THE WOMAN SCIENTIST: BRIEF REFLECTIONS ON THE VISUAL REPRESENTATION OF WOMEN

Kendra H. Oliver, Department of Pharmacology, Program of Science Communication and Technology, Curb Center, The Wond’ry, Vanderbilt University, Nashville, TN, 37232, U.S.A. Email: kendra.h.oliver@Vanderbilt.edu.

Interviewed Artists:

Eve Moll, Vanderbilt University, Nashville, TN, 37232, U.S.A.

Marilyn Murphy, Department of Art, Vanderbilt University, Nashville, TN, 37232, U.S.A.

See www.mitpressjournals.org/toc/leon/52/3 for supplemental files associated with this issue.

Submitted: 9 October 2018

Abstract

From a dropped acknowledgment on a publication to the use of women to popularize specific scientific causes, a deeper exploration of women scientists' role warrants discussion. Here, the author explores this representation of the woman scientist in visual art, framing the discussion from a multifaceted, cross-disciplinary perspective. Through the perspective of various artist’s reflections, the ArtLab exhibition acts as a launching board enabling continued dialogues surrounding the gender perspectives within the scientific community.

Art and mass media have not traditionally supported identity development of women scientists [1]. Visual representation communicates the set of shared values, ideas and practices that build a communal identity. However, a walk through any academic institution reveals walls covered with portraits of white males dominating the space and communicating the accepted demographic of science. As a female scientist and artist, I was interested in beginning a cross-disciplinary dialogue on the representation of women scientists in visual arts. Based on my own experience, academia has not specifically supported the success of women or other minority groups. My artwork has evolved to focus on some of those struggles, and it touches on the psychological burden of a biased system that can make women, or any minority group, feel like intruders. Using the images of historically marginalized women scientists such as Mary Jacobi and Émilie Du Châtelet (aka Gabrielle Émilie Le Tonneller de Breteuil, Marquise Du Châtelet), this series of artworks was devoted to the exploration of this narrative (Fig. 1). In this same vein, my art has focused on the psychological aspects of being a woman scientist, perhaps as a metacognitive personal therapeutic approach.

Women have been historically marginalized within all scientific disciplines [2]. Research has shown that women in science have more emphasis placed on their appearance and their exceptional status as women in a traditionally male discipline [3]. They are also often used to popularize specific causes. Even in modern media, women scientists are underreprented, perpetuating the stereotype of women not being drawn to or proficient in the sciences [4]. Subtle, or not so subtle, influences on gender stereotyping and bias, both cultural and historical, have major implications for the interests of young women entering science, technology, engineering and mathematical (STEM) careers [5]. These observations counterbalance the growing number of women graduating from STEM programs [6]. However, lack of woman scientist representation may explain higher attrition rate among women PhDs, which may be strongly influenced by social and structural factors [7].

As an extension of my own experiences, and in light of the vast literature on the representation of women in science, I initiated an exhibition of visual art on the representation of women scientists through ArtLab, a program at Vanderbilt University. The exhibition explored the intersection of art and science and was initially held November 2017 at The Wond’ry.

Within the Department of Art at Vanderbilt University, Professor Emerita Marilyn Murphy had previously created visual works representing female scientists. Her work has been shown in more than 300 exhibitions internationally. She has curated more than 30 exhibitions and her work is in many public and private collections, including the Kemper Collection, Huntsville Museum of Art, the Boston Museum School and the Prudential and Bridgestone Collections. Eve Moll is currently a junior at Vanderbilt University studying molecular and cellular biology and communication of science and technology. She is an honors scholar and recipient of the Cornelius Vanderbilt Scholarship. At 14 years old, Moll created ArtbyEve, which helps raise money for various charitable groups through art. Moll’s work has benefited a variety of causes, including Women in Distress and Debbie’s Dream Foundation. She has explored women in science as part of her independent research. Below are reflections by each artist on their personal journey to identifying as women scientists.

Marilyn Murphy

When I was a child, my mother would take my brother and me to open tours of factories: a plant that built seismographs, Liberty Glass plant, a Wonder Bread factory, American Airlines maintenance base and more. I loved the machines and the serious tasks involved in their processes. Later, in graduate school, I began collecting deaccessioned bound volumes of the Oil and Gas Journal from the University of Oklahoma library, other science magazines and some U.S. Steel annual reports. Most were from the 1940s and 1950s. I saw only a few women represented, but I wanted to create an inclusive view. I was aware that women did what was traditionally perceived as men’s work in World War II so I began the hunt. The image research was fascinating and led to source material that included women scientists in what would have been perceived as non-traditional jobs (Fig. 2).

I am astonished at the range of bias women in my generation have had to deal with in the workplace and in daily life. As a

Fig. 1. Kendra H. Oliver, #2, acrylic, paper, marker, epoxy on canvas. (© Kendra H. Oliver)
young woman, I presumed the bias to be pretty much past, until a gallery in New York, where I was living in the 1970s, told me how much they loved my work but they already represented a woman artist. When I was an undergraduate art major, we used The History of Art by H.W. Jansen, the standard in the field, for three semesters. It did not include a single artwork by a woman. Art historian Linda Nochlin and the work of artist Judy Chicago were powerful forces for change in how young women artists saw themselves and their opportunities.

I want to show that a woman can create powerful art while indicating that women scientists or welders can also do serious work. How women are represented becomes instructive to people of all ages and especially to young girls who are developing their own image and options. Times are changing but bias is still out there. Beyond mentoring, young women also need a sort of toolkit to deal with issues of bias, which can be crass and direct, or something more subtle like the lack of eye contact in a meeting.

**Eve Moll**

I find the stories of scientists like Marie Curie, Gerty Cori, Maria Goeppert-Mayer and Barbara McClintock inspiring because they are among the first women to be recognized for their scientific achievements by the Nobel Prize committee. The disparity between male and female Nobel Prize winners is a telling byproduct of academic culture that has underestimated or otherwise undervalued women.

The faces on the large canvas (Fig. 3) are not recognizable. They are of no women in particular. Rather, they represent anonymous future female scientists. Their gazes point upwards, as does an upstretched hand, towards a lofty goal: to practice fulfilling and important work in a STEM field. At this juncture in my life, I find myself relating to these girls in the large canvas. The gender disparity in recognition for scientific achievement quite literally colors the red-and-blue-spotted background of this piece, giving a social context. Each blue dot represents a male Nobel Prize winner in a STEM field. Each red dot represents a female. The blue dots outnumber the red 719 to 20. This gap is projected to close as more women excel in STEM. My hope is that an aspiring female scientist, no matter her race or age or experience, can look upon this installation and see herself amongst these tenacious women. It is important that role-aspirants can relate to their role models, and this is the spirit with which I have portrayed women in STEM. Furthermore, it is far too easy to forget that science is carried out by people in a social context. Science is interminably bound to those who practice it. We should think critically about who is practicing science, and I aim to inspire an appreciation for this idea in my viewers.

**Reflections**

Here, the personal account of each artist in her representations of women scientists is shaped by her independent experiences and her individual background. Altogether, the exhibit provides a valuable multiperspective commentary highlighting the need for open communication and dialogue on the dearth of woman scientist representation. Using various artistic media, including visual art, discussion such as this may serve to further shift perspective and the cultural narrative of women scientists. Already, we are seeing increased media portrayal to reflect both the increased presence and significance of women in the science workforce [8].

These works frame a discussion from a multifaceted, cross-disciplinary and personalized perspective within the visual arts. This conversation should also be expanded to include the representation of racial and ethical minorities. With that in mind, this short reflection only scratches the surface on women’s representation within the sciences, but, clearly, varying personal experiences have influenced each artist’s work. By creating an open channel for discussion, we are developing a better understanding of the past injustices, present biases and future directions to improve the visual representation of women in science.

**Fig. 2. Marilyn Murphy, *Popular Science*, graphite on paper, 2005. (© Marilyn Murphy)**

**Fig. 3. Eve Moll, *Large Canvas*, oil on canvas. (© Eve Moll)**

**References and Notes**


