

Narrative Transportation: How Stories Shape How We See Ourselves and the World

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Manuscript Accepted to be Published in *Advances in Experimental Social Psychology*

Green, M.C. & Appel, M. (2024). Narrative transportation: How stories shape how we see ourselves and the world. *Advances in Experimental Social Psychology*, 70, 1-82.
<https://doi.org/10.1016/bs.aesp.2024.03.002>

Abstract

Scientific interest in the processing and effects of narrative information has substantially increased in recent years. The focus of this chapter is on *narrative transportation*, an experiential state of immersion in which all mental processes are concentrated on the events occurring in the narrative. We describe and integrate interdisciplinary advances in the study of narrative transportation. After an introduction of the concept and related approaches, we outline antecedents in terms of story factors, individual differences, situational variables, and related interactions. In the following sections, we introduce processes and effects that are facilitated by stories and narrative transportation. This includes research on persuasion, misinformation and its correction, self and identity, social cognitive skills, and on the fulfillment of belongingness needs. We close with an outlook on the role of technology and artificial intelligence, meaning making, and climate change communication as emerging and future directions.

1. Introduction

People spend much of their time with mediated stories, such as series on streaming networks, true crime podcasts, Hollywood movies, novels, news about current events, or TikTok reels. Storytelling has been a popular form of communication throughout history, and the nature and effects of engaging with stories has been a topic for thinkers and researchers since antiquity. In recent decades, there has been an increasing interest in stories in the social sciences. Much of the related research is based on the assumption that the processing of stories differs in relevant ways from the processing of non-narrative information. Following Richard Gerrig (1993; 2023), our framework to understanding narrative processing and effects is that of *transportation*: Stories invite recipients to enter a narrative world, and people are changed, at least temporarily, by their experience in that narrative world.

As outlined by Green and Brock (2000), recipients' likelihood of being transported in a story world varies. In this chapter, we will describe the factors that increase (or decrease) individuals' likelihood of becoming transported into stories, including individual differences, textual factors, and situational factors. We will also examine the mental processes that occur when people are transported, which include affective and cognitive engagement, as well as mental imagery. We consider the processes that may result from transportation, such as reduced resistance to persuasion. Finally, we discuss the outcomes of being transported, with a particular focus on attitude, belief, and behavior change. We will present evidence supporting the role of transportation in narrative persuasion, as well as describing other effects of narratives, particularly on the development of social cognition and social skills, as well as the effects on the self.

1.1 Defining Narratives

While people can become immersed or absorbed in a variety of experiences (e.g., a moving piece of music; a beautiful sunset), the research and theory that we focus on here relates to being transported into a narrative or story world specifically. Narratives are defined as a connected series of events (Abbott, 2002; Onega & Landa, 2014) and they typically include the actions and experiences of one or more protagonists that are causally related (e.g., Escalas, 1998).¹ In contrast, non-narrative forms of communication include lists of arguments or assertions often found in didactic or expository messages. Texts can vary in their degree of narrativity, which we will discuss in more detail in a later section (2.1.1).

According to Dahlstrom (2014), narratives have three key elements: characters, temporality, and causality. Character means that narratives are about people or person-like entities (for example, animals, aliens, or anthropomorphized objects). Temporality means that a narrative presents events that occur over time, rather than simply presenting abstract claims (as in didactic or non-narrative messages). Typically, stories have a beginning, middle, and an end. Finally, the causality criterion means that the events in the narrative are linked by cause-and-effect sequences.

These definitions can encompass a wide range of different narrative forms. Research on health narratives often uses brief personal testimonials; similarly, consumer psychology has investigated narrative ads, which are typically a page or a short commercial. Literary narratives may take the form of short stories or novels, and entertainment narratives can include films or multi-episode television series. Narratives can also be shared interpersonally in conversations, in

¹ Although some theorists have distinguished between narrative and story, in the current chapter, we will use these terms interchangeably.

live theater performances, or in audio formats such as radio programs or audiobooks. Narratives have been integrated into games and virtual reality experiences.

Most of the research considered here will focus on these types of external narratives, but the term narrative has also been used more broadly to describe a particular mode of thought that involves mental simulation. For example, Bruner (1986) described narrative thought as a way of making meaning, including making sense of people, their intentions, and their interactions (in contrast to what he terms paradigmatic or logico-scientific thought). Pennington and Hastie (1986) draw on research on story grammars and episode schemas to suggest that story schemas include initiating events, character goals, and outcomes. From a consumer psychology perspective, Escalas (2004) focuses on narrative processing as mental simulation.

The term narrative has also been used in a broader sense in personality psychology, with research suggesting that individuals' life stories or narrative identities can have important implications for their well-being (e.g., McAdams & McLean, 2013). Pennebaker has demonstrated the health benefits of forming a story about one's personal experiences (Pennebaker & Seagal, 1999). Narrative has also been used to describe a general framework for interpreting information, particularly in political contexts (e.g., the "narrative on poverty" or the "narrative of immigration"; e.g., Constantino & Weber, 2021; see also the Narrative Policy Framework, Jones & McBeth, 2010).

1.2 Narrative Transportation

The experience of being immersed in a narrative is a common one. Many people can recall instances of reading a book late into the night, watching one more episode of a streaming series even though they promised themselves they would stop, or being so fully engaged in a story that it feels strange to return to the normal world. Literary writers frequently have used

travel or transportation as a metaphor for the narrative experience. From a cognitive psychology perspective, Gerrig (1993) presented the idea of transportation as an organizing framework to describe the experience of being immersed in a narrative world. He noted that as with literal travel, individuals who are fully engaged in a narrative mentally visit a new place (the world created by the story author) and return changed by the experience (having new memories or attitudes). Green and Brock (2000) extended this work by developing a narrative transportation measure to assess the extent to which individuals become absorbed in a narrative. As we will describe later, other researchers have also investigated similar concepts with labels such as absorption, narrative engagement, involvement, and immersion.

Narrative transportation is an experience in which all of one's mental processes (i.e., attention, emotion, and imagery) are concentrated on the events occurring in the narrative (Green & Brock, 2000; 2002). Transported individuals are immersed in the narrative; they respond emotionally to narrative events and form vivid mental images of narrative settings and characters. Transportation can occur across media, including spoken stories, written text, and audiovisual materials.

1.2.1 Dynamic Nature of Transportation

Although the original conceptualization of transportation suggested that transported individuals mentally leave the real world behind and become entirely focused on the story world, more recent perspectives emphasize that transportation is a dynamic process in which attention can be more or less focused on the narrative over time, and that transported readers integrate their own experiences with narrative events. However, even though individuals may draw on and consider their real-world knowledge and may not maintain the exact same degree of focus

through the narrative, these processes appear to take place within an overall experience of feeling absorbed in the narrative world.

Bezdek and Gerrig (2017) used reaction time and memory tasks to assess participants' attention at different points during film excerpts. Their results suggested that the level of focused attention varied, with more focused attention occurring at more suspenseful points in the narrative. Similarly, Tchernev and colleagues (2023) developed a method to measure the dynamic nature of transportation into narratives by using continuous self-report measures of attention and presence. They observed variation across time in these measures, and additionally found that those who were more transported into a narrative also thought more about themselves and about the real world.

1.2.2. Interplay between Transportation and Self-Related Thoughts

Regarding the interplay between the narrative world and the reader's own experience, Strange and Leung (1999) emphasized the role of "reminders" (or personal resonance), defined as connections between narrative content and the reader's past, personal, or media-based experiences, in narrative impact (see also Larson & Seilman, 1988). Stories are likely to evoke story-congruent personal memories, which then reinforce the message of the narrative. Other research has also focused on the role of self-referencing in narrative persuasion (e.g., Escalas, 2007; de Graaf, 2014).

Conceptually, Dill-Shackleford and colleagues (2016) have proposed the concept of "dual empathy." They suggest that readers or viewers simultaneously feel empathy for the narrative's character but also for themselves, because the narrative triggers autobiographical memories and thoughts. Similarly, Bilandzic (2006) suggested that personal experience with situations (experiential closeness) may combine with transportation (mediated closeness) to

provide an enhanced transportation effect (for a similar concept see Hamby et al., 2018; Hamby et al., 2017). However, this effect likely only occurs when the personal experiences are consonant with the story; if one's personal experience contradicts the story, individuals may adopt a critical mode of processing and transportation is disrupted.

1.3 Measuring Transportation and Closely Related Concepts

Transportation is typically measured using the self-report Transportation Scale (Green & Brock, 2000; short form, Appel et al., 2015). The original version of the scale assesses the broad dimensions of transportation including emotional involvement, cognitive attention, suspense, lack of awareness of surroundings, and mental imagery. Example items include, "While I was reading the narrative, I could easily picture the events in it taking place," and "I was mentally involved in the narrative while reading it." The scale score is the mean of the items, typically on a 1 *not at all* to 7 *very much* response scale. The original scale was developed in the context of written narratives, but it has since been used regularly for audiovisual stories with small changes in wording (e.g., "watching" instead of "reading"). Although (as noted above) the exact level of immersion may vary over the course of the narrative experience, this measure provides an individuals' overall assessment of their transportation and has proven useful in many studies (see van Laer et al., 2014, for a meta-analysis). Lu et al. (2012) have adapted the scale for use with children, a measure they have called narrative immersion.

Researchers have explored the physiological correlates of transportation, using measures such as heart rate and skin conductance (e.g., Richardson et al., 2020; Sukalla et al., 2016; Thissen et al., 2022). However, such measurement is complex, because transportation involves multiple processes (e.g., attentional focus, story comprehension, emotional response). For example, a study using EEG (electroencephalography) found that transportation was associated

with activation of working memory, attention, emotion, and imagination (Gordon et al., 2018). An fMRI study suggested that narrative immersion engages the affective empathy network in the brain (the anterior insula and mid-cingulate cortex; Hsu et al., 2014; for a more detailed discussion of neurocognitive approaches, see Jacobs & Willems, 2018). Neuroimaging approaches have also examined the brain areas associated with narrative engagement and processing more generally (e.g., Grall et al., 2021; Schmälzle et al., 2022), as well as the related topics of story comprehension (Mar, 2011) and the different brain areas activated by fact versus fiction (Altmann et al., 2014). We wish to add that the interpretation of psychophysiological and neuroscientific data is particularly challenging and some conclusions may need to be interpreted with caution. One prevalent misinterpretation is that of reverse inference (Poldrack, 2006) – the activation of a particular brain region leads scholars to conclude that a particular cognitive process is active, whereas the focal brain region is engaged in many other processes as well. To ameliorate this problem, researchers need to show that the activation of the focal brain region is consistently associated with one process but not another, and researchers are advised to triangulate this data with other measures, such as self-reported experience (see also Weber et al., 2015).

Busselle and Bilandzic (2009) have developed a measure of narrative engagement (a state of immersion that is conceptually similar or identical to transportation). The advantage of the narrative engagement scale is that it includes four subdimensions, including understanding the narrative, having attentional focus on the narrative, feeling emotion for and with narrative characters, and having the sensation of ‘being there’ in a narrative world. Although the scale as a whole correlates highly with transportation (r s ranging from .73 to .86 in Busselle & Bilandzic,

2009), the measure is useful for researchers who wish to focus on particular elements of the narrative experience.

Along similar lines, Kuijpers and colleagues (2014) also developed a measure of narrative absorption that includes four subscales. The Story World Absorption Scale (SWAS) includes an attention subscale, with items that assess focus, losing track of time, and forgetting the outside world. The transportation subscale specifically focuses on feeling as if one has entered or traveled to the world of the story. The emotional engagement subscale assesses emotional responses specifically related to the main character of the story, and the mental imagery subscale assesses visual imagery. Initial validation studies showed high correlations (in the $r = .65$ range) between the SWAS and the narrative engagement scale and the Green and Brock transportation scale (Kuijpers et al., 2014). The SWAS scale authors suggest that the subscales may be particularly useful for investigating how different texts might evoke different types of absorption.

1.4 Presence, Flow, and Retrospective Imaginative Involvement

There are several other concepts that have been explored in the psychological and communication literature that involve a state of immersion. These concepts have substantial overlap with transportation, but also differ in various ways, as explained below.

A related concept that has developed primarily from the virtual reality literature is presence, or the sense of being there (Klimmt & Vorderer, 2003). More formally, presence has been defined as the perceptual illusion of non-mediation. It is sometimes divided into subcategories, including spatial presence (the person feeling as if they are physically inhabiting the virtual environment), and social presence. Social presence refers to the “sense of being with another” (Biocca et al., 2003, p. 456) within a mediated environment. The other person may be

an actual human or may be a game character. A variety of presence scales have been developed (see Pianzola, 2021). Because these scales were largely developed in the context of virtual reality, they often include items about perceived level of control over one's (virtual) surroundings, being able to respond to other agents in the virtual world, and other spatial presence items that tend to be less relevant for other media.

Another concept that bears a conceptual resemblance to transportation is flow. Csikszentmihalyi (1990) described flow as a state of immersion brought about by absorption in an activity that matches the challenge of the activity to the skills of the individual. Flow is a broad concept that encompasses a range of activities (e.g., playing music, rock climbing), but Csikszentmihalyi (1990) notes that reading is a common flow experience. For written narratives, texts that are too difficult or complex for a particular reader may prevent a flow experience, and texts that are too simple might induce boredom. However, the relationship between challenge and skill may be somewhat more complex for reading or narrative processing than other types of activities, because individuals may still become immersed in even simple stories (e.g., a favorite tale from childhood).

Finally, most research on narrative processes has focused on the immediate experience of reading (or otherwise engaging with) a narrative. However, individuals may also continue to think about the narrative world or the characters after the story has finished. Slater and colleagues (2018) have called this experience retrospective imaginative involvement (or asynchronous cognitive involvement). Retrospective imaginative involvement can take a variety of forms, including imagining oneself in the fictional world, extending or mentally revising the story (for example, imagining a different ending for the story or creating fan fiction to develop new stories with familiar characters or narrative worlds), or engaging in conversations or fan

communities related to the narrative. Retrospective imaginative involvement is positively correlated with individuals' dispositional tendency to become transported (transportability; Sethi et al., 2022).

Similarly, from a consumer psychology perspective, Hamby and colleagues (2017) have proposed the concept of retrospective reflection. Retrospective reflection involves memories evoked by the story which corroborate the story-implied beliefs. Their studies suggest that retrospective reflection mediates the effect of transportation on beliefs.²

Due to the overlap between transportation, narrative absorption, and similar concepts, Pianzola (2021; see also Pianzola et al., 2021) conducted a scoping review of 23 different presence, flow, and narrative absorption questionnaires (with a total of 484 items), with the goal of identifying core concepts contained in the wording of the questionnaire items. His categorization of the items suggested that the primary psychological phenomena assessed were attention, spatial presence, social presence, flow (as characterized by a sense of challenge), narrative absorption, and emotional impact. This review highlights that while there is overlap between these concepts, there are also elements that are distinct.

1.5 Engagement with Narrative Characters

Characters are an essential part of the narrative experience, and psychologically, individuals often react to characters in similar ways as they do to real interaction partners. The “computers are social actors” perspective suggests that we automatically respond to computers, robots, or artificial intelligence entities as if they are real social partners (Reeves & Nass, 1996); similar logic can be extended to fictional characters. This theoretical approach suggests that

² This concept is similar to Strange and Leung's “reminders,” discussed above.

because throughout most of evolutionary history, humans' social interactions were only with real people, individuals unconsciously extend cognitive processes to fictional characters and other media objects (Gabriel et al., 2016). Although narrative transportation includes emotional connections to characters, there are related concepts that attempt to more precisely specify how audience members relate to story characters.

1.5.1 Identification

The most widely studied form of connection with characters is identification (Cohen, 2001; see also Cohen & Klimmt, 2021), defined as “a process that consists of loss of self-awareness and its temporary replacement with heightened emotional and cognitive connections with a character” (p. 251). This process has also been called experience-taking (Kaufman & Libby, 2012). When individuals identify with a character, they temporarily take on the perspective and goals of that character. Transportation and identification are often correlated, but are conceptually and empirically distinct (e.g., Tal-Or & Cohen, 2010). Multiple studies have demonstrated that character identification can be a mechanism of attitude change (e.g., de Graaf et al., 2012; Hoeken & Fikkers, 2014).

Wishful identification refers to wanting to be like or act like the character (for instance, a child wishing to be like a favorite superhero; Hoffner, 1996). Intelligent and attractive characters are most likely to evoke wishful identification (Hofner & Buchanan, 2005).

1.5.2 Parasocial Interactions and Parasocial Relationships

Parasocial interactions occur when individuals feel as if they are part of a social interaction with a character or media personality (Dibble et al., 2016). Parasocial relationships are longer-term connections in which an individual feels a sense of friendship or connection with a media personality or narrative character (Horton & Wohl, 1956; Giles, 2002); these

relationships are often described as one-sided, because the character or celebrity is not aware of the audience member and does not feel a sense of relationship with that person. However, audiences mentally simulate interactions with the character or media persona, and feel a sense of intimacy with them (Gardner & Knowles, 2008).

Polichak and Gerrig (2002) have described narrative audiences as side-participants, analogous to people in a group listening to a conversation between others. Similar to parasocial interaction, this theoretical approach positions the reader as separate from the narrative characters (rather than the merging that takes place with identification), but nonetheless interested and engaged with them. Readers may then engage in participatory responses, the kinds of mental responses that would arise if they were actual participants in the narrative's events (for example, wanting to warn a character who is approaching danger, or trying to mentally solve a problem for a character in peril). These cognitive and emotional responses can shape individuals' memory for the text and increase its impact.

1.5.3 Narrative Collective Assimilation

Narratives often portray social groups in addition to individual characters; for example, *Lord of the Rings* shows communities of hobbits and elves, as well as the group of characters going on the quest to destroy the ring. Rather than (or in addition to) identifying with a single character with the story, readers may come to feel as if they are part of the social group more generally. For example, a reader of vampire novels might temporarily feel as if they are part of the vampire community, or audiences for a television program set in a particular school or spaceship might feel as if they are members of those groups. This phenomenon is known as narrative collective assimilation (Gabriel & Young, 2011). Narrative collective assimilation can have beneficial psychological consequences, including improved life satisfaction and mood. As

discussed below (section 4.5), Gabriel and colleagues (Gabriel et al., 2016) suggest that narratives can help meet belongingness needs, and narrative collective assimilation is one mechanism by which they do so.

1.5.4 Influences on Connections to Characters

Audiences do not connect to all characters equally. A common assumption, which is sometimes empirically supported, is that similarity between an individual and a character will lead to higher identification (e.g., Hoeken et al., 2016; Igartua et al., 2023). However, this assumption is not always accurate, especially if the similarity is on broad demographic factors (J. Cohen et al., 2018; Christy et al., 2022). Perceived similarity may be more important than matching a particular characteristic (Ooms et al., 2019). A recent meta-analysis found a small but significant effect of similarity on identification, with psychological similarity having larger effects than manipulations of objective similarity (J. Huang et al., 2023); another recent meta-analysis also found a small but significant effect of similarity (M. Chen et al., 2023).

Individuals tend to be more likely to identify with ingroup characters, but studies of experience-taking found that revealing an outgroup character's identity late in the narrative led to greater experience-taking than when the identity was revealed early (Kaufman & Libby, 2012). Characters with a fantastical appearance (who are not clearly part of a specific ingroup or outgroup) can also increase engagement with narratives and characters (Lu et al., in press). The effects of similarity with the protagonist may also depend on other factors, such as the group membership of the recipient and the social status of the relevant groups (e.g., Warshel, 2021).

Character connection can be influenced by story structure; specifically, telling a narrative from a character's perspective (focalization) tends to increase identification with that character (de Graaf et al., 2012). A small meta-analysis of 16 health promotion studies found that

narratives from the first-person point of view (“I”) led to greater identification than third-person narratives, although this difference was not significant for transportation (Chen & Bell, 2022). The traits or behaviors of a character also affect identification and liking. Affective disposition theory (Zillmann, 1995; Grizzard et al., 2023) suggests that people are more disposed to like a character who acts in a morally good way. Research has also investigated the circumstances under which audiences can like morally ambiguous characters or antiheroes (e.g., Raney & Janicke, 2012), or can find such characters cognitively engaging and enjoyable, even if not likeable (Krakowiak & Oliver, 2012). Konijn and Hoorn (2005) went beyond morality to consider the dimensions of aesthetics (beautiful versus ugly) and realism (whether the character could exist in daily life or not). They found that beautiful characters and realistic characters also led to higher involvement (operationalized as a mix of empathy and identification).

2. Predictors of Narrative Transportation

Beyond factors influencing character perceptions specifically, in the following section we will describe in greater detail the factors that influence transportation. In line with related theory and research on media and text processing (e.g., Groeben, 1981; Valkenburg & Peter, 2013), narrative transportation is considered to be a psychological state that varies with the text or media product, the recipient, the situation, and interactions between these sources of variance (see Figure 1). As outlined by Green and Brock (2000) and demonstrated in much of the research of the last decades, stories are not equally transporting for all readers or in all situations.

[Insert Figure 1 about here]

2.1 Story Characteristics

Understanding the influence of story characteristics on narrative transportation requires an interdisciplinary approach, as the analysis of text properties taps into the fields of linguistics, literature studies, film studies, and related disciplines. The analysis of content and style of stories dates back to Greek antiquity (Aristotle, around 350 B.C.E./1994; Freytag, 1905) with AI-driven software providing new opportunities for large scale corpus analyses (e.g., Dale et al., 2023; Reagan et al., 2016). Story characteristics have previously been subsumed under different labels, such as *text quality* (e.g., Green & Brock, 2000; see also Kreuter et al., 2007), or *craftsmanship* (e.g., Green & Brock, 2002). In the extended elaboration likelihood model proposed by Slater and Rouner (2002), the story line appeal, quality of production, unobtrusiveness of the persuasive subtext, and similarity of the characters with the self (homophily) were suggested as important text factors. While these approaches are valuable, we believe that the concepts of narrativity and literariness (Koopman & Hakemulder, 2015) provide a more nuanced conceptual basis for discussing the influence of story characteristics on narrative transportation.

2.1.1 Narrativity

Narrativity is an umbrella term that comprises several features that distinguish narratives from other types of texts, such as informational or expository texts. Despite their heterogeneity (see Appel et al., 2021; Kinnebrock & Bilandzic, 2006), the extant conceptions of narrativity converge on a core set of content dimensions and associated structural features (Ryan, 2007). As outlined in the beginning of this chapter, stories describe *a sequence of events that unfold over time and are causally related to one another* (Onega & Landa, 2014). They are populated by agents who follow goals, interact with one another, and respond emotionally to the

events that happen in the story world. In many stories, a conflict arises, and protagonists are hindered in attaining their goals. This conflict can either be resolved (as in stories with a happy ending) or give the sequence of events a negative turn. Thus, narratives usually contain at least one turning point (peripety or climax). A simplified notion of narrativity derived from these considerations is that the more of these content elements appear in the story and the better they are implemented on the discourse level, using the appropriate literary and linguistic devices, the higher the narrativity of a story (Fludernik, 2002).

Previous theory and research suggest that narrativity contributes to transportation by enabling an easy flow of comprehension. In their event indexing model, Zwaan et al. (1995) assume that readers monitor the dimensions of time, space, agent (protagonist), causality, and intentionality during story comprehension. When a break occurs on one of these dimensions in the story (e.g., a temporal shift or a break in the causal chain of events), readers slow down because they need to initiate a new event and update its index on the dimension. The situational dimensions that structure narrative understanding are likely to facilitate transportation into the story world. Moreover, narratives typically follow a schematic structure (e.g., Rumelhart, 1975) and the events that make up this structure create an emotional arc (e.g., from fear to relief, as in thrillers, or from good to bad, as in tragedies). Recent software-based corpus analyses have identified several common emotional arcs in popular media (e.g., Boyd et al., 2020; Del Vecchio et al., 2021; Reagan et al., 2016). Emotional arcs may be considered a prime structural principle of storytelling.

A main line of empirical evidence regarding the influence of narrativity on transportation is based on disrupting the temporal sequence of events in a random fashion in one condition. This story version is compared to an unedited story of moderate to high narrativity.

Indeed, the random re-arrangement of story parts decreased transportation (Appel et al., 2015; J. Wang & Calder, 2006; Schreiner et al., 2018).

In a related series of studies, Laurino Dos Santos & Berger (2022) examined the role of semantic similarity of story parts on evaluations of the story. They used the term semantic similarity to describe the semantic relatedness of different but adjoining parts of a story. As an example of semantic similarity, they provide the example of a paragraph about pine trees. A subsequent paragraph about another type of tree is considered more semantically similar than a subsequent paragraph about a bank robbery. Based on machine learning methods, they examined how changes in semantic similarity of story parts from the beginning to the end of a story affected recipient evaluations. Analyzing 40,000 movie scripts and 10,000 TV episode closed captions, they found that stories with slow semantic progression in the beginning (the adjoining events were semantically related) and fast semantic progression towards the ends had a particularly high likelihood of obtaining better overall ratings by the audience on the online movie database IMDB. What remains open in the latter study is whether the semantic progression is based on story content (a lot of different events occur) or the presentation of the story (the story is edited so that different events are shown in proximity). This relates to the distinction between *fabula* (the story) and *syuzhet* (its organization or representation) by early 20th century Russian Formalists like Tynjanov and Shklovsky. Whereas the former falls into the realm of narrativity, the latter is at the heart of questions of literariness (e.g., Hakemulder, 2007).

2.1.2 Literariness

The concept of literariness has a long history in the academic field of literary studies (Jakobson, 1921; Hanauer, 2018). It has played a pivotal role in literary theory, as theorists of various orientations tried to differentiate literature from other forms of text and reading. The

concept has become increasingly relevant to psychological theory and research since Kidd and Castano (2013) proposed unique effects of reading literary stories (as compared to non-literary stories) on mentalizing abilities (see section 4.4). Theorists and empirical researchers have ascribed a higher or lower degree of literariness in one of two ways (Appel et al., 2021). First, stories differ in their sociological positioning as literary through paratextual signifiers, such as the name of the author, the publishing house, or prizes won (more on paratext in section 2.3.1). Second, from a linguistic/stylistic perspective, literariness defines the forms of language that are distinctive to literary texts. This perspective is taken in the following sections. Literariness denotes a combination of the aesthetic and the unconventional (Koopman & Hakemulder, 2015). Related work has emphasized the use of linguistic elements that draw attention to the text. These elements increase salience by not conforming to everyday language, to other elements of the text, to linguistic conventions, or to world knowledge. These textual aspect of literariness (and related reader responses) are often described as *foregrounding* (Miall & Kuiken, 1994; 1999; the term itself is attributed to Mukařovský, 1931/1964, in the Czech original: *aktualizace*). Increasing salience to the linguistic elements has also been described as *de-familiarizing* (Shklovsky, 1965; Miall & Kuiken, 1994). Consistent with the de-familiarizing notion of literariness, studies have shown that foregrounded language produced slower reading times (e.g., Hanauer, 1998; Miall & Kuiken, 1994; Sopčák, 2007; van den Hoven et al., 2016).

There are two competing predictions regarding the influence of literariness on transportation: On the one hand, foregrounding could reduce transportation, as attention is required for basic story comprehension (as indicated by the slower reading times), rather than allocating attention to the events unfolding in the story world. On the other hand, foregrounding likely increases perceived novelty and yields aesthetic pleasure, both processes contributing to

transportation. Moreover, similar to the flow experience sensu Csikszentmihalyi and others (see section 1.3), transportation is likely highest when the challenge of high text literariness is met with a proficiency to make sense of the text on the readers' side.

Empirical research on the effects of literariness or its linguistic marker of foregrounding has employed different approaches. In the first approach, the same text is manipulated to include more or less instances of foregrounding. A study by Koopman (2016) is a case in point. Following Mukařovský, she distinguished between phonetic (repetitions of sounds, like alliteration), grammatical (e.g., ellipsis), and semantic (e.g., metaphor) foregrounding. Participants in her experiment either read the original version of a literary text (a chapter of the novel *Counterpoint* by Anna Enquist), containing a high level of semantic, phonetic and grammatical foregrounding, a version without semantic foregrounding (phonetic and grammatical foregrounding only), in which as many (novel) metaphors and metonymies as possible were replaced by literal alternatives, or a version without foregrounding (for a similar manipulation see Djikic et al., 2009). After reading, a questionnaire assessed readers' self-reported experiences and judgments. As expected, the original (high foregrounding) condition elicited higher *perceived foregrounding* (how original, striking and surprising the style was perceived) than both other conditions (see also Hanauer, 1998; Sopčák, 2007). No effect was observed for transportation or other affective response measures. Interestingly, empathic understanding was higher after reading the original version of the story as compared to the version without foregrounding (Koopman, 2016).

[Insert Table 1 about here]

Although theory and research on literariness is most frequently concerned with written literature, movies have been analyzed under a similar perspective (Hakemulder, 2007). Neo-formalist approaches to screenwriting and film (e.g., Bordwell, 1985) distinguish *functional syuzhets* (that facilitate understanding of the fabula) from *de-familiarizing syuzhets* that complicate a direct understanding of the storyline. Based on considerations regarding the influence of fabula and syuzhet on recipient experiences, Huang and Grizzard (2022) examined different *syuzhets* on audience responses by manipulating the chronological order of telling a story. The feature films *Memento* and *Pulp Fiction* served as stimulus material. Both films have an achronological structure in its theatrical release version and both are highly popular among general audience members. Note that unlike a random assembly of story parts, the creation of the (achronological) structure is an integral part of the artistic process of movie making. Similar to Koopman's (2016) approach, the de-familiarizing style of the original movie was reduced; Huang and Grizzard (2022) presented either the original version of one of both movies or a chronological version of it. Viewers of the original versions not only experienced more suspense but also higher transportation, as well as appreciation and enjoyment. These main effects were neither qualified by individual differences in need for cognition nor by differences in analytic thinking (as indicated by the Cognitive Reflection Test, Frederick, 2005).

A different strategy to compare the experience of stories of high versus low literariness is to compare highly acclaimed literature to that of genre fiction. Kidd and Castano (2013) presented one out of three works of literary fiction that were taken from a collection of the 2012 PEN–O. Henry Prize winners (high literariness) or one out of three works of popular fiction from an anthology (low literariness). Whereas the literary texts were enjoyed *less* than popular texts, reported transportation did not significantly differ across conditions (Experiment 5). In a more

recent study by Schwerin and Lenhart (2023), however, students were more strongly transported into literary stories (*Corrie* by Alice Munro or *The Vandercook* by Alice Mattison) than into non-literary genre fiction (science fiction story *Space Jockey* by Robert Heinlein, mystery thriller story *Too Many Have Lived* by Dashiell Hammett).

2.1.3 Media and Modalities

People follow stories on different media formats and modes, as texts on paper, texts on digital devices, audiobooks, comic books, 2D and 3D moving images, or in VR. In the last decades, e-readers and related e-reading software have been marketed with the specific use case of reading (longer) texts (e.g., Amazon's Kindle), and a substantive amount of research has addressed potential differences between reading text on paper versus reading text on a screen. Mangen and Kuiken (2014) suggested that reading text on an e-reader lacks a "sense of text", and the missing kinesthetic impression of the text (e.g., the perception of turning the pages) may elicit a feeling of awkwardness handling the medium, reducing narrative transportation. In partial support for their hypothesis, in a sub-group that was told that the story was non-fiction, participants' narrative engagement scores were lower when a crime story was presented on a Kindle app for iPad vs. a text booklet. No such difference was found in a sub-group that was told that the story was fiction (the fiction vs. non-fiction manipulation was exploratory in this study). Comparing text presentation on an e-reader versus printed text, Schwabe and colleagues (2021) did not find any differences regarding several transportation-like experiences (using large item sets based on Appel et al., 2002, and Koopman, 2015). Research on text comprehension is in line with the latter results: Meta-analyses show that average comprehension scores do not differ between screen reading and print reading when it comes to narrative texts (Clinton, 2019,

Delgado et al., 2018; Schwabe et al., 2022); for non-narrative texts, however, there seems to be a slight advantage of print over digital formats (Clinton, 2019; Delgado et al., 2018).

Another relevant area of research deals with potential differences between watching videos on smaller versus larger screens. The mode of access to movies and other audiovisual content has been a substantial topic among artists and theorists (e.g., Beugnet, 2013). Some theory suggests that the engagement with audiovisual stimuli increases with screen size, because larger screens attract more attention and arousal (Reeves et al., 1999). Given the popularity of smartphones, a large percentage of stories watched worldwide are watched on small screens (van Kessel et al., 2019), which would suggest lower transportation into stories among large parts of the audience. Much of the available research on screen size did not focus on transportation but related theory and measures of spatial presence. Empirical research in this tradition compared different sizes of field of view with the help of blinders or display screen size of head-mounted displays or TV/computer screens of different sizes. Meta-analytic data suggest that larger field of view (including larger screens) increased presence (Cummings & Bailenson, 2016). However, the included primary studies restricted participants moving closer to smaller screens, and the stimuli were rarely narratives. In a series of studies that assessed the experience of transportation when watching short narrative movie clips on a smartphone-sized or a monitor-sized screen, no conclusive evidence was found that smaller screens impair story experience (Appel & Mengelkamp, 2022). Moreover, screen size did not affect the influence of pre-exposure information that had been used in the past to manipulate transportation (Green et al., 2008; Tiede & Appel, 2020, see section 2.3.1).

In a third relevant area of potential media and modality differences the comparison between print to audiovisual stories is focused. Green and colleagues (2008) underscored two

potentially relevant differences between written and audiovisual stories: First, audiovisual stories involve a stronger sensory richness that could lead to a stronger allocation of attention and thereby increase transportation (Gerrig & Prentice, 1996). Second, the effort required to represent the story is higher for print and the process of generating a mental model from text could foster the experience of transportation (Busselle & Bilandzic, 2008). Presenting a printed excerpt of the novel *The Rainmaker* (Grisham) or the same scene of the 1997 movie, no differences between both version in terms of transportation occurred. However, in partial support of the underlying assumptions, self-reported mental effort was higher in the print condition.

Higher transportation for the audiovisual form was found in a more recent study: When presented in an audiovisual compared to a print format, a health narrative created to increase HPV vaccination elicited more transportation (emotional and cognitive components were assessed) while also encouraging higher levels of psychological reactance (Walter et al., 2017). However, a meta-analysis of health narratives in studies of African-American women showed no difference in persuasion across audio-visual and print narratives (although they did not specifically examine transportation; Ballard et al., 2021).

Following up on the idea that print versus film-effects should vary with mental imagery ability (Green et al., 2008), Isberner and colleagues (2018) presented excerpts of Disney stories (that varied in the main characters' in self-efficacy, e.g., Pocahontas, Cinderella) either as movies (around 10 minutes each) or the corresponding text (around 1000 words), with comparable content in the text and video version of each narrative. They found an interaction between presentation medium and individual differences in participants' perceived ability to generate vivid mental imagery (measured via the Vividness of Visual Imagery Questionnaire, VVIQ;

Marks, 1973): Participants with low VVIQ scores were more transported by films than by texts whereas participants with high VVIQ scores were equally transported into texts and films.

Some studies have also examined the use of pictures to increase mental imagery. Cohen et al. (2020) found that including images in a story about mental illness increased narrative engagement and reduced counterarguing. Similarly, Adaval and Wyer (1998) found that including a more prominent picture increased the effectiveness of a narrative ad (whereas it decreased the effectiveness of a message in list format). These authors suggested that narratives are processed in a holistic rather than piecemeal fashion, so the images contribute to the overall evaluation rather than distracting from message processing. Chang (2013) compared the effects of adding narrative images (a person using a product) to product images to a narrative ad, and found that narrative images increased attitudes through increased imagery fluency. Although these latter sets of studies did not examine transportation directly, they imply that that relevant images can enhance transportation into print narratives.

2.2 Recipient Traits and Individual Differences

Theory and research suggest that the experience of transportation is – in part – a function of rather stable individual differences. Gnambs and colleagues (2014) conducted a latent state-trait analysis of transportation scores to disentangle the different sources of variance. As expected, observed transportation scores captured components of textual variations (state components) as well as trait components. The latter were noteworthy, but smaller than in prior latent state-trait analyses of traits such as extraversion or the need for affect. This pattern of results is line with the general assumption that transportation is best conceived as a state that varies substantially with the story, the reception context, and related interactions. Still, there are meaningful individual differences in a general tendency to get transported.

Several specific traits have been connected to the state of transportation, in order to describe and explain these interindividual differences in getting transported into narrative worlds. Some approaches followed the rationale of formulating and examining a trait counterpart to state transportation. The most notable construct in this regard is *transportability*, a generalized tendency toward being transported by a narrative (Dal Cin et al., 2004; see also Jensen et al., 2016, for an adaptation for children, and Mazzocco et al., 2010). Closely related, both conceptually and empirically, is *narrative engageability* (Bilandzic et al., 2019) that involves four subdimensions (suspense/curiosity propensity, emotional engageability, ease of accepting unrealism, presence propensity). Another recent construct and measure overlapping with transportability is trait *imaginative engagement* (Black et al., 2022) that is focused on the propensity of engaging in active imagining when reading a story. These traits and measures are typically applied whenever researchers are interested in habitual immersion and do not present actual narrative stimuli (e.g., Brechman & Purvis, 2015; Dunlop et al., 2008; Lenhart et al., 2022). Consistent with the supposed role of these constructs, associations between these trait measures and state transportation are high. Imaginative engagement and transportability together accounted for 29.4% of the variance of being transported when reading excerpts of a novel (Black et al., 2022; see also Christy & Fox, 2016; Zheng, 2014).

Other research focused on broader constructs to explain, rather than describe and quantify, individual differences in the propensity to get transported into story worlds. A substantial amount of attention was given to the *need for affect* as a predictor of narrative transportation and responses to stories more generally. This trait refers to individuals' tendency to approach or avoid situations and activities that are emotion inducing (Maio & Esses, 2001). The need for affect has consistently been associated with emotional experiences during media

reception (e.g., Bartsch et al., 2010; Maio & Esses, 2001) as well as with narrative transportation with the approach dimension regularly showing larger associations than the avoidance dimension (e.g., Appel & Richter, 2010; Chen et al., 2022). Appel and Richter (2010) found that the need for affect predicted transportation which in turn increased the persuasive effects of an emotional (versus less emotional) narrative, a case of mediated moderation.

Several studies examined the role of the need for cognition, i.e., the tendency to seek out and engage in effortful cognitive activities (Caccioppo & Petty, 1982). They showed that the greater participants' need for cognition, the stronger participants' transportation (e.g., R. Thompson & Haddock, 2012), particularly in a high-distraction environment (Zwarum & Hall, 2012). In a study that examined transportation to print versus film, higher need for cognition predicted that individuals were more transported into print, but higher need for cognition predicted that individuals were *less* transported into films (Green et al., 2008).

Positive associations between transportation (or closely related measures) and stable individual differences were further reported for openness (e.g., Silvia & Nusbaum, 2011), sensation seeking (e.g., T.M. Thompson et al., 2018), and trait empathy (e.g., the fantasy subscale of Davis's (1983) Interpersonal Reactivity Index, Hall & Bracken, 2011). Similarly, individuals who are more motivated to engage with the perspectives of others (a tendency termed mind-reading motivation; Carpenter et al., 2016), are more likely to become transported into narratives (Carpenter et al., 2018).

Moreover, prior knowledge or experience relevant to the themes of the story increased transportation. Green (2004), for example, found that readers who had homosexual friends or family members, or had insight into university fraternities, showed greater transportation into a story in which these topics were prominent. Research by Chow and colleagues (2015) suggests

that prior experience leads to greater perceived vividness of narrative scenes, and may help readers form a richer narrative representation. Likewise, general beliefs about the world predict being immersed into stories that are in line with these beliefs. For example, participants who believed in good luck and good fortune (“I often feel it's my lucky day”) were more strongly transported into a narrative ad that featured a lottery win, at least when they were not distracted by processing instructions (McFerran et al., 2010, see more on reading tasks below).

Slater and Rouner (2002) suggest that personal relevance (the extent to which a message addresses one’s self-interest), a factor that strongly predicts elaboration of non-narrative messages, is not a particularly important factor for narrative engagement. Individuals can easily become absorbed in stories that present situations very distant from their own circumstances. Instead, they suggest that narrative absorption may be influenced by how well the story serves the needs and goals of the reader (e.g., vicarious social engagement; entertainment).

2.3 Situations and Contexts

2.3.1 Paratexts, Fiction versus Non-Fiction Indicators, and the Influence of Reviews

People are consistently exposed to information about stories, for example through advertisements for upcoming movies, opinions from peers about a bestselling novel, or social media postings about new series on a streaming platform. A substantial line of research examined how such context information influences narrative transportation.

Some of the context information is provided by the creator or publisher of the story. Following Genette (1987), informational elements accompanying a text, such as the genre label, back-cover details, intro texts on streaming services, or author/director interviews are called paratexts. While Genette primarily discussed books, the concept of paratext is applicable to different media products, including movies and computer games. For example, a movie might be

promoted before its release through a TV spot showcasing awards from Cannes, Berlin, or Sundance, or an endorsement by a famous critic.

Paratexts play a crucial role in indicating the fictionality of a story (fiction or non-fiction), for example by informing about the genre of a story (e.g., *news report*, *novel*, *biography*, *TV series*, or *documentary*). The differentiation between fiction and non-fiction is based on distinct norms regarding the relationship between depicted events on the one hand and real-life occurrences and facts on the other. Creators of non-fiction need to adhere to norms emphasizing the truthful portrayal of events, epitomized by the Global Charter of Ethics for Journalists, stating, “Respect for the facts and for the right of the public to truth is the first duty of the journalist” (IFJ, 2023). Conversely, creators of fiction have the liberty to create characters, incidents, or societies that have no counterpart outside of the story. They may, however, try to depict real-life characters and events accurately, like a journalist would (Eco, 1994).

Evidence regarding the impact of fictionality information accompanying a story on story processing is mixed. When asked about expectations evoked by fiction versus nonfiction (and fake/lie stories), nonfiction was considered most useful and trustworthy, whereas fiction was considered most engaging and entertaining (Appel & Maleckar, 2012). In studies varying argument quality within a narrative, a fact label prompted greater critical scrutiny than a fiction label (at least for participants low in need for cognition; Green et al., 2006). Studies on reading time differences between stories that were either introduced to be fictional or non-fictional (the text itself was identical) revealed that fictional texts yielded significantly longer reading times (Zwaan, 1991; but see Triantafyllopoulos et al., 2021). In addition, fact versus fiction labelling elicited different brain activation patterns when reading one and the same text (Altmann et al., 2014). In contrast, research on transportation more often than not failed to demonstrate an effect

of fact versus fiction labelling (e.g., Chlebuch et al., 2020; Green & Brock, 2000; Strange & Leung, 1999). Likewise, individuals reported feeling similar levels of sadness to movies labelled as fictional versus non-fictional (Goldstein, 2009).

Prior to reading a book, watching a movie or streaming a series, recipients are often exposed to reviews or other summaries and evaluations of the story. Theory suggests that reviews have the potential to influence users' transportation and related processes by altering recipients' expectations (Tan, 1996). Early research on fundamental perceptual processes emphasized the role of expectations as guides for perception (Bruner & Postman, 1949) and expectations were found to influence a range of experiences, such as the taste of beverages (e.g., Lee et al., 2006) or the perceived effectiveness of medications (e.g., Shiv et al., 2005).

Regarding story processing, Tan (1996) argues that recipients invest cognitive and emotional resources into processing media stimuli in expectation of gratifications. These expectations are built prior to the processing itself or during the early stages of processing. If, for instance, it is already apparent at the beginning of a film that the film offers interesting characters and an exciting plot, the viewer will expect high quality from the rest of the film. Consequently, they will invest more resources. Given the uncritical receptive stance associated with transportation, once transported into the story world, it is less likely that flaws in the content or style will be detected. Indeed, presenting positive reviews (as compared to negative reviews or no reviews) elicited higher transportation (e.g., Dixon et al., 2015; Gebbers et al., 2017; Isberner et al., 2019; Shedlosky-Shoemaker et al., 2011; Tiede & Appel, 2020) which could be attributed to more positive expectations (Tiede & Appel, 2020). Tiede and Appel argue that presenting reviews could be a feasible way to manipulating narrative transportation without changing the narrative itself (see also Tukachinsky, 2014).

2.3.2 Reading Goals and Secondary Tasks

In their seminal series of studies Green and Brock (2000) included instructions meant to manipulate transportation. In the *Theater condition*, readers were encouraged to get deeply transported by asking them to take over the role of a main character, like an actor/actress would (Experiments 2 and 3). Conversely, readers in the *Fourth-grade literacy condition* were instructed to evaluate the text during reading in terms of difficult language that might not be understood by a fourth grader (Experiments 2 and 4). Whereas the theater manipulation did not increase transportation, the *Fourth-grade literacy condition* reduced transportation in comparison to a standard reading instruction in their more strongly powered Experiment 4 (see also Shedlosky-Shoemaker et al., 2014). Similarly, participants in a study by Sestir and Green (2010) were instructed to either focus on the story “as if you were inside the movie itself” or to “focus on the color scheme used in the movie clip”. As expected, self-reported transportation (but not identification) was lower in the latter condition.

Another way to decrease the cognitive resources available for getting transported into the story is by asking recipients to process story-unrelated stimuli while reading or watching (Hamby et al., 2017; Wentzel et al., 2010). Hamby and colleagues (2017) presented a string of numbers on the bottom of a screen and instructed participants in one condition (load throughout) to count how often a certain number appeared on the screen during the whole experimental session. In a second condition (load-after-reading), participants were instructed to ignore the numbers while reading and to start counting the numbers when the story had ended. In the control condition, participants were instructed to ignore the numbers altogether. As expected by transportation theory, transportation in the load-throughout condition was significantly lower than in both other conditions. Cognitive load imposed after reading did not influence

transportation, as transportation did not differ in the load-after-reading and no-load conditions. In sum, the current evidence suggests that getting transported can be impaired by reading goal and secondary task instructions, whereas increasing transportation against baseline could not be accomplished.

2.3.3 Environment

Readers or viewers enter story worlds from a physical and social situation: they sit in a packed (or almost empty) movie theatre, they watch TikToks with their friends or stand at a cold rural bus stop reading a story set in the desert. Surprisingly little research, however, has been conducted on the influence of situational variables on transportation.

One way that the environment can affect the processing of stories is through distraction (Green et al., 2004), a phenomenon that parents with little children are likely familiar with. Zwarum and Hall (2012), for example, prepared a situation in which participants watched a narrative video with the sound of other participants' videos being clearly audible, and the participants further received five experimenter messages on the screen that were unrelated to the video. Participants in this group reported to be less transported into the story world, as compared to a control condition in which the same clip was presented without background noise and without pop-up messages.

As indicated in the study by Zwarum and Hall (2012), the presence of other people can be a source of distraction, but this is not the only role others can play. Film theorists have emphasized that going to a movie theatre is a social experience in which the presence of others shape enjoyment and responses to the story told on the big screen (e.g., Hanich, 2014). Even silent reading may differ depending on the presence of others (Kuzmičová, 2015; Kuzmičová et al., 2017). Based on psychological theory, Tal-Or (2021) has outlined several ways in which

other people can affect transportation and related processes, starting from the assumption that the mere presence of other people could increase arousal (Zajonc, 1965; E. Cohen et al., 2016) and therefore affect emotional responses and transportation. Empirical evidence suggests that positive responses by others while watching a movie (enthusiasm expressed by a confederate co-viewer) increased transportation (Tal-Or, 2016; Tal-Or & Tsfat, 2018).

Another line of research examined recipient responses when ingroup or outgroup members were present. In a study by Tal-Or and Tsfat (2016), Jewish participants watched a movie in which an Arab protagonist was portrayed rather negatively. When the film was watched together with an Arab co-viewer (as compared to a condition with a Jewish co-viewer) recipient engagement in terms of identification with the Arab protagonist was increased. Increased identification, in turn, was associated with more positive attitudes toward Arabs (see section 4.1.4 on narrative effects on intergroup attitudes). Related research examined Black or White participants' experience of Black-oriented animated comedy with Black or White co-viewers (Banjo et al., 2015; 2017). In a classic study on the experience of horror movies (Zillman et al., 1986), men enjoyed a movie most in the company of a woman (actually a female confederate) that showed signs of distress, and they enjoyed a movie least in the company of a woman showing confidence rather than fear.

Based on extant theory on the influence of environmental cues (i.e., room temperature) on affect, cognition, and behavior, Tal-Or (2019) expected that a match between the temperature in a movie and room temperature increased transportation. In an experiment, she showed an excerpt of a movie that was either set in a desert or in frosty Siberia. The temperature in the room was manipulated to be either cold ($\sim 16^{\circ}\text{C}/60.8^{\circ}\text{F}$) or warm ($\sim 24^{\circ}\text{C}/75.2^{\circ}\text{F}$). In partial support of the match hypotheses, perceived temperature match was positively associated with transportation.

3. Processes Facilitating Narrative Effects

Transportation can influence a variety of narrative outcomes, including attitude and belief change, as discussed in Section 4 below. In the current section, we discuss how the components of transportation and related processes evoked by transportation can contribute to these outcomes. Broadly, stories often present a specific series of events, but readers then generalize from those events. This tendency to draw general conclusions appears to be relatively automatic. Indeed, in some conditions in their study, Strange & Leung (1999) explicitly informed participants that the story they were reading did not represent a typical case. Nonetheless, participants' beliefs about the causes of students dropping out of high school (the topic of the story) were still influenced by the narrative. Gerrig and Prentice (1991; see also Prentice et al., 1997) showed that readers are most likely to adopt context-free assertions (claims that are not bound to a particular setting) from narratives rather than context details (information specific to a particular world). For instance, viewers of a political drama might form views about political issues based on the story, but are unlikely to believe that the fictional president in the program is actually the real-world president.

The influence of narratives is increased to the extent that participants are transported into them. In this section, we highlight the role of emotions and mental imagery in transportation. We also discuss the role of characters in creating narrative impact, as well as cognitive effects such as reducing resistance. Finally, we consider the effect of narratives on memory, a process that may be driven primarily by narrative structure, but which may be enhanced by transportation.

3.1 Emotions and Emotional Flow

There is an extensive history of research on the role of emotion in persuasion (e.g., Petty et al., 2003), and emotion has also long been recognized as a key part of the narrative experience

(e.g., Oatley, 1999a; 1999b; Mar et al., 2011). Transporting narratives are effective, in part, because they evoke emotions (Green et al., 2012). Stories can induce particular discrete emotions that are linked to desired actions; for example, narratives might evoke fear of disease to encourage prevention behaviors (e.g., Dunlop et al., 2010) or guilt to discourage negative health behaviors (Liu & Yang, 2020). Narratives might also create positive emotions; for instance, advertisers might try to create happiness or warm feelings toward a product to encourage viewers to purchase it (Escalas et al., 2004). Emotions are typically evoked by events or descriptions in the narrative. While audiences often empathize with characters and experience similar emotions, audience emotions can also differ depending on their appraisals (e.g., Appel et al., 2019; Hamby & Jones, 2022). For example, a reader may experience anger if she believes a character has made a foolish choice.

Beyond discrete emotions, recent theory has focused on the idea of emotional flow. Emotional flow is an audience member's experience of emotional shifts over the course of a narrative, usually in response to events in the narrative (Nabi & Green, 2015). These shifts may involve changes between different emotions (e.g., from fear to happiness) or shifts in intensity within the same emotion (e.g., from slightly to extremely sad). These emotional experiences can arise through identification with the characters in the narrative, as when a reader vicariously experiences a protagonist's emotions, or the emotions may arise independently based on the audiences' own appraisal of the narrative. Because these shifts may help maintain reader interest and attention, they should be associated with greater transportation (Nabi & Green, 2015). This assumption was confirmed in two studies in which continuous self-report measures of emotional experiences were applied (real-time-response measurement, Winkler et al., 2022; self-probed emotional retrospections, Winkler et al., 2023). A self-report emotional flow scale has recently

been developed (Fitzgerald et al., in press). This six-item measure includes items assessing perceived shifts in intensity and valence.

3.2 Mental Imagery

The Transportation-Imagery Model (Green & Brock, 2002) proposed that transportation can evoke vivid images, and that this story-linked mental imagery is an important driver of belief change. Imagery facilitates the mental simulation of narrative events, which may change or reinforce attitudes (Green & Brock, 2000; Green, 2006; Mazzocco & Brock, 2006). However, relatively little narrative persuasion research has directly examined the role of imagery. Research suggests that an individual's imagery ability increases presence and enjoyment of a narrative text, but not in a narrative film (Weibel et al., 2011). In another study, participants who were given practice and instructions for creating vivid imagery across different senses (e.g., visual, auditory, smell, and touch) were more transported into a story and showed greater subsequent prosocial behavior than individuals who were instructed to read the story as if they were reading it for leisure (D. Johnson, Cushman et al., 2013). As mentioned in section 2.1.3 above, providing narrative-relevant pictures can increase imagery fluency and subsequent persuasion (e.g., E. Cohen et al., 2020).

3.3 Characters as Role Models

Social Cognitive Theory (originally called social learning theory; Bandura, 1986) has been used to explain the effects of narrative persuasion. A primary contribution of social cognitive theory is the idea that people can learn by observing the behaviors of others (including narrative or fictional characters) and seeing the positive or negative consequences of those behaviors. Positive role models demonstrate the desired behavior and are rewarded (e.g., the

character wears a seatbelt and survives an accident), whereas negative role models engaged in undesired behaviors and are punished (e.g., a character who smokes and develops lung disease).

Narratives can include transitional role models, who demonstrate negative behaviors or resistance to change at first, but then adopt the desired behaviors over the course of the narrative. Transitional characters are often most effective because audiences can identify with their struggles at the start of the narrative, and then when the character succeeds, this ability to make a positive change can increase self-efficacy in the audience. For example, a study of vaccine acceptance among African-Americans demonstrated that a self-persuasion narrative which showed the narrator's initial skepticism of the COVID-19 vaccine and then her conversion to supporting the vaccine was more effective than a narrative that was more positive toward the vaccine from the beginning (Huang & Green, in press). These effects were mediated by increased self-referencing, affective empathy, and similarity with the character.

Social cognitive theory has been particularly influential in entertainment-education research and practice. Entertainment-education involves creating entertainment programs with educational or persuasive content or intentionally embedding such content in entertainment programs (for example, conveying accurate health information in a medical drama). It has been used to address a wide range of topics (adult literacy, domestic violence, cancer screenings, etc.; see Singhal et al., 2003, Frank & Falzone, 2021). Researchers and practitioners drawing on the principles of social cognitive theory have included pro-social narrative messages in actual media fare in many parts of the world (e.g., radio dramas in Mexico, Sabido, 2004; Rwanda, Paluck, 2009, DR Congo, Paluck, 2010; or in Burkina Faso, Bilali, 2023), including the United States (e.g., H. Wang & Singhal, 2016). Evaluations of these programs often involve field studies, many of which have shown beneficial effects.

Characters may also serve as sources of information with a narrative. However, not all characters are equally trustworthy sources of information. Appel and Mara (2013) found that a trustworthy character led to stronger intentions to drive in a fuel-efficient way (the topic of the story) than a less trustworthy character.

3.4 Overcoming Resistance

According to transportation theory, when individuals are transported into narratives, they are less likely to counterargue claims made in the narrative (Green & Brock, 2000). Additionally, because narratives sometimes present messages in a subtle way (e.g., showing the consequences of a health behavior through narrative events, rather than through providing direct health information to audiences), they may be less likely than didactic messages to evoke reactance. However, even narratives that are clearly designed to persuade (for example, a narrative promoting seatbelt use by sharing the story of a person being saved from injury during a car accident) may be effective messages. The Entertainment Overcoming Resistance Model attempts to provide a framework linking different narrative processes to different types of resistance to persuasion (EORM, Moyer-Guse, 2008).

Supporting these ideas, a recent meta-analysis (Ratcliff & Sun, 2020) examined multiple forms of resistance, including counterarguing, perceived freedom threat, message derogation, and anger, and found that narratives evoked less resistance than non-narratives. These findings held even for cases in which the persuasive intent of a narrative was obvious (Ratcliff & Sun, 2020). However, one complexity in considering counterarguing and narrative processing is that transported individuals may not counterargue against the narrative as a whole, but may counterargue against characters within a narrative (for example, if a character is promoting a

harmful position or demonstrating negative behavior; Moyer-Guse & Nabi, 2011; see also Niederdeppe et al., 2012, for a discussion of different types of cognitive responses to narratives).

More recently, affective resistance in terms of perceived corniness was examined as a complement to counterarguing in the field of narrative communication (Appel, 2022; Appel et al., 2019). Participants who showed stronger affective resistance (i.e., who perceived narrative ads to be, for example, *cheesy* or *oversentimental*) experienced lower transportation. Affective resistance mediated the negative effect of a persuasion warning over and above the mediating effect of transportation.

In work from an elaboration likelihood model perspective, Krause and Rucker (2020) found that narratives tend to reduce argument processing. Their findings suggest that stories thus may be more effective than non-narratives if arguments are weak, whereas simply presenting the facts may be a better approach for strong arguments (see also Slater & Rouner, 2002). However, many narratives do not include explicit arguments; rather, they persuade by illustrating events, actions, and their consequences. Consistent with the discussion of narrativity above (section 2.1.1), transportation may not be the primary mechanism of persuasion for stories that rely on explicit claims in the narrative (for example, as part of the dialogue between characters) for their persuasive effect. This type of persuasion may be more influenced by elaboration or other cognitive processes.

More generally, transportation is a pleasurable experience associated with enjoyment, and individuals often seek out entertainment narratives (Green et al., 2004). Thus, another advantage narratives may have for persuasion is that people may be more likely to be willing to read or watch narratives compared to more didactic presentations (selective exposure). For example, Knobloch-Westerwick and Sarge (2015) found that weight-loss messages with exemplars had

longer reading times (exposures) than those with base-rate information and were more effective in creating behavior change.

3.5 Processing Fluency

Processing fluency refers to how easy or difficult it is to process or understand information. Processing fluency often leads to more positive evaluations of stimuli or messages (for example, more positive judgments of truth or beauty; Schwartz, 2018), particularly when individuals are using more intuitive or low-effort judgement strategies. However, the effects of processing fluency on transportation and narrative persuasion appear to be somewhat more complex. Nielsen and Escalas (2010) examined processing fluency by changing the ease of reading a narrative ad through a manipulation of whether the font was clear or somewhat blurry. Surprisingly, they found that transportation was higher for the difficult-to-read condition. They suggest that the reading difficulty led participants to believe that more effort was needed to process the ad, and thus participants exerted more effort and were more transported into the story. Similar results were reported by Vaughn et al. (2010), but these authors also found evidence in other studies that increased processing fluency increased transportation (e.g., Vaughn et al., 2009, as manipulated by a prior experience of regulatory fit versus non-fit; see Bullock et al., 2021, for additional evidence of positive effects of processing fluency). They suggest that for relatively less-transporting narratives, fluency may increase individuals' confidence in a negative evaluation of the story, whereas fluency should increase transportation into a more-transporting story. Walter et al. (2020) further suggest that while fluent narratives can create flow, narrative disfluency may aid persuasion by reducing attitude certainty.

3.6 Perceived Realism

The relative ease of comprehension further plays a role in recipients' evaluations of *perceived realism*. The more story events, including the characters' thoughts, feeling, and actions match the knowledge and expectations of the audience, the higher the psychological realism of that story. In other words, transporting stories also feel psychologically real (regardless of whether they are non-fiction or fiction). For example, Hall and Bracken (2011) found positive correlations between transportation and perceived realism. Perceived realism also has multiple dimensions. For example, based on qualitative analysis of focus group discussions of media realism, Hall (2003) proposed the dimensions of perceived plausibility (the degree to which narrative events could occur in the real world), perceived typicality (how similar the events are to the audience's usual experiences), perceived factuality (degree to which the narrative portrays a specific person or event in the real world), perceived narrative consistency (narrative coherence), and perceived perceptual quality (degree to which a narrative presents a compelling portrayal of a possible reality). She noted that plausibility was the most commonly discussed conceptualization. Indeed, individuals are regularly transported into stories that are not factual or typical (e.g., science fiction stories set on other planets), suggesting that plausibility is a more important factor for transportation. As noted above in the discussion of narrativity (section 2.1.1), consistency or coherence is also important.

In a study of narrative public service messages and advertisements, Cho et al. (2012) found that multiple realism dimensions were important for narrative impact, but in different ways. Plausibility predicted emotional involvement, whereas typicality predicted identification. Consistency and perceptual quality predicted message evaluation (perceptions of message effectiveness). Involvement, identification, and evaluation all predicted attitudes. Busselle and Vierrether (2022) tested the basic assumption that features of the text can affect realism,

particularly if there are obvious violations of readers' expectations. In their study, stories that included modern technologies whereas they were set in the past reduced readers' perceptions of realism and their engagement in the stories (see Green & Garst, 2008, for similar findings).

3.7. Stories and Memory

Beyond transportation specifically, narratives may have advantages for long-term memory. A recent meta-analysis suggests that narratives are both easier to comprehend and easier to recall than expository text (Mar et al., 2021). Mar and colleagues propose several reasons for this narrative advantage. First, stories tend to have a clear structure or narrative grammar (Graesser et al., 1996), in which a protagonist pursues goals, encounters conflicts, and finds a resolution. This structure is familiar and is more likely to be similar to individuals' everyday life, whereas expository texts may use structure that are less predictable. Narratives are also often about social relationships, and these themes are also familiar to audiences. This prior knowledge can aid comprehension and memory. In contrast, expository texts may be more abstract and more likely to contain unfamiliar concepts. Additionally, stories are likely to contain emotional content, and evidence suggests that emotion can aid memory. Finally, narratives also have a developmental advantage over non-narratives or expository texts, as people are exposed to narratives starting in early childhood.

Furthermore, research suggests that assertions that are part of the causal structure of the narrative tend to be more memorable and persuasive than those that are non-causal (Dahlstrom, 2010). Causal assertions were defined as ones that changed future events; for example, one character makes a statement that causes another character to change his behavior. Dahlstrom (2012) found that assertions in causal positions were more likely to be perceived as truthful than

those in non-causal positions, and this effect persisted over two weeks. These effects were not moderated by prior beliefs or transportation.

4. Outcomes of Narrative Processing

4.1 Attitude, Belief, and Behavior Change

4.1.1 Overall Effects

The power of transporting narratives to persuade audience members has been demonstrated across a range of social, psychological, and health topics (for reviews and meta-analyses, see Ballard and Hoffner, 2021; Braddock & Dillard, 2016; de Graaf et al., 2016; Shen et al., 2015; van Laer et al., 2014). This research has been conducted across disciplines, including social psychology, communication, marketing, and public health. As a meta-analysis of 76 articles confirms, individuals who are more transported into narratives show more narrative-consistent affect, beliefs, attitudes, and behaviors across a range of topics (van Laer et al., 2014).

Much of the research on narratives and attitude change has examined explicit attitudes. However, a few studies have demonstrated that narratives can also affect implicit attitudes. Implicit attitudes are automatically activated associations that may influence individuals without their intent or conscious awareness. Dal Cin et al. (2007) found that a film depicting a main character smoking increased smokers' associations between smoking and the self (Dal Cin et al., 2007). Other examples include findings that suicide awareness stories increased implicit associations between self and life (Arendt et al., 2016) and that a film clip that depicted Black characters in a positive way significantly reduced implicit anti-Black bias from pretest to post-test (Wittenbrink et al., 2001).

Most studies on narrative-based attitude, belief, and behavior change have measured effects immediately or shortly after narrative exposure. Studies that have investigated longer-term effects of persuasive narratives (such as attitude change maintained over time, e.g., Frank et al., 2015; Hormes et al., 2013; and sleeper effects: e.g., Appel & Richter, 2007) have shown promising effects. A recent meta-analysis suggested that narratives are more effective than non-narratives at creating change over time for attitudes, intentions, and behaviors (long-term effects were not significant for beliefs; Oschatz & Marker, 2020).

Furthermore, comparisons between narrative and non-narrative messages are challenging, because of the inherent differences between these message formats. However, a number of studies have attempted to compare narratives to messages containing didactic or statistical information (non-narratives). When examining this literature as a whole, the results are mixed. A small early meta-analysis suggested that statistical messages are more effective than narratives (Allen & Priess, 1997), but a more recent meta-analysis comparing statistical and narrative evidence suggested that statistical evidence has a stronger influence on beliefs and attitude, whereas narratives have a stronger influence on intention (Zebregs et al., 2015). A systematic review of interventions about vaccination suggested that narratives were more effective than statistical messages about half the time, but the effect size tended to be very small (Lazić & Žeželj, 2021); combined narrative and statistical messages showed a slight tendency to be more effective than either one separately, but only a small number of studies were included for this comparison.

4.1.2 Health

Narratives have been widely used in health contexts, often in the form of personal stories or testimonials about disease detection or treatment (e.g., Kreuter et al., 2007). De Graaf and

colleagues (2016) provided a review of the range of different types of stories used in health persuasion research (see also Dahlstrom et al., 2017; Shaffer et al., 2018). Among other findings, their results suggested that stories with high emotional content were more likely to have effects and that an overtly persuasive narrative does not inhibit persuasion. A meta-analysis of health narratives by Shen and colleagues (2015) further suggested that narratives had a small effect on persuasion, and the effects were stronger for audio or video narratives. Additionally, narratives advocating prevention or detection showed significant effects, whereas cessation narratives did not. Beyond the effects of narratives generally, transportation effects have been investigated in a number of health-related areas.

In one study, participants were shown a fictional narrative film about cervical cancer and asked to recall facts conveyed in the film (i.e., facts relating to cervical cancer and HPV, such as “women need Pap tests even if they are not sexually active”). Transportation predicted increased knowledge gain as well as behavioral intentions for cervical cancer screening (Murphy et al., 2013). Findings also suggested that Mexican-Americans were most transported into the film, which featured Latina characters. Similarly, another study showed participants a six-episode story arc from *Desperate Housewives*, in which a main character (Lynette Scavo) was diagnosed and treated for Non-Hodgkin’s lymphoma (Murphy et al., 2011). Transportation predicted increased knowledge about Hodgkin’s lymphoma, as well as story-consistent attitudes (e.g., the importance of social support; Murphy et al., 2011).

Kim et al. (2012) investigated how exemplification of successful smoking cessation (e.g., reading a woman’s testimony about quitting smoking) influenced recipients’ narrative engagement, a measure that included transportation items (in addition to perceived similarity and empathy). Exemplars are illustrative individual cases presented within a news report; they may

or may not have the same level of plot development as other forms of narrative (Brosius & Bathelt, 1994; see Kramer & Peter, 2020, for a meta-analysis of exemplification effects, and Huang et al., 2022 for a discussion of distinctions between exemplars and narratives). Smokers who read a news article that included an exemplar experienced greater narrative engagement compared to those reading an article without an exemplar and in turn reported higher intentions to quit smoking. Another study of smoking cessation suggested that watching narrative videos could be an effective means of helping high-risk individuals quit smoking. Participants were randomly assigned to watch a video of personal stories of quitting smoking, or a control video unrelated to tobacco. Individuals in the story condition who were more transported were also more likely to report attempts to quit smoking at a two-week follow up (Williams et al., 2011).

Dunlop and colleagues (2010) attempted to further explore the mechanisms underlying the effects of anti-smoking narratives. Similar to the studies described above, their work found that smokers who were more transported into an antismoking narrative showed higher quitting intentions, and this effect was mediated by both cognitive and experiential (emotional and self-referencing) responses (see also Liu & Yang, 2020).

Research has also shown behavioral effects of other narrative formats. Leung et al. (2014; see also Leung et al., 2017) found that reading a manga comic story featuring fruit consumption led to healthier snack selection compared to a control group. Lu and colleagues have explored the effects of both narrative video games (Lu et al., 2012) and of combining narratives with active video games to encourage physical activity among children (Lu et al., 2016), finding that immersion into games has positive outcomes, including greater physical activity.

4.1.3 Advertising and Marketing

Advertising and marketing narratives are often relatively brief, but studies have demonstrated the utility of transportation even in these contexts. For example, Escalas (2004) created ads that either encouraged participants to imagine themselves using a pair of running shoes, or ads that did not encourage mental simulation. The simulation ads created a sense of transportation, which in turn led to more positive ad attitudes and brand evaluations. Research by Glaser & Reisinger (2022) highlights the importance of clearly linking the product with the story, such as by demonstrating the use of the product or the way the product solves a problem, to increase transportation and ad effectiveness. Beyond attitude change, Seo and colleagues (2018) showed that narrative transportation was positively related to willingness to share a narrative social media post, and Anaza et al. (2020) found that narrative ads increased trust in suppliers in a business to business advertising context.

A meta-analysis by van Laer and colleagues (2019) investigated moderators of transportation effects. Somewhat surprisingly, they found that transportation effects are stronger when the story is in a commercial rather than non-commercial domain, when the story is user-generated rather than professionally-generated, and when it is received by one story-receiver at a time rather than multiple people. They suggest that the stronger effects for commercial stories may be due to commercial stories having a persuasive intent, whereas other stories might be intended to provide entertainment or escapism. Additionally, they suggest that commercial stories are more likely to appeal to positive emotions than stories in other domains (e.g., health or social issues). We further suggest that attitudes toward consumer products may be easier to change than more strongly held attitudes or behaviors (e.g., quitting smoking).

4.1.4 Intergroup Attitudes

Narratives can provide an opportunity for individuals to learn about and empathize with members of other groups (e.g., nationalities, racial or ethnic groups, or religions). This vicarious engagement with outgroup members can promote positive attitudes and reduce prejudice (Banas et al., 2020; Igartua et al., 2019; Wojcieszak et al., 2020). Mediated intergroup contact has shown positive effects in a number of studies (Park, 2012; Murrar & Brauer, 2019; but see Paluck et al., 2021), and narratives have often been used to improve attitudes towards stigmatized groups (e.g., Johnson et al., 2013; Paravati et al., 2022; Moyer-Guse et al., 2019; Rathje et al., 2021). A meta-analysis by Banas and colleagues (2020) showed that positive mediated intergroup contact reduced prejudice (but that negative mediated contact increased prejudice). Intergroup anxiety and empathy were mediators of these effects.

Similarly, Paluck and colleagues' comprehensive review of the prejudice literature suggested that entertainment or narrative interventions had a relatively strong effect on prejudice reduction (although their review included only 12 studies in this category; Paluck et al., 2021). However, Paluck and colleagues caution that interventions that are brief, cheap, and easy to implement ("light touch" interventions) tend to have correspondingly small and transient effects. This observation implies that more in-depth narrative interventions, such as radio or television series used in entertainment-education, may be more useful in creating lasting change compared to shorter or single-exposure narratives.

J. Cohen and colleagues (2015) explored the effects of transportation into a controversial two-sided narrative. Participants read a story in which two characters disagreed about a provocative issue (on-campus demonstrations about the Palestinian-Israeli conflict on an Israeli campus). Results suggested that transportation tempered attitudes, as did identification with a character who did not share one's prior position. However, identifying with a character who

shared one's original position led to attitude polarization. The results of this study suggest that two-sided, transporting narratives can be used to open the minds of readers to opposing arguments and thus temper their positions, creating a greater understanding of opposing arguments and greater tolerance for opposing positions (J. Cohen et al., 2015), with the caveat that such effects may also depend on the character with which one identifies.

4.1.5 Cultivation

Research on cultivation theory (e.g., Gerbner et al., 2002) has examined narrative and media influence beyond the effects of single stories. This work has primarily focused on how television watching can shape individuals' views of the world. In particular, cultivation theory suggests that if particular ideas appear across multiple different narratives or media programs, individuals are likely to adopt those beliefs. For example, early cultivation research showed the "mean world" effect, in which heavy television viewers were likely to overestimate the likelihood of violence (in part due to the popularity of crime programs and in part due to journalistic tendencies to focus on negative events). Appel (2008) replicated the mean world effect for non-fiction but also found that watching crime fiction and other entertainment formats was associated with a stronger belief in a just world (culprits in fiction regularly get what they deserve and the hero prevails). Later research has extended these ideas to topics such as materialism (Shrum et al., 2011).

Effects consistent with cultivation theory have been demonstrated with a variety of different beliefs, including gender roles, health, and politics (see Hermann et al., 2021, for a meta-analysis and Busselle & van den Bulck, 2019 for a review).

Cultivation theory was originally focused on macro-level effects (e.g., the omnipresence of television and the similarity of broad themes across programs), but more recent research has

linked this theory with individual-level psychological effects. Cultivation effects are more likely to occur when individuals are using heuristic processing rather than when individuals are encouraged to think carefully about their responses, suggesting that some of these effects may be due to accessibility (Shrum, 2001). Additionally, Bilandzic (2006) has proposed a theoretical model suggesting that cultivation effects may be enhanced by transportation, or what she terms mediated closeness. An initial test of this model suggested a possible curvilinear effect, such that individuals low in transportability were less likely to adopt genre-consistent attitudes, but individuals above a certain transportability threshold did show effects from watching (Bilandzic & Busselle, 2008).

4.1.6 Narrative Effects on Sources

Not only can narratives affect an audience's attitudes or behaviors, but the use of narratives can also affect perceptions of the source of the message. One set of studies suggested that individuals who shared narratives rather than non-narratives were perceived as warmer. Conversely, individuals who shared more statistical information were perceived as more competent (Clark et al., 2019). Communicators who are perceived as cold but competent might benefit from using narratives to increase trust; studies suggest that scientists might have this reputation (Fiske & Dupree, 2014). Thus, narratives might be especially helpful in areas such as science communication.

Additionally, the quality of storytelling may matter for person perception. In hypothetical scenario studies, men who were better storytellers were more attractive to women as long-term partners (Donahue & Green, 2016). Storytelling ability was associated with higher status or the capacity to gain higher status.

4.2 Misinformation

4.2.1 Errors from Fiction

Much of the existing research focuses on the positive or prosocial effect of transporting narratives. However, the same processes can lead to persuasion for anti-social attitudes or erroneous beliefs, depending on the content of the narrative. One way that narrative persuasion can lead to incorrect beliefs is when narratives contain inaccurate information (Konijn et al., 2009; Marsh & Fazio, 2006; Marsh et al., 2012; Gerrig & Prentice, 1991; Wheeler et al., 1999). In real-world situations, such inaccuracies may arise when authors change real-world facts for dramatic effect, or simply add details to their stories without checking for accuracy. Of course, in some cases, authors may intend to mislead their audiences. Green and Donahue (2011) conducted a study in which participants were informed after reading that a story was false, either due to intentional deception on the part of the author or accidental errors during the publishing process. Participants held negative views of the deceptive author, but showed story-consistent attitude change relative to control in all conditions.

Marsh and Fazio (2006) examined whether readers could monitor fictional narratives for errors in general knowledge facts. For example, in one version of the story, a character stated that the capital of Russia was St. Petersburg (rather than the correct city, Moscow). Despite being warned that some of the information they read may be incorrect, readers reproduced these errors on a subsequent knowledge test (Marsh & Fazio, 2006). These findings provide a cautionary note for the use of fiction in educational contexts (see Marsh et al., 2012).

Interestingly, however, research by Fazio and colleagues (Fazio et al., 2015) found that transportation was unrelated to suggestibility for false facts. Indeed, in their studies, individuals were more likely to give incorrect answers after reading false facts that were part of lists rather than stories. As noted above, transportation may be more relevant for persuasion that occurs due

to the events in the story rather than claims stated in a story, but further research is needed to explore the distinctions between these types of narrative influence.

4.2.2 Correcting Misinformation

Narratives have also been used to correct misinformation, and may be particularly effective when emotional content is involved. For example, Sangalang and colleagues (2019) tested the effectiveness of narratives at reducing belief echoes or affective perseverance, an effect that occurs when misinformation continues to influence attitudes even when individuals have accepted corrective information. They found that narratives reduced misinformation about natural tobacco products, particularly when an emotional ending was included.

However, another set of studies directly comparing narrative and non-narrative corrections found no difference in effectiveness between narrative and non-narrative formats (Ecker et al., 2020). The narratives and non-narratives used in these studies were quite brief, however (less than 150 words), and thus may have been less likely to evoke transportation or emotional responses. Similarly, a study on misinformation about e-cigarettes found an interaction such that that non-narrative correction was more effective when presented by a social media contact, whereas the narrative correction had a stronger effect on attitudes when given by a social media algorithm (Huang & Wang, 2022). Indirect effects suggested that the narrative was seen as less credible, which reduced persuasion (although a positive indirect effect of transportation also emerged).

4.3 Narratives, Self, and Identity

4.3.1 Activating or Rejecting Character Traits

Beyond attitude or belief change, experiencing a narrative may affect one's own sense of identity by temporarily activating the traits of a character in one's mind, a process that may occur

unconsciously. For example, a viewer who watches a generous character may temporarily see themselves as more generous, particularly if they identified with the character (Sestir & Green, 2010). Loi and colleagues (2023) expanded on these ideas by examining which aspects of the self-concept were activated by reading, proposing that a *story-world possible self* emerges when aspects of the reader's self-concept blends with a character in a story that resembles that aspect of the self. Emotional engagement and transportation were positively related to self-reports of activation of story-world possible selves. In the absence of identification, contrast effects may occur. Audiences who identify with a character demonstrate behaviors similar to that character, while readers who feel dissimilar to a character demonstrate contrasting behaviors (Appel, 2011).

Narratives can also affect the self when individuals consciously choose to adopt a character as a role model. For example, Black youth who watched the movie *Black Panther* (a superhero film that highlights Black excellence) showed increased empowerment and well-being (Gonzales-Velazquez et al., 2020).

4.3.2 The Proteus Effect

An extension of character identification that occurs in virtual reality has been called the Proteus effect (Yee & Bailenson, 2007). In virtual reality environments, players can embody different characters or avatars. Research suggests that individuals temporarily take on the characteristics of their digital avatars, and the mental activation of these characteristics can influence behavior even after users are no longer in the virtual environment. For example, individuals who were randomly assigned to embody a taller avatar showed greater confidence during a negotiation task, and participants who were assigned more attractive avatars showed reduced social distance and higher self-disclosure in a subsequent interpersonal interaction (Yee & Bailenson, 2007). A meta-analysis on the attitudinal and behavioral effects of embodying

avatars suggests a small to medium effect size for users' conformity to their avatar's characteristics (Ratan et al., 2020). In contrast to the other forms of character connection discussed here, these effects do not require a narrative or storyline.

4.3.3 Expanding the Boundaries of the Self

More broadly, stories can expand the boundaries of the self and provide temporary relief from the burdens of self-regulation (Slater et al., 2014; see also J. Cohen et al., 2019; Green, 2005; Moskaleiko & Heine, 2003). The Temporarily Expanding the Boundaries of the Self (TEBOTS) model suggests that individual identities constrain the extent to which individuals can fulfill core motivations of agency, autonomy, and affiliation. That is, even if one is generally a successful person, one cannot be competent in every domain; even if a person has satisfying relationships, they can only know a limited number of people. The experience of stories allows individuals to temporarily provide expanded satisfaction of those goals (e.g., vicariously experiencing success through characters). The model suggests that becoming transported into narratives and identifying with characters are the means to accomplish these effects (see Shedlosky-Shoemaker et al., 2014, for related work). Additionally, it predicts that stories will be sought more often at times of developmental transition or personal threat. Indeed, some work has shown that individuals with depleted self-control resources were more transported into a story (B. Johnson et al., 2014); conversely, another study demonstrated that individuals who were self-affirmed showed reduced narrative engagement compared to those who were not affirmed (B. Johnson et al., 2016).

4.3.4 Self-compassion

Recent work has also examined the potential for narratives to increase self-compassion. In three studies, Andreeva and Green (in press) examined the effects of narratives that modeled

self-compassion through a main character's self-compassionate response to mistakes and misfortunes. Unexpectedly, however, these narratives did not lead to increases in self-compassion, and in one study, greater transportation and identification even showed negative effects on self-compassion. The authors suggested that this failure may be due to a backdraft effect (Germer & Neff, 2019); the narratives evoke negative emotions through their descriptions of failures, and readers do not have sufficient time to process these negative emotions or memories before answering the self-compassion items. Follow-up longitudinal studies are showing more promising results, with self-compassion narratives leading to greater self-compassion after a two-week delay (Andreeva & Green, in preparation).

4.3.5 Insight and Meaning

An important function of narratives is meaning-making. Research focused on eudaimonic or meaningful entertainment has highlighted how stories that address difficult aspects of the human condition such as death or suffering can help provide opportunities to consider the deeper meaning of life (Oliver & Bartsch, 2010; Oliver & Raney, 2011). Such stories often involve mixed affect, such as bittersweet feelings, and they can lead to greater psychological well-being. Oliver et al. (2017) suggest that there is a reciprocal relationship between narrative absorption and meaningfulness, such that heightened needs for insight lead to greater absorption into meaningful narratives, and greater absorption (transportation) leads to more intense experiences of meaningfulness.

4.4 Social Cognitive Skills

Not only can narratives affect the way that individuals see themselves, there is also some evidence that the experience of stories can improve the ability to draw adequate inferences about others. Indeed, literary scholar Zunshine (2006) proposed that reading is rewarding

because is it an opportunity to practice theory of mind skills (see also Oatley, 2011). Integrating extant theory and research, Raymond Mar (2018a; 2018b) suggested that stories can enhance social understanding in two ways (Social Processes and Content entrained by Narrative framework, SPaCeN): First, while reading or watching a story, recipients constantly engage in social-cognitive processes. Stories often describe the social world in great detail, including the plans and motivations of the protagonists. In order to follow the flow of events, recipients need to understand the inner workings of the protagonists. Stories therefore serve as simulations of real-world social encounters; by engaging with these simulations, recipients can practice social interactions in story worlds, which ultimately improves their social cognitive skills (Koopman & Hakemulder, 2015; Mar & Oatley, 2008; Mar, 2018a, 2018b; Oatley, 2016). Second, according to Mar (2018a), stories present content about social relations and the social world that is encoded and can be fruitfully applied in real-world situations. For example, some social situations are rarely encountered in real life (e.g., a sudden lay-off by an employer; childbirth). Fictional depictions of these events allow recipients to develop cognitive representations of these situations.

Much of the empirical research in this field focused on mentalizing as a correlate or consequence of story processing, i.e., the “reasoning about the mental states of others, such as inferring other people’s thoughts, beliefs, attitudes, emotions, and motivations” (Mar, 2018a, p. 457; referred to by some as theory of mind). Other studies focused on *empathy*, i.e., thinking what other people are thinking (= cognitive empathy) and feeling what others are feeling (= emotional empathy).

Cross-sectional studies indeed show that individuals who spend more time with fictional stories (and can therefore successfully distinguish authors of novels from distractor names per

the Author Recognition Test, ART) score higher on measures of trait empathy (e.g., Bal & Veltkamp, 2013) and on measures of mentalizing skills (e.g., Fong et al., 2013; see Mumper & Gerrig, 2017, for a meta-analysis).

Other studies used an experimental approach by exposing participants to fictional narratives and measuring mentalizing skills immediately after reading. Kidd and Castano (2013, mentioned already in section 2.1.2) presented literary narratives (award winning short stories), non-literary fictional narratives (popular genre fiction), non-fictional texts or no text and measured mentalizing performance using the Reading Mind in the Eyes Test (RMET; Baron-Cohen et al., 2001). Their experiments showed that literary narratives (as compared to non-literary narratives, non-fiction, or no reading) increased mentalizing performance. Evidence from replication studies, however, is mixed. Whereas some replicated and extended the finding to reading whole books (Pino & Mazza, 2016) and TV series (Black & Barnes, 2015), evidence overall is mixed (e.g., van Kuijk et al., 2018; Lenhart & Richter, 2022; Panero et al., 2016; Samur et al., 2018). A meta-analysis by Dodell-Feder and Tamir (2018) synthesizing experimental studies that compared the effects of reading fiction vs. reading nonfiction or no reading on social-cognitive performance found small effects ($g = 0.15 - 0.16$). A recent *p*-curve-analysis of the available evidence indicated that the empirical evidence has evidential value (low likelihood of selective reporting) but that this summary is fragile as a few additional studies could change the picture (Quinlan et al., 2023).

Given that the effects outlined by Mar (2018a) should develop over longer periods of time, longitudinal studies are particularly relevant. Lenhart and colleagues (2023) examined adolescent reading frequency as a predictor of future self-reported prosocial behavior and social adjustment. In some support of the specific power of literary stories (Kidd & Castano, 2013),

reading of modern classic literature was positively associated with later prosocial behavior and social adjustment whereas cumulative reading in general did not predict these outcomes.

The mixed evidence on the link between stories and social cognition could be due to differences in recipients' narrative transportation between studies, as transportation likely increases the related processes and effects (e.g., Mar, 2018a; see also Barnes, 2018, for a similar argument regarding imaginative engagement). In Kidd and Castano's (2013) studies, transportation did not mediate the effect of literary fiction reading on social-cognitive skills. Other studies were more supportive. For readers of a fictional story (vs. control), self-reported empathic skills significantly increased over the course of one week, but only when they were strongly transported into the story world (Bal & Veltkamp, 2013). More recently, Schwerin and Lenhart (2023) presented literary or popular (less literary) stories and found no overall differences in terms of self-reported empathy and mentalizing performance after reading. Importantly, readers' transportation (along with narrative engagement and identification) moderated the effect of story condition on mentalizing: Readers of literary stories who were strongly transported into the stories showed a better mentalizing performance than readers of popular stories.

4.5 Narratives and Belongingness Needs

In addition to the possible long-term benefits for social cognitive skills, narratives can also provide more immediate benefits for psychological well-being. In particular, humans have a fundamental need to belong, to feel included and connected to others (Baumeister & Leary, 1995). Derrick and colleagues (2008) proposed that belongingness needs can be met (at least temporarily) through narratives and parasocial relationships. This social surrogacy hypothesis has been supported in a variety of studies (see Gabriel et al., 2016, for a review). For example, in

an initial correlational study, Derrick et al. (2009) found that individuals were more likely to watch a favorite television program when they were feeling lonely, and to report that they felt less lonely when watching a favorite program; such effects did not emerge for watching television in general. In their second study, thinking about a favorite television program reduced the negative feelings evoked by recalling a conflict with a relationship partner. In other work, individuals with a higher need to belong also scored higher on parasocial interaction and transportability measures (Greenwood & Long, 2009), suggesting that individuals who have unmet belongingness needs may be more likely to seek out media to fulfill those needs (see also Gabriel et al., 2017; see also Rain & Mar, 2021). Further research has found that engaging in narrative collective assimilation (see section 1.4) improved life satisfaction and positive mood (Gabriel & Young, 2011).

Ministero and colleagues (2022) proposed that re-reading might provide an especially psychologically safe way for individuals to fulfill their belongingness needs. That is, because people know what will happen in a book that they have read before, they avoid the risk of surprising and unpleasant emotional events (e.g., the death of a favorite character). Of course, there may be multiple motivations for re-reading, such as enjoyment or greater appreciation of a text, but re-reading also provides greater predictability, which may be important for individuals seeking comfort and a sense of belonging. Indeed, Ministero et al. (2022) found that the tendency to reread was associated with unfulfilled belongingness needs, insecurity about social acceptance, and higher transportability.

4.5 Effects of Particular Story Types

In addition to examining the effects of narratives generally, some research has focused on particular types of structures of narratives. Below, we discuss work on interactive narratives,

which have a more flexible narrative structure, as well as extended serialized narratives. An important area for future research is the way that being exposed to multiple narratives might affect viewers; we describe the existing research in this area as well, and close the section with an examination of restorative narratives, a type of story that includes a progression from negative events to hope.

4.5.1 Interactive Narratives

Traditional narratives have a storyline determined by the author, and audiences experience the narrative with the order and content provided by the author. In contrast, interactive narratives provide more agency to the audience by giving them the ability to determine the direction of the plot at key points in the narrative. A classic early example of interactive narratives was the “Choose your own Adventure” books, which instructed readers to turn to different pages depending on their choice of action. Modern interactive narratives include story-based video games, which may include sophisticated graphics and sound. Theoretically, interactive narratives may pose a challenge to transportation, because they interrupt the action and may disrupt the process of mental simulation. Alternatively, audiences may enjoy the increased control over the narrative and thus may be more immersed in the experience.

As one applied example, a team of researchers and writers developed an interactive novel called *The Brewsters* for training students in the health professions about ethics. The novel allowed readers to make decisions about issues ranging from professional behavior in social situations to clinical trial participation, and has shown promising initial results (Rozmus et al., 2015). Green & Jenkins (2020) used an excerpt of this novel in experimental work, and their initial research suggested that individuals are equivalently transported into traditional narratives and interactive versions. However, interactive narratives may be most effective for individuals

who are willing and able to put mental effort into these stories (those high in the need for cognition), and that such stories may have the added benefit of increasing the sense of personal responsibility for the events that occur in the narrative (Green & Jenkins, 2014; 2020). This sense of responsibility may translate to increased real-world attitude and behavior change.

Other research has found positive effects of interactive narratives (Frank et al., 2021; Parrott et al., 2017). For example, Walter and colleagues (2018) found that interactive narratives about members of marginalized groups increased identification and positive attitudes over traditional narratives. Narrative engagement and identification mediated the effects of the interactive narrative on attitudes. In another study, an interactive health narrative about obesity was more effective than a non-interactive version (Oh et al., 2020), and was also more transporting than the control version. However, a study of prosocial behavior found no advantage for an interactive narrative over a traditional one (e.g., Steinemann et al., 2017).

4.5.2 Serial Narratives

Some narratives are presented in serial form, in which the story is presented over multiple episodes. Such narratives are common in entertainment-education, and can be very effective at creating engagement and behavior change (Singhal & Rogers, 2012). Recent research has examined the use of cliffhangers, or unresolved endings, in creating motivation for individuals to return to the narrative. One set of studies using written texts found that cliffhangers endings did increase the desire to read future installments without reducing readers' enjoyment (Schibler et al., in press). Similarly, a study of narratives paired with an active video game showed that using a serial narrative structure (an overarching plot carried through the set of videos) was better at encouraging physical activity among players than an episodic narrative structure (each video having a relatively self-contained storyline; Lu et al., in press).

4.5.3 Multiple Stories

Studies of narrative persuasion have typically focused on the effects of one narrative (or in the case of entertainment-education, a particular television or radio series). However, outside of the research context, individuals encounter many different narratives, perhaps even in the same day (for example, watching several television programs in an evening). While these narratives may be unrelated to each other, in some cases, stories might compete with or contradict one another.

A small number of studies have investigated the effects of multiple narratives. For example, Simons and Green (2013) investigated the use of stories in (hypothetical) medical decision-making. Participants' task was to choose one of two treatments for a hypothetical patient. They received information about the target patient and also read two stories of previous patients, one who had been successfully treated with one medication, and another who been successfully treated with a different medication. One narrative was written to match the target patient and the prior patient on treatment-relevant characteristics, such as age. The other narrative either contained or did not contain irrelevant details that matched the target patient (e.g., similarity in hobbies or musical taste). Participants were more likely to choose the medication from the less-relevant narrative if these matched details were present. The study suggests that one potential concern about the use of narratives in health contexts is that individuals can be overly influenced by irrelevant narrative elements. This "distraction by details" could present real-world dangers if individuals are reading stories in an online support group, for instance, and make their decisions based on irrelevant similarities rather than medically-relevant factors (see also Winterbottom et al., 2012).

Komori (2018) gave participants a story (or persuasive messages) on one side of an issue, and two weeks later, provided a narrative (or persuasive message) on the opposite side of the issue. Individuals who were more transportable were more likely to change their attitudes again after the second set of messages, suggesting that higher transportability could lead to more attitude instability (because transportable individuals may shift their beliefs in different directions in response to different stories).

Research from consumer psychology has examined how transportation into a narrative (such as a television program) affects reactions to advertisements within that program. Studies suggest that that interrupting a transporting narrative with another message (such as an advertisement that appears in the middle of a program) leads to reduced effectiveness of the advertisement (Wang & Calder, 2006). If the ad appeared following a transporting narrative, however, people liked the product more when they had been transported into the program.

4.5.4 Restorative Narratives

Restorative narratives share instances of difficulty or trauma while highlighting themes of hope and perseverance. The transition from a negative situation to a positive trajectory allows audiences to emotionally engage with negative content by reducing the need to regulate emotions to avoid feeling overwhelmed. Based on an original definition of restorative narratives proposed by the nonprofit organization Images and Voices of Hope (Tenore, 2015), Fitzgerald et al. (2019) proposed that a restorative narratives contain two primary features: a demonstration of character strengths, such as resilience, and a meaningful progression of the individual or community experiencing the hardship.

Fitzgerald et al. (2019) provided initial evidence of the unique effects of restorative narratives. They compared a restorative narrative to a negative narrative about a woman's

diagnosis and treatment of a rare disease. The restorative version of the story featured strengths of the narrative character (e.g., perseverance despite setbacks), and her progression through treatment throughout the story. Results suggested that the restorative narrative, compared to a negative version of the same story that focused on the difficulties of treatment, led to more positive and prosocial outcomes, such as an increased willingness to help. Similar effects of restorative narratives have been demonstrated with different stories (e.g., recovery from natural disasters; addiction; Fitzgerald et al., 2020). In these studies, emotional responses rather than transportation emerge as the primary mediator of the effects.

Along similar lines, Hamby and Brinberg (2016) demonstrated in three studies that positive endings increased story-consistent beliefs. However, in their work, they focused on global reflection (thinking about the story meaning after the narrative has ended) as the primary driver of these effects. Transportation enhanced global reflection.

5. Emerging and Future Directions

Narratives are an essential form of communication, and humans spend large amounts of time engaged with various forms of narratives. In this chapter, we have focused on the immersive experience of narrative transportation. Important antecedents of transportation include features of the text, such as narrativity and literariness, as well as individual differences such as transportability and need for affect. We examined the mental processes associated with transportation, including both affective and cognitive processes, as well as the social processes evoked by interactions with narrative characters. We have also provided an overview of the extensive body of literature testing narrative effects. The persuasive effects of narratives have been shown with a range of topics, from health to advertising to intergroup relations. Additionally, narratives can have important effects on the self. Transportation theory and related

ideas have provided essential insights into how stories work. In this section, we describe some current and future directions for this area of research.

5.1 Technology and Artificial Intelligence

Although narratives can be transporting regardless of medium, the unique features of different media and emerging technologies may affect narrative processing. For example, stories told in virtual reality may evoke stronger physiological responses. Individuals may have different expectations for narratives conveyed in different media (e.g., they may not expect the same level of narrative structure in a game narrative in which a player has many choices for how to direct the narrative). Features such as music may affect transportation into video narratives (e.g., Costabile & Terman, 2013). As new forms of storytelling emerge, some of the basic principles described here are likely to remain relevant, but new theories may also need to be developed to explore differences across media.

The proliferation of generative artificial intelligence software based on large language models, such as *ChatGPT* or *Midjourney*, is associated with challenges and opportunities in the fields of entertainment and storytelling (e.g., Watercutter, 2023). Research has only started to examine the impact of AI-generated stories from a recipient perspective.

Available evidence shows that people are, on average, unable to distinguish between AI-written and human-written narratives, even after undergoing training (Clark et al., 2021). This finding is in line with research on poetry (Hitsuwari & Nomura, 2022) and video clips featuring unknown protagonists (Köbis et al., 2021, see also Appel & Prietzel, 2022): People struggle telling human-made from AI-generated creative work, even if textual analyses may still find slight differences (Dou et al., 2022). Although empirical research is missing to date, this pattern

of results suggests that individuals could be as likely transported into AI-created story worlds as into human-created story worlds.

As outlined in our section on situations and paratexts (2.3.1), expectations derived from context information can shape recipients' experience. Because AI cannot have human experiences or emotions, audiences may believe that AI cannot create truly meaningful stories, and thus may have lower expectations for the quality of AI-generated narratives. Related research on AI-generated stories manipulated the story paratext, attributing the story to either a human author or AI (Messingschlager & Appel, 2023). In two experiments, participants (falsely) informed of AI authorship were less transported into contemporary fiction short stories than participants informed of human authorship. As predicted, this result did not hold for science fiction short stories, suggesting that participants perceived the science fiction stories a better match for AI's abilities than contemporary fiction.

Further research is needed to illuminate the experiences and effects of stories generated by AI, including content and source effects. AI storytelling is changing at a rapid pace. We assume that one of the emerging research directions is the interaction with and the effects of embodied artificial storytellers (e.g., storytelling robots) which may tell stories created by AI or by humans (see, for example, Appel et al., 2021; Liang & Hwang, 2023). Another imminent research direction is the characteristics of AI story worlds and related effects. Previous research showed that AI recommendation software packages are biased against minorities and women (e.g., Dressel & Farid 2018; Marinucci et al., 2023), replicating and amplifying stereotypes in societies (that are ingrained in the material AI is developed from). Human observers of stereotyping by AI, however, appear to be less outraged when people are discriminated against by AI than by humans (*algorithmic outrage deficit*, Bigman et al., 2023). Importantly, pictures

and stories generated by AI are saturated with stereotypical depictions. Given the power of narrative persuasion, research on the (incidental) effects of stereotypes in AI-generated stories and related countermeasures seems warranted.

5.2 Meaning Through (Conspiracy) Narratives

Another emerging and future topic is the connection between the narrative form, transportation, and people's desire to establish meaning. We understand the latter here as the presence of expectable relationships between the things in the world, the self, and the self in the world (Heine et al., 2006). Per definition (e.g., Abbott, 2002; Onega & Landa, 2014), stories consist of causally related events. Moreover, stories are highly predictable; they tend to follow conventions in content and form. For example, introductions to scriptwriting for TV and film emphasize that the unfolding events need to be based on the characteristics of the protagonists. Plot development and conflict resolutions should never occur *deus ex machina*, without a reason laid out in previous story parts (e.g., Bordwell, 1985). One may argue that this narrative pattern of simple causality and connectedness contrasts with real world occurrences which are difficult to explain and involve multiple causal factors and a certain degree of randomness (e.g., war; illness; crime victimization; job offers, Appel, 2008).

Theorists from several fields have highlighted that stories could be a main way to establishing meaning (e.g., Bruner, 1990; McAdams, 1985; Oliver et al., 2021). Initial research shows that stories can overcome meaning threats (i.e., threats imposed by challenging technologies such as humanlike robots, Mara & Appel, 2015; Appel et al., 2016).

Meaning making is a main motive underlying the belief in conspiracy theories (e.g., Douglas et al., 2017). Research examining the role of the narrative form in conspirational messages (conspiracy theories as *conspiracy narratives*), however, is largely lacking to date (cf.

Zwaan, 2022). A recent perspective on conspiracy theories emphasizes *entertainment* as an aspect that influences the processing and effects of conspirational media content (van Prooijen, 2022; van Prooijen et al., 2022). Given that the experience of entertainment is closely related to transportation (Green et al., 2004), connecting transportation theory to the growing research on conspirational thinking is promising. In addition to understanding the development of conspirational thinking, positive, non-conspirational stories may serve as a tool to counter meaning threats, as indicated by the research on the acceptance of potentially threatening technologies (e.g., Appel et al., 2016). Non-conspirational stories could serve as a functional alternative to conspiracy narratives (*counter-narratives*, e.g., Bamberg & Wipff, 2020; Carthy et al., 2020).

More generally, while much of the research on narrative persuasion has focused on prosocial topics, as the discussion above on conspiracy stories indicates, not all narratives are beneficial to either individuals or societies. Future research should consider identifying ways in which individuals can defend themselves against narratives with unethical goals.

5.3 Environmental Issues and Climate Change

Climate change is an increasingly important issue, and ways to encourage policies or behaviors that can reduce global warming are needed. At the same time, climate-fiction has become its own genre in which the story unfolds against the background of the dire consequences of climate change (Schneider-Mayerson, 2018). There is already some research on using narratives to change attitudes on environmental issues, including climate change, with promising results (e.g., Bozeman et al., 2022; Liu & Yang, 2023; Rickard et al., 2021). One underlying idea is that climate change may seem abstract or distant to many people, and narratives can be a way of making the issue more immediate and vivid. For example, in early

work on this topic, Leiserowitz (2004) found that viewers of *The Day After Tomorrow*, a dramatized portrayal of the extreme effects of climate change, had higher levels of worry about climate change and stronger intentions to act against climate change than non-viewers (see also Lowe et al., 2006). More recently, Gustafson and colleagues (2020) found a personal story about the impact of climate change (a sportsman talking about changes in the areas where he hunts and fishes) shifted climate change beliefs and risk perceptions among moderates and conservatives, an effect mediated by emotion. Morris et al. (2019) compared brief climate change narratives to non-narratives, and found that narratives were more effective at promoting pro-environmental action, an effect that also appeared to be driven at least in part by emotional arousal.

Bilandzic and Sukalla (2019) found that an eco-dystopian film increased personal intentions to act in environmental ways compared to a control group, and that narrative engagement had an indirect effect on intentions through guilt. Similarly, Bieniek-Tobasco and colleagues (2020) found that participants who were randomly assigned to watch a narrative climate documentary had higher risk perceptions and higher efficacy beliefs than participants in a control group; transportation was also a positive predictor of risk and efficacy.

While this existing work is a promising start, additional efforts are needed to address this significant societal issue. As Paluck et al. (2021) noted in the context of prejudice reduction interventions, larger scale efforts may be needed. Furthermore, larger changes may need to come from governments or corporations, so narrative efforts should recognize the limits of focusing on individual attitude and behavior change.

6. Conclusion

The now classic novel *Infinite Jest* (Foster Wallace, 1996) revolves around a mysterious film of the same name (also called ‘The Entertainment’ in parts). The film is portrayed as so

compelling that recipients are deeply immersed and completely lose interest in their own lives. In the novel, the film is considered a highly dangerous weapon because people cannot stop watching it, even for the most basic necessities. In other words, recipients enter the (supposedly fictional) world of the narrative – but cannot leave it.

Fortunately, the real-world experiential state of narrative transportation is more benign. Transportation includes cognitive and emotional engagement in a story, as well as the formation of mental images (Green & Brock, 2000). Transportation is a flow-like state in which individuals may lose track of time due to their complete focus on the narrative world; however, recent research has also highlighted the dynamic nature of transportation (Tchernev et al., 2023). Narrative audiences may mentally move back and forth between considering their own lives and the story world, and this integration appears to enhance the narrative experience. Narrative characters also play an important role in the narrative experience, and audiences may connect to characters in a variety of ways. They may identify with characters, like or feel similar to the characters, or think of the characters as friends (or enemies). The same mental processes that allow us to understand and empathize with real people are also activated when we engage with narrative characters. Thus, psychological understanding of interpersonal processes is relevant to understanding engagement with narrative characters, and vice versa.

Despite the substantial length of the novel *Infinite Jest*, Foster Wallace did not reserve much space for answering the question as to which characteristics made the focal piece of entertainment fatally immersive for everyone.³ Turning to scientific evidence in the here and now, a sizeable number of studies have examined the predictors of narrative transportation. In this chapter, we have organized the research literature on the antecedents of narrative

³ Readers learn that the film comes in a cartridge, a device similar to a video tape. A newly invented lens by the filmmaker was used. One scene includes a baby and their mother, the mother apologizing to the baby.

transportation along story, recipient and situational factors. Regarding recipient factors, dispositional tendencies such as transportability and need for affect appear to be general predictors of transportation. Situational factors that create positive expectations (in particular, prior positive reviews) can encourage greater transportation, whereas distraction or cognitive load can interfere with transportation. Notably, the paratextual factor of a fact versus fiction label does not generally affect transportation (and often does not affect the degree of persuasion).

It is important to highlight, however, that predictor variables often interact with each other. For example, features of a story that contribute to higher transportation among some recipients could have a different effect on others (unlike the inevitable influence of watching *Infinite Jest*). As a case in point, Isberner and colleagues (2019) compared recipients' extent of transportation into excerpts of Disney movies to transportation into excerpts of the corresponding books. Whereas participants who reported a low ability to generate vivid mental imagery were more transported by films than by texts, no such difference was found for participants with higher scores on this dimension.

That said, a textual factor that influences narrative transportation across recipients and situations is narrativity. On the one hand, for transportation to occur, texts or other material need to include a related series of events – the necessary precondition of the narrative form (e.g., Abbott, 2002). We therefore do not recommend applying the concept of transportation to non-narrative stimuli, such as lists of arguments or short textoids that lack connected events. Other concepts such as attention, interest, or elaboration may be more appropriate for such stimuli. On the other hand, within the range of stimuli that pass as stories, narrativity varies. Stories differ in the extent to which they include protagonists with goals, ensuing conflicts, and to which extent they follow one of several canonical affective trajectories (narrative arcs), to name a few

characteristics of narrativity. Initial research suggests that stories with high narrativity elicit stronger narrative transportation (e.g., Appel et al., 2015; Schreiner et al., 2018; J. Wang & Calder, 2006). Given the recent progress in software-based text analysis (e.g., Berger & Packard, 2022; Boyd et al., 2020; Reagan et al., 2016), we expect that related empirical research linking text analyses and recipient research will thrive in the coming years.

Because narratives are complex stimuli, they can include a variety of elements and evoke multiple mental processes that can lead to persuasive outcomes. Transportation is closely associated with processes such as emotions and mental imagery. Additionally, stories (perhaps particularly those that are transporting) have the potential to make information more memorable, and stories are often an effective means of overcoming resistance to persuasion. However, not all stories may exert influence in the same way; for example, some may have their effect through evoking strong emotions, whereas others might provide thought-provoking descriptions.

The persuasive outcomes of narratives have been demonstrated across a range of topic areas, including health, social issues, and consumer products. Narratives can also improve intergroup attitudes, in part through providing vicarious intergroup contact. As we have illustrated repeatedly throughout this chapter, there is consistent evidence that higher engagement (transportation or character identification) is likely to lead to more persuasion. Similarly, there is substantial evidence that characters can play a role in this process through modeling (e.g., social cognitive theory; Bandura, 1986).

However, as with any persuasive message, some stories are effective at conveying their message, and other stories are less so (analogous to strong and weak arguments in the elaboration likelihood model; Petty & Cacioppo, 1986). Research that has looked at content factors appears to show a less consistent pattern; for example, health narrative research has not yet provided a

clear answer about whether showing a character who survives a disease versus one who does not survive is more effective at motivating health behavior (e.g., Krakow et al., 2017; Lille et al., 2022). Thus, for persuasion purposes, formative research and testing specific stories with the relevant target audiences remains important (just as pretesting for argument quality is important for non-narrative messages).

Research has also demonstrated narrative effects with a wide range of narrative types, ranging from brief narrative advertisements to long-running entertainment education programs. Given that the prototypical transportation experience may involve becoming immersed in a richly imagined narrative world, it may seem strange that a 30-second advertisement or a story consisting of a few paragraphs could transport people. Our view is that very brief narratives likely work because they evoke story structures that are highly familiar (and perhaps emotionally charged) for the audience: a soldier's homecoming, a joyous outing with friends, a family celebrating a special occasion. The story may not need to provide extensive detail because audiences can connect so easily to the situation involved.

That said, however, we also echo Paluck's (2021) point that brief interventions are more likely to have small and fleeting effects. While it is possible that a very short story could create an emotion or a mental image that stays with viewers and influences their behavior even much later (for example, Cantor's work on fear responses to media; Cantor, 1998), a repeated story or an extended narrative world (a novel, a television series) may be more likely to have enduring effects. The entertainment-education literature provides many examples of the power of radio or television series to change attitudes about issues such as domestic violence (Singhal et al., 2003).

In the current chapter, we have focused primarily on positive and prosocial effects of narratives. However, the same processes can lead to negative outcomes when the stories contain

misinformation or other harmful content. As noted above, finding ways to diminish the negative impact of some types of stories is an important direction for future research. However, claims about the alleged negative impact of certain stories can themselves be used for harmful or discriminatory purposes, such as the current book-banning efforts in the United States.

Persuasion is not the only possible outcome from narrative immersion, however. Narratives are often enjoyable and entertaining; furthermore, they can help individuals see the world in a new way. They can provide a sense of meaning or identity. They can give comfort and provide a feeling of belonging through parasocial contact. Engagement with fiction, especially when individuals engage in fiction reading over time, can also help improve social skills. Perhaps because of these many benefits, people spend a significant amount of time engaged in narratives, and understanding these processes and effects remains a valuable endeavor for social scientists (and scholars in related fields such as literary studies).

The similarities and differences in narrative engagement processes across media remains an important and exciting direction for future research, as highlighted in Section 5. However, we caution that more technological features or affordances are not always better. For example, interactive narratives are not necessarily more (or less) engaging than traditional narratives, and larger screens are not necessarily more immersive than smaller ones. In some cases, technological affordances may even distract from narrative engagement, such as if a user is too busy exploring the visual aspects or movement possibilities in a virtual world to follow a storyline. Thus, while the increasing use of virtual reality narratives may be an exciting trend for future technology, such narratives likely will not displace reading or other forms of story exposure.

In sum, narrative research and transportation theory are relevant to some of the most challenging societal problems that we face today. While additional research can also shed light on remaining unresolved issues raised here (for example, when it is better to use narrative versus non-narrative appeals), the body of work that has developed over the past few decades has provided significant advances in our understanding of how narratives work and the effects that they have. Stories engage our minds and change the way we see the world.

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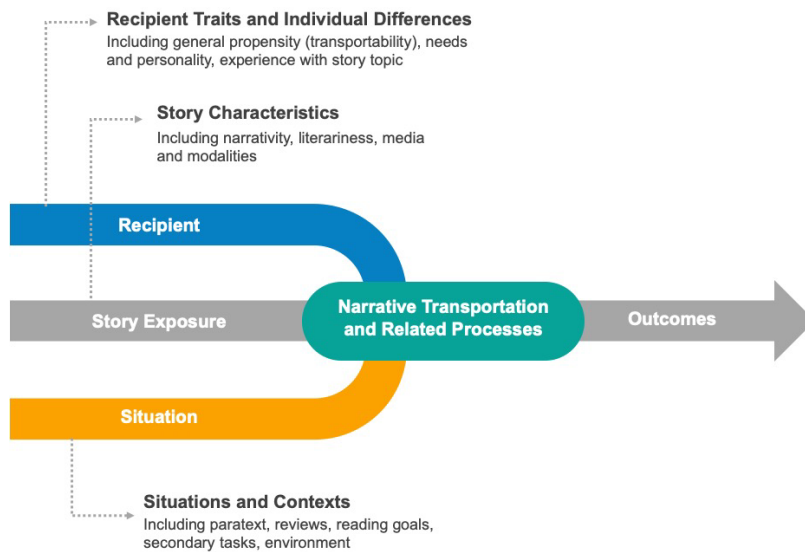


Figure 1

Recipient, Story, Situation, and Related Interactions as Predictors of Narrative Transportation

Table 1. Literariness manipulation by Koopman (2016)

Original	Semantic Foregrounding Removed	Without Foregrounding
“In the middle of those juicy meadows the woman had seen the child’s back for the last time.”	“In the middle of those juicy meadows the woman had seen her child for the last time.”	“In the middle of those lush meadows the woman had seen her child for the last time.”
“The cold child.”	“The dead child.”	“..., because of her dead child.”
“The farewell. Carrying the body to the burial. Seeing it off. Carrying. Setting up the place where she would be from now on. Taking possession of the cemetery as an outside living room.”	“The farewell. Carrying the body to the burial. Seeing it off. Carrying. Setting up the place where she would be from now. Staying at the cemetery constantly.”	“And then the farewell, with the carrying of the body and seeing it off. They took her daughter to the place where she would be buried. She would go to that cemetery very frequently.”