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Book Review: Toys and Tools in Pink: Cultural Narratives of Gender, Science, and Technology by Carole Colatrella

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Toys and Tools in Pink: Cultural Narratives of Gender, Science, and Technology by Carol Colatrella. Columbus, OH: The Ohio State University Press, 2011. 246 pp. ISBN 978-0-81421147-2.

The issue of women's underrepresentation in science, technology, engineering, and math (STEM) fields is an important and current issue in the social sciences, and this same topic is being explored in a variety of popular culture mediums, including books, movies, and television shows. For instance, while social scientists have examined university programs that promote women's success in science and engineering (Fox, Sonnert, & Nikiforova, 2009), the characters of CBS's hit television show "The Big Bang Theory" have explored how women fit into the male-dominated culture of physics and engineering labs. In Carol Colatrella's book titled *Toys and Tools in Pink: Cultural Narratives of Gender, Science, and Technology*, Colatrella discusses STEM gender issues while considering women's representation in popular culture. Specifically, the author approaches the gender gap in STEM through careful consideration of popular culture that depicts women in STEM fields.

Colatrella is a professor of literature and cultural studies as well as the Co-Director of the Center for the Study of Women, Science, and Technology at Georgia Institute of Technology. She asserts that a popular culture and gender study is needed, given that prior social science research indicates that socio-cultural environmental factors have an effect on the number of women who are attracted to and retained in STEM fields. If we accept that books, movies, and television shows represent a facet of the socio-cultural environment, then they, too, play a role in how society understands women in STEM fields.

Colatrella suggests that female characters in these works are often depicted as one of five stereotypes—the ethical observer, criminal deviant, mother/caretaker, babe scientist, and technical innovator, and she organizes the book around these roles. The first five chapters focus on each of the archetypes and provide detailed summaries and analyses of several cultural narratives to illustrate them. The final chapter examines the ways women and girls are portrayed with respect to STEM in children's literature, television shows, and films. Colatrella argues that these works are particularly important, because they are often a child's first exposure to STEM fields and may affect whether girls believe that they can succeed in science and math.

The works on which Colatrella bases her cultural analyses range from nineteenth century books such as Mary Shelly's *Frankenstein* to present-day works like Nickelodeon's television series *iCarly*. The wide timespan provides the reader with historical background regarding the status of women in STEM fields. For instance, Colatrella describes several works from the early twentieth century that promoted women in the field of medicine and advocated that "feminine

influence and ideals can transform medicine” (p. 79). Today, National Science Foundation (NSF) statistics show that women enjoy higher participation in the biological sciences and other fields related to medicine than they do in other STEM fields, such as engineering and computer science (NSF, 2013). Colatrella’s analyses illustrate that there have been positive examples of women in biology in cultural narratives for over a hundred years. Thus, her readings of these portrayals of female doctors provide context to help explain why women were able to achieve parity in the biological sciences more quickly than in other STEM fields. Some scholars have suggested women gained parity in the biological sciences because it was one of the first professional scientific fields deemed appropriate for women (O’Hern, 1979).

Colatrella explains that the way literature and visual media represent women in STEM fields can reinforce or challenge stereotypes, which in turn may help or undermine efforts to attract and retain more women in STEM fields. For instance, in her analysis of Michael Crichton’s 1993 novel *Disclosure* and its 1994 film version, Colatrella demonstrates how the story contests some stereotypes. *Disclosure* portrays the main male character as a successful executive who is also a caring family member and depicts women, especially those who are information technology executives, as smart and capable. However, Colatrella argues that this film is “no friend to feminism” (p. 156). Its overarching theme suggests that efforts to promote diversity may lead to a lack of technical competence, and the women are portrayed as less adept at technology than the men in their field. As evidenced by this example, Colatrella’s book provides thorough and fair analyses of the works at hand, allowing the reader a sense of the complexities of how gender in the STEM fields is portrayed in cultural narratives. Colatrella points out that individual consumers of these works will interpret and respond to them differently, so further research must be done to understand the impact of cultural narratives on women’s participation in STEM.

Considering how literature and visual media portray women in STEM fields, *Toys and Tools in Pink* provides additional context to understanding factors that may be limiting women’s success. However, there are some important limitations to Colatrella’s analysis. First, the texts that the author employs are Euro-centric. While she includes examples from outside of the United States, even those examples decidedly Western, so this book is most relevant for understanding how women in Western cultures have been portrayed in film, books, and television. Additionally, Colatrella does not emphasize the intersections race, ethnicity, culture, and gender in her analysis. Given that feminist scholars have called for the inclusion of race in the study of gender (Collins, 1998), this seems a curious omission. This gap in Colatrella’s analysis represents an important opportunity for future research—how have women of color been portrayed in the sciences in popular culture? Finally, some readers may

be unfamiliar with many of the narratives the author includes. For example, in the first few chapters of the book, Colatrella relies heavily on classic works in French literature by Émile Zola and Honoré de Balzac that are not widely read. Although Colatrella does provide summaries of these narratives, readers who are not familiar with those works may have trouble following her arguments as to how these early narratives depicted women in the sciences.

Despite the above-mentioned limitations, *Toys and Tools in Pink* is a novel approach to a much-discussed topic. Colatrella adds a new dimension to the conversation about women's representation in STEM fields; therefore, this book is particularly pertinent for scholars who research issues of gender in STEM fields. This book can help researchers understand what girls and women see in popular culture about who can succeed as a scientist. It does not, however, speak much to how women and girls interpret these portrayals, how it affects their participation in STEM fields, and what the policy implications could be. Colatrella has started a conversation about how Western society portrays women in the sciences but leaves it for others to answer the remaining questions.

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Reviewer

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