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# Some of all Human Knowledge: Gender and participation in peer production

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**Abstract**

The promise of peer production includes resources produced by volunteers and released freely for the world to use. Wikipedia and Open Source Software are famous examples of peer-produced projects. Anyone is free to participate, but not everybody does. Wikipedia aims to collect the “sum of all human knowledge,” but only about 13% of editors on the site are female [3]. In Open Source Software, the percentage of female contributors has been estimated near 1% [4]. If women are not well represented among authors of the most widely accessed reference source on the planet, are important voices muted? Could these projects be even more impactful with more female participation? This panel includes experts in feminist theory and open collaboration, activists, and representatives from peer-produced projects to discuss recent findings and trends in this complex and often contentious research space.

**ACM Classification Keywords**

K.4.2 [Social Issues]

**General Terms**

Human Factors

**Introduction**

Open source software and open content production are departures from market-driven models of production.

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In fact, they could even be interpreted as feminist—goods are produced by individuals who choose to participate in collective action, free from traditional economic and hierarchical control structures. Yet, the gender gap in peer production communities like Wikipedia and Linux rivals or exceeds that of computer science. What's happening? Does it matter for volunteer organizations? What can we do about it? The CSCW community is equipped to address these questions both through empirical study and design.

### **Participants**

*Andrea Forte (moderator)*

*Bio* - Andrea Forte is an assistant professor in the College of Information Science and Technology (iSchool) at Drexel University. Andrea researches the new literacies and organizational innovations that accompany broad adoption of participatory media.

*Judd Antin*

Since the 2010 UNU-MERIT study [3] sparked conversation about Wikipedia's so-called "Gender Gap," researchers have examined the nature and influences of the gap as well as potential explanations for it. These studies are valuable if only to help improve Wikipedia; however, Wikipedia is also a model for open collaboration. Much research on socio-technical systems of online collaboration has drawn on Wikipedia's users and open data. As a result, our ignorance about how gender bias may influence Wikipedia's inner workings can be damaging, and may cause us to misunderstand patterns of participation elsewhere. The momentum around the issue of Wikipedia's gender gap is an opportunity to develop a long-term program of research. This research must be longitudinal. Women or men do not become enfranchised or disenfranchised all

at once. Instead, we must understand participation as a journey, and identify potential crossroads, roadblocks, and points of derailment. Identifying these points and drawing arcs of participation through them will add to our understanding of technology mediated social participation, and may reveal potential levers for helping to address Wikipedia's gender gap.

*Bio* - Judd Antin is a social psychologist and research scientist in the Internet Experiences group at Yahoo! Research. Judd's areas of expertise include incentives and motivation for online collaboration, "gamification" and game mechanics, online communities, collective action and social dilemmas, as well as trust, reliability, and credibility.

*Shaowen Bardzell*

The rise of massive communities of creativity, from Flickr to YouTube, introduces different relationships among creative workers and hobbyists than the small teams of homogenous professionals commonly studied in social psychology and for whom professional creativity software is typically designed. Interestingly, some of these communities are strongly gendered. Predominantly male communities include Wikipedia and World of Warcraft. I will focus on Etsy.com, a massive community that is dominated by women. Etsy.com is an online creative community for buying and selling crafts. Studies of collaboration, creativity, quality control, and socialization at Etsy offer an interesting counterpoint to studies of comparable processes in Wikipedia and other communities. Not only is Etsy an interesting domain of inquiry, but its primary output—craft—has also been theorized in ways that diverge from the information science theories often leveraged to investigate Wikipedia and information-based

communities. For example, feminists have seen in craft's engagement with material life an epistemology that stands as an alternative to traditional Western epistemologies [1; 2]. Specifically, they argue that forms of labor become coded for gender. As massive-scale crafting communities increasingly mediate the production, distribution, and consumption of international craft, it is important to understand the ways traditionally gendered modes of production are both propagated and challenged online— and the ways digital environments contribute to those processes.

*Bio* - Shaowen Bardzell is an Assistant Professor of Human-Computer Interaction Design in the School of Informatics and Computing and the Affiliated Faculty of the Kinsey Institute at Indiana University. Bardzell leverages her background in the humanities to study computing in use, with an emphasis on emotional, intimate, and embodied computing experiences. This includes 1) investigating how cultural theory can be used in HCI to enhance our understanding of people's subjective and social responses to experiences with technology, and 2) making cultural theory accessible to interaction design practitioners. Recent work has focused on intersections between HCI's rising interest in social change and feminist social science, sexual and intimate interactions, everyday aesthetics, and the application of critical and cultural theories for developing concept-driven design strategies.

*Leigh Honeywell*

The widely-cited FLOSSPOLS study [4] points to longstanding gender issues in FOSS communities, but the view on the ground (and from the chatrooms) varies widely from project to project. Many have created women- and equity-focused advocacy and

support groups, which act as a grassroots network for marginalized participants. Documentary projects, namely the Geek Feminism Wiki, have helped FOSS enthusiasts confront barriers faced by women in software and other "geek" communities. Women and allies have developed a number of effective strategies to improve the environments in which FOSS software is created, such as anti-harassment policies and codes of conduct, community moderation, and the fine art of the gentle call-out. New projects (particularly those started by women) have started to bake these ideas into the culture of their communities with great success. The numbers across many FOSS communities are still low, but the tone in a large number of them has improved.

*Bio* - Leigh Honeywell is a Security Program Manager at Microsoft (but is not speaking on their behalf). Leigh served as co-leader of the Ubuntu Women project, and co-founded the HackLabTO hackerspace in Toronto. She blogs at [geekfeminism.org](http://geekfeminism.org) and is an advisor to the Ada Initiative, which seeks to support and encourage women in open technology and culture. She holds a BSc. in Computer Science and Equity Studies from the University of Toronto.

*John Riedl*

In our recent large-scale quantitative study of the effects of gender in Wikipedia editing and content [5], we found that only 16% of new editors during 2009 identified as female. Females made only 9% of edits by people who joined in 2009 and new female editors were more likely to leave Wikipedia when their edits were reverted. We also found that for women who stayed, there were differences between the types of editing they did and the types male editors did. For example, women editors seemed to be particularly engaged in

the community-building activities on the site. We also analyzed the role of gender in conflict among Wikipedia editors. Articles females tend to edit are twice as likely to be contentious and female editors are more likely to have early contributions undone by fellow editors and to be indefinitely blocked by fellow editors. Finally, we found that the gender gap is reflected in Wikipedia's content. For example, articles about films with a predominantly female audience tend to be shorter than those about films men tend to watch. Our findings point out gender imbalances in Wikipedia editing and content coverage. This is an interesting and unforeseen effect: Wikipedia's widely praised democratized mode of knowledge production has created a culture that appears to be less welcoming to some potential editors. We are interested in developing tools to improve this situation.

*Bio* - John Riedl is a Professor of Computer Science and Engineering at the University of Minnesota. His research is in intelligent user interfaces for the social web. His GroupLens research group seeks to develop tools that make collaborations on the social web more pleasant and fruitful. One of their major research efforts investigates the nature of collaboration in Wikipedia, identifies problems with the process and results, and designs tools to overcome these problems.

#### *Sarah Stierch*

Gender research is a good example of why Wikimedia Foundation welcomes and encourages research on its projects. We were interested to find that our intuitive understanding of gender differences on Wikipedia is borne out by empirical findings. Those who are close to the project know that early in its life, there was a lot of participation on Wikipedia by editors who were early

adopters of wikis and often interested in writing about STEM (science, technology, engineering and math) topics. They established a culture that was dominated by male participants. Ten years later, the Internet is a very different place. Broad adoption of social media has created an ideal time to address gender and other participation gaps. This is an opportune moment to critically assess and discuss new design ideas, and insights about organizational culture that can help us broaden participation and strengthen our mission.

*Bio* - Sarah Stierch is a masters student at George Washington University in Museum Studies. A Wikipedian since 2004, Stierch is active in examining ways to close the gender gap in Wikipedia and related websites, and has a direct role in leading the fight to "mind the gap" as a Wikimedia Foundation Fellow. Stierch is the first Wikipedian in Residence at the Smithsonian Institution and serves on the Advisory Board for the Ada Initiative.

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