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Exploring the Representation of Women Perspectives in Technologies

Susan M. Dray

Dray & Associates, Inc., USA
susan.drays@dray.com

Andrea Peer

Iowa State University, USA
ajpeer@iastate.edu

Anke M. Brock

IRIT, Univ. Toulouse, France
anke.brock@irit.fr

Anicia Peters

Iowa State University, USA
anpeters@iastate.edu

Shaowen Bardzell**Margaret Burnett**

Oregon State University, USA
burnett@eecs.oregonstate.edu

Elizabeth Churchill

ACM SIGCHI
Churchill@acm.org

Erika Poole

Pennsylvania State University,
USA
epoole@ist.psu.edu

Daniela Busse

UX Innovations Lab
Samsung Research America
d.busse@sisa.samsung.com

Abstract

Technology has a profound mediating effect on the way we relate, obtain knowledge, and contribute to society. Given the impact and potential ramifications of technology on our society, it is imperative that both masculine and feminine perspectives are included in shaping our modern day technologies. This panel focuses on the representation of women perspectives in technologies we design, analyze, and use. There are many barriers when it comes to getting women perspectives into system designs such as: the small amount of HCI gender research currently in the literature, the lack of analysis of gender-agnostic software tools which fit female problem-solving approaches, and low grant support for research which looks at the representation of the feminists' perspective in our current discourse. This panel will address these barriers with respect to the tools and technologies we experience and design.

Author Keywords

Women; equality; feminism; gender; technology; HCI; system design

Introduction

Worldwide there is a gender gap in technology with only a small part of all computer science related positions being held by women. In the US, women hold only 27% of Computer Science (CS) related jobs and only 20% of undergraduate CS majors are women [5]. Numerous efforts are underway to encourage women to join the field of CS.

Recently an initiative in the field of Human Computer Interaction (HCI) emerged: the "Women's Perspective in HCI Initiative". A women's lunch was arranged during CHI2011. Following this, a CHI Women Facebook Group [6] was set up. The group discusses and posts links and relevant articles to issues affecting women in different spheres of life, but mostly about women's issues in technology and HCI. In early 2012, the group discussed the idea of capturing video interviews of women in HCI, highlighting their career stories. The idea was to air the video recordings via several different channels in order to have more visibility for women in HCI and encourage more women to enter, remain and rise to the leadership roles in the field by showing positive role models for younger women. The CHI Women Facebook group then compiled the interview protocol with the understanding that this uniform protocol could be used at any HCI-related conference or setting internationally. A 3-person team, with assistance from some of the CHI women's group members, then conducted 53 interviews onsite during CHI2012 with both women and men. Interviewees were at all stages of their career from just beginning

graduate students to seasoned lifelong career professionals.

Related but different initiatives at CHI2012 included a women's lunch, a Special Interest Group (SIG) meeting on Work-Life-Balance [4] and a panel on Women in UX Leadership Roles [3]. A feminist HCI manifesto [2] has been presented at CHI 2010. Recently Interacting with Computers featured a special issue on "feminism and HCI" [1].

The following are the outcomes and highlights of the CHI Women interviews at CHI 2012, which we want to discuss in this panel with a specific focus of the impact of these findings on getting the female perspective into system design work:

- Women appreciate and remain in the field of HCI because it gives them the ability to be creative. It allows them to be pioneers and promotes a sense of purpose that enables them to touch many lives. They are passionate about working with both technology and people, and value a field that encourages development for good, where they can have a real impact on people's lives.
- Even though there are relatively more women in the wide-ranging field of HCI than in other branches of Computer Science, women shared that they are still lonely in the field and lack encouragement and support in many cases. Many more women are needed in our area of work.
- Role models played an important part in getting women to enter the field of HCI.

- Mentors are important for ongoing progression in the field and they can be effective in helping their mentees overcome obstacles.
- Women shared different strategies that they had developed for balancing life and work in HCI. Work-life balance is always a difficult act and unfortunately it is still mainly a women's job to handle balance between personal life and work.
- There is a real need for greater diversity of people in the field, not only males and females but also different nationalities and ethnic groups.

Although participants reported that the situation for women in HCI is "not that bad," and that they are hopeful for the future, it did leave us asking just why so much excitement and interest is engendered in the question of how to get more women into HCI. We believe that it is important to continue the "Women's Perspective in HCI Initiative" to help create networks for including and encouraging women and other so-called minorities in HCI. Besides these efforts to include women as members into the community, we think that it is imperative that both male and female perspectives are included in shaping our modern day technologies.

Meet the panelists

We chose our panel members based on the following criteria:

- As the initiative was created by the CHI women group, and interviewees shared how important having women role models are, all participants are women
- We chose women from different career fields (research and industry) who have contributed to

the larger discourse about women's perspectives in system design work

- Some of the participants have already participated in the CHI women video interviews at CHI 2012.

All invited panelists have confirmed their willingness to participate.

Shaowen Bardzell

Assistant Professor of Human-Computer Interaction Design, Indiana University, USA

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 for Research in Sex, Gender, and Reproduction at Indiana University. She specializes in socio-cultural computing, with an emphasis on emotional, intimate, and embodied experiences, a series of research themes that contribute to the broader agenda of feminist HCI that she is developing. Recent work has focused on exploring the 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. Dr. Bardzell is the co-director of the Cultural Research In Technology (CRIT) Group at Indiana University School of Informatics and Computing.

Margaret Burnett

Professor of Computer Science, EECS, Oregon State University, USA

Margaret Burnett is a Professor of Computer Science at the School of Electrical Engineering and Computer Science at Oregon State University. Her current research focuses on end-user programming and software engineering, and gender issues in those contexts. She has a long history of research in human issues of programming. Dr. Burnett has won several awards for her research. In addition, she is on the Editorial Board of ACM Transactions On Interactive Intelligent Systems. She also has served on a variety of other ACM and IEEE conference program committees, chairing a few of them. Concerning her work for women in IT, she co-lead the NCWIT (National Center for Women In Technology) "REU in a box" project (debuted May 2011), was a panelist at ACM CHI'11 and ACM/IEEE ICSE'11 events on U.S. National Science Foundation "Broader Impacts", and co-chairs the Academic Alliance of the NCWIT.

Daniela Busse

Design Strategist at UX Innovations Lab, Samsung Research America

Daniela Busse is a Design Strategist at Samsung Research America (Silicon Valley), inventing and investigating novel experiences for Samsung's future product offering. In her 15 years of experience as a User Experience researcher and professional, she held roles as UX Director at SAP Labs (Palo Alto), as Chief UX Architect in a high-level innovation team in SAP's Office of the CEO, and as Design Researcher at Microsoft's Office Design Group. Her research spans UX

issues and opportunities in Consumer Electronics, Collaboration & Convergence, Sustainability, Business Solutions, Healthcare, Human Error, UX processes & organizations, and Design Strategy. Over the years, she was Principal Investigator on several university collaborations (incl. Carnegie Mellon, University of Illinois, and the Rotman School of Management) at SAP Labs and Microsoft Corp, and held a three year post on the board of Examiners at the Dundee University Masters of Design Ethnography program. She won the first prize in a Design competition on Sustainable solutions at SAP Labs in a team of two, and also made finalist for SAP's internal high profile competition at the DKOM Demo Jam. In 2012, her team won an outstanding inventors award at Samsung Research America. For her MA in Psychology and Computing Science (with minors in Sociology and Politics) at the University of Glasgow, she was awarded with first class honors in both Psychology and Computing Science, as well as with the Sun Microsystems prize for best dissertation in Computing Science. Her Ph.D. with the Glasgow Accident Analysis Group focused on Human Error in Medicine, analyzing accidents and preventable deaths in Adult and Neonatal Intensive Care Units.

Elizabeth Churchill

Vice President of the Association of Computing Machinery's Special Interest Group on Human Computer Interaction

Dr. Elizabeth Churchill is an applied social scientist working in the area of social media, interaction design and mobile/ubiquitous computing. She was formerly a Principal Research Scientist at Yahoo! Research, where she founded, staffed and managed the Internet Experiences Group. Until September of 2006, she

worked at the Palo Alto Research Center (PARC), California, in the Computing Science Lab (CSL). Prior to that she formed and led the Social Computing Group at FX Palo Laboratory, Fuji Xerox's research lab in Palo Alto. Throughout her career Elizabeth has focused on understanding people's social and collaborative interactions in their everyday digital and physical contexts. She has studied, designed and collaborated in creating online collaboration tools (e.g. virtual worlds, collaboration/chat spaces), applications and services for mobile and personal devices, and media installations in public spaces for distributed collaboration and communication. Elizabeth has a BSc in Experimental Psychology, an MSc in Knowledge Based Systems, both from the University of Sussex, and a PhD in Cognitive Science from the University of Cambridge. In 2010, she was recognized as a Distinguished Scientist by the Association for Computing Machinery (ACM). Elizabeth is the current Executive Vice President of ACM SigCHI (Human Computer Interaction Special Interest Group). She is a Distinguished Visiting Scholar at Stanford University's Media X, the industry affiliate program to Stanford's H-STAR Institute.

Erika Poole

Assistant Professor, College of Information Sciences and Technology, Pennsylvania State University, USA.

Erika Poole is an assistant professor in the College of Information Sciences and Technology at Penn State University, where she directs the Wellness Technologies Lab. Her current research focuses on the use of mobile technologies and on-body sensing to improve personal health and wellbeing. She sticks sensors on all kinds of things, including kids, pets, and herself. She also enjoys navel gazing about translating research findings

into real-world settings, social implications of emerging technologies, and creating new and better research methods for human-computer interaction, ubiquitous computing, and health informatics. Before arriving at Penn State, Erika received a PhD in human-centered computing and MS in computer science from the Georgia Institute of Technology, as well as a BS in computer science from Purdue University. Once upon a time, she was a Georgia Tech Presidential Fellow, an NSF Graduate Research Fellow, a DHS Fellow, and a Sam Nunn Security Fellow. While in graduate school, she also discovered the joy/distraction of working as a personal trainer and group fitness instructor, and holds a handful of national certifications in these areas.

Moderators

This panel will be primarily moderated by an active member of the "Women's Perspective in HCI Initiative". The moderator will introduce the "Women's Perspective in HCI Initiative" video interviews, deliver questions to the panelists. Two other active members of the initiative will moderate the questions from the audience using a backchat technology.

Andrea Peer (Primary moderator)

Ph.D. student, Iowa State University, USA
Co-Founder and Lead User Centered Design Consultant, UXL42

Andrea Peer is currently a Ph.D. Student in Human Computer Interaction at Iowa State University. She has her B.S. in Mechanical Engineering from the US Merchant Marine Academy and her M.S. in Organization and Management from Antioch New England Grad School. She is working with Dr. Sree Nilakanta and Dr. Stephen Gilbert. Andrea has 10 years of experience in

user-centered design and software development project management. She spent four years as project manager in the Air Force, designing and developing user requirements for a \$4.5 million dollar project, serving 80 program offices and approximately 500 users worldwide. Andrea's expertise is in user-centered design method selection and she is currently developing a research model to determine the factors, which influence user-centered design success for a given organization. Andrea also provides HCI education to academia and industry. As a secondary research interest, she continues to analyze best practices in HCI education and curriculum design. In 2011, Andrea led the effort to set up the User Experience (UX) Lab at Iowa State University. Andrea provides research guidance for all ISU HCI projects that use the UX lab. She is also one of the lead user-centered design consultants for the UX lab. In 2011, Andrea also became the co-founder of UXL42, LLC., providing user experience consulting services. Andrea has participated in the "Women's Perspective in HCI Initiative" since CHI 2012 and is an active member of the CHI Women Facebook

Anke Brock (Backchat support)

Ph.D. student at IRIT (University Toulouse & CNRS) and PsyClé (Aix Marseille University), France

Anke Brock is currently a Ph.D. student in Human Computer Interaction both at the IRIT computer science research lab in Toulouse and the PsyClé research lab for psychology at Aix Marseille University, France. Her research focuses on making maps accessible for visually impaired people. She is also as a teaching assistant at the University of Toulouse. Anke graduated in 2004 as an engineer for Information

Technology from the University of Cooperative Education in Stuttgart, Germany. During several years she worked as an engineer in the research and development department at Bosch in Hildesheim, Germany. Her main topics were navigation systems and driver assistance systems. Then she went back to university and in 2010 she obtained her master's degree in Human-Computer Interaction at the University of Toulouse. In 2010 Anke received a scholarship of the French ministry for her Ph.D. thesis and in 2012 a Google Anita Borg Scholarship. Anke has participated in the "Women's Perspective in HCI Initiative" since CHI 2012 and is an active member of the CHI Women Facebook group.

Anicia Peters (Backchat support)

Ph.D. student, Iowa State University, USA

Lecturer: Software Engineering, Polytechnic of Namibia

Anicia Peters is a Ph.D. student in Human Computer Interaction at Iowa State University. Anicia is a native of Namibia where she earned the Rector's Medal for her Bachelor's degree in Information Technology at the Polytechnic of Namibia. She also received the Professor Yrjo Neuvo award (Nokia) for the best graduate in Information Technology. She holds a MSc degree in Human Computer Interaction. Anicia received an International Fulbright Science & Technology Award to pursue PhD studies in the US, while she is lecturing in the School of Information Technology: Software Engineering Department at Polytechnic of Namibia. Before she began her academic career, she was instrumental in successfully implementing a government-wide Oracle-based Integrated Financial Management System for the Government of Namibia. She served as the project's Technical Manager and also

headed the Application Development Section within the Ministry of Finance. Anicia is also an active committee member of the Women of Colour Network at her university. Previously she also worked for a German non-governmental organization and has done extensive work in gender mainstreaming in a quest to get more women represented in politics and decision-making positions in the Southern African Development Community (SADC). During this time she authored a book on this work and edited another book on the situation of gender in southern Africa. In 2012, she also received a Schlumberger Faculty for the Future Women in Science scholarship and a Google Anita Borg Scholarship.

Susan Dray

President of Dray and Associates, Inc., Minneapolis, MN USA

Susan Dray is the President of her own consulting firm that provides user experience research for a wide range of products, systems, and applications since 1993. She has worked initially as a member of a human factors research group at Honeywell. Later she has been championing usability of corporate systems at American Express. Susan has worked in 25 countries, and is widely known for her expertise in international user studies. She is a Fellow of the Human Factors and Ergonomics Society, recipient of the Lifetime Service Award from the ACM-SIGCHI and was named a Distinguished Engineer of ACM. She is currently the Director of Publications on the Board of Directors of the User Experience Professionals Association. Together with her partner, David Siegel, she edited the Business Column of the ACM-SIGCHI magazine, *Interactions*, for many years, and currently edits its Forum on

Evaluation and Usability. Susan holds a doctorate in Psychology from UCLA and is a Board Certified User Experience Professional (CUXP). Susan is an important part of our panel as she is one of the founders of SIGCHI, as well as of the CHI Women initiative and the Facebook "CHI Women" group.

Panel structure

The panel will begin with a general introduction of the topic and the panelists by the moderator. The moderator will then present the history of the "Women's Perspective in HCI Initiative" and some impressions from the video interviews. (15 minutes in total)

Following this the moderator will pose the following questions to the panelists, and encourage them to document their perspective with personal anecdotes.

- 1) What is your own experience of being a woman or feminist in HCI? And why are you passionate about the "Women's Perspective in HCI Initiative"? (15 minutes)
- 2) How might we build our community of women around the topic of HCI gender and feminism research to support a balanced women perspective in the technologies we develop? (15 minutes)
- 3) How can we overcome barriers, if any exist, to our gender and feminism research, and subsequent technology design decisions? (15 minutes)
- 4) How can we make the work of women in HCI more visible to young women interested in Computer

Science or STEM fields and the HCI field at large?
(10 minutes)

Questions from the audience (a backchatter technology will be used for this) (25 minutes).

Given the diversity of this panel, we expect a rich variety in the responses.

Audience

The CHI Women Facebook group has currently more than 350 members. We think that the panel will be interesting for all of them, as well as for all other women attending CHI. Of course interested men are welcome.

Audience Participation

Prior to CHI, we will advertise the panel on the CHI Women Facebook group and create a separate Facebook event. We will personally invite everyone who participated in the interviews at CHI 2012 per mail.

During CHI participants will have the possibility to use a backchatter technology in order to ask questions to the panelists. One of the moderators will collect these questions and at the end of the panel time is reserved for delivering them to the panelists.

After CHI we will write an article for ACM Interactions or a similar magazine. We will also follow up on the Facebook group. By doing so, we hope that this panel will help to open up the discussion to integrate women's perspectives in the field of HCI. We also hope that this panel will generate support to continue with the "Women's Perspective in HCI Initiative".

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