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The Value of Ada

Valerie Barr considers the continuing attraction of the woman considered the first computer programmer.

Valerie Barr
"Why is Ada Lovelace Still the Woman That Young (and Not So Young) Women Look To?"

<http://bit.ly/1jT0tSp>
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I was lucky enough to represent ACM and ACM-W at the recent Ada Lovelace Symposium at Oxford University, celebrating her 200th birthday. I participated in a panel "Enchantress of Abstraction and Bride of Science: can women scientists escape being icons, role-models and heroines." Following are my remarks:

Why? Why do so many current organizations and events identify with and recognize Ada Lovelace? We are well into the 21st century; Ada was born 200 years ago. Why do so many women today seem to look to her as a model and icon? How is it that this woman, who lived her life in the 1800s, can be so important today to women in computing, especially when, by and large, people know very little about the detail and depth of her accomplishments?

Thomas Haigh and Mark Priestley discuss Ada in their September 2015 piece in *Communications* entitled "In-

novators Assemble: Ada Lovelace, Walter Isaacson, and the Superheroines of Computing" (<http://bit.ly/1MRkFeo>). While they make a number of good points in their piece, there are a number of problems as well. I'll digress long enough to comment on only one of the problems.

They state that "most areas of science and engineering are gradually becoming more balanced in their gender representation." This is a problematic statement for two reasons.

First, they do not place that comment geographically in the world, though based on the rest of the piece I assume they are talking about the U.S.

Second, assuming a U.S. focus, they do not account for changing demographics in the U.S. Today, almost 60% of college graduates in the U.S. are women. This skews any by-discipline view of gender representation.

The only accurate way to gauge relative balance is to look separately at women's degrees and men's degrees; that perspective shows us that we have a long way to go. Overall, in the U.S., 11% of women's degrees are earned in the STEM disciplines, while 24% of men's degrees are earned in the same fields. Only biology has true gender balance with 7% of women's degrees and 7% of men's degrees

earned in the field. And, since I'm sure you are wondering, less than 1% of women's degrees are earned in CS, while 5% of men's degrees are.

Returning to Ada, Haigh and Priestley argue, "The superhero narrative is not ... the best way to understand history." They argue for the historian's responsibility to "provide accurate and nuanced stories" and further that history will "ultimately prove more inspiring and more relevant than superhero stories." They make a compelling case, one I agree with, that we need to give more airtime to the many, many women who were involved in the development of computing as a technology and a field. They close by saying, "Superhero stories have little time for ordinary humans, who exist only to be endangered or rescued. Reducing the story of women in computing to the heroics of a handful of magical individuals draws attention away from real human experience and counterproductively suggests that only those with superhuman abilities need apply."

So how do we make sense of this? How are we to understand the iconic nature of Ada as a figure for women in computing? And, frankly, why would anyone bother resurrecting a figure from such a different era?

Where I think Haigh and Priestley go wrong is at the outset, in the title, where they cast Ada as a superheroine. I would argue part of the value of Ada, the reason why she plays an important role, is that she actually is not seen as a superhero, she is not seen as being magical in some way.

I do believe, however, that part of her appeal is precisely because she is not of the modern world, because she comes from a different era, a different educational system, a completely different moment in time. This means today's young women are not dissuaded by her story because they know their life has not been and could not be like hers, so they feel no expectation they have to be exactly like Ada in order to succeed in computing.

Despite the historical differences, there is something very relatable about her for today's women. Her parents had some real problems (that might be the polite way of putting it), she did not have educational access equal to that of men with comparable intellect, and she was micromanaged day to day. Wow, that's the story of many, many women around the world today!

At the same time, she was in many ways able to ignore the script society wanted to write for her, or maybe she managed to just be somewhat unaware of it. She did what she wanted to do, engaged in the intellectual pursuits that clearly drove her and excited her, and seemingly went about her business. That is something well worth emulating!

Imagine for a moment, what if Ada were alive today? How would she measure up relative to some of today's female "superheroes" in tech? If we put Ada Lovelace on stage at the Grace Hopper Celebration of Women in Computing (<http://ghc.anitaborg.org/>), what would she talk about? I suspect she'd be up there, like roboticist Manuela Veloso recently was, talking about her latest technical work and giving credit to her graduate students; not like Sheryl Sandberg, whose big take-away message was "before you go to sleep every night, write down three things that you did well today." If we limit ourselves to those figures who are most hyped in the press today, is there anyone better than Ada to serve as a role model for today's female computer science student?

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As Haigh and Priestley argue, we do have to do a much better job laying out who the key women in computing have been, and who they are today. Until then, we have a great gap, and that gap can actually dissuade women from coming into the field. Leaders, prominent figures, superheroes stand on the shoulders of lots of people below them, but if people hear only about the superheroes, then they will be dissuaded from even trying.

My eye was caught recently by an online listing of top 10 women in tech. I thought: "great, I can post this to the ACM-W Facebook page." I started reading the list and my next thought was, "why would I post this?" Given the lack of detail presented, there did not seem to be a single "regular" person on the list. Everyone on it was young and already worth millions or billions, was a founder or high-level executive in a major company like Lens Technology in Hong Kong, BET365 in the U.K., Epic Healthcare Software, Facebook, or YouTube. I do not mean to take away from the accomplishments of the women who lead these and other companies, but let us not pretend they got there on their own. Most often they had an extraordinary level of help and mentoring and coaching that is made invisible, and that makes it hard for them to be effective role models, because most people do not have access to the kinds of help they had.

A young woman sitting in her classroom today, or banging her head against a recalcitrant bug in her as-

signment, or working hard to get the next product release ready on time, is not likely to be motivated by the story of Marissa Mayer from Yahoo or Judy Faulkner from Epic. She might be motivated by the story of Margaret Hamilton (<http://bit.ly/1OLmmLw>), who developed the onboard flight software for the Apollo space program (<http://bit.ly/1Sy3Xrv>), or Sue Black (<http://bit.ly/1Pe73vj>), who did not follow the typical route into the field but got her Ph.D. at age 39 and is today a rock-star advocate for women in computing and a champion of Britain's role in the history of computing, or Dame Shirley (<http://bit.ly/1RfSHku>) and the women who worked with her.

While those stories are kept quiet, there is a dearth of role models for the majority of women who are in and might enter computing. In this context, Ada continues to serve very effectively as inspiration and as icon.

Reader's comment:

Two things occur to me; one personal and one historical.

First, for whatever reason, the idea of a role model has not (that I am conscious of) played a major part in my life. All along, there have been people I admired and wished to be more like, but never did I discover someone who made me say, "There, that is what I want to do, that is who I want to be." I was interested in subjects, areas, more than in persons, so naturally I'm unsure how much role models matter for others. My remarks may need to be discounted a good deal, because I am a white male, which is likely to have affected my view of what I could do. Still, as long as women can see that there IS a computing field and women are already working in it, just how much do particular role models count? I am not saying they do not; I am suggesting this is not the only thing we need to be concerned with.

Second, did Ada Lovelace need a role model in order to do what she did? I think, without knowing very much about her yet, that she did not. Does this make her a good example? I believe it does, but, as you are more or less saying through this essay, it depends on how you take her.

—John Branch

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