



Transportation into a story increases empathy, prosocial behavior, and perceptual bias toward fearful expressions

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ABSTRACT

Theorists from diverse disciplines purport narrative fiction serves to foster empathic development and growth. In two studies, participants' subjective, behavioral, and perceptual responses were observed after reading a short fictional story. In study 1, participants who were more transported into the story exhibited higher affective empathy and were more likely to engage in prosocial behavior. In study 2, reading-induced affective empathy was related to greater bias toward subtle, fearful facial expressions, decreased perceptual accuracy of fearful expressions, and a higher likelihood of engaging in prosocial behavior. These effects persisted after controlling for an individual's dispositional empathy and general tendency to become absorbed in a story. This study provides an important initial step in empirically demonstrating the influence of reading fiction on empathy, emotional perception, and prosocial behavior.

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1. Introduction

Theorists from various disciplines propose positive functions of reading fiction including educational and moral development (Alexander, Miller, & Hengst, 2001; Vitz, 1990) and empathy development (Keen, 2007; Mar & Oatley, 2008). Yet, these theoretical assumptions have recently been questioned and have only rarely undergone empirical scrutiny (Keen, 2007). In two studies, the often hypothesized link between reading fiction and empathy was tested.

Mar and Oatley's (2008) recent comprehensive theory proposes the primary function of narrative fiction is to allow the reader to simulate and learn from fictional social experience. According to Mar and Oatley, when reading fiction an individual simulates, that is, feels emotions and experiences thoughts congruent with the story's characters. Readers also learn about the complex social world by abstracting meaning, drawing inferences, and making predictions about plot development and the interpersonal relationships in the story. By indirectly experiencing the same subtleties of social interaction and travails of fictional story characters, Mar and Oatley propose readers experience empathic growth – the focus of the current study.

It is generally agreed that empathy consists of affective and cognitive components (Davis, 1983; Decety & Jackson, 2006; Vingemont & Singer, 2006). The components of empathy include, *affective empathy*, meaning feeling concern or compassion for

another, *emotional contagion*, or experiencing identical emotions as another, and *perspective-taking*, or a basic understanding of another's thoughts and emotions. The component predicted by Mar and Oatley to be most affected by reading fiction is affective empathy. They point out that the process of identifying with a character in a story does not necessarily mean the reader feels identical emotions *with* the character, but rather feels emotion *for* the character, like warmth toward a character who accomplishes a goal. While feeling for a character may also involve cognitive perspective-taking, this is considered a relatively independent component that is less "feeling-focused" than affective empathy.

While reading fiction may foster empathic growth, it is also important to determine whether these empathic feelings translate into real-world behaviors. The close relationship between empathy and *prosocial* behavior is well established (Eisenberg & Miller, 1987). Therefore, it is predicted reading fiction should also increase prosocial behavior. Many fictional narratives include characters that exhibit prosocial behavior. According to social learning theory, the more an individual simulates and learns from the characters exhibiting prosocial behavior, the more likely the individual will perform prosocial behavior as a consequence (Greitemeyer, Osswald, & Brauer, 2010).

To this author's knowledge, the link between reading fiction and empathy in adults has been empirically tested in only one study (Mar, Oatley, Hirsh, Paz, & Peterson, 2006). However, the study did not examine direct and immediate responses to reading a fictional story and instead focused on individuals with a history of reading fiction. It remains unclear whether reading fiction can induce affective empathy and whether this translates into

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prosocial behavior. In addition, while the study revealed fiction readers were better at a global measure of emotional perception, the precise nature of the perceptual consequences of reading fiction also needs elucidating.

Recent work demonstrates that individuals higher in dispositional empathy have enhanced perception of emotional facial expressions, particularly fearful expressions (Besel & Yuille, 2010; Clark, Winkielman, & McIntosh, 2008). However, it is not yet clear whether reading-induced affective empathy also influences emotional perception. In addition, previous studies did not allow the separation of perceptual accuracy and perceptual bias. A novel prediction is that an empathic state could bias an individual toward perceiving an emotion, even when it is not present. In the real world, emotional expressions are often subtle and fleeting, so under these conditions of uncertainty, it is possible an empathic person is biased toward emotion. This bias should be particularly evident when a facial expression conveys a need for help, like a fearful expression (Besel & Yuille, 2010). Recent studies investigating emotional perception and all basic emotions suggest a strong link between empathy and fear perception, over and above perception of sad expressions and others (Clark et al., 2008; Marsh, Kozak, & Ambady, 2007). By favoring fearful expressions, the individual high in affective empathy may sacrifice perceptual accuracy. Consequently, the predictions are that individuals higher in reading-induced affective empathy will demonstrate higher bias toward subtle fearful emotional expressions and lower perceptual accuracy.

2. Study 1

The purpose of the first study was to determine if reading a fictional story can induce affective empathy and increase prosocial behavior. The literature lacks a way to assess the degree to which a particular sample of fiction elicits the simulation of social experience. However, Green and Brock (2000) posit that *transportation* into a story occurs when an individual is fully engaged, experiences high imagery, and is emotionally impacted by the story. Supporting the idea that transported individuals are simulating and learning from the fictional social world, participants in the study modified their attitudes in a story-consistent manner. Therefore, it appears the degree to which an individual reports being transported into the story can serve as a proxy for how much they simulated and learned social information from the story.

3. Method

3.1. Participants

Participants volunteered to participate by responding to an announcement in their class or a publically posted flyer. The sample consisted of 62 students and community members (30 men, 32 women). The mean age was 21.37 (range 18–53, 3% above age 29) and all participants had normal or corrected-to-normal vision.

3.2. Materials

3.2.1. Fictional story

The story was written specifically for this study, took approximately 15 min to read, and was written at a 14-year old reading level. The story was designed to induce compassionate feelings for the characters and model prosocial behavior.¹

3.2.2. Affective empathy

Batson, Early, & Salvarni's (1997) measure of affective empathy was used where participants rated how much (1 = very little, 5 = extremely) they experienced six emotions while reading the story including, compassionate, sympathetic, soft-hearted, tender, moved, and warm. This scale demonstrated good reliability for this sample (Cronbach's $\alpha = .863$) and has shown sensitivity to manipulations of empathy (e.g., Batson et al., 1997).

3.2.3. Mood assessment

The Positive and Negative Affect Scale (PANAS; Watson, Clark, & Tellegen, 1988) was used to assess positive and negative mood dimensions, where participants rated how much (1 = very little, 5 = extremely) they felt specific emotions during the story.

3.2.4. Transportation

Green and Brock's (2000) transportation scale provides an assessment of the degree to which an individual is fully engaged in the story, has vivid imagery, and is emotionally impacted by the story. Example items include "I had a vivid mental picture of Eric" and "After finishing the story, I wanted to learn more about Eric and Mr. Howard." On a Likert scale, participants rated how much (1 = very little, 5 = extremely) they experienced these items. It has been validated and shown sensitivity to changes in the quality and persuasiveness of a story (Green & Brock, 2000). This scale demonstrated good reliability for this sample (Cronbach's $\alpha = .745$).

3.2.5. Prosocial behavior

Helping behavior was assessed using a validated measure, where the experimenter "accidentally" drops pens within sight of the participant and then records whether or not the participant helps to pick up the pens (van Baaren, Holland, Kawakami, & van Knippenberg, 2004).

3.2.6. Control measures, demand questions

Given the close relationship between empathy and prosocial behavior (Eisenberg & Miller, 1987), dispositional empathy could provide an alternative explanation of any relationship with reading-induced affective empathy. In addition, one's general tendency to get involved in fiction could also provide an alternative explanation of the results (Mar et al., 2006). Consequently, two subscales from the Interpersonal Reactivity Index (IRI; Davis, 1983) were used for control. The Empathic Concern dimension is the dispositional version of affective empathy. Example items include "I often have tender, concerned feelings for people less fortunate than me" and "I am often quite touched by things that I see happen." The Fantasy dimension is the dispositional version of transportation. Example items include, "I really get involved with the feelings of the characters in a novel" and "When I am reading an interesting story or novel, I imagine how I would feel if the events in the story were happening to me." Both scales employ a 1 (does not describe me well) to 5 (describes me very well) Likert scale and demonstrated good reliability in this sample (Cronbach's $\alpha = .815, .706$, respectively).

To ensure participants carefully read the story, they were asked content-related questions at the end of the session. In addition, a funneled debriefing procedure was used to determine if the participants were aware that the pen drop was a part of the study.

3.3. Procedure

Participants first took the PANAS as an assessment of baseline mood. Next, they read the story, followed by another assessment of PANAS with affective empathy items interleaved throughout the scale. After the transportation scale was administered, the experimenter stood up and told the participants they needed to

¹ Full story is available upon request from the author.

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