

# Emotional Engagement with Fictional Characters

Our emotional responses to fictional characters can be explained by the activation of evolved social-cognitive mechanisms that were originally developed for real-life interactions.

## Abstract

Studies indicate that readers automatically generate detailed emotional representations of fictional characters much as they do for real people. Two experimental studies (Gernsbacher et al., 1992, 1998) demonstrate that readers swiftly infer characters' emotions, while experiments by Argo et al. (2008), Publisher Rights et al. (2013), and Shedlosky-Shoemaker et al. (2014) report that narrative transportation bolsters empathy and engagement. Benton (1994) and Sperduti et al. (2016) show that the evocation of personal memories enhances emotional intensity for both real and fictional stimuli. In contrast, Humbert-Droz et al. (2020) and Sperduti et al. (2016) note that subjective emotional responses to fiction may be lower, even though physiological arousal sometimes remains comparable to that elicited by real stimuli.

These findings support an evolutionary interpretation in which cognitive and affective mechanisms—originally honed for real-life social interactions—also activate when engaging with fiction. Specifically, automatic emotion processing and the immersive quality of narrative transportation appear to trigger responses that are in line with evolved social-cognitive systems.

## Paper search

Using your research question "Can EP theories explain why, in many ways, we emotionally respond to fictional characters as if they were real?", we searched across over 126 million academic papers from the Semantic Scholar corpus. We retrieved the 50 papers most relevant to the query.

## Screening

We screened in papers that met these criteria:

- **Emotional Response Focus:** Does the study examine emotional or psychological responses to fictional characters (including parasocial relationships or comparisons with responses to real individuals)?
- **Research Methodology:** Does the study present original empirical research (quantitative or qualitative) OR a systematic review/meta-analysis of such research?
- **Theoretical Framework:** Does the study incorporate psychological or neurological mechanisms (including evolutionary psychology frameworks and/or neuroimaging evidence)?
- **Population:** Does the study include adult participants OR a general population (not exclusively children)?
- **Psychological Component:** Does the study examine psychological or emotional components (rather than purely literary or media analysis)?
- **Evidence Base:** Does the study present empirical evidence or analysis of empirical evidence (rather than pure theory)?

We considered all screening questions together and made a holistic judgement about whether to screen in each paper.

## Data extraction

We asked a large language model to extract each data column below from each paper. We gave the model the extraction instructions shown below for each column.

- **Study Design Type:**

Identify the specific type of research design used in the study. Look in the methods section for details about:

- Experimental design (e.g., between-subjects, within-subjects)
- Quantitative or qualitative approach
- Specific design type (e.g., randomized controlled trial, observational study, experimental study)

If multiple design elements are present, list all. If the design is not clearly stated, write "Design not clearly specified" and note any relevant methodological details you can find.

- **Theoretical Framework:**

Identify and extract the primary theoretical framework or model used to explain emotional responses to fictional characters.

Look in the introduction, theoretical background, or discussion sections. Specifically note:

- Name of the theory/model
- Key theoretical constructs
- How the theory addresses emotional engagement with fictional characters

If multiple theories are discussed, prioritize the primary or most developed theoretical approach.

- **Sample Characteristics:**

Extract detailed information about study participants:

- Total sample size (N)
- Demographic breakdown (age, gender, education level if reported)
- Recruitment method
- Inclusion/exclusion criteria

If demographic details are incomplete, note the specific missing information. If ranges are provided for age, record the full range and mean/median.

- **Experimental Stimuli:**

Describe the fictional characters or media used in the study:

- Type of media (movies, written stories, etc.)
- Number of characters studied
- Characteristics of characters (e.g., ethical status, aesthetic qualities)
- How characters were presented or manipulated

Be as specific as possible. If multiple types of stimuli were used, list all with distinguishing details.

- **Key Outcome Measures:**

Identify and extract the primary outcome measures related to emotional responses:

- Specific measures used (e.g., empathy scales, emotional transportation)
- How emotional responses were quantified
- Specific instruments or metrics

If multiple outcomes were measured, list all, prioritizing those most directly related to emotional engagement with fictional characters.

- **Key Findings:**

Extract the primary findings related to emotional responses to fictional characters:

- Main statistical results
- Key interpretations of results
- Specific insights about how people emotionally engage with fictional characters

Focus on results that directly address the research question about explaining emotional responses to fictional characters.

## Results

### Characteristics of Included Studies

Study	Study Type	Research Focus	Methodology	Key Variables	Full text retrieved
Argo et al., 2008	Experimental	Empathy and fictionality in consumer evaluations	Between-subjects design	Empathy, fictionality, transportation	No
Benton, 1994	Experimental	Emotional responses to real vs. fictional stimuli	Within-subjects design	Subjective emotional experience, physiological arousal, personal memories	No
Coplan, 2004	Cross-sectional observational	Empathic engagement with narratives	Survey	Empathy, narrative transportation	Yes
Gernsbacher et al., 1992	Experimental	Mental representations of characters' emotions	Between-subjects design	Reading time for emotion-related sentences	Yes
Gernsbacher et al., 1998	Experimental	Automatic inference of characters' emotions	Between-subjects and within-subjects design	Reading time for emotion-related sentences	Yes

Study	Study Type	Research Focus	Methodology	Key Variables	Full text retrieved
Humbert-Droz et al., 2020	Correlational and experimental	Emotional responses to fiction	Between-subjects design	Subjective emotional experience, physiological responses	Yes
Konijn and Hoorn, 2005	Experimental	Perceiving and experiencing fictional characters	Between-subjects design	Engagement, appreciation, ethics, aesthetics, epistemics	No
Publisher Rights et al., 2013	Experimental	Fiction reading and empathy	Between-subjects design with randomized controlled trial elements	Empathy, emotional transportation	Yes
Shedlosky-Shoemaker et al., 2014	Experimental	Self-expansion through fictional characters	Between-subjects design	Self-expansion, cognitive overlap, enjoyment, appreciation	Yes
Sperduti et al., 2016	Experimental	Emotional responses to real vs. fictional stimuli	Within-subjects design	Subjective emotional ratings, electrodermal activity	Yes

Based on the information extracted from the papers:

- Study types : 9 out of 10 studies were described as experimental in design, with 1 described as cross-sectional observational and 1 as including both correlational and experimental components.
- Research focus :
  - Empathy and emotional responses were the most common, each appearing in 3 studies
  - Fiction and fictional characters were prominent themes, appearing in 2 studies each
- Key variables :
  - Empathy and transportation were the most frequently measured, each appearing in 3 studies
  - Emotional experience, reading time, emotion-related sentences, and appreciation were each measured in 2 studies
  - Other variables included physiological responses, engagement, ethics, aesthetics, self-expansion, and enjoyment, each appearing in 1 study
- Full text availability : Full texts were retrieved for 6 out of 10 studies

## Thematic Analysis

### Neural and Psychological Mechanisms

- Processing of real vs. fictional stimuli :
  - Benton (1994) and Sperduti et al. (2016) investigated differences in processing between real and fictional stimuli
  - Findings suggest reduced subjective emotional experiences for fictional stimuli
  - Physiological responses did not consistently show this difference
- Cognitive processes in engaging with fictional characters :
  - Gernsbacher et al. (1992, 1998) found that readers form detailed mental representations of characters' emotions
  - Readers automatically infer characters' emotional states
  - This automatic activation suggests similar processing of fictional and real emotions
- Emotion regulation in responses to fiction :
  - Humbert-Droz et al. (2020) proposed implicit emotion regulation occurs when aware of fictional nature
  - This may lead to reduced emotional response
  - Suggests complex interplay between cognitive awareness and emotional engagement

### Mediating Factors in Emotional Response

- Personal memory engagement :
  - Benton (1994) and Sperduti et al. (2016) found personal memories enhance emotional engagement
  - This effect occurs regardless of whether stimuli are presented as real or fictional
  - Suggests personal memory evocation may be key to eliciting strong emotional responses to fiction
- Transportation and absorption effects :
  - Consistently linked to stronger engagement with fictional characters across multiple studies
  - Argo et al. (2008): Transportation moderated effects of empathy and fictionality on story evaluations
  - Publisher Rights et al. (2013): Emotional transportation into fictional stories increased empathy over time
  - Shedlosky-Shoemaker et al. (2014): Transportation enhances cognitive overlap and perceived self-expansion with fictional characters
- Individual difference factors :
  - Empathy played a crucial role in emotional responses to fiction
  - Argo et al. (2008): High empathizers showed stronger preferences for less fictional stories
  - Coplan (2004): Emotional transportation can enhance empathy
  - Suggests bidirectional relationship between empathy and engagement with fictional characters

## Evolutionary Psychology Explanations

While the studies did not directly test Evolutionary Psychology (EP) theories, their findings provide insights that can be interpreted within an EP framework:

- Automatic emotional processing :
  - Gernsbacher et al. (1998) demonstrated automatic nature of emotional inferences about fictional characters
  - This suggests an evolved cognitive process that may not strongly distinguish between real and fictional social stimuli
  - Could be adaptive for social learning and simulation in low-risk environments
- Transportation and empathy :
  - Publisher Rights et al. (2013) found transportation enhances emotional engagement and potentially increases empathy over time
  - This aligns with the idea that fiction might serve an adaptive function in developing social-emotional skills
- Balance of involvement and distance :
  - Konijn and Hoorn (2005) found a trade-off between involvement and distance in character appreciation
  - This could reflect the need to balance emotional engagement with cognitive awareness of reality
  - Might be adaptive in allowing learning from fictional experiences while maintaining ability to distinguish from reality

## Synthesis of Findings

Theme	Supporting Evidence	Contradicting Evidence	EP Implications
Automatic emotional processing of fictional characters	Gernsbacher et al. (1992, 1998): Readers automatically form mental representations and infer characters' emotions	No mention found in the reviewed studies	Suggests evolved social cognition processes apply to fictional entities, potentially aiding social learning
Role of transportation in emotional engagement	Argo et al. (2008), Publisher Rights et al. (2013), Shedlosky-Shoemaker et al. (2014): Transportation enhances engagement and empathy	No mention found in the reviewed studies	May reflect adaptive capacity for social simulation and learning through narrative

Theme	Supporting Evidence	Contradicting Evidence	EP Implications
Personal memories enhance fictional engagement	Benton (1994), Sperduti et al. (2016): Personal memories increase emotional intensity for both real and fictional stimuli	No mention found in the reviewed studies	Suggests fiction can activate adaptive memory systems, potentially enhancing its impact
Reduced subjective emotional response to fiction	Humbert-Droz et al. (2020), Sperduti et al. (2016): Subjective emotional responses often weaker for fictional stimuli	Benton (1994): No difference in physiological arousal between real and fictional stimuli	May reflect evolved ability to distinguish reality from fiction while still engaging emotionally
Empathy's role in fictional engagement	Argo et al. (2008), Coplan (2004): Empathy influences and is influenced by engagement with fiction	No mention found in the reviewed studies	Suggests bidirectional relationship between fiction engagement and evolved empathy systems

Based on the synthesis of findings from the included studies:

- We found supporting evidence for five themes related to emotional engagement with fictional characters:
  - Transportation enhancing engagement (3 studies)
  - Personal memories enhancing engagement (2 studies)
  - Reduced subjective emotional response to fiction (2 studies)
  - Empathy's role in engagement (2 studies)
  - Automatic emotional processing (1 study)
- We didn't find mention of contradicting evidence for 4 out of 5 themes in the abstracts or full texts of the included studies. For the theme of reduced subjective emotional response to fiction, we found 1 study reporting no difference in physiological arousal between real and fictional stimuli.
- The studies suggested several Evolutionary Psychology implications:
  - Evolved social cognition processes may apply to fictional entities
  - Fiction engagement may reflect adaptive capacity for social simulation and learning
  - Fiction may activate adaptive memory systems
  - Humans may have evolved ability to distinguish reality from fiction while still engaging emotionally
  - There may be a bidirectional relationship between fiction engagement and evolved empathy systems
- We didn't find multiple studies supporting the same Evolutionary Psychology implication; each implication was derived from a different theme.

## References

- A. Benton. “Origins of Neuroscience.” *Trends in Neurosciences*, 1994.
- Amy Coplan. “Empathic Engagement with Narrative Fictions,” 2004.
- E. Konijn, and J. Hoorn. “Some Like It Bad: Testing a Model for Perceiving and Experiencing Fictional Characters,” 2005.
- Jennifer J. Argo, R. Zhu, and D. Dahl. “Fact or Fiction: An Investigation of Empathy Differences in Response to Emotional Melodramatic Entertainment,” 2008.
- M. Gernsbacher, Brenda M Hallada, and Rachel R. W. Robertson. “How Automatically Do Readers Infer Fictional Characters' Emotional States?” *Scientific Studies of Reading*, 1998.
- M. Gernsbacher, H. Goldsmith, and Rachel R. W. Robertson. “Do Readers Mentally Represent Characters' Emotional States?” *Cognition & Emotion*, 1992.
- Marco Sperduti, M. Arcangeli, D. Makowski, P. Wantzen, T. Zalla, Stéphane Lemaire, J. Dokic, J. Pelletier, and P. Piolino. “The Paradox of Fiction: Emotional Response Toward Fiction and the Modulatory Role of Self-Relevance.” *Acta Psychologica*, 2016.
- Publisher Rights, P. M. Bal, and M. Veltkamp. “How Does Fiction Reading Influence Empathy? An Experimental Investigation on the Role of Emotional Transportation.” *PLoS ONE*, 2013.
- Randi Shedlosky-Shoemaker, Kristi A. Costabile, and R. Arkin. “Self-Expansion Through Fictional Characters,” 2014.
- Steve Humbert-Droz, Amanda Garcia, Vanessa Sennwald, F. Teroni, Julien Deonna, David Sander, and Florian Cova. “Lost in Intensity.” *Aesthetic Investigations*, 2020.