



The Gendering Of Albert Einstein And Marie Curie In Children's Biographies: Some Tensions

By: **Rachel E. Wilson**, Amber R. Jarrard, and Deborah J. Tippins

Abstract

Few twentieth century scientists have generated as much interest as Albert Einstein and Marie Curie. Their lives are centrally depicted in numerous children's biographies of famous scientists. Yet their stories reflect interesting paradoxes and tacit sets of unexplored sociocultural assumptions about gender in science education and the larger society. Trevor Owens' analysis of common Einstein and Curie biographies for children provides a context for us to consider a deeper reading of these scientists' stories in ways that can be both empowering and liberating. In the process, we consider some interesting tensions surrounding the gendered nature of their stories.

Wilson, R.E., Jarrard, A.R. & Tippins, D.J. The gendering of Albert Einstein and Marie Curie in children's biographies: some tensions. *Cult Stud of Sci Educ* 4, 945 (2009). <https://doi.org/10.1007/s11422-009-9190-9>. Publisher version of record available at: <https://link.springer.com/article/10.1007/s11422-009-9190-9>

The gendering of Albert Einstein and Marie Curie in children's biographies: some tensions

Rachel E. Wilson · Amber R. Jarrard · Deborah J. Tippins

Abstract Few twentieth century scientists have generated as much interest as Albert Einstein and Marie Curie. Their lives are centrally depicted in numerous children's biographies of famous scientists. Yet their stories reflect interesting paradoxes and tacit sets of unexplored sociocultural assumptions about gender in science education and the larger society. Trevor Owens' analysis of common Einstein and Curie biographies for children provides a context for us to consider a deeper reading of these scientists' stories in ways that can be both empowering and liberating. In the process, we consider some interesting tensions surrounding the gendered nature of their stories.

Keywords Children's literature · Gender equity · Einstein · Curie

Drawing on the lives of Albert Einstein and Marie Curie as reflected in children's biographies, Trevor Owens aims to show that their authors gender these books. In this sense, a central claim of his study is that Einstein and Curie's gender is central to the shape of their stories. Owens clearly shows that the place and role of womanhood has changed over time. Keeping his goal of making a case for the gendered nature of the stories in mind, we were left wondering about the gender of the authors of the biographies. It seems to us that an important aspect of Owens' claim would involve knowing something about the gender of the authors, themselves. Owens' discussion of the children's biographies of Einstein and Curie highlight some interesting tensions in the way gender is presented and brings to light some of the embedded assumptions that might mediate the message of these biographies.

Einstein, Curie and the postmodern lens

Owens brings a postmodern or anti-foundationalist lens to his critique of the Einstein and Curie biographies. In this sense, his study explores the broad picture of how stories change,

R. E. Wilson · A. R. Jarrard · D. J. Tippins (✉)
Department of Science and Mathematics Education, The University of Georgia,
212 Aderhold Hall, Athens, GA 30602-7126, USA
e-mail: debtippins@hotmail.com; dtippins@uga.edu

emphasizing empowering messages and the reader's agency. This postmodern lens enables us to understand new dimensions of the relationships that characterize the lives of Einstein and Curie. At the same time, it provides us with a tool for exposing some of the tacit assumptions surrounding the way that gender is represented. Through a postmodern lens we can explore the cracks and fissures within the "institution." Both Einstein and Curie shared a common ground in that they both had to appeal to science to be accepted as scientists. But Curie, as a single representative of women in science, for example, may not be an accurate representation of the institution. In keeping with the postmodern tradition of teasing out problems, the biographies of Rachel Carson, Barbara McClintock and others would be equally important to an understanding of how gender is represented in children's books.

Curiously, Owens suggests that gender has a foundation in genetics and phenotypes in addition to culture. He suggests that feminism is equivalent to women, as defined by anatomy. In the case of Einstein, this is an interesting assumption to explore. Einstein has been described by some scholars as promoting "relations" in science—something that is frequently associated with women. Kincheloe et al. (1999), for example, explain how Einstein, in his effort to understand gravity, saw it as a relationship rather than an object. Einstein's emphasis on relations, which cuts across a variety of domains, illustrates many lessons about the importance of not viewing the world in isolation from context. This idea is also integral to how children read and make sense of biographies. In describing how Einstein bid farewell to his wife and children as they left on a train, Owens explains how the scenario leaves young readers with a view of Einstein as a deeply conflicted and flawed individual, rather than pointing to his feminine side. But Einstein, through feminist ways of knowing, challenged the assumption that logic should oppress consciousness associated with emotion; it was his reliance on emotion and intuition that enabled him to turn the world upside down and inside out. Similarly, Owens associates aggression with men in discussing Einstein's lifelong struggle with authority. But in many ways, Barbara McClintock's struggles with authority mirror those of Einstein.

Tensions of gender equity in the workplace and at home

In his discussion of the Einstein and Curie children's biographies, Owens highlights an interesting tension that may be reflected in American society at large: the tension between gender equity in the workplace and at home. After reading Owens' paper, we were particularly intrigued by the way he described how children's biographies portrayed Mileva and Albert Einstein's separation. Though Curie's portrayal as a pioneer for women in science has been very positive, the tale of Mileva Einstein as a resistor of gender norms was not presented in the same way. Owens notes that despite the fact portrayals of Mileva in authoritative biographies are generally short and show Einstein initiating the separation, children's biographies consistently portray her in a negative light. Owens notes, "the early children's books do almost everything in their power to make the divorce appear either mutual or Mileva's fault." Owens further describes how children's biographies not only portray Mileva as being at fault for their divorce, but also how they did not write about Mileva as a fellow student and scientist. Though Owens notes that portrayals of Mileva in more recent children's biographies (since the 1990s) have shown her marriage to Einstein as more conflicted and its failure as also Einstein's doing, Owens' comments reflect conflicting messages about why Mileva was struggling in their marriage.

Owens writes that McPherson's (1995) biography describes a Mileva who wants Einstein to be home more to help with day-to-day life. However, McPherson also writes of

Mileva's eagerness to help with his scientific work, but that Einstein needed time to do his work, and merely wanted a housewife, not a partner. Owens connects McPherson's (1995) biography to Brallier's (2002) biography in the trend of portraying a more complex Mileva. Owens notes that Brallier still portrays Mileva negatively, but at least Mileva is portrayed as intelligent enough to have been a scientist herself, and that the marriage was a conflict of expectations in the home between Albert and Mileva.

Even though Owens describes how children's biographies now portray the marriage and separation of Mileva and Einstein as more complex and less the sole fault of Mileva, these biographies paint a portrait of a woman struggling to be happy as a housewife for a famous scientist. It is this portrayal of Mileva that brings forth an important tension for us. Why was Mileva's struggle ignored or portrayed negatively? Why were her own scientific abilities ignored? Why were Einstein's expectations of a quiet home life in which he did not fully participate not fully acknowledged as a source of tension? Einstein draws his notions about a quiet home life from somewhere and it would be interesting to see what influences shaped his ideas in this regard.

While the changing portrayals of Mileva may seem like progress to some, we wonder if they merely echo our society's struggle with gender equity in the home. Why is it more acceptable to see gender equity in the workplace, but not in the home? Is it because it is more acceptable to show women as resisters in society at large, but not as resisters in their own families, against their husbands? Is our societal structure of gender too strong to allow for women to be seen positively resisting norms, such as being more responsible for home affairs?

We began to look through Owens' article for clues as to whether this tension may have come to light in Marie Curie's own life. Owens does portray Curie as a resister of the structure of school and science, someone who pushed against the norms that these communities set out for her. And as he points out, "young readers of this Curie biography are misled to believe that Curie succeeded in science by always knowing the right answers." It would be interesting to compare portrayals of Curie as wife and mother with the evolution of Mileva's portrayal in the same roles.

Blair-Loy (2001) conducted a study with female high-powered financial workers who came of age from the 1950s to the 1980s in the United States. Blair-Loy described two cultural schemas that influenced these women's decisions: work devotion schemas and family devotion schemas. A cultural schema is defined as "an orderly, socially constructed, and taken-for-granted framework for understanding and evaluating self and society, for thinking and acting" (Blair-Loy 2001, p. 689). All of the women in Blair-Loy's study internalized the work devotion schema, but most felt strong irreconcilable differences with the family devotion schema. Though the women dealt with these contradictory pulls in different ways, every woman in the study acknowledged the strength of each schema in their lives.

These schemas offer us a lens with which to view Marie Curie and Mileva Einstein's lives. Marie Curie's struggle between her work and her role as mother and wife has not been exposed to us through Owens' analysis of the children's biographies. However, from what we know about the portrayal of Mileva and Albert Einstein's divorce, we can see that Mileva was perhaps struggling between her own desire to have work be a part of her life and her devotion to her family with Einstein. Later portrayals of the separation of Mileva and Albert show that this struggle between competing cultural schemas is not unique to women alone, but may merely impose feelings of greater restrictions, as in Mileva's case. Another analysis of children's biographies of famous scientists, especially women, that looks for signs of a struggle between a work devotion schema and a family devotion

schema would shed light on what messages young men and women are receiving about the lives of scientists and the hard decisions they have to make to be history-makers.

The tension of meritocracy

One clear tension that Owens' analysis highlights centers around the issue of meritocracy and how it is applied to the accomplishments and views of Einstein and Curie's school experience in terms of what it means to be scientifically minded. This tension can be further detailed by examining what it means to be a good scientist, or rather the mixed messages that come through the biographies of what it means to be a good scientist. This tension, as reflected in the experiences of Einstein and Curie, can be understood in relation to larger constructs of gender. Sandra Bem (1993) discusses one example of this in her book *Lenses of Gender* when she describes the biological theorizing that swept the nineteenth century.

Bem discusses the studies conducted by Helen Thompson Woolley and Leta Stetter Hollingworth that attempted to empirically answer the question of male-female difference. Specifically, their studies focused on intelligence and special talents. It was the follow up study conducted by Lewis Terman that can be useful in interpreting the tension that Owens displays in his article. In 1936 Terman conducted the first test of mental masculinity and femininity. One outcome of this test, which is of particular relevance to the tension of meritocracy that we see in the lives of Einstein and Curie, was with respect to schooling and obedience. In Terman's test, participants were awarded masculine points if they agreed that they were disobedient children, and if they agreed that school was a place in which they found it difficult to get along. Similarly, femininity points were awarded if respondents disagreed with those statements, effectively saying that they were not disobedient children and they did not find school a difficult place to get along.

This example supports the overarching assumption that can be seen in the mixed messages with regard to Einstein and Curie, which is that there were different expectations and thus different contributing factors for success based on gender. The tension of meritocracy can be further examined in terms of gender by considering who has merit and how that merit is explained. For Einstein, Owens points out that in children's biographies there is an over exaggeration of the rebellion that he displayed at schools. Not only was his dislike for school used as a prominent feature and part of his character, but that rebellion was also directly linked to Einstein being scientifically minded. Owens points out that the rebellion is portrayed in the books as "indicative of central features of scientific thinking." Owens' description of Einstein's portrayal shows that his rebellion was linked to his having a scientific mind, which can be interpreted as fostering success.

Thus, Einstein's success as a scientist was attributed to his scientific mind, which was displayed through his resistance as a student. Einstein was given merit through his intelligence and scientific mind. Curie, on the other hand, was given merit through her ability to be a good student and follow the rules, as depicted in Owens' paper. This issue seems to be under dispute, with regard to how compliant Curie was as a student, but nonetheless, Owens points out specific examples in children's literature that allude to the conformity of Curie being a key to her success. By contrast, Kuhn would argue that Curie succeeded by changing the "paradigm." Owens points out that through much of the children's literature the message can be found that "Curie was successful strictly because she worked hard." He goes on to say that, "this situation may well leave young children, and especially girls, believing that school is the sole route to success in science, and that success in science is strictly about following rules."

This is a very different message from the one that readers may perceive about Einstein. Curie is portrayed as a good student who followed the rules, and obeyed them. She was given merit in these books because of her conformity and behavior. This behavior has been linked to her success as a scientist. For Curie, following the rules equaled success and where we saw a resistance in school against the conformity for Einstein's success, we see an absence of resistance in the books that centered on the life of Curie. While success for Curie was obtained through her lack of resistance and conformity, for Einstein success and merit were achieved through resistance and being scientifically minded. Even though both Einstein and Curie were recognized as achieving scientists, Einstein was the only one linked to having a scientific mind. If being scientifically minded is linked to rebellion we could draw a conclusion, at least in terms of children's biographies, that males are more predisposed to be scientists and possess scientific thinking capabilities. By contrast, females, through hard work and following directions can possibly achieve the status of a scientist. This idea is reinforced through the examples from the M-F test described earlier. According to the M-F test, it is more masculine to be a rule breaker and have a dislike for school, and therefore more masculine to have a scientific mind.

This discussion alerts us to the ways in which the feminist critique of the past several decades has challenged the androcentric myths of intelligence, one which is grounded in subjugated talents and definitions. Perhaps in Owens' analysis of children's biographies of Einstein and Curie we can recognize a need to rewrite the history of intelligence in ways which include all races, classes and gender.

A simple caveat

Will children blindly accept the stories of Einstein and Curie as told? We contend that teachers and parents share in the responsibility to make sure this is not the case. Much remains to be said about children's biographies from the perspective of literacy studies. Work in the field of literacy studies points to literacy as a set of social practices which can be inferred from events mediated by written texts. Barton and Hamilton (1998), in discussing literacy as a social practice, suggest that the meaning of any text is inextricably linked to practices, including values, attitudes, feelings and social relationships. We suggest that the stories of Einstein and Curie should not exist in isolation. Rather, their biographies might be more usefully understood in relation to children's own lives and the broader social context of their lived experiences. The context in which children read the biographies becomes critically important in enabling children to uncover new dimensions of meaning by engaging in questions such as: Why did the author write this book? What values does the book reflect? From where did the stories of Einstein and Curie originate?

References

- Barton, D., & Hamilton, M. (1998). *Local literacies: Reading and writing in one community*. New York: Routledge.
- Bem, S. L. (1993). *The lenses of gender*. New Haven, CT: Yale University Press.
- Blair-Loy, M. (2001). Cultural constructions of family schemas: The case of women finance executives. *Gender & Society*, 15, 687-709. doi:10.1177/089124301015005004.
- Brallier, J. M. (2002). *Who was Albert Einstein?* New York: Grosset and Dunlap.

Kincheloe, J. L., Steinberg, S. R., & Tippins, D. J. (1999). *The stigma of genius: Einstein, consciousness, and education*. New York: Peter Lang.

McPherson, S. S. (1995). *Ordinary genius: The story of Albert Einstein*. Minneapolis: Carolrhoda Books.

Rachel E. Wilson formerly taught biological science in a secondary school in Guyana. She is currently a doctoral student in the Department of Mathematics and Science Education at the University of Georgia. Her research interests center around understanding unexplored assumptions about gender and science teaching and learning.

Amber R. Jarrard formerly taught high school physics and environmental science. She is currently a doctoral student in the Department of Mathematics and Science Education at the University of Georgia. She draws on feminist epistemologies and pedagogies to understand gender issues in the context of science teaching and learning.

Deborah J. Tippins is a professor in the Department of Mathematics and Science Education at the University of Georgia. She uses sociocultural and anthropological research approaches to study questions of eco-justice and culturally relevant science teaching and learning.