

Literary Character

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Whether it's *Oliver Twist* or Harry Potter, Hester Prynne or Katniss Everdeen, literary characters offer us a chance to vicariously experience life in all its drama, humor, mystery, and adventure. Through Atticus Finch, we fight a moral cause in the face of prejudice. Through Lizzy Bennet, we defy class boundaries to find romantic happiness. Through Ralph Ellison's *Invisible Man*, we lament society's refusal to recognize our individuality.

Although many students would rather be watching TV or playing video games than working through classic tomes, science has documented how a steady dose of books can fuel their academic success, vocabulary, and reading comprehension.

But a number of studies suggest that books — and specifically literary fiction — can also affect social skills, emotional intelligence, and behavior throughout life. As Canadian novelist and psychological scientist Keith Oatley, an APS Fellow, has written, stories appear to offer a deeply felt simulation of social experience, expanding our understanding of ourselves and others.

Evidence suggests that these effects may germinate when children are first exposed to storybooks, but before they even learn to read — when they're simply *listening* to stories from books. In a 2009 study, Israeli educational researchers Dorit D. Aram and Sigalit Aviram found that children of mothers who were knowledgeable about children's fiction were more likely to be rated by teachers as empathic and emotionally well adjusted. And a 2010 study led in Canada by York University psychologist Raymond A. Mar, a prolific researcher on the link between narratives and social abilities, found that preschoolers whose parents were better at recognizing the titles and authors of children's books scored better on measures of theory of mind — the complex skill of understanding other people's mental states.

These studies, however, are based on inference. More recently, educational researchers have directly linked children's reading and social development. A team led by Judith Lysaker of Purdue University conducted an experimental intervention with 22 second- and third-grade students who were exhibiting difficulties with both reading comprehension and social relationships. The children participated in a reading group that focused not only on understanding the text but also on exploring the thoughts, intentions, and emotions of the characters in the books. For example, the students were asked to write a

letter from a particular character's perspective.

As reported in 2011 in the journal *Reading Psychology*, assessments done before and after the reading intervention showed significant improvements in the participants' reading comprehension and in their ability to imagine the emotions of others.

The Role of Genre

Research with adults suggests that such broadening in perspective isn't evoked by just any novel or short story. In a study published last year in *Science*, psychologists David Comer Kidd and Emanuele Castano of the New School for Social Research found that reading literature improves intuitive abilities. But that effect appeared to apply only to what they describe as *literary* fiction — not the mysteries, thrillers, and other popular books that often sit atop bestseller lists.

Kidd and Castano performed five experiments to measure the effect of reading literary fiction on participants' theory of mind (ToM). To choose texts for their study, Kidd and Castano relied on expert evaluations to define three types of writing: literary fiction, popular fiction, and nonfiction. They had each participant read excerpts from one of three genres:

- recent National Book Award finalists or winners of the 2012 PEN/O. Henry Prize for short fiction;
- popular fiction drawn from Amazon.com bestsellers or an anthology of recent popular fiction; or
- nonfiction works from the *Smithsonian* magazine.

Afterward, the researchers tested the participants' ToM capabilities using several well-established measures. One of these measures is the "Reading the Mind in the Eyes" test, which asks participants to look at black-and-white photographs of actors' eyes and indicate the emotion expressed.

Across the five experiments, Kidd and Castano found that participants who were assigned to read literary fiction performed significantly better on the ToM tests than did participants assigned to the other experimental groups. And the effect held after controlling for the readers' age, gender, education, and mood.

The study suggests that not just any fiction helps foster ToM. Unlike popular fiction, literary fiction requires intellectual engagement and creative thought from its readers, Kidd and Castano assert.

"Features of the modern literary novel set it apart from most bestselling thrillers or romances," they wrote. "Through the use of ... stylistic devices, literary fiction defamiliarizes its readers. Just as in real life, the worlds of literary fiction are replete with complicated individuals whose inner lives are rarely easily discerned but warrant exploration."

Neutralizing Bias

According to a study led by psychology researcher Dan Johnson, the exploration of fictional characters' inner lives may even help counter certain racial, ethnic, and cultural biases. Johnson, an assistant professor of psychology at Washington and Lee University, assigned a subset of 68 study participants to read an excerpt from the 2009 novel *Saffron Dreams* by Shaila Abdullah. The story's protagonist, a counter-stereotypical Muslim woman, is attacked by a group of male teenagers who spew racial and ethnic slurs at her. The other participants simply read a synopsis of the excerpt, devoid of descriptive prose and dialogue.

Next, the researchers showed the participants a series of pictures of ambiguous-race faces and asked them to rate them as either Arab, Caucasian, mixed but mostly Arab, or mixed but mostly Caucasian.

The participants who read the actual excerpt were more likely than the synopsis readers to categorize people as mixed race, rather than identifying them as either Arab or Caucasian. In essence, racial categories became less salient for them after they read Abdullah's story.

In a second experiment, Johnson and his colleagues recruited 110 students online and had them read either the excerpt of the novel, a brief synopsis, or a separate piece about the history of the automobile. Afterwards, the participants viewed 12 images of the ambiguous-race faces expressing varying levels of anger. Again, the students were asked to assign each face to one of the same four categories used in the earlier study. Participants who read the synopsis or the history piece tended to categorize the most intensely angry faces as Arab. But those who read Abdullah's narrative showed no such bias.

This led Johnson and his team to conclude that artfully written, evocative fiction helps people identify with characters from different cultures — and thus disrupts readers' tendency to stereotype and judge.

This doesn't mean that a good page-turner is devoid of psychological effects. Scientists at Emory University have found that reading a compelling novel may cause changes in the brain that reflect readers' immersion in the story. Led by neuroscientist Gregory S. Berns, the researchers had 21 college students read *Pompeii*, a piece of historical fiction written by Robert Harris and published in 2003. The book, which revolves around a young man's efforts to save the woman he loves as Mount Vesuvius erupts in ancient Italy, was selected specifically because of its dramatic plot.

For 5 days, the participants underwent daily functional magnetic resonance imaging (fMRI) scans while at rest. Over the next 9 days, the students read portions of the book until they finished, undergoing additional fMRI scans every morning. Their brains also were scanned for 5 days after they finished the book.

In looking at the scan results, Berns and his colleagues detected heightened activity in regions of the brain associated with physical sensation and movement. Those types of changes suggested that reading fiction — any fiction — mentally transports us into the body of the protagonist.

What's more, the neurological changes continued for 5 days after participants finished reading, revealing that the effect wasn't fleeting, the researchers said.

Chekhov-Induced Change

Another study indicates that the story itself may be less important than its mere status as fictional or nonfictional. Researchers Maja Djikic, Sara Zoeterman, Jordan Peterson, and Oatley gave 166 people a battery of questionnaires that included standard personality measures and questions about their current emotional states. They were then randomly assigned to one of two conditions. Those in the “art” condition read “The Lady With the Dog,” a classic short story by Anton Chekhov about an adulterous affair between a Russian banker and a woman he meets while vacationing in Yalta.

Participants in the control condition read the same tale, only rewritten to appear as a nonfictional report of proposed divorce proceedings. The researchers made every effort to make sure the plot remained almost identical. The control text had the same length, content, and complexity as Chekhov’s original, and readers found it just as interesting.

After reading the stories, all the participants were given another round of questionnaires, including the same personality and emotional measures they took at the beginning of the experiment.

The researchers found that the people assigned to the “art” condition showed more changes in personality traits compared with those who read the nonfiction version of the story. What’s more, each person’s change was unique, affected by the emotions he or she was feeling while reading.

“While it might seem surprising, this study demonstrates the turn-of-the-century prose by Chekhov can make university undergraduates experience and report themselves as more different than those who read a documentary-style text with the same content,” the research team wrote in a chapter of the book *Directions in Empirical Literary Studies* (2008). “By projecting ourselves into fictional stories and the minds of fictional characters, we open ourselves up to greater possibilities for who we may become.”

But how robust are these effects on children and adolescents? Does reading fiction affect them the same way that novels appear to influence adults?

In a 2008 article in *Perspectives on Psychological Science*, Mar and Oatley acknowledge that children may have difficulty comprehending subtext and metaphor, but point to research showing that they can still hone some of their social reasoning skills by reading storybooks. Nevertheless, the researchers agree that empirical links between story reading and social development are spotty and should be studied in more depth.

Recent research has, however, signaled that certain forms of fiction can engage even the most excitable, distractible children. Take youngsters who show a high tendency toward sensation seeking, a personality trait that APS Fellow Marvin Zuckerman identified to describe people who possess a heightened need for stimulation. High sensation seekers (HSS) are drawn to novel, emotionally complex experiences, which can sometimes lead to deviant behaviors like drug use and aggression. In a 2011 study involving fourth- and fifth-grade students, Purdue University researchers found that HSS children overall were less apt to enjoy the passive act of leisure reading. But if those students read more exciting or suspenseful narratives, they were just as likely to enjoy reading as their low-sensation-seeking peers.

At first glance, the fantasy novels and outer-space thrillers that are thought to better engage sensation seekers might be regarded as lacking in depth. It’s assumed that students get far more poignancy out of *To Kill a Mockingbird* than *Divergent*.

But in their 2008 article, Mar and Oatley argue that even books populated by wizards, dragons, vampires, and aliens can strive to depict important aspects of the human experience.

“A science-fiction novel that takes place on a distant space station,” they wrote, “may have greater psychological realism than does a pulpy novel set in modern times in a familiar locale.” æ

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