4 for a visual representation.

Figure 4 – Moderators of Narrative Persuasion
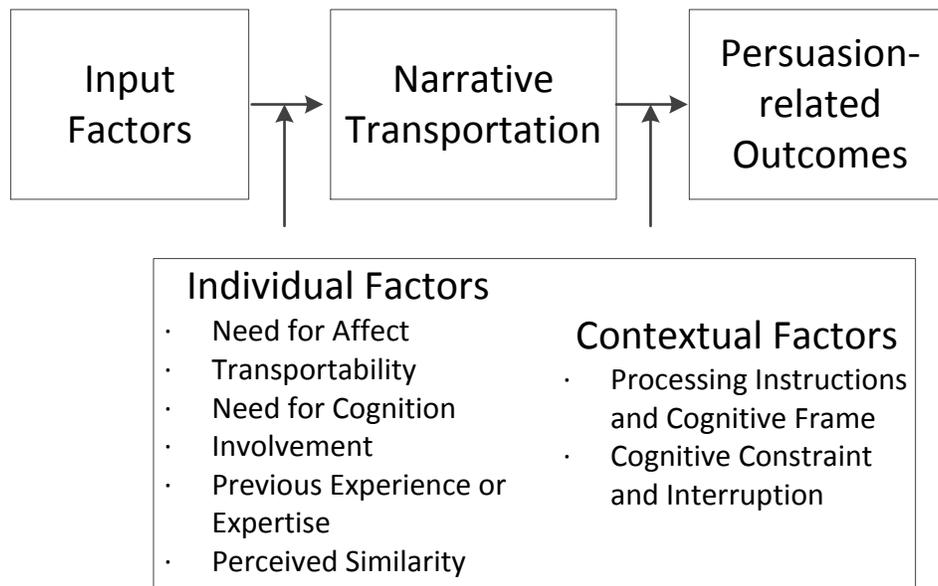
2.8.1 Individual factors.

Need for affect. The experience of emotion is central to the processing of a narrative; emotional engagement is a facet of transportation. Individuals differ in the extent to which they experience emotion in response to the same stimulus. Appel and Richter (2010) studied how the need for affect (Maio and Esses 2001), or "general motivation of people to approach or avoid situations and activities that are emotion inducing for themselves and others" (585) facilitates the experience of transportation. Across two studies, they found that need for affect moderated the persuasive effects of a fictional narrative and the persuasive effect of a story with high (or low) emotional content; that is, need for affect determines whether and to what extent the person experiences transportation and is persuaded by the information presented in the narrative. Similarly, Thompson and Haddock (2012) found that higher levels of need for affect are positively related to the transportation. Although the authors do not explicitly examine need for affect's role as a moderator, the persuasiveness of the narrative appeal (but not a rhetorical appeal) differed across levels of need for affect, suggesting that it moderates the input – transportation or transportation – persuasion-related outcome link.

Transportability. People differ in the extent and ease with which they are "caught up" in a narrative. This individual difference has been termed *transportability* by Dal Cin and colleagues (2004). They found transportability predicts transportation into a narrative message, but not the extent to which one is persuaded by traditional rhetoric or advocacy messages. Other authors have replicated the finding that higher levels of transportability enhance transportation into narrative films (Bilandzic and Busselle 2011), and that more highly transportable participants indicate higher levels of story consistent attitudes (in a narrative, but not argument-driven, context; Mazzocco, Green, Sasota, and Jones 2010).

Phillips and Mcquarrie (2010) found women who prefer to use the narrative engagement mode of consuming fashion advertising tend not to like ads that show pretty, idealized pictures (preferring more grotesque imagery) in contrast to the preferences of women who primarily engage for identity. Though not measured as "transportability" per se, this finding suggests that certain types of images (grotesque) interact with an individual's predisposition to engage with advertising in a certain way (engage to transport) to foster higher levels of transportation.

Individuals also differ in the extent to which they can generate mental images (MacInnis and Price 1987). This individual difference is related to transportability, such that ease of generating mental images facilitates the experience of being "caught up" in a story. Schlosser (2003) examined how individuals are transported into interactive product websites, and found individual level of imagery ability interacts with aspects of a product's website; vivid imagers (people with higher levels of imagery ability) had similar levels of purchase intent regardless of the website viewed, but low-imagers had higher purchase intent based on highly interactive site. This finding suggests that object interactivity facilitates transportation into a website when individuals are less able to evoke vivid mental images of product use on their own. Green and colleagues (2008) examined how an interaction between mental imagery ability and channel impacts transportation. They hypothesized that imagery ability would make a difference in a printed text condition, but not in a movie condition; that is, individuals who have difficulty creating mental pictures may benefit from the imagery provided in films. They did not find any significant effects, and suggest this may be due to a ceiling effect; scores on the imagery questionnaire were generally high, so it may be that most individuals possessed sufficient mental imagery ability to imagine the narrative events.

Authors have used differing terms for this eagerness or predisposition to engage and have found some audience members "get into" a narrative more easily than others. Future work might examine whether this ability can be learned. Are individuals high in transportability more resistant than low-transportability individuals in attempts to reduce transportation? If so, are they less affected by, for example, plotline inconsistencies, or is it that it is easier for them to return to a transported state after being interrupted?

Need for cognition. The need for cognition (NFC; Cacioppo and Petty 1982), reflects the extent to which individuals are inclined towards effortful cognitive activities, and has been long established as a meaningful individual difference in rhetorical persuasion. Green and Brock (2000) emphasized that transportation and cognitive elaboration are distinct processes and to evaluate the discriminant validity of narrative processing, they hypothesized (and found) that need for cognition does not predict transportation or story-consistent beliefs. This finding has been replicated by some authors (Appel and Richter 2007) but not others; Thompson and Haddock (2012) found higher levels of need for cognition correlated with higher levels of transportation, and Braverman (2008) found the relationship between transportation and persuasion was stronger for participants lower in NFC.

Other research suggests that need for cognition may have a more nuanced relationship with transportation and persuasion. Green and colleagues (2008) found that NFC interacted with narrative format; individuals high in NFC were more transported by reading, whereas individuals low in NFC were more transported by watching the same narratives. Shrum, Burroughs, and Rindfleisch (2005) found an interaction between need for cognition and amount of TV viewing on transportation such that for individuals who are high in NFC, amount of TV viewing predicts transportation; heavier viewers are more likely to be transported than lighter viewers.

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Future research might resolve these conflicting findings by examining which relationships in the narrative persuasion process are sensitive to differences in NFC. For example, NFC may moderate the relationship between paratext and transportation, such that paratext label influences transportation only for individuals higher in NFC; or, between transportation and reflection (as outlined in the section above) such that individuals high in need for cognition reflect on their transportation experience more deeply. In addition, need for cognition may also have an influence when the narrative is experienced in an educational or consumer choice context, but not when the purpose of the narrative is solely for enjoyment.

Involvement. While both involvement and transportation are related to similar cognitive processes such as attention and imagery, transportation is different from involvement in that the person feels caught up in the story and not in the consequences extrinsic to the narrative. Empirical studies of this relationship yield an inconsistent pattern on whether and how involvement influences the process of narrative persuasion. Wang and Calder (2006) manipulated level of personal involvement by telling participants they were going to evaluate a concept for a new magazine that would be circulated at their school (high involvement) or in another city (low involvement). They found two main effects of transportation and personal involvement on their focal dependent measures but did not find an interaction, suggesting that these two processes effect attitude independently.

Involvement does appear to have an influence on how narratives are processed in a health context, but there is also inconsistency across findings; Kim and colleagues (2012) found participants in a more advanced stage of change (Prochaska and DiClemente 1983), and ostensibly more highly involved, experienced higher levels of narrative engagement in response to a variety of smoking-cessation narratives. In contrast, Braverman (2008) examined the impact

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of involvement in the contexts of weight loss and alcohol consumption and found higher levels of transportation led to higher levels of belief acceptance, but only for low-involved participants.

These studies suggest involvement moderates the relationships between message and transportation, and between transportation and outcome measures in different ways. Involvement may strengthen the former relationship, but, depending on the context or initial attitude, may weaken the latter relationship. Involvement with a particular content area increases attention to a message about that area and results in increased investment of cognitive resources, increasing level of transportation. Once one is transported, however, involvement may have a negative influence on persuasion-related outcomes for two possible reasons; higher levels of involvement may prompt more critical reflection on the message material or inferences made from the story (especially if it espouses an opposing position), which lead to higher levels of story-consistent belief rejection than low-involved participants. Second, in a health context where risk and negative emotion play a central role, involved audience members may guard against accepting information presented in a story that have negative implications. Durkin and Wakefield (2006), for example, suggest that smokers in a more advanced stage of change were less persuaded by a relevant advertisement in a narrative context (compared to a non-narrative context) due to the perceived intrusiveness to their viewing experience that resulted from the higher levels of perceived personal relevance. Thus, differences in the *nature* or context of the involvement may explain the conflicting findings.

Previous experience/expertise. Elements of fictional narratives often relate directly to an audience's real world experiences or areas of expertise. Green (2004) found personal experience moderated the influence of plotline (a narrative about a homosexual man attending his college fraternity reunion) on transportation; people who had a gay friend or family member, or

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experience with Greek life, were more transported. Van den Hende and colleagues (2007) examined how using early concept narratives (scenarios of somebody using and interacting with the prototypes) allows customers to grasp the application of the new technology. The more participants knew about interactive displays of this nature, the more they were transported into the narrative

Individuals may choose to view the same narrative several times, sometimes across different modalities; many books are converted into movie format. In this case, the audience may vary in their degree of previous experience with a narrative, itself. Green and colleagues (2008) examined how transportation was affected by the medium of story presentation, especially when the narrative was experienced for a second time. Their first study showed that people who read a novel before viewing the film version (i.e., had previous experience) were more transported into the film compared to nonreaders. This provides evidence that transportation is not necessarily diminished by repeated exposure and is not contingent on the excitement of wanting to find out what happens at the end of a story. In a second study, participants either read a passage or watch a movie clip on two separate occasions. Reading followed by watching led to the highest level of transportation at time two. The authors speculate this viewing allows participants to first create the narrative world through imagination (prompted by the high-effort medium of text), and then relax and enjoy the story unfolding when re-watching it in a film version.

Overall, research suggests previous experience with a narrative – the focal topic area, the type of narrative, or focal story, itself – enhances transportation. However, these studies have not examined whether higher levels of transportation result in higher levels of story-consistent belief. Personal experience may have a similar effect as involvement; it may enhance transportation into the narrative, but may have a negative effect on persuasion-related outcomes due to elevated

levels of critical reflection. As suggested by research on consumer expertise (Alba and Hutchinson 1987), experts are better equipped to make accurate inferences and reject potentially misleading information.

Future work should explore when previous experience or expertise does not enhance (and perhaps detracts from) transportation; expertise may moderate the impact of realism such that experts are more sensitive to errors or misrepresentations in the narrative world. For example, doctors may recognize factual inconsistencies or simplifications in medical dramas, which may reduce their level of transportation.

Perceived Similarity. Perceived similarity with characters in a narrative is a variable that authors have conjectured should affect narrative processing (Slater and Rouner 2002; Stitt and Nabi 2005). Tal-or and Cohen (2010) examined how similarity between the reader and characters within a story affect transportation. They found transportation did not differ based on gender match, but did differ based on degree of perceived personal relevance. Banerjee and Greene (2012) also examined the impact of gender match (between protagonist in a narrative and audience member's gender) and concluded that it does not affect level of transportation. They did find participants experienced higher levels of transportation with female protagonists, but suggest that result may be due, in part, to the context of cocaine use where female protagonists represent a departure from the norm (and thus, whose narratives were more attention-grabbing and transporting for the readers). Van den Hende and colleagues (2007) found that similarity of shopping behavior (the more participants' shopping behavior resembled the protagonist's), the higher their score on the attention subscale of transportation (or, the less easily they were distracted from the narrative).

Perceived similarity on surface dimensions (gender) in a narrative context does not appear to affect transportation. Many studies highlight narratives' ability to transcend factors that might predispose an audience to be unfavorable. However, research is still needed to examine the effect of perceived similarity that is predicated on "deeper" characteristics, such as values-relevant dimensions, and how this might interact with message content. For example, a staunch democrat may be receptive to a story about a republican's recent vacation, but may be less so when the story centers on politicized topics. In addition, similarity with characters can be perceived in response to a variety of dimensions, and along a continuum; we can be similar to characters in some ways, and different in others.

Individual-factor moderators: summary and future directions. Systematic differences among individuals affect transportation and persuasion-related outcomes. Higher levels of need for affect, involvement, transportability, and personal experience all appear to increase transportation. The effect of many of these individual difference variables is not surprising; for example, that higher levels of transportability enhance transportation. Future work should address the scope and limits of these individual differences factors on transportation.

Additional individual-level moderators. An individual's salient goals may influence transportation and subsequent persuasion-related outcomes. For example, transportation may whether an individual reads a narrative for enjoyment, to stay up-to-date on the topic area, or whether deciding to use a product (or service) presented in the narrative. Other individual-level variables that also may influence narrative persuasion include initial opinion and its strength. Although narratives evoke a process different than argument-based messages, research is needed to evaluate the effect of this approach to persuade individuals who are predisposed to ignore a message based on its counter attitudinal position.

Transportation – persuasion relationship. Much less research has examined how individual differences moderate the subsequent transportation – persuasion link, although there is some evidence that involvement seem to decrease this relationship. This area of work can provide valuable insights on strategies to tailor narratives based on individual differences. Even a simple story can result in different inferences from viewers. A more complete theory of narrative persuasion requires future work to evaluate how narratives affect people, and when they affect people *differently*. For example, does making one element of identity salient influence how a narrative is perceived? Will an individual reach a different conclusion from a story when race is salient compared to a profession? This question may provide an opportunity to reconcile the distinct but similar processes of transportation and identification. Two readers who are equally transported into a story may emerge with different attitudes depending on the character with whom they most identify.

Finally, future work on individual differences could also provide evidence for the construct of reflection. For example, need for cognition may moderate the relationship between transportation and reflection (or directly affect reflection), but have no impact on the relationship between reflection and persuasion-related outcomes.

2.8.2 Contextual factors.

Elements of the context appear to shape the process of narrative persuasion. Research has examined the influence of specific instructions engendering cognitive frames, cognitive constraint and interruption.

Processing instructions and cognitive frame. Several authors have manipulated transportation by instructing participants to process the narrative after imposing a goal, task, or set of instructions. These efforts have been met with mixed success. Green and Brock (2000)

attempted to enhance/minimize transportation through several sets of instructions: to read a narrative with the expectation that it is dramatic, to read normally, and to read looking for errors. These manipulations did not affect the transportation. Only when participants were instructed to edit a passage to reduce it to a 4th grade reading level, coupled with examples and reminders of what participants were supposed to be doing, did the authors obtain significantly reduce transportation.

De Graaf, Hoeken, Sanders and Beentjes (2009) also attempted to use processing instructions to reduce narrative engagement. The detection of language errors and instructions to select one sentence in each of 20 paragraphs to omit (without disturbing the story line) each reduced the narrative world.

Other authors have used instructions to encourage analytic (or narrative) processing of the same message. Green (2004), for example, instructed respondents to relax and read naturally (transportation condition), read critically (analytic condition), or were given no instructions (control), but found no differences in transportation. Escalas (2007), on the other hand, did find that when participants were asked to critique an ad as if they were an advertising critic, the transportation was reduced when compared to participants who were not given such instructions. She found that individuals prompted to imagine using a featured product were transported by their narrative thoughts; weak arguments did not negatively affect attitude in this condition (but did in the analytic self-referencing condition). However, increasing levels of ad skepticism (by instructing participants to "critique the ad as if you were a critic for *Ad Age*") precludes transportation, leading to analytical processing that is sensitive to argument strength.

Vaughn, Hesse, Petkova, and Trudeau (2009) applied regulatory focus theory in which people to manipulate processing fluency or fit; i.e., when a person's focus matches situational

demands. Participants who experienced regulatory fit in an earlier task were more transported into an unrelated story than those who experienced non-fit.

These authors replicated this finding in a second study and added a second factor which did (or did not call) attention to the source of fit or non-fit. Transportation did not differ between the groups of fit/nonfit of participants when their attention was directed to,the source of their mental state, suggesting fit can influence transportation only if people attribute feelings of "rightness" or "fit" to the story.

Neilsen and Escalas (2010) argued that manipulations to decrease fluency would increase narrative processing in contrast to its hampering effect in an argument-driven context. Preference fluency (i.e., the feeling that forming a preference is easy or difficult) often prompts consumers to select an option associated with an easy-to-form preference. The authors hypothesized, however, and found individuals induced to apply more effort and cognitive resources (manipulated through hard to read text or fuzzy images) in a narrative context experienced higher levels of transportation.

The overall findings are generally consistent with the tendency, as described by Shank and Berman (2002), for people to apply narrative processing when presented with a message. Initial instructions intended to reduce transportation or prompt analytic processing must be sufficiently memorable or powerful to offset an individual's inclination to engage in narrative processing. This type of processing is viewed as enjoyable and individuals are willing to invest cognitive resources to obtain it, which runs counter to the prevailing characterization of consumers as cognitive misers.

Cognitive constraint and interruption. Previous authors have suggested that, without sufficient levels of cognitive resources, narrative processing cannot occur (Busselle and

Bilandzic 2009). Chang (2009) found exposure to a narrative (versus informational editorial) followed by exposure to a narrative ad leads to decreased levels of transportation and empathy in response to the narrative ad -- the first narrative "uses up" cognitive resources, so people are cognitively constrained when they view a subsequent narrative. This finding suggests that sufficient cognitive "bandwidth" is needed to foster transportation into narrative advertising and is consistent with findings from research that has imposed cognitively-demanding processing instructions to reduce transportation (De Graaf, Hoeken, Sanders and Beentjes 2009; Green and Brock 2000)

Interrupting a narrative message (and the resulting narrative processing) affects attention and subsequent use of cognitive resources. Wang and Calder (2006) examined how intruding on the transportation experience affects evaluations of the *interrupting* stimulus. When an ad interrupts narrative processing of an external, contextual narrative, attitude toward the (interrupting) ad was decreased. The authors found a main effect of perceived ad intrusiveness for highly transported readers, and an interaction with the ad position; the ad was perceived as most intrusive for highly transported readers who viewed the ad in middle of story (as opposed to the end). A similar pattern of results was obtained in a second study where goal relevance served as the intrusion manipulation; participants with a goal of purchasing beverages (goal-congruent) evaluated a bottled water ad less favorably than those with a goal of purchasing snacks, when it interrupted their narrative experience. Again, intrusiveness moderated the relationship between transportation and persuasion-related outcomes; participants who had a relevant goal and were highly transported indicated lower brand attitudes.

Wang and Calder (2009) also examined how thematic compatibility between a show and an interrupting ad interacts with transportation. When a TV show and ad were thematically

compatible, highly transported participants had less favorable product attitudes. When compatibility was low, participants gave equally favorable evaluations regardless of transportation experience. Again, this effect was the result of perceived ad intrusiveness; when there was high compatibility between the show and the ad, highly transported participants perceived the ad as more intrusive.

Durkin and Wakefield (2008) examined how perceived relevance of a message can increase the perceived intrusiveness or interruption of a transporting experience. They found participants preparing to quit smoking were less persuaded by an anti-smoking ad in a narrative program than those who saw the ad in a non-narrative program (and no difference based on format for smokers not preparing to quit). The authors point to preparing smokers' increased levels of perceived relevance, and consequent higher levels of experienced ad intrusiveness to their experience of transportation, which reduced the impact of the advertisement.

Contextual factors: summary and research directions. Aspects of the context directly influence narrative processing (i.e., interruption) or influence the cognitive frame with which an individual approaches a narrative (induced skepticism, regulatory fit). Research suggests a mental state that enhances fit or increases level of cognitive resources strengthens the relationship between a narrative message input and resulting transportation.

Interrupting or intruding on a transportation experience decreases change of persuasion-related outcomes. Additionally, depending on level of intrusiveness, the interrupting stimulus also receives decreased evaluations. Intrusiveness can be driven by features of the context (an ad in the middle of a story) or an interaction with individual-level variables (perceived relevance).

Additional contextual moderators. Many other contextually-relevant variables and their moderating impact on narrative persuasion remain to be explored. For example, do aspects of the

setting in which the narrative is presented (consumer, entertainment related) affect transportation? Are people more likely to invest cognitive resources in an entertainment context because of higher levels of anticipated enjoyment?

Consumer-related narratives may serve as a useful area to explore the role of additional moderating factors; online sellers are increasingly using excerpts from consumer reviews (often written as narratives) as a way to promote products. A range of relevant variables – from the type of product reviewed (hedonic, utilitarian) to the valence of the review – remain to be understood in terms of their effect on the narrative persuasion process. These variables might moderate the input – transportation relationship, such that higher levels of transportation result in response to reviews that are (for example) more negative in valence. These variables may also influence the transportation – persuasion-related outcome link, such that the experience of transportation is more persuasive for some types of products than others.

Future research might examine whether ceding control over interruption type and frequency to the audience mitigates the research findings related to intrusiveness. The recent phenomenon (on TV show-hosting websites such as Hulu) of allowing an audience to choose ads that are inserted into a narrative before provides an opportune context to explore this question. This practice could reduce their perceived intrusiveness due to the audiences' increased level of perceived control or enhance perceived intrusiveness based on personal relevance.

Transportation – persuasion relationship. Little research has examined how contextual variables moderate the relationship between transportation and persuasion-related outcomes. Exploring variables that influence this relationship is an important step towards understanding how and under what conditions narratives affect people. For example, cognitive fit has been examined in terms of its influence transportation, but how might it moderate transportation's

effect on attitudes? Contextual factors may place people in mental states that vary in terms of construal (abstract, concrete), which may then focus attention on different aspects of the story; individuals in an abstract mindset may show change in terms of more abstract, global attitudes, whereas an audience in a concrete mindset may endorse more specific, low-level beliefs.

Research that explores the boundaries of narrative persuasion is also needed. For example, under what conditions does transportation *not* occur or has a negative relationship with persuasion-related outcomes? Narratives are typically perceived to have lower levels of persuasive intent. Cues signaling persuasive intent following the processing of a narrative (Freistad and Wright 1994) may cause an audience to negatively adjust or preempt any attitude-related change.

2.9 Conclusion

The persuasive influence of narratives has long been leveraged by entertainers, orators, and business practitioners. Over the past two decades, research has grown alongside this intuitive understanding of their effectiveness, and the field of narrative persuasion has developed to provide theoretical insight into this process. This review has synthesized the research in this growing field using a framework that integrates the antecedents and consequences of the narrative persuasion mechanism, identified a potential second mediator (reflection), and described empirical work on the range of individual and contextual variables that moderate this process. In the process of articulating what is known about narrative persuasion, we have highlighted unexplored areas that would benefit from future research.

2.9.1 A methodological note. Almost all empirical work on narratives has been conducted in controlled lab settings, with undergraduate students. Field research in a context such as movie theatres or book clubs present a valuable – and readily accessible -- opportunity to

evaluate the robustness of the current findings and to explore other variables that may have more relevance in a real-world context. Individuals often self-select into viewing certain kinds of narratives; how does this influence the process of narrative persuasion? How does narrative persuasion operate in samples that have not been examined, such as those of different age and culture? Some cultures (Native American, African) have a long tradition of oral communication, using stories to passing down history and stories. Older individuals have heard and told many more stories than their younger counterparts. How might this experience with stories influence the narrative persuasion process?

Another methodological issue concerns the near-exclusive use of Green and Brock's self-report transportation scale. Despite its description as a multidimensional construct, the transportation scale does not contain subscales and treats the construct as unidimensional. This lack of sensitivity to the components of the transportation process does not make available potentially valuable information about the role of each component on overall transportation and persuasion-related outcomes. Additionally, many scale items are related to specific media ("while I was reading the narrative") rendering the scale appropriate for only certain kinds of narratives.

The narrative engagement (Busselle and Bilandzic 2009) instrument provides subscales of the components of the experience. Some of the items, however, may need to be altered to increase generalizability to all narrative conditions. The term "program" is used throughout the scale, and tends to pertain to certain kinds of media. The items on the emotional engagement subscale may not apply to all narrative plotlines, as they include specific emotions (happy, sad, and sorry for).

The creation of an updated scale would be an important gain in the field of narrative persuasion. The ideal scale would not be tied to a particular medium; or, separate versions of the scale for different media could be generated. To address the problem of emotional specificity, a "fill-in-the-blank" type scale could allow tailoring to particular emotional content. Just as Thurstone scales are adaptable to any attitude object of interest ("I like ___"), this type of scale would allow researchers to insert the emotions that are pertinent to particular stimuli. This approach would allow for specific measurement and understanding of how emotions of different valence and intensity differentially contribute to outcomes.

A secondary concern with the measurement of transportation (and any self-report scale measuring a process) is that it does not capture this process in "real-time." The experience of transportation is likely to vary throughout a narrative, and the use of a self-report measure after exposure to the narrative does not capture potentially useful information. Does the "global transportation" response capture the extreme level of the experience or more of an average? Are there primacy and recency effects for reporting the transportation experience? Other measures of transportation are needed order to answer these, and related, questions.

2.9.2 Narratives: the next chapter. The first era of narrative persuasion research demonstrated that messages in a narrative format yield comparable or greater levels of persuasion than their argument-driven counterparts and are processed in a manner that the audience experiences as pleasurable. Consequently, narrative persuasion research has examined how narrative processing can lead to favorable persuasion-related outcomes. The next period of narrative research would benefit from adopting a more critical approach to understand the scope and limits of narrative persuasion. The facets of narrative input, the components of transportation and reflection all need much greater depth of analysis. Relatedly, a central question that will

require a substantial amount of investigation involves focusing on when narratives affect people *differently.* This is an important direction for narrative persuasion theory and of considerable importance to practitioners who wish to use narratives as persuasive tools. Work examining the secondary mediator (or perhaps moderator) of reflection identified in this review would also serve as a potential path toward understanding when narrative messages are most likely to exert persuade.

Efforts to answer these questions would also contribute to a broader goal of developing a unified theory of persuasion. Research examining dual-route processing and persuasion (Petty and Cacioppo 1986) provided an initial contrast to better understand narrative persuasion (through demonstrating that a different process could lead to change of the same persuasion-related outcome variables). By highlighting differences, however, research has not explored commonalities; much of the research conducted in an argument-based context may apply to narrative persuasion. An effort to develop a unified theory of persuasion would explore where similarities and differences exist.

A unified theory of persuasion would also articulate the conditions under which the different approaches to persuasion operate, and when one is more likely to exert greater influence. To date, narrative persuasion researchers have sought to demonstrate that narrative messages can be as (or more) persuasive than argument-based messages, and have pursued a relatively a narrow scope of research. Efforts are needed to determine when narrative (and argument-based) messages are more (or less) persuasive. A related consideration pertains to the dichotomy between "narrative" and "argument-based" messages: This broad classification is likely to conceal meaningful differences within each category and not allow for a more thorough assessment of the features of a message. Finally, the future research questions identified

throughout this paper would contribute to narrative persuasion theory as well as a better

understanding the persuasion process.

ESSAY 2: WHAT'S THE BUZZ ABOUT? HOW CONSUMER REVIEWS PERSUADE THROUGH NARRATIVES

3.1 Abstract

Consumers often read online consumer reviews before making a purchase decision. The format of these reviews (i.e., more information-based vs. more story-based) varies. The current research examines how story-based online consumer reviews persuade using the narrative persuasion framework proposed in essay 1. Across three studies, consumers are exposed to both created and real online consumer reviews. I find that reviews with a more story-like format lead to higher levels of transportation into the review, which leads to more reflection on the review and, ultimately, higher intentions to try the reviewed product. I also examine how traditional argument-based source, message, and audience characteristics moderate relationships among the constructs that represent the narrative persuasion process.

3.2 Introduction

"Eight PM. Dimly lit candles and a waft of jasmine greeted us as we stepped past the velvet curtain just inside the entrance of Morimo. My boyfriend and I had been anticipating this evening, officially to celebrate our anniversary, but more to investigate whether the recent buzz about this place is deserved. The impeccably dressed hostess led us through the chic, intimate dining room, filled with other diners and their hushed murmurs, and seated us at the one empty table. 'Tonight's Chef Surprise is especially memorable,' she advised before walking away.

I love surprises (28 years old, and I still can't sleep on Christmas Eve!), and my boyfriend and I pride ourselves on being adventurous eaters, so we both ordered the Chef's Surprise without so much as glancing at the menu. After a pleasant 20 minute wait over glasses of a moderately priced ($9 per glass) house red wine, the waiter approached with the highly anticipated plates. As he sat them down before us I noted, to my complete surprise –"

What could it be? And, why do you care?

Reviews of consumers' experiences with products or services, like the one above, have risen in prevalence and accessibility. The Internet's growth has facilitated the exchange of opinions between large numbers of geographically-widespread consumers. Consumers often write their reviews in a format describing a detailed, sequential experience. This is consistent with our preference for communicating in stories (Schank and Berman 2002); we construct narratives to relate to others and make sense of our experiences. Casual observation suggests that we learn from and respond to narratives in meaningful ways. In the following research, I evaluate a series of models (based on the framework proposed in Essay 1) that examine how narrative processing can help us to understand the persuasive impact of online consumer reviews.

3.3 Conceptual Framework

3.3.1 Consumer reviews. Consumers often seek information from and share information with others regarding consumption experiences, which has a significant impact on consumer choice (Arndt 1967; Herr, Kardes, and Kim 1991) beyond traditional advertising (Katz and Lazarfield 1955). Consumer reviews are perceived as more relevant and informative than marketer-driven communication (Schlosser 2011) and have a traceable impact on a business's sales (Chevalier and Mayzlin 2006).

Studies also conclude that online consumer reviews are valued by consumers (Stromberg 2007). For instance, over half (58%) of consumers prefer sites with peer reviews and nearly all (98%) online shoppers reported reading peer reviews before making a purchase (Decker and Trusov 2007). Individuals perceive consumer reviews to be less biased and approach them with lower levels of skepticism than marketer-generated communication (Sen and Lerman 2007). Marketers themselves recognize this and encourage consumers to post product reviews and opinions on their e-retail sites (Godes and Mayzlin 2009).

As consumer reviews have grown in importance to consumers and marketers, researchers have sought to better understand them. Empirical work has examined how consumer reviews affect an online seller (Chen, Wang, and Xie 2004), how consumption goals moderate the effect of review valence on persuasiveness (Zhang, Craciun and Shin 2010), and how the valence of a review impacts perceived review helpfulness (Sen and Lerman 2007). The process of *how* consumer reviews influence, specifically how variations in format lead to different levels of influence, has received little attention. One explanatory process is narrative persuasion, which I examine as the mechanism through which consumer reviews achieve influence.

3.3.2 Narrative persuasion and the consumer field. Carl Hovland and other researchers at Yale developed the influential first set of studies on persuasion which examined cognitive responses to argument-driven messages (Hovland, Janis, and Kelley 1953; Hovland and Weiss 1951). This emphasis on rhetoric has continued to the present, where contemporary research on attitude change is dominated by dual route perspectives (Petty, Cacioppo, and Schumann 1983). A great deal is known about the factors that enhance or diminish the effectiveness of argument-driven persuasive communications. However, this overwhelming focus on information presented as discrete arguments stands in contrast with daily reality. Consumers exist in, readily engage with, and learn from an environment saturated with narratives.

A growing number of scholars across fields such as psychology (Green and Brock 2000), communication (Hinyard and Kreuter 2007), education (Slater and Rouner 2002), advertising (Phillips and McQuarrie 2010) and marketing (Escalas 2007) recognize the powerful influence of narratives. Narratives persuade through the depiction of events and consequences rather than arguments and invoke a distinct form of processing (Green and Brock 2000). This narrative processing is fundamental to human comprehension; our thought patterns are structured to

construct narratives from experiences and de-construct the details of others' stories with ease (Schank and Berman 2002).

Work on narratives in the consumer field can be organized by research paradigm. One approach is more qualitative and contextually-oriented. Scott (1994) introduced reader-response theory, which emphasizes the study of reading over formal textual analysis, to the consumer field by examining the process of reading as a link between advertising text and consumer response. Phillips and Macquarrie (2010) examined how narrative transportation is prompted by fashion advertisements when specific aesthetic properties (such as grotesque imagery) are present. Other qualitatively-oriented work has examined the role of imagery in consumers' interpretation of advertisements (Mick and Politi 1989) and how consumers use their autobiographical experiences to help interpret an advertisement's meaning (Mick and Buhl 1992).

The other approach to studying narratives is more focused on the development and evaluation of causal models. Escalas (2007) compared narrative self-referencing with non-narrative (analytical) self-referencing in an advertising context and found that narrative self-referencing persuades through absorption in narrative thoughts, whereas analytical self-referencing persuades through traditional, cognitive elaboration processes. Chang (2009) examined the level of cognitive capacity required to transport and "hook" readers when processing narratively-based advertisements. Wang and Calder (2006; 2009) examined how an advertisement's intrusion on a transportation experience affects the way the advertisement is evaluated. Deighton, Romer, and Mcqueen (1989) compared the processing of argument-driven and dramatic advertising and found that dramatic advertisements are more likely to be processed subjectively and empathetically.

My work builds on these initial examinations of the narrative persuasion process in several ways. I examine narrative processing in the less-examined, non-fiction context of consumer reviews. Research on narrative persuasion has focused on responses to long, detailed narratives. For example, Green and Brock's (2000) seminal studies developing transportation theory used full-length short stories (and these same stimuli have been used in a number of other studies examining narrative persuasion). In the consumer field, authors have used narrative stimuli with developed plotlines to assess whether the mechanism of transportation leads to changes in attitudes and intention (Chang 2009; Wang and Calder 2006).

These types of narratives are not representative of what consumers encounter in their daily marketplace interactions. In contrast, consumer reviews contain limited content and less contextually-rich passages. One unaddressed question for consumer researchers is whether the shorter, product-focused experiences posted as consumer reviews have a format sufficiently story-like to evoke the narrative persuasion process of narratives with a more detailed structure.

Additionally, I evaluate a previously unexamined (though articulated in Essay 1) process of reflection as a mediator between narrative transportation and behavioral intention. Finally, I examine how elements that contribute to the transportation experience (both external and internal to the text) identified in Essay 1, specifically those that play a central role in the context of consumer reviews, influence the narrative persuasion process. These variables have also been examined in the traditional persuasion literature (source, message, audience variables). Thus, I work toward a broader understanding of persuasion by examining how variables examined in the argument-based persuasion literature operate in the context of narrative persuasion. Each of these variables will be described in the theoretical justification of the relevant study. Next, I provide a brief overview of each phase in the narrative persuasion process, as described in Essay 1.

Phase I: narrative message structure. Multiple definitions have been developed for a narrative, including written fictional stories (Green and Brock 2000), television shows (Moyer-Gusé and Nabi 2010), video and print advertisements (Phillips and McQuarrie 2010), and first-person accounts (de Wit, Das, and Vet 2008). Though there is no standard definition, conceptualizations commonly require a coherent sequence, information about a scene and characters, questions or conflict, and resolution (Baesler and Burgoon 1994; Green and Brock 2000; Oatley 2002). In studies comparing the influence of narratives to non-narrative messages (Adaval and Wyer 1998; Mazzocco, Green, Sasota, and Jones 2010), non-narrative messages are operationalized in the form of listed (often statistically-based) arguments, and narrative messages contain parallel information embedded in a first-or third-person account.

While a lay understanding of narratives stems from daily fictional experience (movies and novels contain greater levels of imagery and emotion-conjuring textual elements than expository nonfiction), consumers regularly encounter non-fiction narratives, such as eye-witness reports on the news and consumer product testimonials. Empirical evidence suggests that fictionality is not a necessary condition for narrative processing to occur. The term "narrative" denotes a type of format rather than the factuality of a message (Green and Brock 2000), and evidence suggests that persuasion-related outcomes do not differ when the same narrative passage is presented to participants as news (fact) or fiction (Green and Brock 2000; Green, Garst, Brock, and Chung 2006; Prentice, Gerrig, and Bailis 1997; Strange and Leung 1999).

Phase II: transportation. Narrative processing is distinct from the processing used to evaluate argument-based messages (Escalas 2004, 2007; Green and Brock 2000; Mazzocco, Green, and Brock 2007). Several theories describe transportation in a narrative and assert that it leads to persuasion-related outcomes. Gerrig (1993) coined the term "narrative transportation,"

which makes an analogy between a traveler and a reader becoming absorbed in a narrative; both emerge changed from their journey. Green and Brock built upon this comparison to develop the transportation model of narrative persuasion (2000), which asserts that narratives can change beliefs and motivate action through the mediating process of transportation.

Busselle and Bilandzik (2008) developed the theory of narrative engagement, which describes the process of losing awareness of the self and entering a story world. Narrative engagement draws from deictic shift theory (Duchan, Bruder, and Hewitt 1995), which maintains that readers create mental models of a story and shift the center of their experience from the actual world into the story world, a "deictic shift." Like the transportation model, the model of narrative engagement identifies a mediating form of processing that links reading or viewing a narrative with persuasion-related outcomes. The transportation model and narrative engagement model overlap substantially in terms of the conceptual components of narrative processing. We adopt these shared constructs to inform our conceptualization and measurement of narrative transportation.

Cognitive transportation (known as "cognitive engagement" in transportation theory and "narrative presence" in narrative engagement theory) describes the level of mental involvement in a narrative (Green and Brock 2000). Cognitive transportation entails a lack of self-awareness such that those who are transported into a narrative world may not notice events happening around them. Transported individuals may be unaware of the amount of time that passes, a phenomenon described as "telepresence" (Lee 2004). Under such conditions, conventional cognitive involvement constructs do not evoke the same type of engagement as would be expected when processing explicitly persuasive messages (Slater and Rouner 2002). Another cognitive property of narrative processing is a reduced level of skepticism and disbelief (Green

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and Brock 2000; Slater and Rouner 2002); that is, transportation into a narrative renders an individual's preexisting beliefs and opinions inaccessible, hindering an individual's ability to generate counterarguments.

Vivid *imagery* or mental simulation influences the extent of narrative processing. The ease with which the imagery described in a narrative is evoked helps determine the extent to which a *narrative* experience feels like a *real* experience. If readers can easily picture the characters and scene of the events described, they are more likely to become fully engaged in the narrative world (Green and Brock 2000).

Research in social psychology has demonstrated that opinions and beliefs have both emotional and rational bases (Crites, Fabrigar, and Petty 1994). The experience of emotional arousal in narrative transportation is termed "*emotional engagement*" by both Green and Brock (2000) and Busselle and Bilandzik (2008). Texts that stimulate emotion, regardless of valence, are more likely to engender engagement with the text (McQueen, Kreuter, Kalesan, and Alcaraz 2011).

Phase III: reflection – perceived persuasion. Transportation theory (Green and Brock 2000) and narrative engagement theory (Busselle and Bilandzic 2009) posit that narrative processing directly affects persuasion-related outcomes such as beliefs, attitudes, and behavioral intention. The authors suggest an individual who has been transported into a narrative will be altered by this experience, exhibiting changes in persuasion-related outcomes (e.g., intention). However, there is no proposed mechanism that leads from the transportation experience to changes in expected outcome measures. As discussed in Essay 1, I posit that individuals reflect on their transportation experience, and this reflection mediates the impact of transportation on persuasion-related outcomes.

The specific reflection is contingent on the context motivating the transportation. For example, the *Harry Potter* movies may prompt a comparison of the importance of values such as loyalty, friendship, and love in the movie with the role they play in one's day-to-day relationships. In a health-oriented narrative context, a reflection on the transportation experience is likely to engender cognitions associated with the specific content and may prompt an individual to re-evaluate their position on risk perceptions or attitudes. For example, de Wit, Das, and Vet (2008) compared narrative versus statistical evidence and found that reflections about personal risk were highest after presentation of narrative evidence, and reflection about this risk mediated the effect of message evidence on intention. Although the authors do not examine the mediating role of transportation, they do find that narrative evidence promotes a sense of personal risk (reflective process), which in turn has an impact on behavioral intention. Other studies of narrative persuasion in a health context have identified the mediating role of reflecting on the perceived vulnerability or perceived personal risk on behavioral intention or other persuasion-related outcomes (Dunlop, Wakefield, and Kashima 2008; Moyer-Gusé and Nabi 2010).

While a narrative encountered in a health-related context is likely to prompt reflection that will affect constructs such as perceived vulnerability, consumer-relevant narratives are likely to prompt reflection that will inform subsequent consumption behavior. In the current study, I examine consumer reviews, whose primary purpose is to inform consumers about another's evaluation of a product or service. The reflection that occurs after transportation is likely to represent the persuasiveness of the review; that is, how much the reader perceives the review as influential or helpful. In the proposed model, I evaluate the role of perceived persuasiveness

(which represents reflection in a consumer review context) as mediating the impact of transportation on intention to try a product.

   Phase IV: persuasion-related outcomes – behavioral intention. A substantial body of empirical work demonstrates the relationship between the extent of narrative transportation and persuasion-related outcomes, such as affect, self-concept, social pressure, self-efficacy, knowledge, beliefs and attitudes (Strange and Leung 1999; Appel and Richter 2010; Phillips and McQuarrie 2010; Wang and Calder 2006, 2009; Escalas 2004, 2007) Green, Brock, and Kaufman 2004; Appel 2008). Surprisingly, few studies of narrative processing have treated intention as the primary outcome variable. An expectation when reading a consumer review is that it will influence choice. My focus in the series of studies to be reported is on the effect of the narrative persuasion processes on intention, rather than the effect of the traditional determinants on intention.

   In my first study, I examine transportation and reflection as the mechanisms through which consumer reviews result in a change of intention to use a product. In study 2, I replicate this model and examine how the contextually-relevant source and audience variables of source expertise and personal experience affect the process. In study 3, I examine this process using real-world consumer reviews, adding two message factors (product type, valence) to the set of variables examined in study 2.

Figure 5 – The Narrative Persuasion Process

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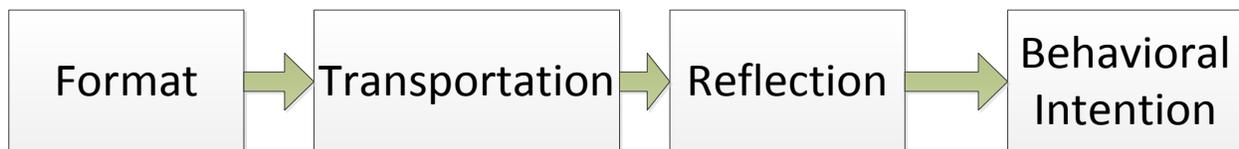
3.4 Study 1: The Mediating Role of Narrative Processing and Reflection

The process of narrative persuasion has been examined in a piecemeal fashion in the literature. The aim of study 1 is to test the framework developed in Essay 1 in a consumer review context. I examine the relationships between message format, transportation, reflection, and behavioral intention. The framework suggests that the more a message is perceived as a narrative, the higher the level of resulting transportation. I expect higher levels of transportation will, in turn, lead to increased levels of reflection, which will result in higher levels of a behavioral intention to try the reviewed product.

3.4.1 Method.

Participants. A total of 131 undergraduates at a large Southeastern university participated for course credit.

Materials and procedure. Participants completed the study in a computer lab and were asked to read a review of a running shoe. This review was constructed to represent an excerpt from the website epinions.com in terms of the visual layout and textual elements (see Appendix A). The review *format* was either narrative (told as a story of the author's experience with the shoe) or informative (a list outlining features of the shoe). The information presented in the review was held constant across the two formats. Participants were asked to read the review and then respond to questions examining their reading experience and perceptions of the review.

Measures. Consistent with the approach adopted by Escalas (2007), I measured each component of transportation. I measured the cognitive engagement component (i.e., the level of mental involvement in the narrative) with the question "How much were you 'transported' (i.e., felt the sensation of being somehow elsewhere) by the review?" The emotional component (i.e.,

emotions evoked through the events depicted or through sympathy with a character) was measured with the question "How much emotion did you experience while reading the review?" Finally, the mental imagery component (i.e., the extent to which a narrative experience feels like a real experience) was measured by the question "How much did you create mental images while reading the review?" All questions were measured on a seven-point scale (1 = not at all, 7 = a great deal). The correlations among the three measures were all significant ($p < .01$) and ranged from $r = .58$ to $r = .74$. The item–total correlations ranged from $r = .84$ to $r = .92$, and Cronbach's $\alpha = .86$. This evidence suggests the three questions reflect the same underlying construct; thus, I averaged the response to these three questions to create a composite measure of narrative transportation.

I obtained measures of respondents' perceptions of the extent to which the review read like a story (1= not at all to 7 = a great deal), reflection, or perceived persuasiveness ("How persuasive is this review?" 1 = not at all persuasive to 7 = extremely persuasive) and behavioral intention ("How likely are you to try this product?" 1 = extremely unlikely to 7 = extremely likely). See Appendix B for the complete measurement instrument.

3.4.2 Results

When manipulating message characteristics, O'Keefe (2003) recommends researchers use the more direct assessment of the underlying perception (psychological state) rather than the researcher created categories for the manipulation. His argument is that a researcher-created manipulation is simply "a methodological device for creating variance in a psychological state" (255). He recommends using a mediation analysis including a direct measure of the manipulation as the indicator of the putative cause, a measure of the mediator, and the persuasive outcomes. In the consumer domain, Sawyer, Lynch, and Brinberg (1995) recognize the value of using

manipulation checks as direct indicators of the psychological state created by an experimental manipulation. In the analyses reported in the three studies, I use the more direct measure of a manipulation; that is, the participants' *perception* of the format rather than the dichotomous manipulation.

Following the recommendations of Bollen and Long (1993), a variety of global fit indices were used, including indices of absolute fit, indices of relative fit, and indices of fit with a penalty function for lack of parsimony. Specifically, the traditional overall chi square test of model fit (which should be statistically non-significant), the Root Mean Square Error of Approximation (RMSEA; which should be less than .08), the Comparative Fit Index (CFI; which should be greater than .95), and the standardized root mean square residual (SRMR; which should be less than .05) were used. In addition to the global fit indices, more focused tests of fit were pursued. The standardized residual covariances (which should be between -2.00 and 2.00) and modification indices (which should be less than 4.00) were examined.

All models were evaluated with AMOS 20 using a maximum likelihood algorithm. Examination of univariate indices of skewness and kurtosis for the continuous variables revealed no skewness above an absolute value of .41 and no kurtosis values above an absolute value of .74, suggesting that the data were normally distributed.

Sequential model of narrative persuasion. The initial model tested can be described in conjunction with figure 6. All residual variances were assumed to be uncorrelated. Traditional indices of global fit uniformly pointed toward a good model fit ($\chi^2(3) = 7.72$, $p > 0.05$; CFI = 0.97; RMSEA = .11; close fit test $p > .12$; standardized RMR = .04). In addition, more focused fit tests (e.g., examination of modification indices, standardized residuals) suggested good model fit. Figure 6 presents the parameter estimates for the unstandardized structural coefficients.

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I predicted the path coefficients from format to narrative transportation, from narrative transportation to reflection, and from reflection to behavioral intention would be statistically significant. The present model provides support for each statement. Both the standardized and unstandardized path coefficients are presented, with the unstandardized coefficients in parentheses.

Figure 6 – Study 1

Format		Transportation		Reflection		Behavioral Intention
	.70 (55)***		.58 (.62)***		.21(.23)**	

* Indicates significance at the p < .05 level
** Indicates significance at the p < .01 level
***Indicates significance at the p < .001 level
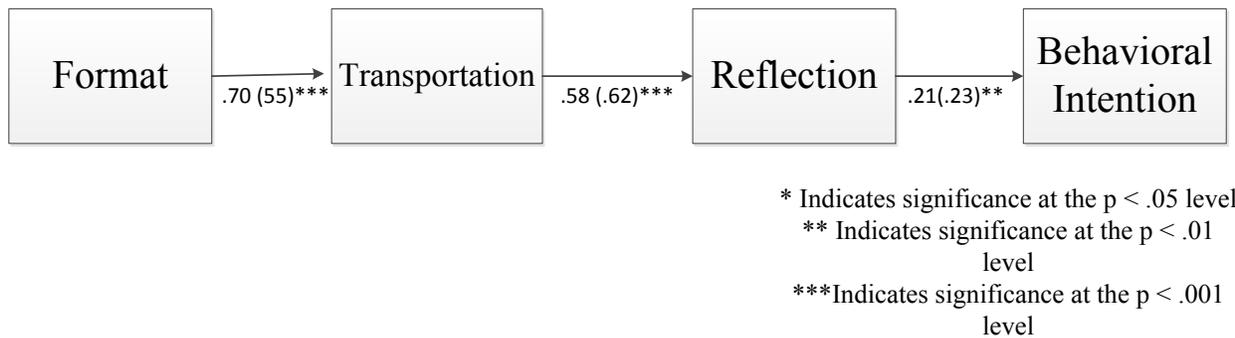
Mediation analysis. I performed an asymmetric bootstrap test of mediation (Preacher and Hayes 2008; Zhao, Lynch, and Chen 2010) using bootstrapped percentile and bias-corrected confidence intervals for indirect effects to examine specific mediating relations. Zhao et al.'s recent review of the mediation literature maintains that the sole condition necessary to establish mediation is that the indirect effect is significant (2010, 204). I requested 5,000 bootstrap samples, using 95% confidence intervals and selected bias-corrected interval bootstrap estimates of indirect, direct, and total effects.

I examined the indirect effect of format on reflection through the mediator of transportation. The indirect effect was significant ($b = .34$, SE = .05, 95% CI = .24 to .45, $p < .01$). Thus, variations in the narrative format affected transportation which in turn affected reflection.

A similar set of analyses examined the effect of transportation on behavioral intention. A bootstrapping analysis indicated that there was a significant indirect effect of transportation on intention to try through reflection ($b = .14$, SE$= .06$, 95% CI $= .03$ to $.26$, $p < .01$). Thus, higher levels of transportation affect reflection, which in turn leads to increased intention to try.

3.4.3 Discussion

The results of study 1 indicate that consumers are transported by narrative format consumer reviews, and that reflection mediates the relationship between narrative transportation and behavioral intent. The process of narrative persuasion appears to operate in the predicted sequence; a more narrative format prompts transportation, which yields higher levels of reflection, which impacts behavioral intention. This integrated analysis is consistent with the empirical work examining the relationships between variables and the framework proposed in Essay 1. I view the model tested in study 1 as the "core" of the narrative persuasion process. As in argument-based models of persuasion, a number of moderating variables influence the persuasion process. Study 2 replicates the process demonstrated in study 1 in a different product domain and integrates two contextually-relevant variables to build toward a more nuanced understanding of the narrative persuasion process in consumer reviews.

3.5 Study 2: The Impact of Personal Experience and Source Expertise

A range of factors, both internal and external to the text, that influence the process of transportation were identified in Essay 1. Two of these factors – also common to the argument-based, traditional persuasion literature – that are especially pertinent in a consumer review context are personal experience and source expertise.

3.5.1 Personal experience. Personal experience has been examined as a factor that influences how consumer reviews are processed (Bansal and Voyer 2000). Personal experience

can take several forms in a consumer review context, one of which involves the frequency of use; individuals vary in the frequency with which they seek out consumer reviews. Simple repetition of any task improves task performance by reducing the cognitive effort required to perform the task (Alba and Hutchinson 1987). The more personal experience individuals have with consumer reviews (i.e., the more frequently they use them), the fewer cognitive resources are needed to process the review; that is, higher levels of personal experience contribute to greater ease of processing.

Narrative processing requires a high degree of attention and cognitive resources (Busselle and Bilandzic 2009). Consistent with this, research has demonstrated that constraining cognitive resources reduces the level of narrative processing (e.g., Green and Brock 2000; Slater and Rouner 2002). The availability of cognitive resources, which results from increased personal experience with consumer reviews, should be allocated to (and ultimately increase the level of) transportation. In study 2, I examine the impact of consumers' personal experience with consumer reviews on narrative processing and expect personal experience with consumer reviews (which reflects ease of processing) to lead to higher levels of narrative transportation.

3.5.2 Source expertise. Individuals perceived as experts tend to possess greater awareness and knowledge about a market and the products within it (Mitchell and Dacin 1996), and consumers tend to be more likely to rely on expert knowledge to inform their behavior (Brown, Broderick, and Lee 2007). In an online context, where message evaluation takes place in an impersonal, diminished cues environment, expertise-related information plays an especially important role. An assessment of a consumer reviewer as low in credibility may prompt a consumer to reduce attention to the review (due to its diminished value), which decreases the likelihood of transportation into the review and subsequent persuasion-related outcomes. I

examine the impact of expertise on the processing of consumer reviews and expect source expertise to have a positive impact on transportation.

3.5.3 Method.

Procedure. Participants at a large, public university in the Southeast ($N = 40$) and a small, private university in the Northeast ($N = 53$) responded to an on-line survey. Participants were told, "Casey Jones regularly writes in a personal blog about a variety of topics. The following page displays an excerpt from the blog site." The post described Casey's experience at a restaurant called Pizza Supreme. Participants were asked to read the post and respond to a variety of measures.

Stimuli. The blog post took the format of a first-person story about the author's experience at Pizza Supreme (narrative format) or as a bulleted list (informational format) about the author's experience (see Adaval and Wyer, 1988 for a similar approach). The content of the information presented in the review was held constant (see Appendix C). The messages also varied in the extent to which Casey was presented as an expert; participants were either told that "Casey Jones is a trained food critic who writes about restaurants in a well-known metropolitan area" or that "Casey Jones is a social worker."

Measures. Ratings of format, transportation, reflection, and behavioral intention were acquired in the same manner described in study 1 (See Appendix D for measures). The correlations among the three measures of transportation were all significant ($p < .01$) and ranged from $r = .61$ to $r = .85$. The item–total correlations ranged from $r = .82$ to $r = .89$, and Cronbach's $\alpha = .82$. This evidence suggests that the three questions reflect the same underlying construct; thus, I averaged the response to these three questions to create a composite measure to reflect transportation. I measured perceived source expertise ("How much of an expert is Casey

Jones when it comes to pizza?" 1 = not at all expert to 7 = extremely expert) and personal

experience ("How often do you read consumer reviews?" 1 = not at all to 7 = a lot").

3.5.4 Results. I again used the measured assessment of review format rather than a

dichotomous measure (i.e., narrative or informational) because the continuous measure provides

a more sensitive representation of the extent to which the review was perceived as a narrative. I

then applied a structural equations modeling (SEM) approach using a maximum likelihood

estimation to test the hypothesized model. The initial model had good global fit indices ($\chi^2(7)$ =

6.14, $p < .52$; CFI = 1.00; RMSEA = .00; close fit $p < .74$; standardized RMR = .04). The

sequential model of narrative persuasion predicts that the path coefficients from format to

transportation, from transportation to reflection, and from reflection to behavioral intention

should be positive and statistically significant. As indicated in figure 7, this was the case. The

path coefficients for the relationships between source expertise and narrative transportation, as

well as the path coefficients for the relationship between personal experience and narrative

transportation, were also positive and significant.

To test the mediation hypotheses, I performed an asymmetric bootstrap test (Zhao,

Lynch, & Chen, 2010) using bootstrapped percentile and bias-corrected confidence intervals for

indirect effects to examine specific mediating relations. Zhao et al.'s (2010) recent review of the

mediation literature advocated that the sole condition necessary to establish mediation is that the

indirect effect is significant (p. 204). I requested 5,000 bootstrap samples, using 95% confidence

intervals and selected bias-corrected interval bootstrap estimates of indirect, direct, and total

effects. I examined the indirect effect of format on perceived persuasiveness through

transportation. The indirect effect was significant ($\beta = .11$, SE = .04, 95% CI = .06 to .20, $p <$

.01). Thus, narrative format affected transportation, which in turn affected level of reflection. I

also found an indirect effect of narrative transportation on behavioral intention through reflection (β = .36, SE = .08, 95% CI = .04 to .16, p < .01). This suggests transportation affected reflection, which in turn affected behavioral intention.

Figure 7 – Study 2
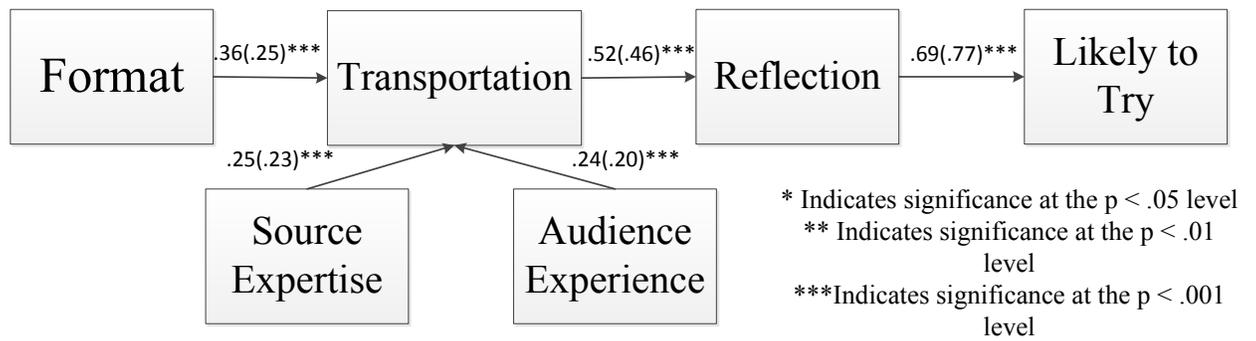
3.5.5 Discussion. The results of study 2 are consistent with the findings of study 1; the more a consumer review reads like a story, the more transportation is evoked. This affects perceptions of the persuasiveness of the review, which ultimately impacts behavioral intention. Additionally, both personal experience and source expertise affected level of transportation, with higher levels of each leading to an increase in transportation. I expand upon this model in study 3 to test additional contextual variables.

3.6 Study 3: The Impact of Valence and Product Type

In study 3, I replicate and extend the models evaluated in studies 1 and 2. I examine real consumer reviews of multiple products and the effect of two additional contextual variables on narrative processing – review valence and product type.

3.6.1 Message valence. Previous work in the argument-based persuasion literature suggests that the effects of message valence vary. Positively framed messages may be more persuasive when there is little emphasis on detailed processing, but negatively framed messages

may be more persuasive when detailed processing is encouraged (Mahenswaran and Meyers-Levy 1990). Other work indicates that negative information is more vivid and memorable than equivalent positive information (Herr, Kardes, and Kim 1991). Wetzer, Zeelenberg, and Pieters (2007) found that negative consumer reviews are likely to emerge from a negative emotional experience (one that induces anger or regret) and that the consumer review platform provides a forum to vent these feelings.

Two components of narrative processing are mental imagery and emotional experience, and past work suggests that negative reviews are perceived as more vivid and strongly tied to emotion. Thus, I expect that negative reviews will lead to higher levels of narrative transportation .

3.6.2 Product type. Research indicates that the experiential or utilitarian nature of a focal product affects the likelihood of generating consumer word of mouth (Babin, Lee, Kim, and Griffin 2005), perceptions of consumer review usefulness (Pan and Zhang 2011), and trust in the source's evaluation of search and experience attributes (Yang and Mai 2010).

The characteristics of experiential goods, which are defined by their emphasis on the consumption experience (Nelson 1970), are difficult to observe and assess before the point of consumption and rely heavily an individual's subjective experience (Eliashberg and Sawhney 1994). This contrasts with utilitarian goods, which are used to fulfill a specific function and easier to assess objectively. Transportation into a narrative that describes the feelings and sensations evoked by the consumption of a product is likely to reduce the perceived risk of purchasing an experiential product more than a utilitarian product. Therefore, I predict the positive relationship between narrative transportation and reflection will be moderated by

product type, such that the transportation-reflection relationship will be stronger for experiential products.

3.6.3 Method

Stimuli development. Pretest participants ($N = 116$) were asked to judge the extent to which 32 categories (drawn from extant review sites) of consumer reviews represented an experiential or utilitarian product using a seven-point scale (1 = not at all characteristic to 7 = extremely characteristic). Participants rated office supplies as most representative of the utilitarian product category ($M_{utilitarian} = 5.73$) and desserts as most representative of the experiential product category ($M_{experiential} = 6.01$). We then selected reviews from epinions.com that varied in product type (experiential vs. utilitarian), valence (positive vs. negative), and format (informational vs. narrative), with 3 reviews in each category (for a total of 24 reviews; see Appendix E for stimuli). A pretest ($N = 47$) assessed whether perceptions of the reviews differed in terms of format ("How much did this review read like a story?" 1 = not at all 5 = extremely), valence ("How do you believe the writer of this review evaluated the target product? 1 = extremely negative to 7 = extremely positive), and informativeness ("How informative was this review? 1 = not at all to 5 = extremely; see Appendix F for measures). Results indicated the reviews were different in terms of format ($M_{info} = 2.29$ vs. $M_{narr} = 2.90$; $F(1,1041) = 88.80, p < .01$) and valence ($M_{neg} = 2.34$ vs. $M_{pos} = 5.58$; $F(1,1037) = 2583.06, p < .01$), but not informativeness ($M_{narr} = 3.16$ vs. $M_{info} = 3.25$; $F(1,1041) = 2.38, p > .1$).

Procedure. Participants at a large, Southeastern university ($N = 110$) responded to an on-line survey in a computer lab setting. Participants were told:

> Consumer report sites such as epinions.com and yelp.com provide a forum for consumers to rate their experiences with products and services and to offer recommendations to fellow consumers. In contrast with the reviews from "experts," these consumer forums

are written by consumers and are informal in nature. We are interested in understanding how you perceive reviews. You will be shown 3 reviews pertaining to a variety of products. Please read each review carefully and then respond to the questions following.

Participants were then randomly assigned to read 3 reviews varying in product type (experiential vs. utilitarian), valence (positive vs. negative), and format (informational vs. narrative) and respond to a series of measures.

Measures. I again measured participants' perceptions of the format ("How much did this review read like a story?" 1 = not at all to 7 = a lot), perceived reviewer credibility ("How credible is the source of this review?" 1 = not at all credible to 7 = extremely credible scale), personal experience with reviews ("How often do you read consumer reviews?" 1 = never to 7 = very often), perceived persuasiveness ("How persuasive is this review?" 1 = not at all persuasive to 7 = extremely persuasive) and intent to try the product ("How likely are you to try this product?" 1 = extremely unlikely to 7 = extremely likely) for each review. I examined each component of transportation using the same measures as those in studies 1 and 2. The item-total correlations ranged between .60 and .86, and I again averaged the response to these three questions to create a composite measure to represent narrative transportation. I measured perceived review valence ("Overall, how do you believe the writer of this review evaluated the target product or service?" 1 = extremely negative to 7 = extremely positive) and whether the product was experiential or utilitarian (please rate the extent to which items in this category can be characterized as experiential, 1 = not at all to 7 = extremely; please rate the extent to which items in this category can be characterized as utilitarian, 1 = not at all to 7 = extremely). I treated the difference between the two product type scores as reflective of product type (Edwards, 2001; See Appendix G for measures).

I aggregated the responses to the three reviews within each category to reduce the impact of idiosyncratic aspects of a single review and to create a more stable reflection of the consumer review for that product category. The median inter-correlation for try was $r = .82$, ranging from $r = .81$ to $r = .86$. The median inter-correlation for reflection was $r = .73$, ranging from $r = .70$ to $r = .78$. Based on these relatively high estimates of internal consistency, I created composite measure of these outcome variables. All subsequent analyses use the composite measures.

3.6.4 Results. A structural equations modeling (SEM) approach using maximum likelihood estimation was applied to test the hypothesized model. The initial model yielded poor model fit indices ($\chi^2(13) = 146.32$, $p < .01$; CFI = .42; RMSEA = .10; close fit $p = .01$; standardized RMR = .09). Inspection of the model diagnostics revealed three sources of ill fit: a modification index of 68.3 suggesting a link between message valence and intent to try, a modification index of 9.6 suggesting a link between the review format and reflection, and a modification index of 6.6 suggesting a link between source credibility and perceived persuasiveness. These suggestions were theoretically meaningful and were added to the model (see discussion section). The revised model yielded good fit indices ($\chi^2(10) = 12.02$, $p = .28$; CFI = .99; RMSEA = .04; close fit $p = .49$; standardized RMR = .04). The hypothesized path coefficients for the predicted relationships were all statistically significant with the exception of the path coefficient for the effect of personal experience on narrative transportation; $p > .10$; see figure 8 for full model (which includes unstandardized coefficients), and table 1 for the path coefficients (both standardized and unstandardized). Possible reasons for the non-significant finding are considered in the discussion section.

I again performed the mediation analysis procedures presented in studies 1 and 2. The indirect effect of format on reflection was significant ($\beta = .10$, SE = .04, 95% CI = .04 to .19, $p <$

.01), but the direct effect of format on reflection was also significant (β = .29, SE=.08, CI = .13 to .45, *p* < .01), suggesting partial support for the predicted mediation. I also found an indirect effect of narrative transportation on behavioral intention through reflection (β = .05, SE = .03, 95% CI = .01 to .12, p < .01). This suggests narrative processing affected reflection, which in turn affected behavioral intention.

Figure 8 – Study 3

* Indicates significance at the p < .05 level
** Indicates significance at the p < .01 level
***Indicates significance at the p < .001 level
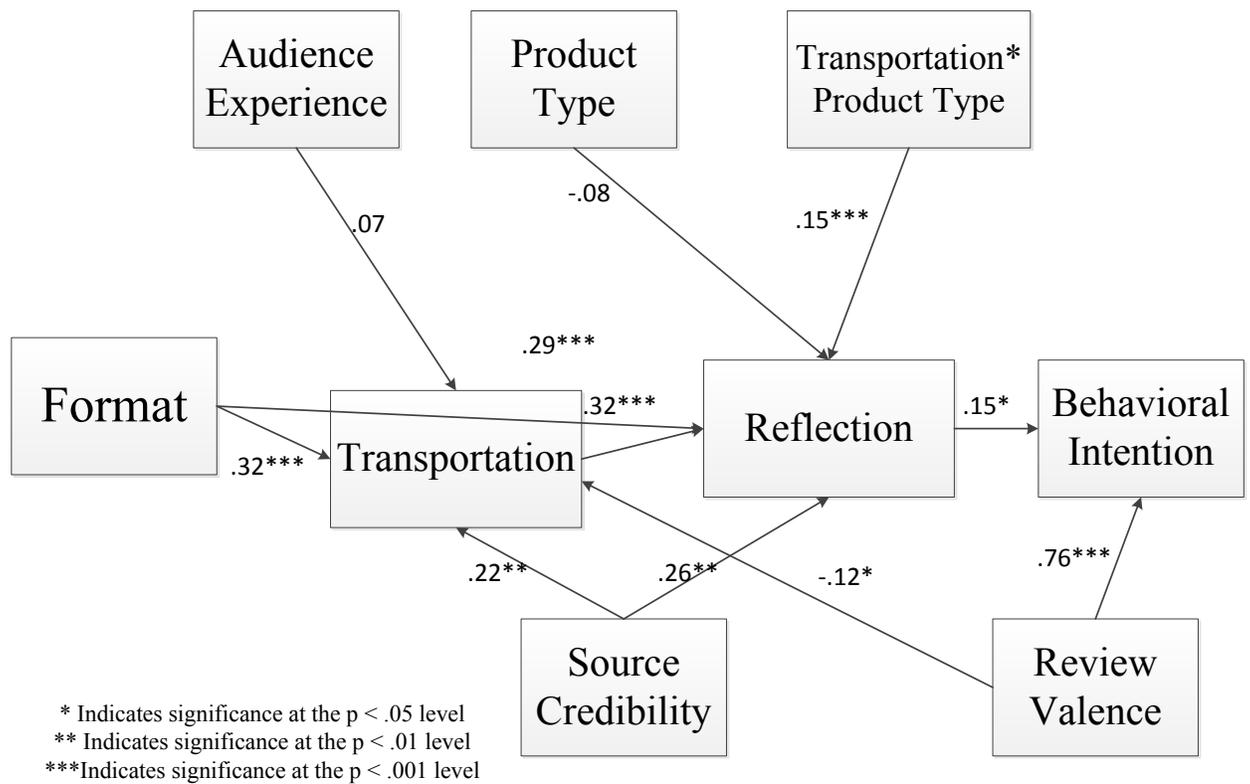
Table 1 – Coefficients for paths in study 3

Relationship (from → to)	β (Unstandardized)	β (Standardized)
Format → Transportation	.32***	.42
Transportation → Perceived Persuasiveness	.32***	.28
Format → Perceived persuasiveness (indirect)	.10**	.12
Perceived Persuasiveness → Behavioral Intention	.15*	.13
Transportation → Behavioral intention (indirect)	.05**	.04
Source credibility → Transportation	.22**	.22
Source credibility → Perceived Persuasiveness	.26**	.23
Audience Experience → Transportation	.07	.11
Product type → Perceived persuasiveness	-.08	-.10
Product type * Transportation → Perceived persuasiveness	.15***	.24
Review valence → Transportation	-.12*	-.17
Review valence → Behavioral intention	.76***	.79

3.6.5 Discussion. The results of study 3 largely replicated the sequence represented in figure 5 and examined in studies 1 and 2 using actual consumer reviews. The hypothesized negative relationship between review valence and level of transportation was supported; the more negative the review, the more participants were transported into that review. Product type moderated the relationship between transportation and reflection; the impact of transportation on reflection was stronger for experiential products. I did not find support for the predicted relationship between personal experience and narrative transportation, and found only partial support for narrative transportation mediating the path between format and reflection. In addition, the modification indices suggested the addition of paths between valence and intention, and credibility and perceived reflection. I now turn to these issues.

The relationship between personal experience and transportation differ between studies 2 and 3. One explanation for this could be a significant difference in the zero order correlations between these two constructs for the two studies. I performed a Fisher R-Z transformation to compare the correlations between personal experience and transportation in each study and found they did not differ significantly ($r_{study1} = .13$, $N = 110$; $r_{study2} = .22$, $N = 93$; $p > .05$). This means that, in the context of the more complex model of study 3, other variables accounted for the variance.

An alternative explanation is that personal experience (i.e., ease of processing) may differ between the studies for reasons pertaining to the stimuli; study 2 featured a (longer) blog post about an individual's experience at a pizzeria, whereas study 3 featured several (shorter) consumer reviews. Personal experience may play more of a role with certain products, or when consumers process messages with certain types of goals.

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The suggested link between format and perceived persuasiveness, or reflection, indicates that transportation only partially mediates this relationship and that additional features of the consumer reviews had a direct impact on perceived persuasiveness. This finding is in contrast to studies 1 and 2, where transportation fully mediated the format to reflection relationship. Upon further consideration, differences in stimulus format may account for this inconsistency. Though all studies feature descriptions of an individual's experience with a product or service, studies 1 and 2 feature a longer consumer review and a blog post, respectively; study 3 presented the message in the form short consumer reviews. It is possible that the narrative format of the shorter consumer reviews influenced perceptions of persuasiveness outside of the mechanism of transportation due to the diminished opportunity to be transported (it is easier to "get into" a page-long monologue than a several sentence description), suggesting that narrative format may serve as an external cue.

The suggested link between source credibility and perceived persuasiveness indicates that source credibility has a direct effect on perceived persuasiveness beyond its direct relationship with transportation. This finding is consistent with past research in the word of mouth literature (Cheung, Lee, and Rabjohn 2008). Finally, the suggested link between valence and intention to try indicates that people are more likely to try products that have been reviewed favorably than products that have received negative evaluations. This makes intuitive sense; an individual will be less likely to try a product reviewed negatively regardless of the extent of immersive processing into the review.

3.7 General Discussion

Examinations of consumer reviews typically take a descriptive, rather than process-orientated, approach. Most work has focused on why consumers choose to generate consumer

reviews (Balasubramian and Mahajan 2001) or the impact reviews can have, underscoring its importance in the e-business environment (Bickart and Schindler 2001; Schlosser 2011). The process of how consumer reviews persuade has received less attention.

Perhaps due to the wealth of available data, many studies on consumer reviews create models to reflect how characteristics, such as number of reviews (Park, Lee, and Han 2007) or valence (Chevalier and Mayzlin 2006), impact sales. The present manuscript extends work on consumer reviews by examining the audience's perception of these reviews and evaluating the mechanisms that underlie the impact of the format and content-presentation style of consumer reviews on behavioral intent. These three studies provide evidence, across several product categories, that consumer reviews using a narrative orientation evoke transportation, which increases levels of perceived persuasiveness, or reflection, and increases behavioral intent to purchase the product. While the persuasive impact of narratives has been examined in related fields, the series of studies reported here is an initial effort to apply narrative processing in an online consumer review context.

Narrative-oriented reviews evoke a form of processing that is distinct from the analytic approach used to evaluate messages that take an argument-driven approach. This processing is related to the mental simulation or generation of imagery, the experience of emotion, and cognitive immersion. Consumer reviews that prompt these aspects are more likely to induce narrative immersion, an experience traditionally examined as a response to fiction. Across three studies, I find that the minimal narrative structure displayed by consumer reviews is sufficient to evoke the mechanism of transportation.

3.7.1 Transportation. People have learned and been persuaded through narratives for centuries, although the mechanisms that underlie this effect are just beginning to be explored. The

results of the studies reported in this essay demonstrate that people engage in narrative processing, even for consumer reviews. These studies extend transportation theory by incorporating an additional mechanism (reflection) into the hypothesized process of narrative persuasion. Previous work examining narrative persuasion confers the state of transportation (Green and Brock 2000) or narrative engagement (Buselle and Bilandzic 2008) with an almost magical strength, asserting its ability to change beliefs, attitudes, intention, and behavior where other methods fail. The present work supports the persuasive effect of narratives, but further explicates the underlying mechanisms, consistent with the model described in Essay 1. My studies suggest that following the transportation evoked by a story, readers engage in a reflection process which then leads to a change in persuasion-related outcome variables. The reflection process is likely to differ based on the narrative content and context in which the message is processed. Essay 3 will further explore this aspect.

3.7.2 Persuasion. The consumer field has placed a high value on work that examines persuasion from an information-oriented approach. The resulting body of literature reflects this orientation to the exclusion of other, more holistic approaches to persuasion, such as responses to immersion in a narrative. Rather than focus solely on how narratives persuade, these studies contribute to the understanding of persuasion, in general, by incorporating variables that are traditionally examined from an information-processing approach to persuasion. The source characteristic of credibility has an impact in a narrative persuasion context. Sources that are perceived as more credible increase perceptions of review persuasiveness. The valence of the review (i.e., a message characteristic) affects intention to try the product in ways consistent with the favorability of the review. In study 3, I obtain the "vividness" effect of negative information, such that negative reviews are more likely to prompt narrative immersion. Product type

(experiential vs. utilitarian) moderates the relationship between transportation and reflection (i.e., this relationship is stronger for reviews of experiential products). The present research is an effort to develop a more integrative perspective that can include both an information-oriented and narrative-oriented review.

3.7.3 Application Areas. The present work underscores the importance of understanding narrative processing and the contextual factors that influence it. Product reviews, once the domain of experts, are easily written and posted immediately following consumption via smartphone. A range of entities benefit from an understanding of how narrative processing operates in a consumer review context, especially sites coaching consumers on how to construct reviews that enhance their impact. Presently, online consumer reviews are elicited with minimal instructions; consumers freely write about the experience they had with a product. The results of the present work suggest that online sellers and consumer review sites can increase the influence of these reviews by prompting consumer reviewers to write in a narrative format.

Online sellers are increasingly using excerpts from consumer reviews as a way to promote products. The present work implies that online sellers would be better served highlighting narrative reviews for certain types of products (experiential) with certain source features (credibility) to audiences with more experience using reviews. Additionally, as websites increasingly embed potentially distracting advertisements (sidebar ads with sound or video that begin playing after the consumer has begun to process the message content), site designers would be advised to minimize this intrusive stimulus when the message is narrative in nature.

A wide range of other application areas can benefit from a refined understanding of the narrative persuasion process. Beyond using narrative advertisements to persuade consumers to purchase certain products, companies can use narratives to deepen consumers' connection with their

brand, and encourage customers to share their brand-related narratives with other consumers. Many companies have already applied this approach, effectively outsourcing advertising by hosting contests where consumers, often eager to participate, post their product-relevant stories on YouTube or other relevant websites.

Health-related messages can especially benefit from adopting a narrative perspective. Individuals who would normally ignore statistically-based messages that are incongruent with their present practice are more likely to be receptive to narratives focusing on the same topic. For example, Slater and Rouner (2002) found that in processing alcohol-education messages, college students rated statistical evidence as more persuasive when the message was congruent with their values and narrative evidence as more persuasive when the message was incongruent with their values. Kreuter et al. (2007) identify four distinct capabilities of narrative in a cancer control context: overcoming resistance, facilitating information processing, providing surrogate social connections, and representing emotional and existential issues. The College of Physicians and Surgeons at Columbia University offers a program in narrative medicine, which fortifies traditional training with skills in using narratives in clinical practice.

3.7.4 Limitations and Future Directions. One limitation of the current work is its focus on products rather than other consumption-relevant foci such as services and ideas. Future work should corroborate my findings for additional consumption activities. In addition, I did not examine the effects of the modality of consumer reviews. Future work could examine how multimedia presentations of narratives, including audio, photographs, and video, affect the underlying mechanisms examined in the current research. For example, websites that include pictures or encourage users to upload video may affect the amount of imagery consumers generate or the level of identification they feel towards the writer of the review, which has

implications for engendering narrative processing. Finally, the present work examines only the message *recipient*'s perception of an consumer review. Future work could integrate more "objective" features of consumer reviews (e.g., ease of access, frequency of use by other consumers) with a perception-oriented approach to develop "best practices" for the development and distribution of consumer reviews.

An unexpected finding was that transportation did not fully mediate the relationship between review format and reflection (i.e., there was a direct effect of review format on reflection) in study 3. Future work should examine the role of additional mediators in the relationship between review format and reflection and explore how the elements of transportation contribute to outcomes. Do all components contribute equally, or is the generation of imagery more likely to have an impact than emotional engagement, for example? Are certain types of images or emotions more engaging than others? Future research should examine the conditions under which these messages are most likely to be effective; for example, how do variations in elements such as protagonist characteristics, presentation voice (first vs. third person), or even modality (written vs. video) impact behavioral intention?

Finally, future work may focus on how narratives and informational messages differentially contribute to persuasion. Are informational-based messages more persuasive than narratives for certain kinds of products, or for certain types of people? Is a combination of information and narrative the most persuasive approach? And, how do attitudes formed through the two different approaches to persuasion differ in terms of accessibility and strength?

Another question posed by the present work that merits further inquiry centers on how the transportation process leads to persuasion-related effects. My findings suggest that consumers do perceive reviews as more persuasive after being transported, and that this mediates

transportation's impact on intent to try. Future work might examine why transportation enhances perceived persuasiveness. Is it the result of fewer counterarguments, as suggested by narrative persuasion scholars (Moyer-Guse and Nabi 2010), or does transportation increase the availability and weight of information contained in a story (relative to other forms of processing)? Essay 3 turns to these questions.

ESSAY 3: REFLECTING ON THE JOURNEY: AN EXPLORATION OF HOW TRANSPORTATION LEADS TO PERSUASION RELATED OUTCOMES

4.1 Abstract

Previous work suggests that an additional process occurs after transportation into a story, preceding persuasion. The present work conceptually defines this process and its role in narrative persuasion, and develops a scale to measure it. First, potential items for a scale to measure this construct are generated and a scale is developed. Two studies explore the underlying factor structure of the scale, which is characterized by three elements: general reflection on the content of a story, relating the story to oneself and the surrounding world, and reflection on the emotion generated by the story. The instrument is used to compare reflection's role in the contexts of narrative and argument-based persuasion.

4.2 Introduction

Transportation (Green and Brock, 2000) and narrative engagement theory (Busselle and Bilandzic 2009) posit that narrative processing affects persuasion-related outcomes such as beliefs, attitudes, and behavioral intentions directly. These theories are silent on how the transportation experience leads to changes in expected outcome measures. As Appel and Maleckar (2012, 26) observe, "what is still lacking… are answers to the question of how transportation affects persuasion." Several authors have posited that transportation leads to less counter-arguing with the premises of the story (Green and Brock 2002) which may make more cognitive resources available to elaborate on story-related information (Slater 2002; Slater, Rouner, and Long 2006) and how it pertains to oneself (Dunlop, Wakefield, and Kashima, 2010), but these processes have not been examined formally as secondary mediators of narrative persuasion.

As described in Essay 1, several studies have examined a secondary process between transportation and persuasion-related outcomes, which can be viewed as a reflective process that integrates elements encountered in the story world into one's understanding of the real world. If transportation encapsulates the trip into the story world, reflection captures the trip out of it. This term is not meant to imply the effortful elaboration considered in dual-route processing models (although this can occur). Rather, it implies that narrative persuasion is more than an inherently pleasant experience that biases judgment, similar to fluency or metacognition; an additional step beyond immersion in a story linking the story world with the "real" world leads to persuasion. For example, after an individual reads a story involving a character that has a health-related problem, one must translate the risk implied in the story into perceptions of *actual* risk; De Wit, Das, and Vet (2008) compared narrative versus statistical evidence and found that reflection about personal risk was highest after presentation of narrative evidence, and that reflection about this risk mediated the effect of message evidence on behavioral intention.

In the following section, I describe briefly studies that incorporate processes that are consistent with reflection as a secondary mediator in narrative persuasion. Further detail can be found in Essay 1.

4.3 Conceptual Background

4.3.1 Cognitive response. Counter-arguing, or the generation of thoughts that dispute an argument, reduces the persuasive impact of a message (Petty and Cacioppo 1986). Some authors have suggested that absorption in a narrative precludes counter-arguing (Slater and Rouner 2002). Transportation requires a high level of cognitive resources, and an audience member who generates rebuttals or counter examples while reading is diverting cognitive resources away from maintaining this state.

Research has examined counter-arguing as an outcome of transportation and has found higher levels of transportation lead to lower levels of critical thoughts or counter-arguing (Escalas 2007; Rowe Stitt and Nabi 2005). McQueen, Kreuter, Kalesan, and Alcaraz (2011) found higher levels cognitive engagement with a narrative (component of transportation) led to decreased levels of counter-arguing, but the experience of negative emotion increased counter-arguing. These authors suggest that, in the context of breast cancer, negative emotions may elicit defensive responses, which manifest in the form of counter-arguing.

Niederdeppe, Shapiro and Porticella (2011) examined different responses to narrative messages, and distinguish between cognitively reactive counter-arguing (thoughts that directly refute the message's position), emotional counter-arguing (frustration or irritation toward that position or a character advocating that position), nonreactive counter-arguing (thoughts that simply state a premise that is opposite of the message's advocated position without explicitly refuting or conveying negative emotion toward that position), or pro-external cause thoughts (thoughts reinforcing the position of the story). Of these types, only cognitively reactive counter-arguing decreased persuasion-related outcomes.

The process of "reflection" provides a mechanism to account for the influence of transportation on persuasion-related outcomes. Some cognitive responses may affect persuasion-related outcomes positively. For example, Niederdeppe, Shapiro and Porticella (2011)'s distinction between different types of counter-arguments or cognitive responses indicate differences in cognitive reflections on the transportation experience. Tal Or, Boninger, Poran, Glicher (2004) explored the question of how narratives influence attitudes through counterfactual thinking, and found counterfactual thoughts in response to the narrative enhanced persuasion when they were self-relevant.

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4.3.2 Perceived Risk. Risk perception is a subjective judgment about the likelihood of negative states or the probability and severity of negative outcomes based on a certain course of action. This assessment occurs in a narrative context when one reflects on, or makes personally-related inferences about, what happened to characters that experienced some adverse health-related outcome. Dunlop, Wakefield, and Kashima (2010) viewed perceived risk as a mediator of the relationship between transportation and persuasion related outcomes and found individuals who were more transported into a narrative focusing on skin cancer experienced higher levels of perceived risk and risk likelihood (similar to what other authors have termed perceived susceptibility), which led to more positive attitudes about skin protection. Similarly, Banerjee and Greene (2012) found greater levels of transportation led to stronger anti-cocaine expectancies, which then resulted in lower cocaine use intentions.

Moyer-Guse and Nabi (2010) examined how cognitive and emotional engagement with characters in a narrative affects perceived personal risk of outcomes related to birth control use. At a two-week follow up, narrative engagement predicted perceived vulnerability, which predicted intention to engage in safe-sex behaviors. Narratives, through the process of transportation, have a unique advantage in prompting reflection about one's risk perception, which may then motivate positive health-related behavior change.

4.3.3 Self Referencing. Self-referencing occurs when one processes information by relating it to one's self or personal experiences (Burnkrant and Unnava 1995). Several studies have indicated self-referencing can mediate the relationship between transportation and persuasion-related outcomes. Dunlop, Wakefield, and Kashima (2010) found self-referencing mediated the relationship between transportation and behavioral intention (to quit smoking) across two studies. Strange and Leung (1999) found self-referencing influenced participants'

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judgments of a character's actions (level of responsibility for outcome), consistent with the causal focus (dispositional or situational cause) of the story. Convergent evidence was found in a qualitative companion study, where the authors determined that narratives did evoke self-relevant, story-consistent memories (e.g., participants in the situational condition were reminded of a poorly funded school they had attended, participants in the dispositional condition were reminded of friends who "just quit working"). Tal Or, Boninger, Poran, Glicher (2004) explored the question of how narratives influence attitudes through counterfactual thinking, finding that counterfactual thoughts in response to the narrative enhanced persuasion when they were self-relevant (when they highlighted a self-oriented, controllable behavior) and when they were self-generated (versus supplied in the text).

Relatedly, Gabriel and Young (2011) found narrative processing influenced audience's self-concept in ways consistent with the narrative. This suggests that, in addition to prompting us to relate elements of a narrative to our own life, narratives may provide us with a frame through which we view aspects of our selves. The extent to which our experiences shape our reflection on narratives, and the extent to which narratives change how we reflect on ourselves, is an interesting area for future research.

4.3.4 Emotion. Although emotional engagement is a conceptual component of transportation (the more emotionally engaged one is, the higher the level of overall transportation), some authors have measured the experience of emotion after the transportation experience. An audience's experience of enjoyment resulting from transportation is distinct from the emotion experienced while transported. Audiences can experience the positive state of enjoyment even when story content is dark or upsetting.

Higher levels of transportation consistently predict how much an audience enjoys a narrative (Tal-Or and Cohen 2010). Bilandzic and Busselle (2011) found each dimension of narrative engagement (narrative understanding, attentional focus, narrative presence, and emotional engagement) contributed to the experience of enjoyment, which predicted persuasion-related outcomes. Chang (2008) found transportation into a message about mental health predicted sympathy toward those suffering from depression in the real world. Mazzocco, Green, Sasota and Jones (2010) demonstrated that higher levels of transportation into a story promoting tolerance toward homosexuals (study 1) or focusing on affirmative action (study 2) increased levels of empathy, which mediated the link between transportation and attitudes. Lamarre and Landreville (2009) found that emotions experienced while viewing documentaries about the Rwandan genocide predicted emotional reactions to the film (specifically guilt and disgust), which predicted changes in outcome variables. Transportation into narratives can lead viewers to feel less lonely (Derrick, Gabriel, and Hugenberg 2009), and can improve mood through a sense of belongingness to the group described in the narrative (Gabriel and Young 2011). This research suggests that, while the experience of emotion is a component of transportation into a narrative, one may also experience a different, reactionary emotion when relating what one experienced while transported to oneself or the surrounding world.

4.4 Overview of Studies

Appel and Maleckar (2012, 26) observe, "what is still lacking… are answers to the question of how transportation affects persuasion." In the current work, I seek to address this question and explore the process of reflection in the context of health, building on previous research. Though narrative persuasion and transportation has been studied in a range of fields, the majority of the work suggesting an additional process following transportation has been

conducted in the health field. Future work will explore whether or when this process generalizes to other contexts.

The process of reflection has been suggested, but not clearly articulated. The current work will conceptually define this process and its role in narrative persuasion. In study 1a, 1b, and 1c, potential items for a scale to measure this construct are generated. In study 2, exploratory and confirmatory factor analyses are used to explore the underlying factor structure of the scale. In study 3, the instrument to evaluate reflection's hypothesized role in the narrative persuasion process is assessed and compared with its operation in the context of argument-based messages.

4.5 Study 1a: Item Generation

Reflection represents the cognitive and emotional responses to narrative messages subsequent to being transported into the narrative. Study 1a elicits responses to generate items to develop an instrument to assess this process.

4.5.1 Method.

Participants. A total of 93 undergraduates at a large Southeastern university participated for course credit. The average age was 20.1 (SD = 1.2), and 63% of the sample was female.

Materials and procedure. Participants completed the study in a computer lab using the Qualtrics survey platform. Mental health was selected as a topic because of its relevance to undergraduates (Kitzrow 2003). Participants were assigned to read messages about social anxiety or generalized anxiety disorder, two common mental health issues in the US and the target population.

The narrative accounts were selected from a website called The Experience Project (www.experienceproject.com) where members of the general population share their lived

experience on a variety of topics. Both narratives were written as first person accounts of their

experience with mental illness. The social anxiety message was 456 words whereas the

generalized anxiety message was 1273 words (See Appendix H). If the nature of reflection

differs as a function of message length (a proxy for extent of cognitive processing) this

difference will increase the range of responses sampled.

Participants were told,

> "We are interested in learning more about your thoughts and feelings when a written
> passage captures your interest. You will be asked to read a passage. At the end of the
> passage we will ask you a few questions. There are no right or wrong answers, so please
> describe your experience as honestly and completely as possible. Please take your time
> and let the experimenter know if you have any questions."

Participants were then presented with one of the two passages followed by open ended prompts.

After reading the passage, participants completed several related scales and were then thanked

for their participation.

Measures. After reading the narrative account, participants were presented with the

following open-ended prompts: "Please describe your thoughts while reading the passage," and

"Describe what emotions you felt while reading the passage." Participants were also asked to

complete Green and Brock's transportation scale (2001) to assess level of engagement with the

narrative (see Appendix R for a copy of the scale).

4.5.2 Results.

Response to Scales. The present work will examine the processes following

transportation into a narrative. As a necessary condition, participants must first be transported.

Scores on Green and Brock's transportation scale significantly different from the scale midpoint

of 3.5; ($t_{\text{social anxiety}}$ (45) = 5.7, p = .00; $t_{\text{generalized anxiety}}$ (45) = 7.4, p = .00)and not significantly

different between the two stories (F (1, 91) = .06, p = .81) $X_{\text{Social Anxiety}}$ = 4.28, SD = .92, N = 46;

$X_{\text{Generalized Anxiety}} = 4.52$, SD = .94, N = 47) The Cronbach's α's were both high; .82 and .82

respectively. These results suggest that participants perceived the stimuli as transporting and

engaging.

  Open Ended Coding. I applied procedures outlined by Kassarjian (1977) and reviewed

the elicited text to familiarize myself with the content and gain an understanding of the

underlying themes. Based on this review, I developed codes for responses to the question "what

are the cognitive and emotional responses to a transportation experience?" and organized the

elicited responses using a complete thought as the basic unit (some responses included more than

one thought). I used descriptive coding to capture the themes, topics, and ideas expressed in the

elicited responses. This process yielded 15 unique categories (see appendix I for list of codes and

categories).

  Two undergraduate research assistants were trained and independently read the elicited

responses. The coders were instructed to assign the responses to the pre-determined categories

and to use as many category labels as relevant, or if none were relevant to assign the code

"other." The coders agreed on 149 out of 186 items to code; I resolved any discrepancies when

there were overlapping, multiple, or conflicting codes. An inter-rater reliability analysis using the

Kappa statistic was performed to determine consistency among raters (Kappa = 0.72, SE = .05, p

<.0.05). These reliabilities indicate that the coding scheme was clear and appropriate.

  Each predetermined category label was used at least once, suggesting that the coding

system comprehensively captured the process of reflection. I examined the items coded into the

"other" category (28 total) for their relevance to the process of reflection. The items coded into

this category were either uninterpretable or indicated that the participant did not take the task

seriously (single word responses such as "educated," "bored," or "sad"), or were not relevant to the conceptualization of reflection ("it was more interesting than most of these studies").

4.5.3 Discussion.

The results from this study indicate that a range of cognitive and emotional responses occur subsequent to being transported into a narrative about mental health, and that 15 categories encompass the range of these responses. These categories demonstrate high levels of face validity in the context of previous research suggesting that a secondary process occurs in the context of narrative persuasion. Mental health represents a broad and relevant context in which to generate these responses since it is a topic relevant and familiar to the sample population. The categorization of these responses serves as an initial step toward developing a systematic measure of this process. Though the categories cover a broad range, the statements generated may be specific to the story context. To enhance confidence in the generalizability of the categories generated, I examine the cognitive and emotional responses to a story in a different context.

4.6 Study 1b: Item Generation

This study elicits reactions to a second narrative using a different health-related context to increase confidence that the process responses elicited generalize to other topics within the health domain. In addition, this study elicits responses from participants during and after their reading of the narrative. As suggested by Slater and Rouner (2002), responses following the processing of a narrative may provide insight into only part of the reflection process; measurement of cognitive responses after exposure to a story may capture thoughts and emotions that arise in response to the vicarious experience (transportation) rather than thoughts that actually crystallized during the processing of the narrative. In this study, I elicit cognitive and

emotional responses to a narrative at several points before the narrative concludes, as well as at the end, to explore whether the thoughts and feelings associated with reflection differ during these distinct stages.

4.6.1 Method.

Participants. A total of 169 undergraduates at a large Southeastern university participated for course credit. The mean age was 20.67 (SD = 1.35) and 51% were female.

Materials and procedure. Participants completed the study in a computer lab using the Qualtrics survey platform. I selected live organ donation as the focus of the stimulus message, since this topic falls within the domain of health and involves a behavioral component. Organ donation is a topic that is likely to elicit interest and careful consideration, which is important for the goals of the present work.

Participants were assigned to read a narrative adapted from the news article, "Organ donor's surgery death sparks question" from the CNN health website (See appendix J). The story was reduced to approximately 2,000 words and was divided up to be read across 7 screens to facilitate reading (page breaks occurred at natural breaks in the story, denoted by the original author with section headings). Previous work indicates that a solid body of text on one page deters careful processing (Berg, Hoffman and Dawson 2010). Participants were assigned to one of three conditions: a "reflection" condition in which participants were stopped 3 times (once after every two screens) and asked to state their current thoughts and feelings, an "interruption" condition in which participants were stopped 3 times (once after every two screens) and asked to complete unrelated demographic measures (e.g. "What is your major?), and an "uninterrupted" condition in which participants proceeded through the story without interruption. The "uninterrupted" condition was included as a control to explore whether being prompted to reflect

while reading a story changes the nature of responses after completion of the story. If responses differ across the groups, at least two factors contribute to the responses: the impact of being prompted to actively reflect, or the impact of simply being interrupted. The "interruption" condition (with demographic variables) was included to examine the simple impact of interruption on transportation and reflection (after finishing reading the story).

Participants were told, "On the next page you will read a story about an organ donor's experience. Please read the story and answer the questions about your reading experience carefully. This study should take approximately 20 minutes." After reading, participants were presented with a series of measures, and were thanked.

Measures. Participants in the reflection condition were given the following prompt: "Please take a moment to reflect on what you are 1) thinking about and 2) feeling right now. Please describe your thoughts and feelings in the box below" three times throughout the message. Participants in the "interruption" condition were asked to complete a number of unrelated demographic questions (see appendix K). After reading, all participants were prompted to complete a reduced Green and Brock's Transportation scale (those that were most directly related to the three conceptualized factors) as well as respond to the open-ended reflection question: "How did you think and feel about the content of the story, in general?"

Dependent Measures. I assessed the risks associated with and attitude towards live organ donor procedures with the following items: "Donating organs through a live donor procedure is worth the potential risks involved" on an extremely disagree (1) – extremely agree (7) scale, "All things considered, I would become a live organ donor" on a not at all likely (1) – extremely likely (7) scale, "overall, all things considered, I believe live organ donation is"

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extremely bad (1) – extremely good (7), and "I learned something about live organ donation from reading this article" extremely disagree (1) – extremely agree (7).

4.6.2 Results.

Response to Scales. As described in study 1a, transportation is a necessary condition preceding reflection on a narrative. Scores on Green and Brock's transportation items were not significantly different between the three conditions (F (2, 167) = .661, p = .52) $X_{no\ interrupt}$ = 4.90, SD = .83, N = 58; $X_{Reflection}$ = 5.04, SD = .72, N = 57; $X_{Interruption}$ = 4.88, SD = .85, N = 56), and were each significantly higher than the scale midpoint of 3.5 ($t_{no\ interrupt}$ (56) = 14.5, p = .00; $t_{reflection}$ (57) = 18.1, p = .00; $t_{interruption}$ (55) = 13.5, p = .00). The Cronbach's α was .76, .73, and .71, respectively.

Response to Dependent Variables. A one-way ANOVA indicated there were no significant differences in responses on the dependent variables by condition (worth the risk: F (2, 167) = 1.09, p = .34, $X_{no\ interrupt}$ = 5.1, SD = 1.1, $X_{Reflection}$ = 4.8, SD = 1.2, $X_{Interruption}$ = 4.8, SD = 1.2; become donor: F (2, 167) = 2.68, p = .07, $X_{no\ interrupt}$ = 3.9, SD = 1.8, $X_{Reflection}$ = 4.4, SD = 1.6, $X_{Interruption}$ = 4.6, SD = 1.8; donation attitude: F (2, 167) = .49, p = .61, $X_{no\ interrupt}$ = 5.6, SD = 1.0, $X_{Reflection}$ = 5.4, SD = 1.0, $X_{Interruption}$ = 5.5, SD = 1.1; learned something: F (2, 167) = .81, p = .45, $X_{no\ interrupt}$ = 5.2, SD = 1.2, $X_{Reflection}$ = 5.3, SD = 1.0, $X_{Interruption}$ = 5.4, SD = 1.1).

Previous work on transportation suggests that it predicts story-consistent beliefs. To examine whether transportation is operating as expected (which is a necessary precondition for reflection), I correlated transportation with each dependent measure (aggregating responses across the three conditions because there were no significant differences in the level of transportation). Transportation was significantly correlated with perceiving live organ donation as worthwhile (r = .24, p = .00), likelihood of becoming a donor (r = .16, p = .04), attitude

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toward live organ donation ($r = .24$, p = .00), and belief that one has learned something through reading the story ($r = .47$, p = .00). Consistent with the narrative message, higher levels of transportation were also negatively correlated with perceptions of frequency of the organ donation complications (likert scale response; $r = -.21$, p = .00; open ended response; $r = -.24$, p = .00) and riskiness ($r = -.26$, p = .00).

Coding. Two undergraduate research assistants assigned the responses to the pre-determined categories and used as many category labels as relevant, or if none were relevant to assign the code "other." There were two sources of data to code; all participants' responses to the open-ended reflection question at the end (Kappa = 0.78, SE = .04, p <.0.05), and the participants in the reflection conditions' responses while reading (Kappa = 0.80, SE = .03, p <.0.05). I again resolved any discrepancies when there were overlapping, multiple, or conflicting codes.

A substantial number (31.5%) of the codes assigned were "0" in response to the reflection question at the end. The codes labeled "0" were examined for relevance to reflection, and were accurately coded as "0." Possible reasons for this pattern of responses are considered in the discussion section. Again, each predetermined category label was used at least once suggesting that the coding system encompasses difference aspects of reflection.

The present study included three conditions to examine (1) the effect of being prompted to reflect during the narrative, (2) the effect of simply being interrupted during the narrative and (3) no interruption during the reading of the narrative on the content of the reflection. I used pairwise z-tests of proportions to examine whether the percentage of codes assigned in one condition different significantly from those assigned in another condition. There were significant differences on 3 of the (15) codes (4 total pairwise differences). First, participants in the "interrupt but no reflection" condition were significantly less likely to give responses "Relating

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the story to me (the reader), other" (0% of codes) than participants in the interrupt- reflection condition (17.7% of codes; Z = -2.51) or the uninterrupted condition (12.5% of codes; Z = -2.07). Second, participants in the "no interruption" condition were significantly more likely to give responses relating to "How I felt for the characters (sympathy or empathy)" (27.5% of codes) than participants in the interrupt-reflection condition (7.6% of codes; Z = -2.58). Finally, participants in the interrupted but no reflection condition were significantly more likely to give responses related to "Thoughts about how the story could have turned out differently" (15.6% of codes) than participants in the uninterrupted condition (0% of codes; Z = 2.59). Therefore, out of 45 possible comparisons, only 4 were significantly different. This suggests that the act of interrupting or asking about reflection while reading does not influence the content of reflection in response to a story.

I then examined the codes assigned to the responses of the participants in the reflection condition that were elicited *while* reading the story with codes of responses following the narrative. These responses while reading were significantly more likely to be coded as

- "How the story made me feel" (27.5% vs 15.4%; Z = -2.41) and "
- "How I felt for the characters (sympathy or empathy)" (29.2% vs 17.1%; Z = -2.36)

and significantly less likely to be coded as

- "Thoughts related to the story topic" (1.1% vs 6.8%; Z = 2.58),
- "Thoughts related to the 'take-home message' or 'moral of the story'" (0% vs 4.3%; Z = 2.72),
- "'How the story relates to the "real world'" (1% vs 11.1%; Z = 4.08), and "
- "Involvement with the topic (as opposed to the story, itself)" (1.8% vs 12.8%; Z = 3.81)

than responses that followed the narrative. These differences suggest that the process of reflecting on a story following completion differs for some thoughts one has while reading the story.

4.6.3 Discussion.

This study elicited responses from participants during and after their reading of the narrative to gain further insight into the nature of reflection. There were no significant differences between the levels of transportation or persuasion-related outcomes as a function of either interruption condition, suggesting that stopping participants to measure their thoughts and feelings did not affect other elements in the narrative persuasion process.

Each reflection category was used at least once in each condition, providing additional support that the coding system encompasses the aspects of reflection. As noted, there were a large number of responses coded "0" (other). This large number may be due, in part, to the eliciting question; in 1a participants were prompted to "Please describe your thoughts while reading the passage," and "Describe what emotions you felt while reading the passage. In 1b, participants were asked "How did you think and feel about the content of the story, *in general*?" (italics added for emphasis), prompting surface level assessments of the story ("It was interesting" or "it was sad" were common responses). This also is consistent with the fact that participants in the reflection condition gave responses that were assigned very few zero codes (<1%) in response to the question, "Please take a moment to reflect on what you are 1) thinking about and 2) feeling right now. Please describe your thoughts and feelings in the box below."

I compared the codes assigned across conditions to determine whether interrupting or prompting reflection influenced the nature of the reflection. Out of 45 possible comparisons (15 codes by 3 pairwise comparisons among the three conditions), only 4 were significantly

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different. "Relating the story to me (the reader), other" was less likely to occur in the interruption condition, and "Thoughts about how the story could have turned out differently" was more likely. The process of trying to "get back into" the story after interruption might shifts thoughts away from the self and more onto the relationships in the story. Participants in the "no interruption" condition were significantly more likely to give responses relating to "How I felt for the characters (sympathy or empathy)" than participants in the reflection condition. The participants in this condition previously provided emotionally-based responses while reading (what was, indeed, the case) which may have diminished their need to express their level of emotional experience or emotional connection after reading. Overall, however, the few differences between the categories as a function of codes suggests that act of interrupting or asking about reflection while reading does not influence the content of reflection in response to a story.

The difference in the responses while reading (in the reflection condition) compared with the responses generated after reading indicate some distinctions in the nature of thought at these points in time. While reading, participants' thoughts focused on the story, and their emotions focused on themselves as well as the characters, which is consistent with Green and Brock's conceptualization of transportation. Thoughts focused on the story topic, the "take-home message" and relating the story to the real world were more likely to follow after story completion, which is consistent with my conceptualization of reflection.

4.7 Study 1c: Item Generation

A "story" refers to the unfolding of events in a chronologically linear time sequence and the story's plot adds causal relationships internal to the sequence (Frye 1973). Previous work suggests that elements of *story* craftsmanship are related to transportation (Green, Brock, and

Kaufman 2004), whereas alteration of plotline influences persuasion-related outcomes, but not necessarily transportation (Banerjee and Greene 2012, Dahlstrom 2012). This difference suggests a distinct process following transportation, but preceding persuasion (i.e., reflection). What is not known is whether the reflective responses differ in their nature (intensity, way of interpreting information) or simply in their content (direct translation of story cause and effect relationships into real-world beliefs).

One key factor that determines how we make inferences narratives is their causal relationships; outcomes occur as a result of preceding actions (Dahlstrom 2010). Causal relationships determine what an audience is persuaded *of;* for example, in the context of health communication, a story featuring a character who does not use sunscreen but has no adverse health effects is a less persuasive advocacy message than if the character develops skin cancer. Because the present work seeks to examine the narrative persuasion process (and how reflection mediates the impact of transportation on persuasion-related outcomes), manipulating the causal relationships within a story may induce possible differences in reflection.

This study alters elements of a story's plotline – specifically, related to causality of a story's outcome to examine how different cause and effect relationships included in a story can influence reflective responses. The elicited responses may provide a more comprehensive picture of what types of responses can be generated during reflection. If there are no differences in types of response, this increases confidence that the items elicited in the previous two studies broadly sampled the domain of reflective responses.

4.7.1 Method.

Participants. A total of 57 undergraduates at a large Southeastern university participated for course credit. The mean age was 20.73 (SD = 1.03) and 60% were female.

Materials and procedure. Participants completed the study in a computer lab using the Qualtrics survey platform and the same stimulus messages as in study 1b. Participants read one of two versions of the story (see appendix L). In the original version, the cause of a character's death is ambiguous (there were possible doctor errors, but he also had an underlying health condition). In the second version, the cause of death was clearly the doctors' fault.

People may reflect more, or in a different way, about the relationships within or outcomes of a story when the causal relationships are ambiguous in an effort to make sense of it. This may also affect the way people relate story information to themselves; the "real world" implications may be less clear.

As in study 1b, Participants were told, "On the next page you will read a story about an organ donor's experience. Please read the story and answer the questions about your reading experience carefully. This study should take approximately 20 minutes." After reading, participants were presented with a series of measures, and were thanked.

Measures. After reading, all participants were again prompted to complete the abridged transportation scale used in study 1b. I assessed the risks associated with and attitude towards live organ donor procedures ("How risky are live donor procedures" not at all risky (1) – extremely risky (7); "How frequently do you think stories like Paul's occur" not at all frequently (1) – Extremely frequently (7); "In the case of live organ donation complications, the donor is to blame for not taking proper precautions" disagree extremely (1) – agree extremely (7); "Doctors are responsible when donation procedures go awry" Disagree extremely (1) – Agree extremely (7)) and four open-ended reflection questions: "How did you think and feel about the content of the story, in general?" "How did you think about how content of the story relates to you and the world around you?"

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4.7.2 Results.

Response to Scales. Scores on Green and Brock's transportation items were significantly higher than the scale midpoint of 3.5 ($t_{ambiguous}$ (28) = 7.7, p = .00, $t_{unambiguous}$ (28) = 9.0, p = .00). and not significantly different between the two different stories (F (1, 54) = 3.3, p = .07) $X_{ambiguous}$ = 4.96, SD = .88, N = 28; $X_{unambiguous}$ = 5.41, SD = .93, N = 28.

Response to Dependent Variables. Participants' responses on several dependent measures were compared to examine the influence of the different stories on persuasion-related outcome measures. Participants in the ambiguous causality condition were more likely to view complications from organ donations as more risky (F (1, 54) = 4.26, p = .04; $X_{ambiguous}$=4.11 $X_{unambiguous}$ =3.18), more frequent (F (1, 54) = 4.26, p = .04; $X_{ambiguous}$=4.11 $X_{unambiguous}$ =3.18) and the fault of the donor ((F (1, 54) = 4.81, p = .03; $X_{ambiguous}$=3.63 and $X_{unambiguous}$=2.29). Participants in the unambiguous condition were more likely to view complications from organ donations as the doctor's fault ((F (1, 54) = 3.7, p = .06; $X_{ambiguous}$=4.04 and $X_{unambiguous}$=4.71).

Coding. Two undergraduate research assistants independently read the elicited responses, assigning the responses to the pre-determined categories. I resolved any discrepancies when there were overlapping, multiple, or conflicting codes. Cohen's Kappa indicated consistency among raters (Kappa = 0.76, SE = .04, p <.0.05). Each category label was used at least once, again suggesting that the categorization structure encompasses differences in the aspects of reflection.

The present study included two conditions to examine the potential impact of storyline on reflection; higher levels of ambiguity may change the content of reflection. To do this, I again used pairwise z-tests of proportions to examine whether the percentage of codes assigned in the ambiguous causality condition differed significantly from those assigned in the unambiguous

condition. There were significant differences on only one code; participants in the "ambiguous" condition were significantly less likely to give responses that were coded as "Relating the story to me (the reader)" (7.4% vs 23.6%; Z = -2.35). None of the other codes (14) differed for the two conditions.

4.7.3 Discussion.

This study altered elements of a story's plotline related to causality of a story's outcome to examine whether different cause and effect relationships included in a story can influence reflective responses. In general, there were no differences in types of response. The results of this study, combined with the findings in studies 1a and 1b, increase confidence that the 15 proposed categories arerobust across variations in various narrative features. I attempted to assess the robustness of the categories used to assess reflective in three ways; through using different stories, through interrupting the reading process, and through altering aspects of a story plotline. In each study, all 15 codes were applied at least once, and the "other" codes were not meaningfully related to my conceptualization of reflection.

4.8 Study 2: Factor Structure

Studies 1a, 1b, and 1c generated potential scale items. Study two uses scale validation techniques to direct item selection and explore the underlying factor structure of the scale.

4.8.1 Method.

Participants. A total of 172 undergraduates at a large Southeastern university participated for course credit in a computer lab (n = 68) or online (n = 104), both through the Qualtrics survey platform. The mean age was 20.74 (SD = 1.15) and 61.7% were female. There were no significant differences between the two groups in terms of their responses or demographic characteristics.

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Materials and procedure. I selected a story from the Narrative Matters section of the journal Health Affairs. Narrative Matters features personal stories about experiences with the health care system and the people in it, using first person narratives to highlight an important public policy issue. I selected a story describing an individual's health-related reactions to use home pesticides (see Appendix M). Participants were told, "The objective of today's study is to understand how consumers evaluate different types of stories. Please read the story that you were given. Take your time, and read naturally and carefully. We will ask you questions about what you have read after you read the story." Participants then read the story and were subsequently presented with the following instructions: "Please answer the following items as they pertained to your thoughts and feelings about the story. Some of the questions may seem similar, but they each measure specific aspects of the reading experience. Please answer each question honestly and thoughtfully." Participants were then presented with response items, and were then thanked for their participation.

Measures. The 15 categories generated from studies 1a, 1b, and 1c were used to generate specific scale items. Because elements of reflection may occur *while* reading or *after* reading, some questions made a distinction between the temporal elements of the process ("I thought about how the story relates to me *while reading* the story" vs. "*after reading* the story"). Several categories encompassed a level of complexity that could be separated into more basic units. I identified multiple, more focused statements for these categories to capture the full range of the category (e.g. in the category "skepticism about aspects of the story or statements in the story" was separated into questions about credibility, questions about statements in the story, and general skepticism). Finally, I included two general, reverse scored statements about amount of thinking following reading ("I did not think about the narrative very much after I finished

reading"). Participants responded to a total of 30 items, using a 1 (strongly disagree) – 7 (strongly agree) scale.

Based on the content analysis of the open-ended elicitation, four general categories emerged from the responses: Statements that reflected thoughts about the narrative (e.g., "I thought about the takeaway message of the story"), about the reader and the world external to the reader ("I thought about how the story relates to me while reading the story"), emotion evoked by the narrative ("I thought about how the story made me feel after reading"), and disbelief in the narrative ("I found myself questioning some of the statements in the story"):

Participants then completed Green and Brock's Transportation scale, several dependent measures related to the story that they read (see Table 2), and demographic measures.

4.8.2 Results.

Response to Transportation. Scores on Green and Brock's transportation items were significantly different from the scale midpoint of 3.5 (X = 4.7, t (171) = 19.07. Cronbach's α for the Transportation scale was .77.

Response to Reflection items: Scale Development Approach. I used an iterative process to identify the factor structure that represents the items developed through the coding of the open-ended elicitations. Theoretical and empirical approaches informed the decisions used to develop a meaningful structure. For any item to be removed from further consideration its deletion 1) could not affect the overall meaning of reflection and 2) should be substantiated by unambiguous empirical evidence that its deletion would result in a more stable factor structure.

As an overview, I used the following process for the scale development: I first determined whether the underlying distribution of each item deviated in a meaningful way from normality. I then derived a total score for each category and calculated item – total correlations

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to assess whether each item was significantly related to the composite score. Items which were not significantly correlated to the composite score were then considered for deletion. Next, I conducted an exploratory factor analysis and evaluated the structure for a four-factor solution (which represented the four categories developed from the open-ended elicitation). Then, I conduct a confirmatory factor analysis to determine the goodness of fit for the hypothesized factor structure.

I used the following decision rules to trim the items from subsequent analyses:

- If an item was not normally distributed and had a skewness or kurtosis value greater than 2, the item was removed from further consideration

- If an item was not significantly correlated with the composite score, it was removed from further consideration

- If an item had a low loading in the exploratory factor analysis (a loading lower than .5), it was eliminated from further consideration

- If an item had a complex loading in the exploratory factor analysis (i.e., a factor loading on more than 1 factor greater than .3), it was eliminated from further consideration

- If an item had a modification index greater than 4 in the confirmatory factor analysis, it was considered for elimination.

Descriptive Analysis. I first examined the descriptive statistics of the items developed to represent these four categories to assess whether the underlying distribution deviated in a meaningful way from normality. The items identified for each category a priori are contained in table 2. None of the items had a skewness or kurtosis values greater than |2|, except item 2, which had a kurtosis of 3.2 indicating substantial deviation from normality. This item is poorly

worded ("I thought about the situation **and** the motivation of the individuals in the story") and

was removed from subsequent analyses.

Table 2 – Reflection Scale Candidate Items by Category

Thoughts about the narrative
1. I reflected on the topic of the story 2. I thought about the situation and the motivations of the individuals in the story 3. I was focused completely on the story and the characters while reading 4. I did not think about the narrative very much after I finished reading 5. I did not think deeply about the information contained in the story 6. I thought about the "takeaway message" of the story 7. I invested effort into understanding the message
Thoughts about the reader and the external world reader
8. I thought about how the story relates to me while reading the story 9. I thought about how the story relates to me after reading the story 10. I reflected on how the narrative relates to my future behavior 11. The story reminded me of some of my personal experiences 12. After reading, I contemplated what the story means for me 13. I found myself thinking of what I would do if I were in the writer's situation 14. The events in the narrative are relevant to my everyday life 15. I reflected on how the narrative (or "story world") relates to what I think about the "real world" 16. Some parts of the story reminded me of people I know 17. Some parts of the story reminded me of situations other people I know have been in 18. I think I can generalize from this story to the "real world" 19. I thought about other people I know while reading the story
Emotions evoked by the narrative
20. I thought about how the story made me feel, while reading 21. I thought about how the story made me feel, after reading 22. I felt a connection between how the story made me feel and how much I thought about it after I finished reading 23. The feelings caused by the story prompted me to think more about how the "story world" relates to the "real world" 24. I found myself thinking of how I would feel if I were in the writer's situation

25. I feel involved with the topic that I read about
Disbelief in the narrative

26. I found myself thinking about the credibility of the story
    27. I found myself questioning some of the statements in the story
    28. I found myself questioning how relevant this story is to the real world
    29. I felt skeptical at times while reading, or after reading, the story
    30. I thought about how the story could have turned out differently

    Item-Total Correlations. The item-total correlations for each category identified in the

content analysis were calculated and items that did not correlate highly (>.5) with the category

total were removed (i.e., items 4 and 5 for category 1; items 10, 13, and 18 for category 2; item

23 for category 3; items 28 and 30 for category 4). These items were also redundant with the

remaining retained items or were sufficiently ambiguous that their retention did not have

theoretical value.

    This initial analysis resulted in the retention of 22 items. Cronbach's α for the categories

of narrative (items 1, 3, 6, and 7), reader/reader's world (items 8, 9, 11, 12, 14, 15, 16, 17, 19),

emotion (items 20, 21, 22, 24, 25) and disbelief (items 26, 27, 28, 29) were .82, .85, .85, and .88,

respectively. This 22 item scale does have empirical support for its use to assess the four

categories that represent reflection. However, the factor structure underlying each category may

be more complex than the uni-dimensional assumption when calculating Cronbach's α. I

addressed the dimensional structure of the items by using an exploratory and confirmatory

approach.

    Exploratory Factor Analysis. I conducted a principal axis factor analysis on the

remaining (22) items using Varimax rotation and selected a four-factor solution based on the

conceptualization of reflection and the empirical evidence. The four factor solution accounted for 62% total percentage of variance (eigenvalues: 7.2, 3.0, 2.2, and 1.3). Based on the decision rule described above, (i.e., a factor loading of > .50 on one factor and < .3 on the other factors) for item inclusion, a total of 16 items were retained (see Appendix N).

I conducted a subsequent factor analysis with the reduced set of 16 items. The solution accounted for 69% of the variance and each item loaded >.5 on one of the factors and < .30 on the other factors. The first group of items related to general reflection on the story content (4 items total). The second factor captured the process of relating story information to oneself and the "real world" (5 items total). The third factor related to emotion (3 items total). The final group of item of items pertained to disbelief or skepticism related to story elements (4 items total).

I examined the communalities of the retained items. Four items (3, 11, 14, and 28) had communalities below .5. I retained these items but noted their potential for added stress in subsequent analyses.

I examined the removed items to determine whether there was theoretical justification to retain them in a subsequent use of the reflection scale. Items 4 and 5 were the reverse-scored equivalent of items 6 and 7 and were redundant. Items 10 and 18 ("I reflected on how the narrative relates to my future behavior" and "I think I can generalize from this story to the 'real world'") may be too broad to elicit unambiguous responses. Items 13, 24, and 30 were overly specific ("I found myself thinking of what I would do if I were in the writer's situation," "I found myself thinking of how I would feel if I were in the writer's situation," and "I thought about how the story could have turned out differently") and are not central to my conceptualization of a general measure of reflection. Items 15 and 23 are cumbersome in wording ("I reflected on how

the narrative (or "story world") relates to what I think about the "real world," "The feelings caused by the story prompted me to think more about how the "story world" relates to the "real world"). Finally, item 30 ("I feel involved with the topic I read about") is vague.

Items 8, 9, and 12 had complex loadings in the factor analysis, but their elimination would remove an import element of reflection – relating the content of the story to oneself. No other items measure this element of reflection. I retained these items despite their complex loadings and examine their performance in subsequent analyses.

Response to Reflection items: Confirmatory Factor Analysis. All factor structures were evaluated with AMOS 20 using a maximum likelihood algorithm. Following Bollen and Long's (1993) recommendations, several global fit indices were used, including indices of absolute fit, indices of relative fit, and indices of fit with a penalty function for lack of parsimony. The traditional overall chi square test of model fit (which should be statistically non-significant), the Root Mean Square Error of Approximation (RMSEA; which should be less than .08), the Comparative Fit Index (CFI; which should be greater than .95), and the standardized root mean square residual (SRMR; which should be less than .05) were used. In addition to the global fit indices, more focused tests of fit were pursued. The standardized residual covariances (which should be between -2.00 and 2.00) and modification indices (which should be less than 4.00) were examined.

The initial confirmatory factor analysis of a 4-factor model yielded poor model fit ($\chi^2(98)$ = 322.87, $p < 0.05$; CFI = 0.85; RMSEA = .12; close fit test $p < .05$; standardized RMR = .08). Inspection of the modification indices suggested that the majority of ill fit was related to factor 4 (disbelief). From a conceptual standpoint, disbelief or skepticism in response to the story should preclude or reduce additional reflection (relating the story to the self or the surrounding world).

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Skepticism, then, plays a moderating role in the process of narrative persuasion; it is not part of the construct of reflection. I computed the composite for each factor and examined each factor composite's inter-correlation; factors 1, 2, and 3 are all significantly positively correlated (r range from .31 to .46, $p < .05$) whereas factor 4 is not significantly correlated with any of the other three. Based on this theoretical and empirical reasoning, I removed factor 4 from the model.

The modification indices also suggested that items included on a "probationary" basis (items 8, 9, and 12) were an additional source of model ill-fit. These items were included in the model on a provisional basis based on their poor performance in the exploratory factor analyses, and given the stress they add in the confirmatory analysis, I removed them from the model.

A final set of modification indices indicate items 3, 14, 22, and 28 added stress to the overall model fit. Items 3, 14, and 28 had communalities below .5 in the EFA and were thus included in the CFA on a conditional basis. The wording for item 22 seems overly complex ("I felt a connection between how the story made me feel and how much I thought about it after I finished reading"). I removed these items from the model.

These changes yielded a 3 factor model (see table 3 for retained items); factor 1 (items 1, 6, and 7), factor 2 (items 11, 16, 17, and 19), and factor 3 (items 20 and 21). The revised model $\chi^2(24) = 33.27$, $p = .10$; CFI = 0.99; RMSEA = .05; close fit test $p = .51$; standardized RMR = .05 provided good model fit. All the items loaded significantly on the pertinent factor.

The fit of the three-factor model was better than that of the one-factor model ($\chi^2(27) = 253.86$, $p = .000$; CFI = 0.59; RMSEA = .22; close fit test $p = .00$; standardized RMR = .14) or any two-factor model created by combining different configurations of the factors (e.g., combining factors 1 and 2; combining factors 2 and 3; combining factors 1 and 3; best model fit

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$(\chi^2(35) = 110.88, p = .000; \text{CFI} = 0.87; \text{RMSEA} = .11; \text{close fit test } p = .00; \text{standardized RMR} = .08)$.

The development of this 3-factor solution was driven empirically. I consider the theoretical implications for the removed items in the discussion section.

Table 3 – Reflection Scale Candidate Items Retained

Factor 1: Thoughts about the narrative
1. I reflected on the topic of the story 6. I thought about the "takeaway message" of the story 7. I invested effort into understanding the message
Factor 2: Thoughts about the reader and the external world reader
11. The story reminded me of some of my personal experiences 16. Some parts of the story reminded me of people I know 17. Some parts of the story reminded me of situations other people I know have   been in 19. I thought about other people I know while reading the story
Factor 3: Emotions evoked by the narrative
20. I thought about how the story made me feel, while reading 21. I thought about how the story made me feel, after reading

Response to Dependent Variables. I examined the correlations between the three factors of the reflection scale, the overall composite, and the disbelief items with participants' responses to 14 belief measures that ranged from directly relevant to the story to tangentially and topically related (For example, "Exposure to pesticides can have harmful consequences" and "I support tighter controls on pesticide use" See table 4). Factors 1 and 3 and the overall composite were consistently significantly correlated with endorsement of the belief statements in ways consistent with the story (11/14 statements for factor 1, 9/14 for factor 3, 11/14 for the composite). Factor 2

was also directionally consistent with these statements, but not significant for most story

consistent beliefs (3/14 significant correlations). The disbelief composite was significantly

correlated with 8/14 statements in the *opposite* direction; in other words, disbelief or skepticism

of statements in the story precludes or reverses persuasion.

As would be expected, the transportation composite was also consistently correlated with

story-relevant statements (13/14 statements), as well as factor 1 ($r = .62, p = .00$), factor 2 ($r =

.25, p = .00$), factor 3 ($r = .47, p = .00$), the composite ($r = .56, p = .00$), and the disbelief items

($r = -.17, p = .03$).

Table 4 – Correlations with dependent measures

Items (all measured on 1 – 7 scales)	F 1	F 2	F 3	Comp	Trans	Disbelief
1. The negative outcomes experienced by the story narrator were her own fault	-.27**	-.05	-.21**	-.22**	-.34**	.33**
2. The negative outcomes experienced by the story narrator could happen to me	.30**	.22**	.34**	.38**	.42**	-.21**
3. The negative outcomes experienced by the story narrator are the fault of the pesticide company	.26**	-.02	.12	.14	.21**	-.16*
4. Exposure to pesticides can have harmful consequences	.34**	.03	.22**	.24**	.31**	-.24**
5. Pesticides are safe if the directions are followed appropriately	-.17*	-.09	-.10	-.15*	-.17*	.28**
6. Consumers should never trust companies	.01	.16*	.05	.11	-.08	-.03
7. Adverse health responses to chemical substances are common	.13	-.03	.22**	.13	.17*	-.12
8. I support tighter controls on pesticide use	.31**	.20**	.29**	.35**	.31**	-.10
9. The story has influenced my perception of risk association with using common chemicals such as pesticides	.40**	.14	.31**	.35**	.45**	-.28**
10. The Freedom of Information Act is helpful in protecting consumers	.27**	.02	.11	.16*	.35**	-.12
11. Current levels of pest control regulation are satisfactory	-.12	-.13	-.14	-.18*	-.19*	.10
12. Penalties for companies whose products are linked to consumer health problems should be more severe	.36**	.11	.29**	.32**	.45**	-.19*
13. I support the Freedom of Information Act	.20**	.07	.19*	.19*	.28**	-.10
14. I would support a campaign against companies whose products have been linked to adverse	.16*	.06	.24**	.20*	.23**	-.18*

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consumer health consequences						

*=significant at the .05 level, **=significant at the .01 level

I created a composite of the 14 dependent variables (which reflects the overall attitude toward the product; i.e., the sum of the relevant beliefs))and examined the reflection composite as a mediator of the transportation – dependent composite relationship. I used a bias corrected bootstrap test of the indirect effect, requesting 5,000 bootstrap samples and bias corrected 95% confidence intervals (Preacher and Hayes, 2008; Zhao, Lynch and Chen, 2010). The 95% confidence interval for the point estimate of reflection [.05, .20, b = .12, SE = .04] did not contain 0, suggesting that reflection operates as a mediator of the relationship between transportation and story-consistent beliefs. However, the direct effect of transportation on the composite was significant (b = .25, SE = .06, p = .01) suggesting that reflection's mediating effect may only be partial.

I repeated these analyses with the individual factor composites. The relationship between transportation and the dependent composite is mediated by factors 1 [.02, .16, b = .09, SE = .04] and 3 [.03, .11, b = .06, SE = .03], but not by factor 2 [-.01, .04, b = .01, SE = .02].

4.8.3 Discussion.

Scale Development. The purpose of this study was to use scale validation techniques to select items for use in a scale to measure reflection. An empirically driven approach yields a three factor structure including dimensions related to cognitive effort or general reflection, relating the story to personal experiences or the world around the reader, and to the experienced emotion.

The items related to skepticism loaded on a separate factor, but were not related to the other factors in the scale in the CFA or in terms of inter-factor correlations. From a conceptual

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standpoint, skepticism in response to the story should reduce additional reflection (relating the story to the self or the surrounding world). Skepticism should not be included in a reflection scale (or as part of the construct of reflection), but should be measured as a moderator of narrative persuasion.

Scale development should also be driven by theoretical considerations. The variance in the empirical analysis may be influenced by idiosyncratic factors related to the focal stimulus and not due to differences in the process of reflection. I examined the items selected for removal with the items retained to determine whether their elimination would remove an important theoretical component of reflection. The retained items generally encompass the different elements of reflection, with the exception of relating the story to oneself (items 8, 9, 12); although, item 11 (the story reminded me of some of my personal experiences) is closely associated with the element of relating the story to oneself.

A longer version of the scale (16 items, from the initial 22 items after the removal of the skepticism items) does have empirical support (high cronbach's alphas) for its use to assess the three factors that represent reflection. This larger version of the scale is retained as useful for future work, although in subsequent studies, I examine the stability of the reduced factor structure,.

Construct and Predictive Validity. As conceptualized, reflection on the narrative occurs after one has been transported into the story; which suggests a relationship between transportation and reflection. The composite measures of transportation and reflection were significantly correlated, and reflection mediates the influence of transportation on story-consistent beliefs. This suggests that both constructs are components of the narrative persuasion process.

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Reflection, as measured by the short scale, also appears to predict endorsement of story consistent beliefs. Factors 1 and 3 were correlated with more story-related beliefs than factor 2 (thoughts about the reader and the external world reader). A story by factor interaction may account for the relative weight of each factor on story content. For example, participants may relate story elements to themselves more readily when they perceive the story topic as more relevant, suggesting a moderating role of involvement. Two of the items measuring factor 2 relate to past experience, and participants may not possess the relevant experience base to which to relate the narrative. This suggests that the importance of the components of reflection may vary as a function of topic and audience experience

Alternatively, participants may ask themselves the question "how does this relate to me?" and determine that it is not relevant for their beliefs or future actions. In this scenario, an individual has reflected on the content of a narrative, but ultimately rejected the implied beliefs as irrelevant. This suggests that high levels of reflection as a process do not always lead to persuasion; the specific reflection *content* is an important predictor of story-consistent belief. Study 3 further explores how the individual factors of reflection relate to persuasion.

4.9 Study 3: Reliability and Discriminant Validity

In this study, participants respond to multiple stories or argument-based messages to explore the stability of the factor structure in terms of reflection on narratives. This study also compared how individuals respond to rhetorical (in contrast to narrative) messages. Previous work indicates that, though these types of messages may be equally persuasive, individuals are less likely to be transported into messages consisting of arguments. The process of reflection, then, may differ or be less relevant in this context.

4.9.1 Method.

Participants. A total of 154 undergraduates at a large Southeastern university participated for course credit in a computer lab through the Qualtrics survey platform. The mean age was 20.7 (SD = 1.14) and 63% were female.

Materials and procedure. I selected two narratives about health-related topics familiar to the participant population; an individual's development of allergies in response to GMO food that was published in a popular woman's magazine, and an individual's experience with the LASIK corrective eye surgery procedure that was published on a popular blog. The argument (or information)-based message was derived from these narratives to identify the relevant "facts," and specify the informative statements, which were then displayed in a bulleted list for the argument-based message. No information about specific individuals or their experience was included in the message. The argument-based messages were approximately the same length as the narrative messages (See appendix O).

Participants were assigned to a "narrative" or "argument" condition in which they read two messages, yielding a 2 (message type: narrative, argument) between x 2 (message topic: GMO foods, LASIK) within-subjects design. The presentation order of the messages was randomized.

Participants were told: "The objective of this study is to understand how consumers evaluate different types of messages. Your task is to read different messages and respond to the questions that follow." Participants read the first focal message (message topic presentation was counterbalanced) and then were asked to complete a set of response measures (the transportation scale, reflection items, message-consistent belief measures, and message-assessment measures). Participants then read a filler message, which was a consumer review of a product that was

written in a format consistent with the assigned condition (narrative or argument) and then completed several message assessment measures. Participants then read the second focal message and completed the same set of measures that followed the first story, followed by another consumer review filler message and questions.

Measures. Participants completed the same set of measures in response to each focal message. First, participants completed Green and Brock's Transportation scale, followed by the reflection scale items identified in study 2 as well as the disbelief measures (12 items total), and measures assessing perceptions of the message ("How much did the message read like a story?" "How informative was the message?" "How helpful was the message?" and "How much did you enjoy reading the message?" All on a 1 [Not at all] – 7 [A great deal] likert scale; see appendix P).

Dependent Measures. Participants then completed measures related to the message. In response to the GMO messages, participants assessed the following statements: "Overall, all things considered, I believe eating GMO corn is," 1 (extremely bad) – 7 (extremely good), "Exposure to GMO foods can have harmful consequences," "GMO foods are common," and "I support tighter controls on GMO food labeling" all on a 1 (strongly disagree) – 7 (strongly agree) scale.

In response to the LASIK messages, participants assessed the following statements: "Overall, all things considered, I believe LASIK surgery is:" 1 (extremely bad) – 7 (extremely good), "If I were a candidate for LASIK surgery, I would consider getting it" 1 (extremely unlikely) – 7 (extremely likely), "I would recommend LASIK surgery to a friend" 1 (strongly disagree) – 7 (strongly agree), "The benefits from LASIK surgery are worth potential risk factors" 1 (strongly disagree) – 7 (strongly agree).

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4.9.2 Results.

Manipulation Checks. Participants in the narrative condition perceived the messages as reading more like a story than participants who read the corresponding informational message (t (152) = 14.8, p = .00, $X_{GMO\ narrative}$ = 5.6, SD = 1.3, $X_{GMO\ info}$ = 2.4, SD = 1.4; t (151) = 9.7, p = .00, $X_{LASIK\ narrative}$ = 5.8, SD = 1.3, $X_{LASIK\ info}$ = 3.3, SD = 1.8) and enjoyed reading them more (t(152) = 7.02, p = .00; $X_{GMO\ narrative}$ = 4.8, SD = 1.5, $X_{GMO\ info}$ = 3.0, SD = 1.6; t (151) = 2.8, p = .00, $X_{LASIK\ narrative}$ = 4.6, SD = 1.8, $X_{LASIK\ info}$ = 3.8, SD = 1.7). The narrative and corresponding informational messages were not perceived as different in terms of informativeness (GMO messages: t(151) = 1.4, p = .16; LASIK messages: t (152) = -.88, p = .38) or helpfulness (GMO messages: t(151) = -.89, p = .37; LASIK messages: t (152) = 1.3, p = .18).

For participants in the narrative condition, paired samples t tests indicated no significant within-subjects differences in perceptions of reading like a story (t (72) = -1.4, P = .16), informativeness (t (72) = -.11, P = .91), helpfulness (t (72) = 1.1, P = .26), or in how much participants enjoyed reading the stories (t (72) = 1.0, p = .31).

For participants in the information condition, a repeated measures ANOVA with a Greenhouse-Geisser correction indicated no significant within-subjects differences in terms of perceived informativeness (F(1, 1.9) = 1.2, p = .30), but there were significant differences in terms of reading like a story (F(1, 1.8) = 21.17, X_{LASIK} = 3.3, X_{GMO} = 2.4), helpfulness (F(1, 1.8) = 13.0, X_{GMO} = 4.7, X_{LASIK} = 5.3), and in how much participants enjoyed reading the messages (F(1, 1.8) = 16.0, , X_{GMO} = 3.0, X_{LASIK} = 3.9).

Together, this suggests that the manipulations of format were successful; the messages were considered different on key characteristics (e.g. format) but not on others (e.g. informativeness). One exception is the differences between the GMO and LASIK informational

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message; the LASIK informational message was perceived as having characteristics that are more consistent with narrative messages (e.g. reading like a story) than the GMO counterpart. Possible differences in subsequent analyses may relate to these differences in audience perception.

Transportation. Cronbach's α's for the Transportation scale for the two narratives were .73 and .78 respectively. Each narrative was perceived as significantly more transporting than its informational counterpart message (t (152) = 9.0, p = .00, $X_{GMO\ narrative}$ = 5.0, SD = .85, $X_{GMO\ info}$ = 3.6, SD = 1.06, t (151) = 5.49, p = .00, $X_{LASIK\ narrative}$ = 5.2, SD = .91, $X_{LASIK\ info}$ = 4.4, SD = .92). A repeated measures ANOVA with a Greenhouse-Geisser correction indicated no significant differences in transportation across the stories (F(1, 1.99) = .45, P = .64). In addition to providing additional support that the manipulations were perceived by participants as intended (participants should be transported more by a narrative than an argument-based message), it is also a necessary precondition for subsequent analyses; the present work seeks to examine responses (reflection) subsequent to transportation

Response to Reflection items: Exploratory Factor Analysis – Narrative Messages. In the first set of analyses, I focus only on responses to the narrative messages. I first examined the descriptive statistics of the items developed to represent the three reflection categories and skepticism to assess whether the underlying distribution deviated in a meaningful way from normality. None of the items had a skewness or kurtosis values greater than |2|, indicating no substantial deviation from normality. I then examined the item-total correlations for each factor. The Cronbach's α for the first factor was .90 and .84 for the GMO and LASIK stories respectively; 89 and .83, for the second factor, 87 and .88 for the third factor.87 and .88 for skepticism.

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I conducted a principal axis factor analysis on the reflection items (9) for each story using a Varimax rotation. The three-factor solution fit the GMO story well based on a scree test (Cattell 1966) and the total percentage of variance accounted for (81.0%; eigenvalues: 4.6, 1.8, .85; see appendix Q). The factor loadings were all high ($>$.50) on the relevant factor. The three-factor solution also fit the LASIK story well based on a scree test (and the total percentage of variance accounted for (78.4%; eigenvalues: 3.9, 2.3, .88). The factor loadings were all high ($>$.50) on the predicted factor, with the exception of item 11, which did not load on any factor.

Response to Reflection items: Confirmatory Factor Analysis – Narrative Messages. I examined the fit of the factor structure in study 2 with each narrative. All factor structures were evaluated with AMOS 20 using a maximum likelihood algorithm. The model for the GMO story fit well ($\chi^2(24) = 23.4$, $p = .50$; CFI $= 0.98$; RMSEA $= .00$; close fit test $p = .71$; standardized RMR $= .04$). The model fit for the LASIK story presented a mixed picture of fit ($\chi^2(24) = 40.28$, $p = .02$; CFI $= 0.95$; RMSEA $= .10$; close fit test $p = .07$; standardized RMR $= .11$). Inspection of modification indices indicated that item 11 was the source of much of the stress; which is consistent with the cross-loading found in the exploratory factor analysis. Further consideration of this item is presented in the discussion.

Response to Reflection items: Within Subject Analysis – Narrative Messages. I conducted paired samples t tests on narrative condition participants' responses to the composites of each factor to explore whether there were differences for participants at the story level (which would yield within-subject differences); that is, do different stories lead to similar levels of reflection, regardless of content? There were significant within-subjects differences on factor 1 (t $(72) = 2.3$, $p = .03$, $X_{GMO} = 5.3$, $X_{LASIK} = 4.8$), and factor 2 (t $(72) = -2.6$, $P = .01$, $X_{GMO} = 4.5$,

$X_{LASIK} = 5.0$), but not on factor 3 (t (72) = -.35, p = .72) or the overall composite (t (72) = -.39, p = .72).

The differences within participant suggest that story content influences the nature of reflection. This is consistent with Green and Brock's studies on transportation; stories vary in terms of how much imagery, emotion, and cognitive engagement they evoke, but averaging them into an overall "transportation" measure provides a more stable measure of the construct. This story variation is also present for reflection. Further consideration of these differences is contained in the discussion section.

Response to Reflection items: Exploratory and Confirmatory Factor Analyses –

Informational Messages. In the next set of analyses, I focus only on responses to the informational messages in terms of the 9 items used in the prior confirmatory factor analyses. I first examined the descriptive statistics of the items to assess whether the underlying distribution deviated in a meaningful way from normality. None of the items had a skewness or kurtosis values greater than |2|, indicating no substantial deviation from normality.

I conducted a principal axis factor analysis on the reflection items (9). A two factor solution fit the GMO message well based on a scree test (Cattell 1966) and the total percentage of variance accounted for (75.0%; eigenvalues: 5.4, 1.3). Items 1, 6, 7, 20, and 21 loaded on factor 1 (factors 1 and 3 in previous analyses) and items 16, 17, and 19 loaded on factor 2. Item 11 showed complex loadings. This factor structure also characterized the LASIK message (66.9%; eigenvalues: 3.9, 2.0); see appendix Q.

I conducted several confirmatory factor analyses with each informational message, using AMOS 20 with a maximum likelihood algorithm. The first model examined the three factor model structure in study 2 to characterize reflection in the context of narratives. This model did

not fit well for the GMO informational message (($\chi^2(24) = 45.87$, $p = .00$; CFI = 0.96; RMSEA = .08; close fit test $p = .18$; standardized RMR = .09), but fit the LASIK informational message moderately well ($\chi^2(24) = 36.01$, $p = .06$; CFI = 0.97; RMSEA = .11; close fit test $p = .03$; standardized RMR = .09). The two factor solution suggested by the exploratory factor analysis did not fit either message well, nor did a one factor solution.

The relatively good fit of 3-factor model to the LASIK informational message is consistent with the manipulation checks indicating that it read more like a story and was more enjoyable (characteristics of a narrative) than the GMO informational message. The LASIK informational message may have been perceived as a "hybrid," evoking elements of transportation and subsequent reflection.

Response to Reflection items: Comparison of Narratives and Information. I created composites for each factor identified in the analyses of the narrative messages for both the narrative and informational messages. I performed an independent samples t-test comparing the factor composites for each message (story and information, GMOs; story and information, LASIK), comparing factor composite averages for each narrative and informational pairing. For the GMO messages, there were significant differences between factor 1 ($X_{narrative} = 5.3$, SD = 1.1 $X_{information} = 4.4$, SD = 1.6; t (152) = 3.8, p = .00), factor 2 ($X_{narrative} = 4.4$, SD = 1.3 $X_{information} = 3.7$, SD = 1.3; t (152) = 2.7, p = .00), factor 3 ($X_{narrative} = 4.7$, SD = 1.4 $X_{information} = 3.9$, SD = 1.6; t (152) = 3.5, p = .00), the reflection composite ($X_{narrative} = 4.8$, SD = 1.1 $X_{information} = 3.9$, SD = 1.4; t (152) = 3.9, p = .00), and transportation ($X_{narrative} = 5.0$, SD = .9 $X_{information} = 3.6$, SD = 1.1; t (152) = 9.0, p = .00).

For the LASIK message, there were not significant differences between message type on any of the factors (factor 1 (t (151) = .25, p = .81), factor 2 (t (151) = -.12, p = .90), factor 3 (t

(151) = 1.7, p = .1, composite (t (151) = .85, .4). The lack of difference between the LASIK narrative and informational messages in terms reflection responses is, again, consistent with the manipulation checks indicating the informational message read more like a story and the relatively good fit of the factor structure for both message formats; subsequent comparisons of the LASIK informational message are treated with caution.

Persuasion-related Outcomes: Comparing Narratives and Information-based Messages. I examined whether format has an influence on level of persuasion by conducting independent samples t-tests comparing the mean differences between narrative and informational format messages on the dependent measures. There were significant differences between the narrative and informational GMO story on 2 of the 4 dependent measures; participants in the narrative condition were significantly more likely to believe that exposure to GMO foods can have harmful consequences ($X_{narrative}$ = 5.4, SD = 1.2 $X_{information}$ = 5.0, SD = 1.2; t (152) = 2.3, p = .02) and support tighter controls on GMO food labeling ($X_{narrative}$ = 5.6, SD = 1.3 $X_{information}$ = 5.3, SD = 1.2; t(152) = 1.9, p = .06), but did not differ significantly in their belief that GMO foods are common ($X_{narrative}$ = 5.8, SD = 1.2 $X_{information}$ = 5.6, SD = 1.3; t(152) = 1.1, p = .28) or in their attitude toward eating GMO corn ($X_{narrative}$ = 3.2, SD = 1.1 $X_{information}$ = 3.4, SD = 1.0; t(152) = -1.6, p = .11). I created a composite measure of all the message-related beliefs, and the means on the composite differed significantly between the message formats ($X_{narrative}$ = 5.4, SD = .8 $X_{information}$ = 5.1, SD = .8; t(152) = 2.5, p = .01).

Next, I examined whether there were significant differences between the narrative and informational LASIK story. There were no significant differences on any of the dependent measures; participants in the narrative condition did not differ from participants in the information condition in terms of overall attitude toward LASIK (t (151) = -.79, p = .45),

consideration of the procedure, if one were a candidate (t(151) = -1.1, p = .25), likelihood of

recommending LASIK to a friend (t(151) = -.89, p = .37) or in their belief that benefits from

LASIK surgery are worth potential risk factors (t(151) = -.23, p = .82). I created a composite

measure of the message-related attitude items, which did not different between the message

formats (t(152) = -.9, p = .37).

Persuasion-related Outcomes: Comparing Narratives and Information-based

Messages' Mediated Relationships. I used AMOS 20 using a maximum likelihood algorithm to

examine the mediated relationships in the two (narrative vs information) conditions; specifically,

I examined whether the reflection composite mediates the effect of transportation on the story-

consistent belief composite. I used an asymmetric bootstrap test of mediation (Preacher and

Hayes 2008; Zhao, Lynch, and Chen 2010) using bootstrapped percentile and bias-corrected

confidence intervals for indirect effects to examine the mediated relationship.

I conducted separate analyses on the different message conditions. I first examined the

relationships for the narrative GMO story. The 95% confidence interval for the indirect effect of

transportation on the attitude composite [CI = .02 to .35, b = .18, SE = .10] did not contain 0,

suggesting that reflection operates as a mediator of the relationship between transportation and

story-consistent beliefs. Additionally, the direct effect of transportation on the composite was not

significant (b = .21, SE = .13, p = .11), in contrast to the partial mediation found in study 2. I

repeated these analyses with the individual factor composites. The relationship between

transportation and the dependent composite is mediated by factors 1 [.06, .40, b = .24, SE = .10]

and 2 [.01, .16, b = .06, SE = .04], but not by factor 3 [-.07, .20, b = .06, SE = .08].

I then examined the relationships for the informational GMO message. The confidence

interval for the indirect effect of transportation on the attitude composite contained 0, (CI = -.04

to .41, $b = .18$, SE = .11), suggesting that reflection does act as a mediator in the context of an argument based message.

I repeated the same analyses for the Lasik messages. In the context of the narrative, the 95% confidence interval for the indirect effect of transportation on the attitude composite [CI = .10 to .46, $b = .28$, SE = .10] did not contain 0, suggesting that reflection operates as a mediator of the relationship between transportation and story-consistent beliefs. Again, the direct effect of transportation on the composite was not significant ($b = -.16$, SE = .16, $p = .61$), in contrast to the partial mediation found in study 2. I repeated these analyses with the individual factor composites. Again, the relationship between transportation and the dependent composite is mediated by factors 1 [.02, .40, $b = .38$, SE = .11] and 2 [.06, .25, $b = .13$, SE = .05], but not by factor 3 [-.09, .14, $b = .03$, SE = .07].

Finally, I examined the relationships for the informational Lasik message. The confidence interval for the indirect effect of transportation on the attitude composite again contained 0, (CI = -.01 to .29, $b = .12$, SE = .07), suggesting that reflection does act as a mediator in the context of an argument based message.

4.9.3 Discussion.

The aim of study 3 were threefold; first, I explored whether the factor structure identified in study 2 captures the patterns of response to transportation into other narratives. Second, study 3 compared how individuals respond to non-narrative (argument-based) messages in the interest of discriminant validity. Though argument-based messages lead to changes in beliefs and attitudes, they do not persuade through transportation, as narratives do. Finally, study 3 explored the role of reflection in the process of narrative persuasion; does it serve as a mediator between transportation and endorsement of story consistent beliefs?

Factor Structure. The exploratory and confirmatory factor analyses indicate that the factor structure from study 2 is generalizable across two other narratives; the three dimensions of general reflection, reflection on the world and the self, and emotional reflection characterized responses to transporting stories. An exception is the performance of item 11 ("The story reminded me of some of my personal experiences"; part of factor 2) which had crossloadings on factor 3 for the LASIK story. The personal experiences in the context of the LASIK story were highly emotionally-based, which might explain the cross-loading with the emotion factor.

Taken together, the confirmatory factor analyses, differences within subjects for the narrative messages on mean factor scores suggest a story by factor interaction, such that the relative weight of each factor may differ based on story content. This parallels the factor performance and actual use of Green and Brock's transportation scale; though they conceptually posit 3 distinct factors, the items rarely load in a "clean" manner. In practice, researchers combine the scale into one aggregate measure of "transportation." This suggests that researchers may want to conduct their own factor analyses for the reflection scale to explore responses to idiosyncratic stories, or mirror researchers' use of Green and Brock's transportation scale and use an overall composite measure.

Comparison with Arguments. Overall, the exploratory and confirmatory factor analyses of the informational messages indicate that factor structure characterizing reflection following processing of an argument-based message differs from that following reflection on a narrative message. These two processes are likely to overlap somewhat; considering a "takeaway message" can occur in response to all messages regardless of format. However, as indicated by comparisons of mean differences on each of the factors, participants appear to consistently reflect more on how they *felt* in response to a narrative.

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In the context of the GMO messages, there were significant differences on each factor; participants who read the GMO narrative were more likely to reflect in the manner captured by the reflection scale than the participants who read the argument-based messages about the GMOs. In contrast, there were no significant differences in terms of mean scores on the different reflection factors between participants who read the LASIK narrative or argument-based messages. This is consistent with responses to the manipulation checks indicating the informational message was perceived more as reading like a story than the other (GMO) informational message, the relatively good fit of the factor structure for both message formats, and no differences between the narrative and argument-based messages on responses to the dependent measures. Though the argument-based message was less transporting than the narrative, it is not the case that there was *no* reflection. This suggests that the argument-based message may have been perceived as a "hybrid," evoking elements of transportation and subsequent reflection. This poses the question for future research: what format features prompt narrative processing?

An alternative possibility is that, while people always reflect (in the way it has been conceptualized in the present work) in response to narratives, it may also occur in response to certain types of arguments. Emotionally-laden topics may either overwhelm the influence of format, or prompt recall of personal experiences in the form of stories, which may then lead to this process of reflection. Again, future work remains to explore this question.

Reflection's Role in Persuasion. The overarching aim of the present work is to answer the question of *how* transportation leads to changes in persuasion. As such, an important question is whether the developed measure of reflection mediates the relationship between transportation and persuasion-related outcomes. The analyses in study 3 found, across two different stories,

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indicate the reflection composite mediates the relationship between transportation and an overall attitude in response to a narrative message. This mediated relationship is not present in response to an argument-based message. The similar levels of endorsement of story consistent beliefs between the two types of messages indicates that both types of messages are persuasive, but the differences in terms of reflection's operation as a mediator suggests that stories and arguments persuade via different mechanisms. This is evidence of the discriminant validity of the construct of narrative reflection.

In study 2, factor 1 and factor 3 mediated the relationship between transportation and endorsement of story-consistent belief, but not factor 2. In the present study, factors 1 and 2 served as mediators, but not factor 3, across both stories. Again, a story by factor interaction seems relevant, such that the relative weight of each factor may differ based on story content. The three factors also are unlikely to have equivalent relationships with different types of story-related beliefs. Beliefs extracted from a story can range in their level of specificity and emotionality. Though a participant may have reflected on her emotions, as captured by factor three, this may have influenced story-related beliefs not measured; the cognitive nature of the measured beliefs may relate more directly to factors 1 and 2.

Overall, however, the analyses suggest that the reflection composite measure plays a mediating role in the process of narrative persuasion, although the mediating roles of specific factors are contingent on additional antecedent factors such as story content.

4.10 General Discussion

A body of work indicates that people learn from and are persuaded by stories through a mechanism commonly termed "transportation." The present work represents an effort to step

beyond current understanding and develop a more complete picture of the narrative persuasion process; *how* does the experience transportation change beliefs?

Consistent with previous work suggesting a process following transportation, this essay conceptualizes "reflection" as an additional step beyond immersion in a story, linking the story world with the "real" world, which then leads to changes in beliefs and attitudes. This work represents an effort to conceptually define and measure this process of reflection as it occurs in response to a health-related narrative.

4.10.1 Reflection

I used an open-ended elicitation process to identify content elements of reflection, from which 3 different factors emerged. The first is a general factor, related to amount of thinking or considering the takeaway message of a story. This factor captures depth, or degree. The second factor relates the story content to oneself and to the experiences of others that one knows. This factor represents the translation of what one has experienced in the story world into the "real" world. The third factor pertains to consideration of the emotion elicited by the experience of transportation into the narrative. This factor denotes the process of using "emotion as information" – what the emotion elicited by the narrative means for how one feels about the "real world." These three factors correspond to the scale developed to measure the process of reflection

4.10.2 Measuring Reflection and Predicting Persuasion

An empirically driven scale development approach (study 2) resulted in a 9 item scale with 3 factors. This factor structure replicated in study 3 in response to two different narratives, and did not characterize responses to argument-based messages. The aggregate measure of the scale predicted the participants endorsed story-consistent beliefs.

Though this reduced scale functions adequately, a longer version of the scale (16 items) is more theoretically comprehensive and has empirical support for its ability to assess the three factors that represent reflection. The longer scale may also provide more stable measures of the individual factors. The predictive ability of the reduced scale's individual factor measures was not consistent across the studies (i.e., in study 2, factor 2 was not related to persuasion-related outcomes, whereas factor 3 was not related in study 3), which may be due in part to the instability of the reduced scale.

4.10.3 Limitations and Future Directions

The present work was conducted in the context of health. This area was selected because of previous work suggesting that reflection is a relevant process in this context, as well as the potential for the use of this construct in health-related behavior change efforts. The process of reflection should be explored in other contexts; the nature of reflection may differ as a function of the type of narrative. For example, historical fiction and dramatic entertainment also lead to changes in beliefs, but the factors identified in the present work may not characterize the nature of reflection in response to transportation into these types of narratives.

The present work also uses several similar narratives written in the third person. Additional work should validate the developed factor structure in response to narratives that differ by modality as well as perspective (i.e., first person narratives). For example, a narrative written in the first person ("I") may enhance the amount of reflection on the self. Visual narratives may *reduce* the amount of reflection relative to their written counterparts because of the self-paced nature of reading, as well as readers' tendency to create mental representations of the narrative world that are already tied to their own world – both of which may facilitate relation of the narrative to the world around the audience member.

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The current work did not specify or measure participants' goals in reading the narrative stimuli, which may influence the nature of reflection. Future work should evaluate the role of goals and paratext (fact or fiction label) on reflection. Though work in the area of narrative persuasion indicates these variables do not influence transportation, they are likely to influence the nature and extent of reflection. For example, a reader who is told that a narrative is fiction, or approaches a narrative with the goal of entertainment may be equally transported as a reader who believes that a narrative is factual, or approaches a narrative with the goal of learning – the difference may manifest when they emerge from transportation, and make sense (or not) of what the story means for *them*.

Finally, skepticism was initially identified as a component of reflection, but removed from the conceptualization during the scale validation process. A question that remains to be explored is how skepticism moderates the process of narrative persuasion. Suspension of disbelief has been identified as an important precursor to transportation, but elements of skepticism may arise at any point during or after processing the narrative. Future work should explore what elements prompt skepticism, and how the timing of cueing influences level of reflection and subsequent persuasion.

Overall, the area of narrative persuasion contains many areas that remain to be studied. The process of reflection represents one such important and relevant topic whose exploration would advance the field and understanding of persuasion, in general.

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APPENDIX A: ESSAY 2 STUDY 1 STIMULI

Asics Running Shoe picture from the epinions.com site reviewing the Asics Gel Pulse (http://www.epinions.com/review/Asics_Gel2130_Running_Shoes_for_Women/content_476718 796420), used under fair use, 2014.

Informational Stimulus

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Write a Review
Sort by: Date Rating

by
1/15/2012

Asics GEL-Pulse™

Specifications:
Weight: 18.4 oz.
Price: 109.99 MSRP
Available in Men's and Women's sizes

Satisfaction ratings on a scale of 1 to 10.

Overall: 8.4
Comfort: 9
Cushioning: 7
Weight: 9
Waterproof: 10
Appearance: 7

Narrative Stimulus

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Asics GEL-Pulse
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Write a Review
Sort by: Date Rating

by
1/15/2012

I've never been a big runner, but I recently bought tickets for a spring break cruise and decided that walking to a pizza place a few blocks away would no longer cut it as my main form of exercise.

I was running on a sidewalk after a long rain, and some teenagers came bolting down the road in a beat-up Civic. They went out of their way to drive in a big puddle beside the sidewalk, making a mini-tidal wave of water, soaking me from the waist down. (If only they would have come back for a picture, I would have gone ninja!)

Anyway, disgruntled though I was, I finally got a chance to test one of the features proudly claimed in the Gel-Pulse ads – they claim to be entirely waterproof. I'm happy to report that, despite my soaking lower body, my feet remained toasty and dry!

They are adequately padded in terms of cushioning and have arch support in all the right places, so I'd say that they are excellent in terms of comfort. And boy, these shoes truly are light as air. My only complaint about the shoe so far has been the occasional rubbing of the tongue against my ankle, but I think that this is usually due to me tying my shoes wrong and getting the tongue tangled up in the laces, so I don't think that anyone else would find this to be an issue. On the rare occasions that I do notice it, after five minutes or so I don't feel anything.

I think that the bright blue and silver colors make for a fun looking sports shoe, with a classic shape. Not that appearance is really that important of a feature in a running shoe, but I must admit I do like how they look.

My overall thoughts: These shoes are well worth the $109.99 price tag, for their lightness, comfort, and waterproofing, especially if you live in an area populated by mischievous, puddle-splashing teenagers.

APPENDIX B: ESSAY 2 STUDY 1 MEASURES

On the following page, you will see a consumer's review of a new model of running shoe. Please read this review carefully.

<Informational or Narrative review here>

The following questions pertain to your perceptions of the running shoe. There is no right or wrong answer.

How likely are you to try the Asics GEL-Pulse shoe?

[1] Not at all likely – 7 [Extremely likely]

How persuasive in this review?

[1] Not at persuasive – 7 [Extremely persuasive]

How credible is the source of this review?

[1] Not at all credible – 7 [Extremely credible]

How informative is this review?

[1] Not at all informative – 7 [Extremely informative]

How much did the review read like a story?

[1] Not at all– 7 [Extremely]

How much did you create mental images while reading the review?

[1] Not at all– 7 [Extremely]

How much were you "transported" (felt the sensation of being somehow elsewhere) by the review?

[1] Not at all– 7 [Extremely]

How much emotion did you experience while reading the review?

[1] None at all– 7 [An extreme amount]

How much did you enjoy reading the review?

[1] Not at all– 7 [Extremely]

How would you rate the overall quality of the product/service described in the review?

[1] Extremely negative – 7 [Extremely positive]

Description of item under review for fair use: Matteo R.'s photo from the website www.yelp.com; Review of the restaurant "Barboncino," used under fair use, 2014.

Novice condition instructions:

Casey Jones is a social worker, but regularly writes in a personal blog about a variety of topics. The following page displays an excerpt from the blog site. Please read the post entirely, as you will be asked about your reactions to whole post.

Expert condition instructions:

Casey Jones is a trained food critic who writes about restaurants in a well-known metropolitan area. The following page displays an excerpt from a site where many of the reviews are posted. Please read the post entirely, as you will be asked about your reactions to whole post.

Narrative blog post:

Pizza Supreme 1/17/2012 3:35 PM

Usually a place that has been open since 1958 has built up thousands of loyal customers in the process. I'd bet that they would all swear it's the best of the best. So it's hard to argue with 54 years of success.

Not me. I don't care if you're in business 100 years. After all, I've had around 30 years of pizza-eating experience, so you'd better bring your A game when you hand me a slice of pizza.

I took a drive out to Pizza Supreme last week and spent a considerable amount of time talking to the owner, Domenico DeMarco, 71. I ended up learning a lot about the 150 or so pizzas he makes a day, such as cooking the pies at 750°F for five minutes; the use of Israeli basil and Italian flour.

I walked around the place before ordering, taking in the ambiance, and realized how cozy and different it feels from a typical pizza joint. I noticed the high, beamed ceiling, and the walls of contrasting beige and brown woods with textural, just-so wear-and-tear. I observed that each of the tables is a bit different, one constructed from lacquered thick light-colored planks, another from dark, rough oak. Everything has the feeling of being worn in. An igloo-shaped, white-tiled pizza oven from Naples smolders at the far end of the restaurant, and that's where Domenico stands, assembling each pizza.

What lingers in my mind after a meal at Pizza Supreme isn't the homemade cheese or the tomato sauce, both of which are tasty, though not good enough to travel 30 minutes for, like I did. It's the crust that left me salivating—a stretchy, bubbly, char-spotted pillow of a bread, the thought of which made my stomach growl days later.

The pies are about 12 inches across, with a puffy, soft crust and moist, molten center, but they're not goopy or underdone: Though the tip sags and drips tomato sauce and cheese, which prompted me to use my knife and fork for the first half, but then I picked it up about halfway through. And again, I think that the crust is the most delicious part, pulling and stretching under your teeth, with char to give it a woodsy flavor.

I went with one especially hungry friend, so we decided to order two pizzas to share. We went classical with the first—simple margherita, where the basic ingredients can shine through. I was a doubter of The Special, which meant that I had to order it. The idea of a savory pie topped with ham and then finished off with some spicy honey didn't sound appealing and reminded me of scary salty/sweet combinations like the McGriddle. I'm glad I took the plunge; it's one of the best, new combinations I've tasted on a pizza in a long time.

I left happily stuffed and ready to digest on my ride home. I guess 54 years of experience does mean something, after all.

Informational blog post:

Pizza Supreme 1/17/2012 3:35 PM

- Open since 1958

- Owner Domenico Demarco, 71, makes around 150 pizzas by hand a day. Cooks them at 750 degrees for about 5 minutes

- Uses quality ingredients like Israeli basil and Italian flour, and a pizza oven imported from Naples

- Cozy ambiance, high, beamed ceiling, unique tables

- Delicious sauce and cheese, but the best part is the chewy crust

- Pies are 12 inches across, moist without being underdone; a knife and fork helps with eating

- Tried the margherita and the Special (ham and spicy honey) – both were tasty

- Overall eval: give it a shot!

How persuasive is this blog post?

[1] Not at all persuasive – [7] Extremely persuasive

How likely are you to try Pizza Supreme?

[1] Not at all likely – [7] Extremely likely

How much do you like Pizza Supreme?

[1] Not at all – [7] A lot

How much do you like Casey Jones?

[1] Not at all – [7] A lot

How credible is this review?

[1] Not at all – [7] A lot

How much of an expert is Casey Jones when it comes to pizza?

[1] Not at all expert – [7] Extremely expert

How similar are you to Casey Jones?

[1] Not at all – [7] Extremely

How much does this post read like a story?

[1] Not at all – [7] Extremely

How informative is the blog post?

[1] Not at all – [7] Extremely

What is Casey's evaluation of Pizza Supreme?

[1] Extremely negative – [7] Extremely positive

How long was the blog post?

[1] Not at all long – [7] Extremely long

How often do you read consumer reviews?

[1] Not at all – [7] A lot

How much did you create mental images while reading?

[1] Not at all – [7] A lot

How much were you "transported" (i.e., felt the sensation of being somehow elsewhere) while reading?

[1] Not at all – [7] A lot

How much emotion did you experience while reading?

[1] None at all – [7] A lot

What is your gender?

[1] Male [2] Female

APPENDIX E: ESSAY 2 STUDY 3 STIMULI

Positive Information Utilitarian Reviews

1. Lexmark KL2000 Printer:

PROS:
- Fast, fast, fast
- Great, very professional looking print quality
- 3 connectivity options including WiFi
- Automatic duplexer
- Supports Windows XP/2000/Vista/7, Mac OS X, and various Linux distros
- Good looking, solid construction
- Great price ($50) and value

     - "Economy" mode saves ink

CONS:
- Slight curl for duplex printouts
- WiFi limited to 802.11b/g

2. PIXMA MP495 Printer:

Document Printing:

-The MP495 is a very competent document printer with all the features you'd find in any inkjet printer.

-Paper loads from the back, so it's a bit more intuitive which side of the paper will be printed on, but it also means you need more space heightwise.

Photo Printing:

-As a photo printer, the MP495 is both fast and high quality. The 'Photo Paper Plus Glossy II' sample paper outperformed some HP photo paper I had.

-The MP495 outperformed another HP photosmart 385 printer I have in both speed and quality. So I am quite pleased with the performance here as I find this to be one of the major draws of this device.

Scanning:

-In a scanner I look for speed, image quality and usable software. I'm quite pleased with the MP495's scanner capabilities.

-From initialization to scan completion took approx. 20 seconds, which I find adequate.

-There's a scan button on the printer, but pressing it doesn't do anything if the printer is hooked up via WiFi.

3. HP Laserjet 6700 printer:

The Laserjet 6700 is a very functional printer with a set of generally positive qualities:

- The scanner is both quiet and fast

- The software is adequate. There's a utility for managing your scans and OCR text conversion and all that good stuff.

- HP boasts an automatic scanning feature that automatically detects the type of document being scanned. I tested it out and it seems to work well as far as being convenient. Included with the software is "MyPrinter" utility that allows you to connect to the printer and configure various options.

- This printer is a very standard document printer with all the features you'd find in any mid-range inkjet printer.

- The $55 price is completely reasonable. On Amazon, the ink for this printer seems to run around $11 for Black and $12 for Color.

Overall, I'd recommend this printer for an everyday-type of printer.

Negative Information Utilitarian Reviews

1. Epson DL400 Printer:

- It prints fast, and scanning and copying are simple.

- When I print an address on a standard #10 envelope, the print is likely to smear, particularly in the return address. Result is unprofessional-looking envelope.

- Uses too much ink. Printer tells me the cartridge is "empty" at least 1 week before it actually is. Printer emptied an ink cartridge I never used in about 4 months.

- "Maintenance cycle" seems to slowly drain ink whether I am printing or not.

- The local Office Max store doesn't refill HP ink cartridges, so my ink costs are higher than HP ink.

- Slow overall print time

2. Lexmark XD 300 Printer:

 - The price is a reasonable $50.

- This printer is very slow per page, and runs an odd cycle of nothing after nearly every printing.

- It sounds like it is processing a page or something, but isn't printing.

- The factory installed color cart lasted for 4 pages. I don't know if this printer uses color ink to print black pages or what happened, but having been set to 'greyscale' I thought I would get some time out of it.

- The printer will not print any pages if the color ink cart is empty. It showed an error message that said to call Canon Customer Support.

3. HP Laserjet 6700 Printer:

The printouts look good and the machine certainly has a lot going for it for such a low pricetag, but there are a few caveats:

 1.) It feels cheap. It feels pretty flimsy, and the paper tray and other moveable parts seem pretty fragile.

2.) It takes a while to set itself up before printing a single sheet. It's definitely not instant printing. That being said, when it does start printing, it prints quickly. You just have to listen to 5 minutes of whirring and clicking before that happens.

3.) It was extremely difficult to figure out how to set up the wireless printing based on the instructions enclosed.

4.) It's shiny and black and shows every smudge and dust particle.

5.) The scanner software is a little clunky. I'm sure it's adequate, but if you want scanner software that allows you to do a lot to manipulate an image right in the software, this isn't for you. It will rotate and crop an image. Beyond that, it's easier to just export and do what you need to do in another program.

Positive Information Experiential Reviews

1. Ben & Jerry's Late Night Snack Ice Cream:

- Good consistency, good amount of mix-ins

- The components of this ice cream: Vanilla Bean Ice Cream, Salty Caramel Swirl, Fudge Covered Potato Chip Clusters

- Nutritionally, pretty terrible: Calories 1080; Total Fat 60; Total Carbohydrate 124; Protein 16. So as you can imagine, it tastes delicious.

- Same price as other Ben & Jerry's ice creams

2. Lindt 70% Dark chocolate:

What it is: Lindt makes high-quality chocolate from just a few simple ingredients. This particular bar, 70% Cocoa Intense Dark, is 3.5 ounces of chocolate in a thin bar.

Size: Inside the wrapper is the chocolate bar, which is sectioned off into ten 1.75"ish squares. These squares are too large for one bite.

Texture: This is a smooth chocolate, and doesn't contain any other flavors than just cocoa. This is not a soft chocolate, but isn't too hard to bite with the teeth.

Flavor: The higher percentage of cocoa, the more different it tastes from regular dark chocolate (like Hershey's Special Dark). Some might describe the flavor as bitter, but I think it has a unique taste.

Ingredients: Chocolate, Sugar, Cocoa Butter, Natural Bourbon Vanilla Beans Overall Opinion A good buy, even if a bit pricey

3. Cadbury Intense Dark Chocolate:

- This bar was 3.6 ounces and made of 80% cacao.

- Ingredient: Nothing fake in the ingredients.

- Packaging: Very bold and eye catching design. Jumped out more than other bars

- Taste: Intense, strong; what you would expect from quality dark chocolate

- Pet Warning: Chocolate is toxic to dogs and cats, and the higher the percentage of cocoa, the more toxic it is; so keep this completely out of your pets' reach.

- Cost and Availability: I found this on sale for $1.50. The normal price was around $2.50 for a 3.6 ounce bar.

- Made in Britain, so it is technically imported chocolate.

Negative Information Experiential Reviews

1. Brookside Dark Chocolate Covered Pomegranate Seeds:

- Decided to order from amazon because they were on sale; costs $17 plus shipping for six large boxes.

- The chocolates arrived in terrible shape; flaky, dry and truly tasting noting like what they should.

- There was no difference in taste between the chocolate outer shell and the inner fruit core, it all tasted like sugary cardboard.

- On the plus side, moderately healthy

2. Edy's fat free chocolate vanilla ice cream:

- Halfway in between a chocolate and vanilla ice cream; vaguely "chocolate flavored."

- Has an artificial taste and sweetness, a little chemically charged. The ingredient list revews why (fake sugar, chemical sounding names)

- Tends to 'crystallize' easily in the freezer and ends up turning into an inconsistent mess.

- Decently priced at $4.

- A healthy option for dessert, but not the tastiest.

3. Scharffen Berger Mocha Chocolate Bar:

- This is a chocolate bar of dark chocolate with small bits of coffee beans in it.

- The dark chocolate has a muted flavor and the coffee is an overpowering, strong taste. Bad balance of flavors.

- This bar uses GMO soy lecithin and is not gluten free.

- Scharffen Berger is an American company founded by two California men, so it sounds like they are trying to "pose" as European.

- The price is average at $2.50 a bar.

Positive Narrative Utilitarian Reviews

1. Brother KR4033 Printer:

This high quality Brother product has altered my perception of the world. I never thought it possible - nay, the concept had remained unimaginable to me - that a young college student of my means could enter the world of duplex laser printing. Brother has produced, for the poor wretched masses of this world, a printer which will print a piece of paper, PAUSE, suck that paper BACK IN, and THEN print the other side. When you have to print out a packet of notes that is 24 pages long, you come to class a lighter and richer man.   While I only have had my life changed by the wireless-duplexing magic of the 2270DW for a few months now, I have had an

older work of Brother's for several years and have been incredibly supportive of the company's effort to bring me cheap, reliable, unjammable printing products. I almost feel the urge to go out and start collecting all of Brother's personal-sized laser printers.   Almost.

2. HP KL9844 Printer:

I am a homeschooling mother of 3, and I print a lot! I decided when my Lexmark printer (was a gift) ran out of black ink I would buy a new printer because Lexmark ink is too expensive and runs out too quickly. I decided on this printer because it got decent reviews on print quality. I'm not concerned about photo printing, because I use another service for that--again, with kids, you end up taking a ton of pictures! I like the ease of use of this printer, and I like that it prints fairly quickly. I was a little concerned about the wireless setup because I'm not a technology person and I've had experiences trying to set up wireless features before that were a bit confusing. I did not find this to be the case! I found that once I unwrapped the printer, installed the ink and put the cd, it started up and practically set itself up.

3. Canon EQ4500 Printer:

I got this printer from my son as a Christmas gift. I set it up on December 26th - it didn't work. Amazon had sent a defective unit. I was really frustrated. I figured it would be weeks before I had a working printer again. I emailed Canon explaining the situation. Usually a company tells you it'll be two or three business days before they reply. This was a holiday weekend, so I didn't expect much.

The next morning I checked my email. There was a rather lengthy email from Canon explaining that I was eligible for a warranty exchange, that they would pay shipping charges both ways. I emailed Canon back saying I wanted an exchange, but I didn't expect much. Maybe in a month I would get a new printer. Well, was I surprised! The next day I got another email from Canon telling me my new printer was on its way.

Despite the initial disappointment, I have to say that this printer is a quality product. It took me literally two minutes to set up the wireless conection. It prints quickly and quietly. I like the look of it, it seems pretty solid and has a glossy black finish; overall, I am very happy with it.

Negative Narrative Utilitarian Reviews

1. Lexmark K400 Printer:

I have owned this printer now for over a month and I want my old printer back. While it is nice that it is wireless and can print regular documents fine, just don't try to do anything else. I have tried several times to print black and white .jpeg pics and PDF documents (such as a resume). Every time I print those type of documents they come out grey and white instead of black and white. I have tried adjusting the settings and even called Canon for help. They were very condescending and unhelpful, generally pretty terrible customer service. I would not buy

another one of these printers. I bought it because it was on sale, and I guess you get what you pay for.

2. Epson YL 700 Printer:

I bought this printer to replace an hp which worked fine, I just hated the cable running across my room as my desk is small and my room too small to manage a larger one. So, being a cash-strapped college student and a sucker for a deal, I bought this product. I managed to install it and connect it to my network, after some difficulty. I even managed to get it to work on my google cloud account.. once. Then, I had an unrelated software compatibility conflict which forced me to reinstall. Long story short, I am now forced to use a cable again. Worse, it didn't reinstall properly and now it's not even working as a default printer option.

The scanner is pretty terrible. I scan documents regularly and often email them, and the only possible way to load them to your computer is as an image (ie, jpg) so to send documents, I am forced to send them as low quality-resolution (I know, because I have seen them printed from the other end) and there is NO changing the options. I have tried.

To the point, I regret ever buying it. So, after a couple of weeks of using this product, I am buying a new printer (and not an Epson) rather than the ink cartridge I would need to continue my relationship with this one. I wouldn't recommend to anyone hoping to use it wirelessly, it's beyond a pain to install, and there's better stuff out there for comparable prices.

3. Canon EQ4500 Printer:

I bought this in October and then got busy at work, so I didn't have time to set it up until early February. The main reason I bought this printer is because of the scanning feature, which I use quite a bit with some of my hobbies. I loaded the software first as instructed, then plugged it in and started scanning. I scanned about 50-75 pages and was moving right along. Then it slowed down; it took 30-45 seconds for one page to go through and the scanning was distorted.

It suggested I discard the image and rescan. I did and it did the same thing. That was a week ago and it hasn't worked since. I can unplug it and when I plug it back in, I can scan 2-5 pages and then it slows down again. I have read some other people's opinions on this product reviews and there were some bad ones, but there were also some good ones. I'm convinced the good ones are written by Canon representatives.

Positive Narrative Experiential Reviews

1. Ferrero Rocher Chocolates:

Ferrero Rocher have been a part of my world since I was old enough to remember them. Christmas day, when I was young we were lucky if we had a chicken for dinner and vegetables from the garden. I would look in the shops and see delicious chocolates such as Ferrero Rocher

but I knew that I would end up with a candy cane or a really inexpensive gift costing pennies. This is why I am thankful so to be in a position to buy these chocolates now, they really are such a fantastic treat.

In terms of how they actually taste: Imagine this- You lift the lid up and off and the smell of hazelnuts and chocolate is released. You start to pull the chocolate out of the gold foil wrapper, which has a brown paper cup underneath. The chocolate is revealed; it is a ball of chocolate with hazelnut chips. You bite into it and notice the crispy crunch of the outside chocolate and hazelnut chips. Then you also get a taste of the soft chocolate that surrounds the hazelnut. Perfection! The combination of the hazelnut and the sweetness of the soft chocolate really compliment each other. Good luck stopping at just one...

2. Ben & Jerry's Late Night Snack Ice Cream:

As a kid, I used to put potato chips in my sandwiches. I also used to put them in my applesauce (don't ask) and I love, love, love dipping salty French fries in my fast food soft serve vanilla. So, when I read that the latest Ben and Jerry's featured flavor ice cream had potato chips, I was instantly interested.

The vanilla bean based ice cream has salty caramel swirl and fudge covered potato chip clusters. Upon opening, the container was full to the top with ice cream and about four potato chip clusters were poking through, a good sign. The smell of the vanilla was toward the Madagascar-pungent side of vanilla; which foreshadowed a bold finish after each bite.   I'll cut to the chase; the potato chip cluster. I was surprised to bite into the fudge-covered chip ball to find the lightness that the cluster had. The texture wasn't dense like I thought it would be. Think of how airy a cheese puff is, but substitute potato chip. Now put a very thin layer of fudge coating on top. The thin layer of fudge let the saltiness of the chip take the lead.

Personally, I could have used a touch more fudge to balance. I thought the fudge got lost a bit among the other bold flavors. However, I know that the fudge served as a function more than anything; to coat the chips and keep them crunchy. I was so happy to discover that the potato chips were, in fact, crunchy! The coating worked! How many times have you tasted something and the "promised crunchy item" was soggy due to it's contact with the other ingredients in the container?

One caveat, just like downing the bag of chips at 12:30am is never a good idea, eating the whole container of ice cream is not advisable. Ben & Jerry's did not skimp on the fat. But you aren't eating ice cream because you are on a diet, you eat it because it puts a smile on your face! And this one does plenty of that.

3. Cones banana ice cream:

Holy moly, Batman, this is some amazing frozen dairy product! It's not gelato, it's not regular ice cream, but an incredible combination, and the result is a consistency that has all of the creaminess of gelato with some of the richness and fluffiness of full-fat ice cream. Pair this dairy combination with artisanal flavor preparations, and you have another ice cream delight right at your fingertips (or tongues).

Walking around the neighborhood after downing some old-school brick oven pizza, I rambled right into this place after seeing the attractive storefront, with its promise of frozen dairy treats. I immediately wanted to try every flavor in the case, but had to put a damper on my enthusiasm and ask for only a couple of tastes lest I get a smackdown for being too demanding a customer. I needn't have worried, because the employee who helped me was friendly and patient as my friend and I worked through several samples.

As others have said, you must at least try the corn flavor. According to the employee, the flavor tastes differently to every person, but to me, it tasted like someone mixed pieces of boardwalk kettle corn throughout a buttery ice cream base. It was very tasty, but I wanted to go with two of the more conventional flavors for my first visit. That was a good choice too, because my scoops of banana ice cream were just fantastic. The flavor exploded in my mouth, and had that great consistency that comes with combining gelato and ice cream recipes. My friend's white chocolate and coffee chip were also described as amazing, with a comment that the coffee was the best coffee ice cream he ever had.

I actually got to chat with the owner as I was eating and he opened right up to me once I showed an interest in his product (and mentioned that I used to work in the ice cream business). It was obvious that he is proud of his product and it shows in very bite. Yes, it is a little pricey ($4 a scoop), but a small scoop can get you far unless you are a big ice cream eater. Give Cones a shot!

Negative Narrative Experiential Reviews

1. Lindt 88% Dark Chocolate bar:

After reading the reviews from other people, I expected something different. Something.... tasty. I like dark chocolate a lot, but this tastes exactly like unsweetened baking chocolate. So, if you have ever tasted baking chocolate and thought, "hey, thats good." Or "hey, I can taste notes of tulips and roses and hints of caramel and berries," then you will like this. Otherwise, save your money and buy something with a little more sugar. I have had 60% cacao and thought it tasted great. Apparently, 88% is just too much concentration for me.

When I tasted it, I gagged a little bit and made the famous sour lemon face, and my daughter started laughing. She thought I was joking in order to hog the rest to myself. So, I did what any good mom would do. I offered the rest to her. But, I grabbed the trash can just as she took a bite, because I knew what was about to happen. She has a much lower tolerance to bitter taste than I do (she is only 7). The black lump came flying out her mouth just as fast as it went in. Now, what do I do with the remaining 11.75 bars of chocolate?

2. Fairview factory vanilla ice cream:

 Back in the day, I may have given this place two thumbs up. But that's before I and tasted ice cream as it should be.

Fairview Ice Cream Factory is located in a spectacular place along the river, with a gorgeous view. Even though it feels a bit touristy, the place itself is cute, kind of like a modern day ice cream parlor. Whenever it's warm out, there's a line. The warmer it is, the longer the line. You definitely need patience. Four flavors are served up - vanilla, chocolate and two other random flavors, usually a butter pecan and strawberry. Clearly not a huge selection.

I went last Tuesday and ordered the classic, vanilla. The taste is creamy but not that creamy. It's edible but if you've had real quality home-made ice cream, you'd know that this stuff is just above average. It's about what you'll find at your local Baskin Robbins, which is a shame because it's their specialty and what they're known for.   My other complaint is it's a tad on the pricy side. As I said, I'm spoiled. Having been to a ton of ice creams shacks elsewhere, I've tasted better, and usually pay $3.50 for enough ice cream to feed a family of 4, not just a scoop.

Now for my personal experience that makes the suspect nature of this fraudulent ice cream place all that much worse: My son had to stay at school an extra 50 minutes so my plan was to take my daughter here while we waited. An Italian ice parlor was right outside the doors of their school, but I assured her we were off to a much better destination with more delicious options. Epic daddy failure and one disappointed kid who now has been promised Italian ice all next week. The people who own this place are clearly capitalizing on the location and don't feel the need to generate a quality product.

3. Breyer's Very Vanilla ice cream:

When I began my illustrious career as an ice cream scooper in college, it wasn't the lines that stretched out the door in the summertime or the people who took ten minutes (and multiple samples) to order that bugged me the most. Instead, it was the occasional person who ordered a scoop of vanilla in a cup. No hot fudge sauce, no sprinkle of nuts, not even a sugar cone on top. I couldn't fathom why someone would satisfy her sweet tooth with something so ordinary in a sea of Oatmeal Raisin Cookie Dough and Coffee-Almond Fudge.   But after some time behind the counter, I realized that vanilla ice cream is more than just the best foundation flavor (better than chocolate, in my opinion). When done right, it has a robust, sweetly nostalgic flavor that needn't be marred by additional ingredients. Maybe my taste buds have grown up, who knows. Unfortunately, far too many brands fail to achieve this.

This is the case with Breyer's Very Vanilla ice cream that I bought last week. I'll be honest, I'm a sucker for a sale, and in addition to being on special at the grocery store, I had a coupon! Happy day! I scurried home with my purchase, excited to dig in, convincing myself that ice cream for dinner is completely justified if it is purchased on sale. I dished out a bowlful, took a

big bite, anticipating the sweet satisfaction that accompanies the slow melt of the stuff on the tongue, and… Disappointment. This is ice cream? Really? Not only was the flavor off (overly sweet – and I'm a sugar monster), the texture was strange. Instead of the smooth, creamy consistency that typically accompanies this wonderful treat, I was saddened by the irregular, ice crystal-y consistency. Maybe it thawed out at some point and was refrozen. Anyway, buyer beware, Breyers Very Vanilla is not in any way related to the dreamy treat that is called "ice cream," and has made me wary of ever buying deeply discounted ice cream again.

APPENDIX F: ESSAY 2 STUDY 3 STIMULUS PRETEST INSTRUMENT

Consumer Report sites such as epinions.com and yelp.com provide a forum for consumers to rate their experiences with products and services and to offer recommendations to fellow consumers. In contrast with the reviews from "experts," these consumer forums are written by consumers and are informal in nature.

We are interested in understanding how you perceive reviews. You will be shown 3 reviews pertaining to a variety of products and services. Please read each review carefully and then respond to the questions following.

<Insert review here: see appendix e)

1. How informative was this review?
      1 (Not at all)   2 (Slightly)   3 (Quite)   4 (Very)   5 (Extremely)

2. How much did this review read like a story?
      1 (Not at all)   2 (Slightly)   3 (Quite)   4 (Very)   5 (Extremely)

3. How much did you identify with the writer of the review?
      1 (Not at all)   2 (Slightly)   3 (Quite)   4 (Very)   5 (Extremely)

4. How credible do you perceive the source of this review?
      1 (Not at all)   2 (Slightly)   3 (Quite)   4 (Very)   5 (Extremely)

5. How long do you perceive this review to be?
      1 (Extremely short) 2   3   4   5   6   7 (Extremely long)

6. Overall, how do you believe the writer of this review evaluated the target product or service?
      1 (Extremely negative) 2   3   4   5   6   7 (Extremely positive)

APPENDIX G: ESSAY 2 STUDY 3 MEASURES

Consumer Report sites such as epinions.com and yelp.com provide a forum for consumers to rate their experiences with products and services and to offer recommendations to fellow consumers. In contrast with the reviews from "experts," these consumer forums are written by consumers and are informal in nature.

We are interested in understanding how you perceive reviews. You will be shown 3 reviews pertaining to a variety of products and services. Please read each review carefully and then respond to the questions following.

<Insert review here: see appendix e)

1. How likely are you to try this product?
   1 [Extremely Unlikely] – 7 [Extremely likely]

2. Overall, all things considered, I view this product as:
   1 [Extremely bad] – 7 [Extremely good]

3. How persuasive is this review?
   1 [Not at all persuasive] – 7 [Extremely persuasive]

4. How credible is the source of this review?
   1 [Not at all credible] – 7 [Extremely credible]

5. How informative is this review?
   1 [Not at all informative] – 7 [Extremely informative]

6. How much did you out yourself "in the shoes of" the writer of the review?
   1 [Not at all] – 7 [A great deal]

7. How much did you create mental images while reading the review?
   1 [Not at all] – 7 [A great deal]

8. How much were you "transported" (felt the sensation of being somehow elsewhere) by the review?
   1 [Not at all] – 7 [A great deal]

9. How much did you reference yourself or your personal experiences while reading the review?
   1 [Not at all] – 7 [A great deal]

10. How much emotion did you experience while reading the review?
   1 [Not at all] – 7 [A great deal]

11. How much did you enjoy reading the review?
   1 [Not at all] – 7 [A great deal]

12. How would you rate the overall quality of the product described in the review?
   1 [Extremely negative] – 7 [Extremely positive]

13. Overall, how do you believe the writer of this review evaluated the target product or service?
   1 [Extremely negative] – 7 [Extremely positive]

14. How much did the review read like a story?
   1 [Not at all] – 7 [A great deal]

15. How representative is (insert product name here) of a product?
   1 [Not at all representative] – 7 [Extremely representative]

16. How representative is (insert product name here) of a service?
   1 [Not at all representative] – 7 [Extremely representative]

17. How utilitarian (functional) in nature is (insert product name here)?
   1 [Not at all utilitarian] – 7 [Extremely utilitarian]

18. How experiential in nature is (insert product name here)?
   1 [Not at all experiential] – 7 [Extremely experiential]

19. How expensive are (insert name of product category)?
   1 [Not at all expensive] – 7 [Extremely expensive]

20. How much experience do you have with the product or service category described in the review?
   1 [None at all] – 7 [A great deal]

21. How often do you read consumer reviews?
   1 [Never] – 7 [Very often]

22. What is your gender?
   [Female] [Male]

APPENDIX H: ESSAY 3, STUDY 1A STIMULI

Social Anxiety Message

"Take, for example, my husband's work barbecue last weekend

I agonized about it for weeks. I had never met his coworkers (it's a new job for him) and I kept thinking that I was going to give everyone a bad impression and screw up my husband's work opportunities. (Yes really, as if I have any effect on his career! Ridiculous right!) These thoughts abnormally consumed much of my time.

The day of the barbecue I must have changed outfits at least five times. Interestingly enough, I ended up with the first outfit I tried on. I obsessed over every detail - my makeup, hair, fragrance, accessories, etc. (In day to day life I'm pretty low maintenance so this is unusual.) In the car on the way to the gathering, I kept fretting and worrying that I would have nothing interesting to talk about. I kept thinking that I would reflect poorly on my husband. I feared the judgments of his coworkers.

When I got to the barbecue I was acutely aware of everyone around me. I was hyper-vigilant to every nuance of their responses to me. I was very self-conscious and over-analyzed every interaction.

After the event, I felt exhausted. In fact, I felt exhausted the whole weekend. I felt like I had run a marathon.

Interestingly, after the event a couple of my husband's coworkers told him how much they enjoyed my company. In their words the consensus was that I was charming, sweet and beautiful. Apparently, they thought he's a very lucky man. So all my worries were for nothing right? So you would think I would learn from this. NO.

This weekend I went through the exact same thing for my niece's going away party. I was the only family member invited by a surprise party thrown by her peers. I was so nervous fearing that I would let her down because her friends would not like me. I felt a paralyzing, overwhelming anxiety. However, at the party a couple of her friends kept teasing my niece and I that we were lying about me being her Aunt and that I was in fact her older, illegitimate sister. I received many other compliments as well. On the way home my husband says to me (knowing that I'm so insecure) "See, everyone always loves you". I say, "Oh, they were just polite."

The point is social anxiety is not based on reality. It is a neurotic, obsessive, irrational fear that can be debilitating and it affects people you probably have no idea that have it! Yes, I generally come across as outgoing and fun and sometimes I really am. But sometimes it's just an act. So you never know how people really feel."

Generalized Anxiety Disorder Message:

"Trying to find the date my life changed has obsessed me since things began spinning out of control. I felt if I could find the exact place and time where the balances tipped I could reach out and grab hold of that Archimedes point and shift the universe back in my favor.

Unfortunately it is not that easy to pinpoint. There are seven years of ups and downs, a hundred moments where I should have, could have and absolutely wished I realized I had a problem and didn't.

It is day three on my internship at the local paper. My body has a built in biological clock, set to annoy me by waking me up every hour on the hour, to make sure I don't sleep through my alarm clock.

The last two nights my girlfriend has been able to get me to go back to sleep by cuddling me when I wake up. I remember thinking look down at her as the sun slowly rose to meet the early hours of the morning that I was the luckiest man in the world, sleeping with her arm over my chest, feeling her pulse syncopating with my heartbeat.

The next night we slept at my place, only I couldn't sleep at all.

My alarm clock goes off.

"Ugh," she says and turns over, pushing the blanket covers off of her back, revealing the silk soft skin from her back and shoulders where her short shiksa blond hair rests in early morning tangle.

"Good morning," I say, noticing my voice is shaky and wondering why.

The alarm clock continues to punch me in the brain.

I get up and go turn off the alarm clock. And I suddenly feel this strength surge of adrenaline in my arm. Like someone injected caffeine into my veins intravenously. My stomach fills with acid and I know I am going to throw up.

Panic.

"Sleepy time," she says. "Have a good day at work."

I don't have the time to tell her anything reassuring.

I run to my bathroom and began emptying my stomach of burning hot yellow bile, trying to catch my breath and find it impossible. The muscles in my stomach tighten and seize like I am in the middle of a push up. My lungs gasp for air. Leg can't stop shaking. Cue more vomiting.

This is not a quiet process and when I enter the room she is looking at me with worry filling her ocean blue eyes. The worry is not simply based on how nauseating it is to hear someone puking their guts out.

"Are you okay?" she asks.

Another injection of coffee directly into my veins. I can feel the adrenaline sliding up from my fingertips up to my elbow to my shoulders to my neck and directly into my brain. I'm running and standing still.

"I'm fine," I say and my voice cracks as I have entered a new and terrifying form of puberty.

My legs shake.

She looks down.

"Twitch much?" she asks and I laugh. Most things can be changed with a few words from her.

She takes my hand and guides me back to bed.

"What's wrong?" she asks.

Before we met, I woke up most mornings with a tightness in my stomach and a terrible urge to vomit up my stomach lining. My roommates Hermit and EMC discovered this upon moving in with me. They briefly considered that I had a secret drinking problem taking into account my early morn retching.

For the first six months of our relationship it went away the second I opened up my eyes and say the most beautiful girl in the world lying next to me.

Only today is not an ordinary day. The season has changed and my mind is experiencing a change in its spectrum of light.

"I don't know," I say and I don't and it scares me and my heart responds beats faster and faster. I tell myself there is nothing to worry about but my inner voice doesn't speak in reassurance but in a panicked tone racing along with my heartbeat. It's angry and shaken and it scares me even more to realize how scared I am.

"Come on babe," she says. "Everything is ok."

I'm experiencing for the first time in my life what I came to refer to as the slide. This is the process of reassuring yourself into utter panic. My hurried voice begging everything to return to normal becomes a preacher of utter and total chaos. Feeling the floor coming out from under me.

"I don't know," I say.

"It's not what we talked about last night," she says. "You know how I feel."

On November 1st, my best friend and former roommate Herman Dagwood moved in with my girlfriend. This had nothing to do with me. His previous slumlord had refused to provide his apartment with heat and it was two months before he was given a functioning refrigerator.

However like anyone in a relationship I didn't go into it without my own fears and insecurities. The last girl I had been in love with fell in love with my childhood best friend. As a result I had an ingrained fear that this girl who I loved more than anything else in the world would do the same with my present best friend.

As I have a strange desire to be aggressively and senselessly honest with the people I love the first moment this feeling began to occur to me I went to my girlfriend in order to explain my fear and move past it. She laughed at me a little and humoured my insanity as she tends to. We kissed and we moved past it.

And I thought I had.

"No," I say. "I was acting ridiculous."

And I was. There is little to no correlation between the two situations. Logically I knew the difference and where my feelings came from.

However at the mention of our discussion yesterday my blood begins to boil in my veins.

I sit down. She rubs my back. Kisses my ear.

It feels like her cool breath is moving through my skin touching my veins and putting out the fires inside me. I believe her and I know what she's saying is true and more than anything I don't want to feel like this.

WHAT'S WRONG WITH ME? WHAT'S WRONG WITH ME?

"I can't go in for work today," I say.

It's the third day of my internship. Six months past my 25th birthday. I have no idea what I'm doing with my life and it scares me half to death.

"Why?" she asks.

"I don't feel good," I say. "I feel really messed up."

"You can't go to work?" she asks.

"No."

As if pleased with my response my body decides to throw another surge of adrenaline at me. My insides are building a staircase to my brain, increasing the pressure with the roof offering no signs of giving way. I lie back down on my bed, trying to stands still and failing.

"You ok?" she asks.

WHAT'S WRONG WITH ME? WHAT'S WRONG WITH ME?

And she means something different. She kisses my lips and it makes me feel better but it's like the refreshing feel of rain while you are bathing in lava.

"No," I say. "I don't think I am."

"We'll figure it out," she says and kisses me again. "Just relax."

I get up and call my work and tell them I am not feeling well. Next I call my parents and tell them I think something has gone wrong."

APPENDIX I: CATEGORIES USED FOR CODING OPEN-ENDED

RESPONSES IN ESSAY 3

1) Thoughts related to the story topic
    "Social Anxiety is a really common thing"

2) Thoughts related to the characters; their actions, feelings, or motivations
    "I think the character worries too much"
    "This guy needs to go to the hospital"

3) Thoughts related to the "takehome message" or "moral of the story"
    "Bad things can happen to good people"

4) Reminded me of past personal experiences
    "I have done the same thing"

5) Relating the story to my (the reader's) future behavior
    "It made me want to become an organ donor"

6) Relating the story to me (the reader), other
    "It made me think about my own life"

7) Thoughts about what I would do if in the writer's/character's situation
    "I would have been more proactive in calling for a doctor"

8) How the story relates to the "real world"
    "I think this is a really normal thing for anyone to do, especially women"
    "This seems like a terrible way to live your life"

9) Thoughts related to people I know
    "My friend does exactly the same thing"

10) How the story made me feel
    "This story made me feel very sad"

11) How I felt for the characters (sympathy or empathy)
    "I felt sorry for the character"

12) Involvement with the topic (as opposed to the story, itself)

"This story really made me think about organ donation"

13) Skepticism about aspects of the story (characters, realism) or statements in the story
    "The story seemed a bit overdramatic, not very realistic"

14) Thoughts about how the story could have turned out differently
    "If only another doctor had been nearby – it's possible he would have lived"

15) Thoughts related to confusion or making sense of the story
    "I didn't understand what made the character so upset"
    "I just wanted an answer"

0) Other
    "The real life examples made it easier to read."
    "I was just picturing the story"
    "This story was not written well"
    "It was a sad story"

APPENDIX J: ESSAY 3, STUDY 1B STIMULI

Before dawn on her 57th birthday, Lorraine Hawks and her husband, Paul, piled into their brother-in-law Tim Wilson's Lexus in Pelham, New Hampshire, with Lorraine and her sister Susie in the back seat and the men up front. As the two couples drove to the Lahey Clinic in Burlington, Massachusetts, Lorraine and Paul teased Tim mercilessly.

"By 5 o'clock today, you're going to have a Republican liver!" they taunted Tim. "You're going to love Ann Coulter! You're going to love Glenn Beck!"

"No way!" protested Tim, a staunch Democrat. He swore that even with a chunk of his Republican brother-in-law's liver inside him, he'd never be conservative. The foursome joked and laughed during the 45-minute drive to Lahey. At the hospital, the sisters kissed their husbands goodbye, and the men were wheeled into operating rooms, where surgeons would remove 60% of Paul's liver and give it to Tim, who suffered from advanced liver disease.

As Lorraine sat in the waiting room with Susie that May morning two years ago, she prayed her husband's liver lobe would cure her brother-in-law. She prayed for her husband, too, but she was less worried about him, since she says the surgeons had reassured them that while liver donation wasn't without risks, it was safe for Paul, a 56-year-old man in good health.

Neither of Lorraine's prayers came true. Tim died less than a year later, after receiving the transplanted part of Paul's liver. He was 58. Her husband died that very day on the operating room table.

"We walked into the hospital a married couple, and I left the hospital at the end of the day as they loaded my husband onto the coroner's truck," says Lorraine.

Paul Hawks, an electrician for the Florida Department of Transportation, was one of more than 4,500 people in the United States in the past 25 years who have donated a section of their liver while still alive. Death is rare: Besides Paul, three other donors have died since 1999.

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Living organ transplants are a miracle of modern medicine. In all, more than 100,000 people in the U.S. like Paul have donated a kidney, a liver lobe or another body part while still alive to save someone else's life. Most of the time, the surgeries go well. Not only are donor deaths rare, but major complications of any kind are the exception rather than the rule. This makes it all the more difficult for Lorraine to understand why her husband was one of the few who didn't make it.

After her husband was wheeled into surgery, Lorraine, her father-in-law and Susie walked around the block a bit and got a bite to eat in the hospital cafeteria. Then shortly after 1 p.m., about four and a half hours after the surgery began, the coordinator of the transplant team came out to talk to them.

Sitting next to Lorraine, their knees nearly touching and speaking in a near whisper, the coordinator told her that they were having trouble getting Paul's blood to coagulate and that an expert had been called in. Then about an hour later, the coordinator came out again to say her husband was having "irregular heart rhythms."

"She was acting real strangely, and we were so frightened," Lorraine remembers.

The coordinator's cell phone rang, and she answered it. She hung up and rubbed Lorraine's arm, which Lorraine found strange, and told her she'd be back in five minutes.

When she returned, she asked the family to come into a small private waiting room. Lorraine remembers her father-in-law screaming, "Tell me what happened to my son!" But the coordinator wouldn't say anything. The family sat there for about 40 minutes. Then the coordinator asked the family to go into a conference room farther away from the waiting area. "We're looking at each other and said 'this can't be good,' " Lorraine recalls." We walked, crying, holding onto each other."

Suddenly the conference room filled with doctors, counselors and pastoral staff.

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"We tried very hard to save Paul ..." Lorraine remembers one of the doctors saying. She was sobbing so hard she didn't hear the rest of his sentence. Then the surgeon who did Paul's operation, her eyes red and puffy, got down on her knees to speak with Lorraine eye-to-eye.

"I saw her mouth moving, but I couldn't hear what she was saying," Lorraine remembers. "My brain was on fire."

Lorraine stayed with her husband's body until the coroner came to take him away. She says the next day, people from the hospital called her six times, offering condolences and to pay for Paul's funeral. She didn't want to talk to them.

A few weeks later, back home in Tampa, Lorraine read a statement online from the Lahey Clinic's then-CEO, Dr. David Barrett. "Lahey Clinic and its transplant team are extremely saddened by the loss of a gentleman who died while donating a portion of his liver to his relative," Barrett said. "Since the inception of its live donor liver transplantation program in 1999, Lahey Clinic has performed more than 200 of these complex life-saving surgical procedures."

Reading the article made Lorraine feel worse, she says. It still didn't explain why her husband had died.

Then in July, about two months after her husband's death, Lorraine stopped by her post office after grocery shopping to pick up her mail. In her box was a thick envelope from the

Massachusetts Department of Public Health. Inside was a nine-page report with the details of what happened during Paul's surgery. Finally, she thought, her questions would be answered. Finally, she would find out why her husband died.

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The Department of Public Health report gives a rare and gruesome picture of a surgical procedure gone horribly wrong. The department's account is based on medical records, operating room communications and two days of interviews with the attending transplant surgeon and other doctors, nurses and administrators.

After Lorraine and Susie kissed their husbands goodbye, Paul and Tim were wheeled into separate operating rooms. Everything went fine until about four hours into the operation, when a vein that carries blood away from the liver partially tore off and started bleeding. Paul's surgeons immediately called for assistance. More doctors and nurses arrived in his operating room. It was to be the beginning of a 2½-hour fight to save Paul. The partially torn vein came all the way off, and doctors sewed up that tear, but then they noticed bleeding coming from somewhere else. As they searched for the source, a clamp on a vein got knocked off, injuring the vein. Repairing that injury, they noticed more tears. They fixed those tears, all the while giving Paul blood products and drugs to raise his blood pressure.

It seemed like Paul might be getting better, but then he started to bleed from several areas all at once. His heart started to beat very fast. Doctors performed CPR, and when that failed, they cut his chest open, massaged his heart directly and shot drugs into his heart to get it going again. But none of it worked. "The patient had a cardiac arrest secondary to excessive bleeding & could not be resuscitated," the report states.

Paul Hawks was pronounced dead at 3:01 p.m. on May 24, 2010.

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Lorraine read the Department of Public Health report sitting in her car in the parking lot of the Tampa post office. As she read the details of her husband's failed surgery, she wondered whether all the tears and bleeding were anyone's fault, or were they just unavoidable consequences of surgery, inevitable events that statistically speaking happen sometimes, and Paul was just unlucky?

Three other items in the Department of Public Health report raised even more questions. First, she found out Paul had been given a pre-operative EKG, and it was abnormal. It showed he might have had a past heart attack, but then follow-up testing showed no evidence of poor blood flow to his heart.

"I had no idea he'd had an abnormal EKG," she says now. "If I had known, I never would have let him have the surgery." The report doesn't say whether Paul knew about his abnormal EKG or if a cardiologist was called in to evaluate whether his heart was strong enough to tolerate

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surgery. Pamela Johnston, the Lahey Clinic spokeswoman, declined to answer questions about the EKG or about any aspect of Paul's surgery or pre-operative care.

Second, the report pointed out that a special high-speed blood pump wasn't used to give Paul blood. The $20,000 device pumps blood at least three times faster than other pumps. Called a Belmont Pump, it's saved soldiers' lives as they lay massively bleeding on battlefields in Afghanistan and Iraq. Lahey owns a Belmont Pump. At the time of Paul's surgery, it was nearby in Tim Wilson's operating room. But as Paul lay bleeding to death for 2½ hours, no one brought it in to his operating room.

"It's portable," says George Herzlinger, president of Belmont Instrument, which makes the device. "It weighs 27 pounds. You just wheel it over."

Third, the report describes how Paul's surgeons never activated a set of procedures used when a patient is massively bleeding. Called the "Massive Blood Transfusion Protocol," it directs surgeons to call the hospital's transfusion services and activate a set of procedures so a patient who's bleeding profusely can most efficiently get the blood products he needs.

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After Paul's death, staff members questioned whether there needed to be a "higher standard" when evaluating patients with abnormal EKGs. They said it would have been "nice" to have had a Belmont Pump in the room. They educated staff about activating the blood transfusion protocol.

In the end, the Department of Public Health report didn't answer Lorraine's questions as she'd hoped. She still didn't know what had killed her husband. Nearly two years after her husband's death, she still has no peace and no closure.

"DPH does not have a position on what caused the patient's death," Jennifer Manley, a DPH spokeswoman, explained. "Likewise, we don't look at who is to blame for the death."

Most liver donors in the United States have "open" surgeries with a long incision across the abdomen. According to medical records, Paul had laparoscopically assisted surgery, a minimally invasive technique with three very small cuts. The advantage of "lap-assisted" surgery is a much easier recovery for the patient. The downside, surgeons say, is if a patient starts bleeding, it can be harder to find the source, since they can look only through small incisions rather than a very large one.

Dr. Peter Pronovost, a patient safety expert at Johns Hopkins University School of Medicine in Baltimore, describes, "when a surgeon wants to try out a new surgical technique, they can just go ahead and do it," he says. "There's no rule saying you have to tell the patient you're taking out the liver in a different way and this will change the risk profile." A spokeswoman for Lahey declined to say how many laparoscopic liver donor surgeries had been done at Lahey before Paul's operation.

Now, nearly two years after her husband's death, after poring over the Department of Public Health report and her husband's medical records, Lorraine still wonders whether she could have done anything to keep from losing her husband on her 57th birthday. She says there's one thing she knows she would have done differently. She had only enough time off work to fly from Florida to Boston for the surgery itself, so she wasn't there for Paul's pre-operative testing. He did that on his own.

Lorraine knows she may never get all her questions answered about why her husband died that May afternoon. She looks back on the day Paul made the decision to donate part of his liver with a mixture of sadness and pride. It was Thanksgiving Day, 2009, and they were at a Cracker Barrel in Tampa with their two grown sons. During dinner, Lorraine's cell phone rang. When she answered the call and heard Susie crying, Lorraine excused herself to take the call outside.

When she returned to the table, Lorraine told Paul and their sons the bad news. "Tim is ill, and if he doesn't get a liver donation, he'll die," she told them. Getting a liver from a cadaver was out of the question, she explained, since Tim was so sick, he'd never live long enough to get off the waiting list. "My husband in 30 seconds -- no, less than that -- said 'I'll get tested,'" Lorraine remembers." And then our son Joseph said he'd get tested, too. Nobody ever asked them to do it. They just did it." Before Joseph could protest, Paul told his son he'd fly to Boston first to get tested first, and if he wasn't a match, then Joseph could try. That turned out not to be necessary, as the tests showed Paul was a "perfect match," Lorraine says.

Interruption – demographics condition questions presented during story reading:
[First set]

Before you continue, please answer the following questions.

1. What is your gender?

[Male/Female]

2. Please Specify your ethnicity:
[Hispanic or Latino/Not Hispanic or Latino]

3. Please specify your race:
[Native American/Asian/African American/Native Hawaiian/White/Other]

[Second set]

Before you continue, please answer the following questions.

1. Please specify your major:

[Marketing/Management/Finance/Economics/Hospitality/Other]

2. Do you know anyone who has received an organ donation?
[Yes/No]

3. Do you know anyone who has donated their organs via live procedures?
[Yes/No]

[Third set]

Before you continue, please answer the following questions.

1. What is your academic standing?

[Freshman/Sophomore/Junior/Senior/Other]

2. Are you an organ donor?
[Yes/No]

3. What is your political affiliation?

[Democrat/Republican/Other]

Interruption – reflection condition questions presented during story reading:
[Repeated 3 times throughout story]

Please take a moment to reflect on what you are 1) thinking about and 2) feeling right now. Please describe your thoughts and feelings in the box below
[Open ended]

Transportation Scale Questions – All Participants

Please answer the questions below based on your reading experience:

1. While I was reading the story, I could easily picture the events in it taking place
   1 [Not at all] – 7 [A great deal]

2. The story affected me emotionally
   1 [Not at all] – 7 [A great deal]

3. I found my mind wandering while reading the story
   1 [Not at all] – 7 [A great deal]

4. The events in the story are relevant to my everyday life
   1 [Not at all] – 7 [A great deal]

5. While reading, my body was in the room, but my mind was inside the world created by the story
   1 [Not at all] – 7 [A great deal]

6. I had vivid images while reading
   1 [Not at all] – 7 [A great deal]

Reflection Question – All Participants

How did you think and feel about the content of the story, in general?

[Open ended]

Dependent Variables – All Participants

1. Donating organs through a live donor procedure is worth the potential risks involved

   1 [extremely disagree] – 7 [extremely agree]

2. All things considered, I would become a live organ donor

   1 [not at all likely] – 7 [extremely likely]

3. Overall, all things considered, I believe live organ donation is:

   1 [extremely bad] – 7 [extremely good]

4. I learned something about live organ donation from reading this article

   1 [extremely disagree] – 7 [extremely agree]

Cohen, Elizabeth. "Organ donor's surgery death sparks questions" CNN website, April 9, 2012. Website: http://edition.cnn.com/2012/04/08/health/cohen-donor-safety, used under fair use, 2014.

Doctor Causality Message

Before dawn on her 57th birthday, Lorraine Hawks and her husband, Paul, piled into their brother-in-law Tim Wilson's Lexus in Pelham, New Hampshire, with Lorraine and her sister Susie in the back seat and the men up front. As the two couples drove to the Lahey Clinic in Burlington, Massachusetts, Lorraine and Paul teased Tim mercilessly.

"By 5 o'clock today, you're going to have a Republican liver!" they taunted Tim. "You're going to love Ann Coulter! You're going to love Glenn Beck!"

"No way!" protested Tim, a staunch Democrat. He swore that even with a chunk of his Republican brother-in-law's liver inside him, he'd never be conservative. The foursome joked and laughed during the 45-minute drive to Lahey. At the hospital, the sisters kissed their husbands goodbye, and the men were wheeled into operating rooms, where surgeons would remove 60% of Paul's liver and give it to Tim, who suffered from advanced liver disease.

As Lorraine sat in the waiting room with Susie that May morning two years ago, she prayed her husband's liver lobe would cure her brother-in-law. She prayed for her husband, too, but she was less worried about him, since she says the surgeons had reassured them that while liver donation wasn't without risks, it was safe for Paul.

After her husband was wheeled into surgery, Lorraine, her father-in-law and Susie walked around the block a bit and got a bite to eat in the hospital cafeteria. Then shortly after 1 p.m., about four and a half hours after the surgery began, the coordinator of the transplant team came out to talk to them.

Sitting next to Lorraine, their knees nearly touching and speaking in a near whisper, the coordinator told her that they were having trouble getting Paul's blood to coagulate and that an expert had been called in. Then about an hour later, the coordinator came out again to say her husband was having "irregular heart rhythms."

"She was acting real strangely, and we were so frightened," Lorraine remembers.

The coordinator's cell phone rang, and she answered it. She hung up and rubbed Lorraine's arm, which Lorraine found strange, and told her she'd be back in five minutes.

When she returned, she asked the family to come into a small private waiting room. Lorraine remembers her father-in-law screaming, "Tell me what happened to my son!" But the coordinator wouldn't say anything. The family sat there for about 40 minutes. Then the coordinator asked the family to go into a conference room farther away from the waiting

area. "We're looking at each other and said 'this can't be good,' " Lorraine recalls." We walked, crying, holding onto each other."

Suddenly the conference room filled with doctors, counselors and pastoral staff.

"We tried very hard to save Paul ..." Lorraine remembers one of the doctors saying. She was sobbing so hard she didn't hear the rest of his sentence. Then the surgeon who did Paul's operation, her eyes red and puffy, got down on her knees to speak with Lorraine eye-to-eye.

"I saw her mouth moving, but I couldn't hear what she was saying," Lorraine remembers. "My brain was on fire."

Lorraine stayed with her husband's body until the coroner came to take him away. She says the next day, people from the hospital called her six times, offering condolences and to pay for Paul's funeral. She didn't want to talk to them.

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A few weeks later, back home in Tampa, Lorraine read a statement online from the Lahey Clinic's then-CEO, Dr. David Barrett. "Lahey Clinic and its transplant team are extremely saddened by the loss of a gentleman who died while donating a portion of his liver to his relative," Barrett said.

Reading the article made Lorraine feel worse, she says. It still didn't explain why her husband had died.

Then in July, about two months after her husband's death, Lorraine stopped by her post office after grocery shopping to pick up her mail. In her box was a thick envelope from the Massachusetts Department of Public Health. Inside was a nine-page report with the details of what happened during Paul's surgery. Finally, she thought, her questions would be answered. Finally, she would find out why her husband died.

The Department of Public Health report gives a rare and gruesome picture of a surgical procedure gone horribly wrong. The department's account is based on medical records, operating room communications and two days of interviews with the attending transplant surgeon and other doctors, nurses and administrators.

After Lorraine and Susie kissed their husbands goodbye, Paul and Tim were wheeled into separate operating rooms. Everything went fine until about four hours into the operation, when a vein that carries blood away from the liver partially tore off and started bleeding. Paul's surgeons immediately called for assistance. More doctors and nurses arrived in his operating room. It was to be the beginning of a 2½-hour fight to save Paul. The partially torn vein came all the way off, and doctors sewed up that tear, but then they noticed bleeding coming from somewhere else. As they searched for the source, a clamp on a vein got knocked off, injuring the vein. Repairing that injury, they noticed more tears. They fixed those tears, all the while giving Paul blood products and drugs to raise his blood pressure.

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It seemed like Paul might be getting better, but then he started to bleed from several areas all at once. His heart started to beat very fast. Doctors performed CPR, and when that failed, they cut his chest open, massaged his heart directly and shot drugs into his heart to get it going again. But none of it worked. "The patient had a cardiac arrest secondary to excessive bleeding & could not be resuscitated," the report states.

Paul Hawks was pronounced dead at 3:01 p.m. on May 24, 2010.

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Lorraine read the Department of Public Health report sitting in her car in the parking lot of the Tampa post office. As she read the details of her husband's failed surgery, she wondered whether all the tears and bleeding were anyone's fault, or were they just unavoidable consequences of surgery, inevitable events that statistically speaking happen sometimes, and Paul was just unlucky?

Other items in the Department of Public Health report started to suggest that there were actions that the surgeons could have taken to increase Paul's chance of survival, but did not.

First, the report pointed out that a special high-speed blood pump wasn't used to give Paul blood. The $20,000 device pumps blood at least three times faster than other pumps. Called a Belmont Pump, it's saved soldiers' lives as they lay massively bleeding on battlefields in Afghanistan and Iraq. Lahey owns a Belmont Pump. At the time of Paul's surgery, it was nearby in Tim Wilson's operating room. But as Paul lay bleeding to death for 2½ hours, no one brought it in to his operating room.

"It's portable," says George Herzlinger, president of Belmont Instrument, which makes the device. "It weighs 27 pounds. You just wheel it over."

Second, the report describes how Paul's surgeons never activated a set of procedures used when a patient is massively bleeding. Called the "Massive Blood Transfusion Protocol," it directs surgeons to call the hospital's transfusion services and activate a set of procedures so a patient who's bleeding profusely can most efficiently get the blood products he needs.

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Now, nearly two years after her husband's death, after poring over the Department of Public Health report and her husband's medical records, Lorraine still wonders whether she could have done anything to keep from losing her husband on her 57th birthday.

Lorraine knows she may never get all her questions answered about why her husband died that May afternoon. She looks back on the day Paul made the decision to donate part of his liver with a mixture of sadness and pride. It was Thanksgiving Day, 2009, and they were at a Cracker Barrel in Tampa with their two grown sons. During dinner, Lorraine's cell phone rang. When she answered the call and heard Susie crying, Lorraine excused herself to take the call outside.

When she returned to the table, Lorraine told Paul and their sons the bad news. "Tim is ill, and if he doesn't get a liver donation, he'll die," she told them. Getting a liver from a cadaver was out of the question, she explained, since Tim was so sick, he'd never live long enough to get off the waiting list. "My husband in 30 seconds -- no, less than that -- said 'I'll get tested,'" Lorraine remembers." And then our son Joseph said he'd get tested, too. Nobody ever asked them to do it. They just did it." Before Joseph could protest, Paul told his son he'd fly to Boston first to get tested first, and if he wasn't a match, then Joseph could try. That turned out not to be necessary, as the tests showed Paul was a "perfect match," Lorraine says.

Ambiguous Causality Message

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On the other hand, there were details suggesting that Paul knew that he was not in optimal health. The report mentioned that Paul had been given a pre-operative EKG, and it was abnormal. It showed he might have had a past heart attack, and that there was evidence poor blood flow to his heart. Paul had been strongly advised to consult a cardiologist, since his heart

might not respond well during surgery, but he insisted on continuing with the donation procedure.

"I had no idea he'd had an abnormal EKG," Lorraine said. "If I had known, I never would have let him have the surgery."

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Eisenfeld, Sue. "Toxic Tale: An 'Enviro' Learns Why We Need Tighter Controls On Home Pesticide Use," May 2011. Website: http://content.healthaffairs.org/content/30/5/985, used under fair use, 2014.

A Toxic Tale: The Perils of Home Pesticide Use

Last winter, despite my instincts telling me otherwise—a low-level warning beacon in my gut that I ignored—I hired a company to apply a chemical flea treatment in our house. Not wanting to waste time on home remedies that might not work, I thought, "Let's just get it over with."

I decided to trust "the system"—which was created to protect consumers, after all. I made this decision despite the fact that I'd been a "ban lawn-care pesticides from our campus" activist in college and had spent nearly my entire professional life as a communications consultant to the Environmental Protection Agency (EPA), writing materials for the public about environmentally sound behavior. As an environmentalist, I've been a pro-organic vegetarian. I also avoid processed foods with ingredients whose names I can't pronounce; use reusable tote bags at the farmers' market; avidly recycle; and drive a low-emissions car.

On the eve of my decision, I looked at my poor kitty. He'd been licking himself raw during the past four months—the pink flesh of his belly and inner thighs showing through bald spots in his soft orange fur, tufts of hair all over the floor. I had to take some kind of action, and fast.

My reaction was maternal, a way to alleviate my "child's" suffering. It was visceral, a way to make those blood-sucking creepy-crawlies go away. And it seemed reasonable: an aerosol flea spray would be applied directly to the floor; it wasn't some kind of flea bomb or fogger. I assumed that if there were risks or warnings or precautions I should know about, the pest control company, which we'd used for years to treat the exterior of our house against ants, would tell me.

The next morning a man came to the house with two aerosol cans of a pesticide and targeted our hardwood floors and rugs, as well as the cement floor in the basement. The pesticide—in the form of a mist designed to fall quickly to the floor—contained chemicals to kill insects and an insect growth regulator that interrupts the life cycle of fleas.

The technician didn't tell us to remove the dishes sitting out on the drying rack. He didn't instruct us to cover the cutting board or the fruits and vegetables on the counter. He didn't advise us to leave the windows open or use fans for ventilation. His only instruction was to stay out of the house, with our cat, for three to four hours, until the product had dried.

What we found after driving around with our cat for six hours, waiting to come home, was

exasperating: big wet drops all over the floors. That wasn't supposed to happen. When we called the company that had applied the flea treatment, the manager was perplexed. He recommended that we mop up the residue, then throw the sponge away.

While my husband did the mopping, I wrote an instant message to a friend: "This is a disaster," I typed. "Don't worry about it," he wrote back. "It's no big deal."

From Yellow Jackets To Hot Lava

The morning after the pesticide treatment, although both my husband and cat felt fine, I awoke to an odd headache in the back right quadrant of my skull—a fleeting but intense shooting pain every few seconds. I felt a bit woozy and off balance and thought I was coming down with a cold. By evening, my arms were buzzing with an odd, electric energy.

The next day, my left side felt as if it had been coated with Ben-Gay. My icy-hot arm and leg magnified the feeling of a cold touch, but I couldn't feel the warmth of a heating pad. My torso reacted to cold as if it were being stung by yellow jackets.

In another twenty-four hours, my fatigue was so intense that even if the house had been on fire, I couldn't have peeled myself out of bed.

And in another day or two, my right side lost much of its strength. Moving my limbs felt like pushing through mud. I struggled to brush my teeth, write, type, and lift a fork. Standing up in the shower and lathering my hair became two things I could no longer do at once. The foot on my cold side began to feel like lava.

Two trips to the hospital emergency room ruled out a stroke and a brain tumor. The doctors and nurses who ordered tests and took blood told me I had some kind of weird neurological problem that would probably take months to figure out. The magnetic resonance imaging (MRI) showed a lesion inside my neck, on my cervical spinal cord. This scar or defect had chewed away some of the protective myelin that coats nerves and transmits messages in the nervous system. Thus, the damage there was scrambling messages being sent around my body, messages about temperature and pain and strength and balance.

As I disintegrated day by day, I began to wonder if I would ever work, drive, or hike again. Who would take care of me? And had I made the biggest mistake of my life three months earlier by leaving my environmental consulting job, and giving up disability insurance? I'd done so to pursue my writing career so I could feel I was living my life to the fullest when I turned forty later in the year. I'd trusted that I could, for the first time in my life, "wing it"—see what life would offer me, go wherever the universe would lead me.

Where it had led was taking one stair at a time, bundling up in fleece pajamas and wool socks to keep my coldness at bay, sitting on a bench in the shower, being waited on by my husband, and wondering what I had done to deserve this fate. I'd never heaved such woeful, breathless sobs of despair.

Process Of Elimination

A week after my symptoms began, a neurologist diagnosed me with "transverse myelitis," an inflammation of the spinal cord. Until my spinal tap and blood test results came back, he couldn't tell me the cause.

Transverse myelitis can be the result of a viral infection like chickenpox, shingles, herpes, flu, HIV, hepatitis A, or rubella. It can also be caused by abnormal immune system reactions or by insufficient blood flow through the vessels in the spinal cord. And it can be a complication of syphilis, measles, or Lyme disease. The neurologist said my symptoms could also be caused by multiple sclerosis, lupus, thyroid disorder, tuberculosis, or other diseases.

"What about pesticide exposure?" I asked. My doctor listened to the story of the chemical flea treatment and the coincidental timing of my exposure and the onset of symptoms, and then he rushed out of the room to call the manufacturer. When he came back, he reported that the medical staff at the pesticide company said no one there had ever heard of the symptoms I had resulting from their product.

"It's concerning, however," my doctor said. "And I sure wouldn't use that stuff myself."

To treat my symptoms, he put me on a megadose of intravenous steroids for five days, then steroid pills for another week. My icy-hot sensation began to fade, and my strength began to return, although my full recovery took several months. Soon my test results started streaming in.

Lyme disease: negative. Lupus: negative. Meningitis: negative. Tuberculosis: negative. Cancer cells: negative. All negative. But four tests involving the cerebrospinal fluid that are often used as indicators of multiple sclerosis came up positive—stunningly unpleasant news that made my mind swirl.

"But we can't know for sure about multiple sclerosis," my neurologist explained, "until you get a follow-up MRI in four to five months, to see whether the lesion is still there or if there are any new ones." A definitive diagnosis, he explained, requires either two "episodes" like the one I had experienced, or two or more lesions on the spinal cord. I would have a long time to think, come to terms with my situation, and wait.

Freedom Of Information Sets Me Free

My months-long recovery involved physical therapy, occupational therapy, exercise, and rest. My old mantra of "need information to understand and heal" finally kicked in, and so my recuperation also required research. And given that I was the only mammal in my house seemingly affected by the pesticide product, I wanted to know whether I was just an odd specimen or if this pesticide had ever harmed anyone else.

My first task was to find the pesticide label online, with information about how to use the product properly. What this told me was that I hadn't been adequately protected from exposure—my first piece of evidence linking my problems to the pesticide. The label instructs users to cover all food-processing surfaces, utensils, and exposed food prior to spraying. We weren't told to do that. It directs pesticide applicators to avoid thoroughly wetting the surfaces being sprayed. Yet there were wet drops of the chemical on the floor six hours later. It also says that the sprayed area should be ventilated after treatment. News to us.

When I got the strength to call the pesticide manufacturer and the company that applied the chemical to report my incident—in between slow, wobbly walks around the block followed by naps—neither claimed to know anything about the possibility that the product could have caused my symptoms. The pest control company said an experienced technician had done the work. The manufacturer stated that information about previous reports of health effects from the public is proprietary.

So I filed a Freedom of Information Act request with the EPA, the government agency responsible for regulating pesticides. It was the only action I knew to take. Although incident reports made to the manufacturer may be proprietary, they must also be released to the EPA. Additionally, the EPA receives incident reports from astute members of the public who know to contact it, as well as from other government agencies and nongovernmental organizations.

The Freedom of Information Act report I received helped me survive the long, anxious wait until my follow-up MRI because once I read through the data—full of other people's symptoms that were quite similar to mine—I knew I didn't have multiple sclerosis.

The EPA's eighty-two-page report about the pesticide used in our house showed that from 1992 until early 2010, 156 "minor" human incidents were reported to the agency concerning the product, as well as 24 "moderate" and 515 "major" human incidents.

Moderate and major medical complaints included, in no particular order, dizziness, difficulty breathing, neurological symptoms, difficulty swallowing, muscle weakness, edema (fluid accumulation and swelling), tremors, abdominal pain, lower gastrointestinal bleeding, confusion, memory lapses, disorientation, ataxia (loss of coordination and muscle movement), stumbling, muscle spasm, kidney pain, seizure, liver failure, abnormal heart rhythm, lethargy, numbness, blurred vision, unconsciousness, coma, chills, hematuria (blood in the urine), memory loss,

hallucinations, swollen tongue, neurodermatitis, migraines, dilated cardiomyopathy (decreased heart function), blood clots, aspirated pneumonia, inability to walk, respiratory arrest, and heart attack.

In addition, a second Freedom of Information Act request I'd submitted about three of the active ingredients in "my" pesticide revealed that over 6,000 medical complaints had been filed about these chemicals when used in other pesticide products.

It seems to me that although many different entities agree that pesticides are, aside from pharmaceuticals, the most well-regulated type of chemical on the market today, people are still getting sick because of them.

What If—And What Could Be

Four months after my neurological episode, when I was finally able to walk in a straight line and not have my right hand buzz every time I bent my head toward my chest, I underwent another MRI. As I had long expected—after weeks of follow-up neurological studies, blood tests, and second opinions—the potential diagnosis of multiple sclerosis was thrown out. My spinal cord lesion had vanished as quickly as it had arrived, chalked up to—as my neurologist put it—"an autoimmune response to pesticide exposure."

Back home, I threw away all our conventional cleaning products and purchased all-natural cleaners from the health-food market. I canceled our quarterly outdoor pesticide treatment against ants. I bought essential-oil bug spray for summertime mosquitoes. I returned to working on the book I wanted to write and the new life I wanted to create for myself.

I felt intense gratitude for a new beginning, a renewed commitment to health.

My decision to use a conventional chemical pesticide in my home was a moment of weakness, a test of blind faith in a system that was supposed to protect me from harm. No one knows why I was affected and others in my household weren't, but, thankfully, my own body rescued me from the error of my ways. I am completely recovered.

The human desire for quick, no-fuss ways to get rid of bugs will never fade, however. The current national frenzy over bedbugs surely confirms that. Some states are even requesting that the EPA bring back chemicals that have long been banned for use—substances that aren't even designed to kill bedbugs—to try to get rid of the critters. Without additional protections and policy changes, unwary consumers will continue to turn to chemical products they assume are safe, given their starry-eyed, misplaced trust in the system. They will find that they are protected from bugs but not from harm.

APPENDIX N: ESSAY 3, STUDY 2 EXPLORATORY FACTOR ANALYSIS

Initial Scale (22 items)

	Factor			
	1	2	3	4
refl1	.637	.160	.286	-.064
refl3	.660	-.006	.122	-.082
refl6	.717	.207	.207	-.051
refl7	.780	.120	.144	-.016
refl8	.332	.548	.329	-.099
refl9	.351	.397	.344	-.025
refl11	.037	.604	.113	-.116
refl12	.513	.359	.323	-.063
refl14	.104	.544	.148	-.034
refl15	.307	.200	.401	-.006
refl16	.189	.682	.099	.095
refl17	.047	.783	.020	.023
refl19	.128	.699	.176	.015
refl20	.133	.217	.851	.006
refl21	.285	.117	.800	.054
refl22	.428	.221	.668	-.078
refl24	.398	.161	.385	-.063
refl25	.444	.417	.342	-.044
refl26	.090	.054	.052	.803
refl27	.053	-.040	-.035	.937
refl28	-.195	-.021	-.055	.619
refl29	-.188	-.084	-.006	.868

Reduced set (16 items)

	Factor			
	1	2	3	4
refl1	-.069	.170	.646	.281
refl3	-.084	.026	.675	.113
refl6	-.053	.194	.709	.194
refl7	-.019	.113	.775	.126
refl11	-.118	.538	.032	.116
refl14	-.040	.505	.102	.160
refl16	.091	.717	.193	.071
refl17	.016	.843	.051	.004
refl19	.008	.733	.130	.180
refl20	.001	.225	.152	.802
refl21	.048	.137	.302	.836
refl22	-.087	.234	.439	.660
refl26	.801	.039	.080	.046
refl27	.938	-.034	.058	-.027
refl28	.624	-.024	-.205	-.058
refl29	.865	-.066	-.174	.016

Communalities of reduced set (16 items)

	Initial	Extraction
refl1	.497	.529
refl3	.438	.476
refl6	.526	.581
refl7	.509	.630
refl11	.402	.318
refl14	.373	.293
refl16	.548	.565
refl17	.569	.714
refl19	.558	.587
refl20	.643	.718
refl21	.692	.812
refl22	.640	.691
refl26	.672	.651
refl27	.772	.885
refl28	.452	.436
refl29	.734	.782

GMO Narrative

An Experience with GMOs

The office of allergist George Dillon, MD, sits on a grassy slope overlooking the Royal River, a wide waterway that originates in inland Maine. When I first came to Dillon in February 2011, the river was covered with ice, and bare trees stood silver sentry on its shores. I was 36. I'd been sick for three and a half years.

During that time I told few friends or members of my extended family how ill I was, because I didn't have any way to explain what was wrong. I had no diagnosis, just a collection of weird symptoms: tight, achy pain that radiated through my body; burning rashes that splashed across my cheeks and around my mouth like pizza sauce; exhaustion; headaches; nausea; and, on top of all that, severe insomnia—my body just could not, would not, turn off and rest. I visited every doctor who'd see me and tried everything they threw at me: antidepressants; painkillers; hormone treatments; acupuncture; Chinese teas—you name it, I did it. Nothing worked. After I maxed out the available specialist practitioners in the Portland metropolitan area, I was sent to neurologists in Boston. All of my tests came back normal.

Dillon has a helmet of thick, graying hair and an intensely serious air. After escorting me into an exam room, he sat down across from me and promptly pushed aside my thick medical file. He'd read through it all, he said, but he wanted to hear the story from me. He listened patiently, asking questions every so often: When did my rashes flare? Was the pain an ache in my muscles, or did it feel deeper? Was I worse after I slept or at the end of the day? He seemed, as we spoke, to have all the time in the world. Then, with no pyrotechnics, he offered his theory: "I think it's possible you've developed a reaction to genetically modified corn."

Genetically modified corn? Everyone's heard of GMO corn, but I realized I didn't know what it actually was. Dillon explained that starting in the mid-1980s, the biotechnology giant Monsanto began to genetically alter corn to withstand its herbicide Roundup—the goal was to kill weeds but not crops—as well as to resist a pest called the corn borer. These small changes in the DNA of the corn are expressed by the plant as proteins. It's those proteins, Dillon believes, that can act as allergens, provoking a multisystemic disorder marked by the overproduction of a type of white blood cell called an eosinophil.

He swabbed inside my nose with a Q-tip, then placed the results under a microscope. "Take a look," Dillon said. "See all those pink cells? Those are eosinophils." My nose, it seemed, was chock-full of them. When the immune system is working properly, eosinophils swarm certain invading substances, be they parasites or viruses, and work to eliminate them. Sometimes, however, an allergenic protein may prompt the immune system to release eosinophils. Then, it's as if a faucet gets turned on but can't be turned off—eosinophils just keep coming. Eventually

they begin to leave the bloodstream and may infiltrate and damage the GI tract, esophagus, mucous membranes, lungs, the fascial system (the layer of connective tissue that surrounds the muscles, blood vessels, and nerves), and the skin—hence, the avalanche of symptoms.

Dillon's advice was to strip all corn, even that which was marked organic, from my diet. "It's almost impossible to find a corn source in the United States that doesn't have the [protein] in it," he said. The U.S. government started approving GMO corn and soybeans for sale in the mid-1990s, and today, 88 percent of corn, and 93 percent of soybeans, are the transgenic varieties. Moreover, Dillon and others contend that due to cross-pollination via winds, birds, and bees, there's no such thing anymore as a GMO-free corn crop. He estimated that it would take from two to four months of living without corn for the eosinophils to cycle out of my body, and almost a year before I'd feel entirely like myself.

While I quickly discovered that blaming GMO foods for any kind of health problem is controversial in the medical and biotech worlds, what's beyond debate is the increase in the incidence of autoimmune disorders such as type 1 diabetes, lupus, and celiac disease, as well as of allergies. As for the latter, the National Health Interview Survey found, for instance, that since 2001, the number of children with food allergies has jumped by 50 percent, and those with skin allergies by 69 percent (and the increase isn't merely a by-product of fuller reporting by parents, experts say).

I was desperate enough that I was willing to try the diet Dillon recommended. After all, how hard could it be to give up corn? The answer was: way harder than I imagined. Corn was my Waldo, popping up everywhere: in tea bags, juice, and cheese culture; it lined my "to go" coffee cups and plastic bags of frozen vegetables; it coated my store-bought apples and was on the bottom of restaurant pizza—almost everything my family used, no matter how piously natural and organic, had corn in it. It came under the guise of dozens of names like "xanthan gum," "natural flavors," "free-flowing agents," "vitamin E," "ascorbic acid," "citric acid," and "cellulose," to name a few. Almost daily, I'd find a new culprit. "Damn, this toothpaste is full of corn!" Then: "Wait, our dish soap is made from corn!" Or: "Oh my God, iodized salt has dextrose in it!"

The first thing I noticed was that my skin rashes began to dissipate. Then, slowly, my body stopped aching, and I could walk or even jog easily, for the first time in years. I started to have more energy, and I slept better at night. The head cold went away—poof—and I wasn't going through a box of tissues a day. My hands became less stiff. I realized, in retrospect, that my frozen hands had been the hardest symptom to tolerate: I could barely button my son's small shirts or apply a Band-Aid, which made me feel useless as a mother. Almost four months later, in late May, I felt pretty much like my old self. I was so startled by my physical well-being that I didn't know how to enjoy it. Each night I'd go to bed preparing myself for the possibility that I might wake up sick again the next morning. Could GMO corn really be my problem? Could this blessed state really last?

It has been over a year and I still feel healthy. My small family has been able to jettison GMOs, thanks to the local farmers we've found and our willingness to do without the vast majority of prepared foods. But my husband and I both have jobs, and there are days when we can't imagine preparing everything from scratch forever. Yet when I was sick for all that time, my life felt totally out of control. Although Dr. Dillon told me that most people allergic to GMO corn can end up tolerating small amounts after a couple years of abstinence, each time I've dared cheat, I've awoken the next morning with a frozen left hand, a sore hip, and a facial rash. So for now, at least, the extra work isn't really a choice; it's a way of life, one that reminds me daily that our modern world is full of challenges—dietary, economic, environmental—that at times feel overwhelming. And perhaps that's the gift in this: I've had to slow down and think about my food—how it was grown, what's in it, and which trade-offs were made in the journey from a seed to my plate. That consciousness has to be worth something bigger than just my health.

GMO Arguments

Facts about GMOs

- The term GM foods or GMOs (genetically-modified organisms) is most commonly used to refer to crop plants created for human or animal consumption using the latest molecular biology techniques. These plants have been modified in the laboratory to enhance desired traits such as increased resistance to herbicides or improved nutritional content.

- The enhancement of desired traits has traditionally been undertaken through breeding, but conventional plant breeding methods can be very time consuming and are often not very accurate.

- Genetic engineering, on the other hand, can create plants with the exact desired trait very rapidly and with great accuracy. For example, plant geneticists can isolate a gene responsible for drought tolerance and insert that gene into a different plant.

- Genes can be transferred from one plant to another and from non-plant organisms. The best known example of this is the use of B.t. genes in a number of traditional crops. B.t., or Bacillus thuringiensis, is a naturally occurring bacterium that produces crystal proteins that are lethal to insect larvae. B.t. crystal protein genes have been transferred into the plant, enabling the plant to produce its own pesticides against insects such as the European borer.

- According to the FDA and the United States Department of Agriculture (USDA), there are over 40 plant varieties that have completed all of the federal requirements for commercialization. Some examples of these plants include tomatoes and cantalopes that have modified ripening characteristics, soybeans and sugarbeets that are resistant to herbicides, and corn and cotton plants with increased resistance to insect pests.

- While there are very, very few genetically-modified whole fruits and vegetables available on produce stands, highly processed foods, such as vegetable oils or breakfast cereals, most likely contain some tiny percentage of genetically-modified ingredients because the raw ingredients have been pooled into one processing stream from many different sources.

- The prevalence of soybean derivatives as food additives in the modern American diet virtually ensures that all U.S. consumers have been exposed to GM food products. It's almost impossible to find a corn source in the United States that doesn't have genetically altered proteins in it.

- Many products that would not appear to be made with corn can in fact contain it, such as tea bags, juice, cheese culture, and package linings.

- The presence of corn in the ingredients list on nutritional labels can be denoted by a range of terms beyond the simple word "corn," such as xanthan gum, natural flavors, vitamin E, citric acid, and cellulose.

- The U.S. government started approving GMO corn and soybeans for sale in the mid-1990s, and today, 88 percent of corn, and 93 percent of soybeans, are the transgenic varieties. Some experts contend that due to cross-pollination via winds, birds, and bees, there's no such thing anymore as a GMO-free corn crop.

- Environmental activists, religious organizations, public interest groups, professional associations and other scientists and government officials have all raised concerns about GM foods, and criticized agribusiness for pursuing profit without concern for potential hazards, and the government for failing to exercise adequate regulatory oversight. Development or exacerbation of allergies is one large concern; there is a possibility that introducing a gene into a plant may create a new allergen or cause an allergic reaction in susceptible individuals.

- Starting in the mid-1980s, the biotechnology giant Monsanto began to genetically alter corn to withstand its herbicide Roundup—the goal being to eradicate weeds but not crops—as well as to resist a pest called the corn borer. These small changes in the DNA of the corn are expressed by the plant as proteins.

- These proteins that can act as allergens, provoking a multisystemic disorder marked by the overproduction of a type of white blood cell called an eosinophil. When the immune system is working properly, eosinophils swarm certain invading substances, be they parasites or viruses, and work to eliminate them. Sometimes, however, an allergenic protein may prompt the immune system to release eosinophils. Then, production of the eosinophils continues at an accelerated speed. Eventually they begin to leave the bloodstream and may infiltrate and damage the GI tract, esophagus, mucous membranes, lungs, the fascial system (the layer of connective tissue that surrounds the muscles, blood vessels, and nerves), and the skin.

- The increase in GMO exposure parallels the increase in the incidence of autoimmune disorders such as type 1 diabetes, lupus, and celiac disease, as well as of allergies. The National Health Interview Survey found that since 2001 the number of children with food allergies has jumped by 50 percent, and those with skin allergies by 69 percent.

- Research suggests that people allergic to GMO corn can end up tolerating small amounts after a couple years of abstinence.

Lasik Narrative

My Lasik Story

I started wearing glasses at age 15 and quickly switched to contacts because I didn't care for glasses. My eyesight would get a little worse each year. I was very nearsighted although I know that my poor eyesight falls in the more moderate range than severe. Still, I couldn't see or read anything in front of me unless I standing very close to it. I had wanted to get Lasik done for a while, but there were several reasons that delayed my decision to get it. The cost was a large factor, and the procedure itself seemed daunting. The thought of someone working on my eyes was scary – even though the odds of something going wrong may be small, nothing is ever guaranteed, and eye function is not something I wanted to risk. I started asking around, though, and almost everyone that I quizzed about their experience said the procedure wasn't a terrible ordeal, and the end results were fantastic.

I chose Dr. Dornic at the Laser Eye Center after reading all of his patient reviews and confirming that his office would accept my health insurance. The initial consultation was free. They took some pictures of my eyes and measured the strength of my glasses. The doctor looked in my eyes and told me that I was a candidate for regular Lasik and Custom, or Wavefront, Lasik. Regular Lasik was cheaper – at $1249 per eye with the insurance discount. It boasted an 85% chance of 20/20 vision. It used your accounts of lenses to determine how to shape your eye. Basically it is done the same way they determine what prescription lens to use. The custom approach is more expensive at $1649 per eye. It uses a machine to determine how to laser your eyes. It gives a much more accurate picture of your eye and therefore the adjustments made are more precise leading to better vision. They boast a 98% chance of 20/20 vision or better with a high probability of improved night vision as well.

Since I was already paying for the procedure, I decided that I might as well pay for the best and chose the Wavefront approach. The office scheduled a pre-op appointment for me and told me to stop wearing contacts for a week before the appointment. The pre-op appointment was no different than a regular eye doctor examination; it took about an hour.

The next morning I arrived for my procedure. I signed some consent forms and made a down payment for services. Next I was given 5 mg of Valium and some antibiotic eye drops. After 15 minutes I felt nothing from the Valium so they gave me an additional 5-mg. To be honest, it still didn't have that much effect. I was a little more relaxed but I didn't feel drugged in any way. They did a total of 3 sets of the antibiotic drops and I headed into the laser room.

They showed me what the sound of the laser would be like and told me what was going to happen. They gave me a stuffed monkey to hold onto during the procedure – it was kind of funny at first but in the end I was glad to have the monkey! They taped one of my eyes with a black shield so I couldn't see out of that eye. Next they taped my upper and lower eyelashes on the eye they are going to work on. They gave me numbing drops in my eye and finally put the eye

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speculum in to hold my eye open. I was really worried about that part but it wasn't bothersome at all. They put more drops in to wash out my eye and then attached a suction cup over top of my eye. I felt pressure and it was a strange sensation but it wasn't painful in any way. I was told that I would initially lose vision (don't panic!) but would momentarily be able to make out a blinking orange light that I should then focus on.

The next step is to cut into your eye to make a flap. This was where I was glad to have the monkey. I guess my eye wasn't as numb as it should have been and it hurt – it wasn't as intense as labor pains or anything, but it was a sensation that made all my hair stand on end. Luckily it was only for a few seconds. The next part was the most memorable; the doctor lifted up the flap and suddenly everything was really blurry, warped, and other-worldly looking. The laser then started and I could actually smell my eye being burned away. The laser doesn't hurt at all. It took about a minute for this part of the procedure, after which they put the eye flap back down and then I could see normally again. At this time the doctor sponged the flap to smooth it out and let it air dry for 2 minutes. One eye is done!

For the next eye the procedure was the same but I was nervous because of the pain I felt during the slicing of my first eye. After the numbing drops, the doctor was touching my eye and I could feel it. I began thinking, "If I can feel him now (which I couldn't with the last eye) what is it going to be like when he slices the eye?" I spoke up and they put more drops in. I'm glad I did, as I didn't feel the pain with the slicing this time. The second eye was much easier since I had been through it and knew what to expect, plus I didn't have the pain that I had with the first eye.

After the procedure, they moved me to an exam room and put some more drops to lubricate my corneas and told me to keep my eyes closed. The doctor checked my flap and then did another laser patient. After that patient, he checked my flap again and gave me more drops. By now my eyes were burning so they gave me more numbing drops. They taped plastic shields to my eyes and gave me sunglasses to wear over them and sent me home.

Joe, my husband, drove me home and I went to bed. The burning in my eyes kept getting worse and I will admit it was uncomfortable. I was also tearing up, and that was uncomfortable too. After a while I finally fell asleep, and when I woke up I felt much better; the burning was gone. My eyesight immediately after surgery was still quite blurry – although less blurry than when I was without contacts or glasses. As the day went on, I noticed it was improving.

A week after the surgery I had 20/20 vision with slight nearsightedness of -.5 in each eye. I asked about the fact that seeing things close-up was still difficult. The doctor said that since I wasn't using the muscles in my eyes before for reading (the nearsightedness compensated for that) the eye muscles didn't develop. Now that I don't have the nearsightedness, I will need to develop the muscles in my eyes which could take 1-6 months. He also said it would take the same time frame for the halos around brightly lit objects at night to go away. So the few "problems" I am having

are common and will subside over time. As far as I'm concerned, the surgery was a success and I am enjoying the freedom of not having to worry about contacts or glasses.

Lasik Arguments

LASIK Background

- LASIK is an acronym for "laser assisted in-situ keratomileusis."

- LASIK is an eye operation where the eye surgeon creates a flap in the cornea and then uses a laser to reshape the cornea to correct for a person's glasses or contact prescription.

- LASIK became FDA approved in the USA in 1995 and since then, over eight million LASIK surgeries have been performed in the country.

- LASIK is not the only vision correction surgeries are available; other options include PRK, LASEK, and phakic IOL surgery, which use different procedures.

- The LASIK procedure is best in treating low and moderate myopia (nearsightedness), hyperopia (farsightedness), and astigmatism.

- There are current studies with follow-up patients for over 10 years and they suggest that in the right hands, LASIK can be quite safe and effective.

- LASIK complications are rare. If they occur, they will usually do so within days or weeks, not years, after the procedure.

- Common complications include dry eye or flap complications. There have been reports of decreased contrast sensitivity & visual aberrations. Corneal sensation returns back to normal within 6 months.

- Average regular LASIK prices (factoring in the average insurance discount) are $1249 per eye with an 85% chance of 20/20 vision.

- A more custom approach called Wavefront LASIK is more expensive at $1649 per eye. It uses a machine scan to give an accurate picture of the eye. The adjustments made are therefore more precise and lead to better vision. This procedure has a 98% chance of 20/20 vision or better with a high probability of improved night vision as well.

LASIK procedure

- The doctor will perform a thorough eye exam to ensure that the eyes are healthy enough for the procedure. He or she will evaluate the shape and thickness of the cornea, pupil size, refractive errors (myopia, hyperopia and astigmatism), as well as any other eye conditions.

- With wavefront technology associated with custom LASIK, a patient is likely to undergo a wavefront analysis that sends light waves through the eye to provide an even more precise map of aberrations affecting your vision.

- Patients are instructed to stop wearing contact lenses for a period of one week before the pre-operation eye exam and before the LASIK procedure, as contacts can alter the natural shape of your cornea.

- Before the actual LASIK procedure, numbing eye drops are applied to the eye to alleviate any discomfort during the procedure. The doctor may also supply medication in order to facilitate relaxation.

- First, the eye surgeon uses either a mechanical surgical tool called a microkeratome or a femtosecond laser to create a thin, circular "flap" in the cornea.

- The surgeon then folds back the hinged flap to access the underlying cornea (called the stroma) and removes some corneal tissue using an excimer laser.

- This highly specialized laser uses a cool ultraviolet light beam to remove ("ablate") microscopic amounts of tissue from the cornea to reshape it, refocusing light entering the eye for improved vision.

- For nearsighted people, the goal is to flatten the cornea; with farsighted people, a steeper cornea is desired. Excimer lasers also can correct astigmatism by smoothing an irregular cornea into a more normal shape. It is a misconception that LASIK cannot treat astigmatism.

- After the laser reshapes the cornea, the flap is then laid back in place, covering the area where the corneal tissue was removed. Then the cornea is allowed to heal naturally.

- Laser eye surgery requires only topical anesthetic drops, and no bandages or stitches are required.

- Patients return home almost immediately after the procedure. It is common to experience temporary burning or itching. This should fade by the following morning.

- Eyesight stabilizes and continues to improve over the week. While the procedure has an excellent safety profile, post-operative LASIK complications can occur and may include infection or night glare (starbursts or halos that are most noticeable when viewing lights at night, such as while you're driving). Most common complications subside over 1-6 months.

APPENDIX P: ESSAY 3, STUDY 3 MEASURES

We would like to ask you questions about your perceptions. Please select the response that best represents your reading experience.

(Transportation Items)
While I was reading the narrative, I could easily picture the events in it taking place.
    1 [Not at all] – 7 [Very Much]

While I was reading the narrative, activity going on in the room around me was on my mind.
    1 [Not at all] – 7 [Very Much]

I could picture myself in the scene of the events described in the narrative.
    1 [Not at all] – 7 [Very Much]

I was mentally involved in the narrative while reading it.
    1 [Not at all] – 7 [Very Much]

After the narrative ended, I found it easy to put it out of my mind.
    1 [Not at all] – 7 [Very Much]

I wanted to learn how the narrative ended.
    1 [Not at all] – 7 [Very Much]

The narrative affected me emotionally.
    1 [Not at all] – 7 [Very Much]

I found myself thinking of ways the narrative could have turned out differently.
    1 [Not at all] – 7 [Very Much]

I found my mind wandering while reading the narrative.
    1 [Not at all] – 7 [Very Much]

The events in the narrative are relevant to my everyday life.
    1 [Not at all] – 7 [Very Much]

The events in the narrative have changed my life.
    1 [Not at all] – 7 [Very Much]

<page break>

(Reflection Items)
I reflected on the topic of the message.
    1 [Strongly disagree] – 7 [Strongly agree]

I thought about the "takeaway message" of the message.

1 [Strongly disagree] – 7 [Strongly agree]

I invested effort into understanding the message.
     1 [Strongly disagree] – 7 [Strongly agree]

The message reminded me of some of my personal experiences.
     1 [Strongly disagree] – 7 [Strongly agree]

Some parts of the message reminded me of people I know.
     1 [Strongly disagree] – 7 [Strongly agree]

Some parts of the message reminded me of situations other people I know have been in.
     1 [Strongly disagree] – 7 [Strongly agree]

I thought about other people I know while reading the message.
     1 [Strongly disagree] – 7 [Strongly agree]

I thought about how the message made me feel, while reading.
     1 [Strongly disagree] – 7 [Strongly agree]

I thought about how the message made me feel, after reading.
     1 [Strongly disagree] – 7 [Strongly agree]

<page break>

(Message Perception Items)
How much did the message read like a story?
     1 [Not at all] – 7 [A great deal]

How informative was the message?
     1 [Not at all] – 7 [A great deal]

How helpful was the message?
     1 [Not at all] – 7 [A great deal]

How much did you enjoy reading the message?
     1 [Not at all] – 7 [A great deal]
<page break>

(Dependent Measures – GMO)
Overall, all things considered, I believe eating GMO corn is
     1 [Extremely bad] – 7 [Extremely good]

Exposure to GMO foods can have harmful consequences
     1 [Strongly disagree] – 7 [Strongly agree]

GMO foods are common
    1 [Strongly disagree] – 7 [Strongly agree]

I support tighter controls on GMO food labeling
    1 [Strongly disagree] – 7 [Strongly agree]

(Dependent Measures – LASIK)
Overall, all things considered, I believe LASIK surgery is
    1 [Extremely Bad] – 7 [Extremely good]

If I were a candidate for LASIK surgery, I would consider getting it
    1 [Extremely unlikely] – 7 [Extremely likely]

I would recommend LASIK surgery to a friend
    1 [Extremely Bad] – 7 [Extremely good]

The benefits from LASIK surgery are worth potential risk factors
    1 [Extremely Bad] – 7 [Extremely good]

APPENDIX Q: ESSAY 3, STUDY 3 EXPLORATORY FACTOR ANALYSES

GMO narrative

	Factor		
	1	2	3
refl1	.239	.848	.120
refl6	.144	.845	.298
refl7	.181	.788	.332
refl11	.759	.089	.234
refl16	.865	.231	-.004
refl17	.910	.182	.144
refl19	.881	.166	.121
refl20	.184	.234	.906
refl21	.134	.385	.831

Lasik Narrative

	Factor		
	1	2	3
refl1	.021	.954	.250
refl6	.110	.656	.243
refl7	.221	.705	.311
refl11	.410	.332	.313
refl16	.892	.089	.026
refl17	.858	.184	.026
refl19	.839	.010	.030
refl20	.061	.328	.763
refl21	.000	.300	.842

GMO arguments

	Factor	
	1	2
refl1	.841	.278
refl6	.892	.209
refl7	.753	.225
refl11	.631	.422
refl16	.276	.869
refl17	.326	.769
refl19	.241	.793
refl20	.696	.282
refl21	.655	.317

Lasik arguments

	Factor	
	1	2
refl1	.729	.210
refl6	.672	.218
refl7	.491	.321
refl11	.428	.322
refl16	.108	.930
refl17	.159	.906
refl19	.118	.768
refl20	.848	-.072
refl21	.774	.013

APPENDIX R: TRANSPORTATION SCALE

Circle the number under each question that best represents your opinion about the narrative you just read.

1. While I was reading the narrative, I could easily picture the events in it taking place.

    1 [Not at all] – 7 [A great deal]

2. While I was reading the narrative, activity going on in the room around me was on my mind.

    1 [Not at all] – 7 [A great deal]

3. I could picture myself in the scene of the events described in the narrative.

    1 [Not at all] – 7 [A great deal]

4. I was mentally involved in the narrative while reading it.

    1 [Not at all] – 7 [A great deal]

5. After the narrative ended, I found it easy to put it out of my mind.

    1 [Not at all] – 7 [A great deal]

6. I wanted to learn how the narrative ended.

    1 [Not at all] – 7 [A great deal]

7. The narrative affected me emotionally.

    1 [Not at all] – 7 [A great deal]

8. I found myself thinking of ways the narrative could have turned out differently.

    1 [Not at all] – 7 [A great deal]

9. I found my mind wandering while reading the narrative.

    1 [Not at all] – 7 [A great deal]

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

    1 [Not at all] – 7 [A great deal]

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

     1 [Not at all] – 7 [A great deal]

12. I had a vivid mental image of [character name].

     1 [Not at all] – 7 [A great deal]

Notes: Items 2, 5, and 9 are reverse-scored.

Item 12 can be repeated for the number of main characters in the story, substituting a different character name for each item.

Source: Green, M.C., & Brock, T.C. (2000). The role of transportation in the persuasiveness of public narratives. *Journal of Personality and Social Psychology, 79(5),* 701-721.