Julie Carpenter

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Education

Doctor of Philosophy, Learning Sciences, 2013
University of Washington, Seattle, WA
Dissertation: *The Quiet Professional: An investigation of U.S. military Explosive Ordnance Disposal personnel interactions with everyday field robots.*
Committee Chair: John D. Bransford, Ph.D.

Master of Science, Technical and Scientific Communication; 2007
University of Washington, Seattle, WA

Master of Science, Technical Communication; 2004
Concentration: Human-Computer Interaction
Rensselaer Polytechnic Institute, Troy, NY

Bachelor of Arts, Communication; 1999
Concentration: Film, Radio, and Television Theory
University of Wisconsin, Madison, WI

Research Summary

I investigate the social dynamic between people and emerging technologies. My research lies at the crossroads of robotics and social sciences, and examines how new technology designs encourage or discourage human emotional attachment. Of particular interest to me is how robot design, behavior, and context of use influences operator decision-making, especially in human-robot collaborative interactions. This work is scaffolded by an interdisciplinary approach used to find patterns in human behavior, actions, and cultural influences related to these interactions, and pointing to actionable solutions as well as new directions for innovative work. More broadly, these findings can be applied to the development of robots and other technologies that are effective in human collaborative/team or training situations.

Keywords used in my research: Attachment, Attachment theory, Communication, Culture, Cultural studies, Design, Emerging technologies, Emotion, Human Factors, Human-Robot Interaction, Interaction Design, Learning Sciences, Robotics, Social Robotics, User-Centered Design, User Experience.

Publications and Presentations

(Name appears as both "J. Carpenter" and "J. Hillan.")

Book

Carpenter, J. (2016). *Culture and Human-Robot Interaction in militarized spaces: A war story*. UK: Ashgate.

Book Chapters

Carpenter, J. (2016). Deus Sex Machina: Loving Robot Sex Workers, and the allure of an insincere kiss. In J. Danaher & N. McArthur (Eds.), *Sex Robots: Social, Legal and Ethical Implications.* (Manuscript in preparation.) Cambridge, MA: MIT Press.

Carpenter, J. (2013). Just doesn't look right: Exploring the impact of humanoid robot integration into Explosive Ordnance Disposal Teams. In R. Luppicini (Ed.), *Handbook of Research on Technoself: Identity in a Technological Society* (pp. 609-636). Hershey, PA: Information Science Publishing. doi:10.4018/978-1-4666-2211-1.

Peer-Reviewed Journals

Carpenter, J. Davis, J., Erwin-Stewart, N., Lee. T., Bransford, J. & Vye, N. (2009). Gender representation in humanoid robots for domestic use. *International Journal of Social Robotics (special issue), 1*(3), 261-265.The Netherlands: Springer.

Reichenbach, J., Bartneck, C., & Carpenter, J. (2008). The Carrot and the stick - The role of praise and punishment in human-robot interaction. *Interaction Studies: Social Behaviour and communication in biological and artificial systems; special issue of on "Human and robot interactive communication," 9*(2), 179-203. Oxford, UK: Ingenta.

Hillan, J. (October, 2003). Physician use of patient-centered Web logs and journals. *Clinical Medicine and Research, 1*(4), 333-334. Stanford, CA: Stanford University Libraries.

Hillan, J. (July, 2003). PatchWorx: Connecting ill and disabled children in an online community. *Clinical Medicine and Research, 1*(3), 259-260. Stanford, CA: Stanford University Libraries.

Peer-Reviewed Conference Proceedings - Full Papers

Carpenter, J. (2009). Why send the Terminator to do R2D2s job?: Designing androids as rhetorical phenomena. *Proceedings of HCI 2009: Beyond Gray Droids: Domestic Robot Design for the 21st Century.* Cambridge, UK. Sept. 1.

Carpenter, J., Davis, J., Erwin-Stewart, N., Lee. T., Bransford, J. & Vye, N. (2008). Invisible machinery in function, not form: User expectations of a domestic humanoid robot. *Proceedings of 6th conference on Design and Emotion.* Hong Kong, China.

Carpenter, J., Eliot, M. & Schultheis, D. (2006). Machine or friend: understanding users' preferences for and expectations of a humanoid robot companion. *Proceedings of 5th conference on Design and Emotion.* Göteburg, Sweden.

Reichenbach, J., Bartneck, C., & Carpenter, J. (2006).Well done robot! The importance of praise and presence in human-robot collaboration. *Proceedings of RO-MAN 06: The 15th IEEE International Symposium on Robot and Human Interactive Communication,* 86-90. Hatfield, UK.

Bartneck, C., Reichenbach, J., Carpenter, J. & Hupfeld, F. (2006). Use of praise and punishment in human-robot collaborative teams. *Proceedings of RO-MAN 06: The 15th IEEE International Symposium on Robot and Human Interactive Communication,* 177-182. Hatfield, UK.

Peer-Reviewed Conference Proceedings - Short Papers and Presentations

Carpenter, J., Davis, J. Erwin-Stewart, N. Lee. T., Bransford, J. & Vye, N. (2008). *Gender representation in humanoid robots for domestic use.* 1st International Conference on Human-Robot Personal Relationships. June 12-13. Maastrict, The Netherlands.

Carpenter, J., Eliot, M. & Schultheis, D. (2006). The Uncanny Valley: Making human-nonhuman distinctions. *Proceedings of the 5th International Conference on Cognitive Science*, 81-82. Vancouver, B.C., Canada.

Carpenter, J. (2006). *Exploring Human-Centered Design in Human Robot Interaction*. Presented at HRI Young Researchers Workshop, in conjunction with HRI 2006. Salt Lake City, UT.

Hillan, J. (2005). The necessity of enforcing multidisciplinary research and development of embodied Socially Intelligent Agents. *Proceedings of AISB '05.* (British) Society for the Study of Artificial Intelligence and the Simulation of Behaviour, 133-140. Hertfordshire, UK.

Other Publications

Carpenter, J. (2014, September). The existential robot: Living with robots may teach us to be better humans. *Issues*, *108*, 39-42.

Invited Presentations

Carpenter, J. (2016, March 3). *Humans + Robots: Dream Machines*. TEDxEAL "Each One, Teach One." Odense, Denmark.

Carpenter, J. (2014, May 14). *DroneU: The emotional consequences of operating a military drone* [Podcast].

Carpenter, J. (2014). *The Robot Accommodation Dilemma: Human-field robot interactions, attachment, and operator decision-making*. IDGA Counter-IED Training Forum. Arlington, VA.

Research Experience

Research Fellow, Ethics + Emerging Sciences Group (Patrick Lin, Ph.D.)
California Polytechnic State University, San Luis Obispo, CA, 2015-Present

Ethics, risk, and social concern assessment. Publishing projects. Engage policymakers, business, academia, as well as the broader public on key issues in science and society.

Assistant Director, Engineering Communication Program
University of Washington, Seattle, WA, 2007-2008

Managed Engineering Writing Center (EWC). Developed all new original course curriculum and taught *Introduction to Theories, Methods, and Materials of Writing Center Tutoring* (TC 499) course. Scheduled, tracked usage, offered workshops, and visited classes to promote the EWC services. Assisted the Director with TA support and training (for 231 and 333 TAs).

Curriculum Design and Engineering Writing (Karen Kasonic)
University of Washington, Seattle, WA, 2006-2007

Researched and developed curriculum for grant writing workshops hosted by Department of Technical Communication. Reviewed current TC 333 curriculum and collaborated to develop new teaching materials. Collected, organized and archived original classroom materials developed by TC 333 Teaching Associates, including lecture notes and supplementary materials such as PowerPoint and instructions for group exercises.

Internet-Based Research Efficacy/Examining Computer Supported Cooperative Work
(Jan Spryridakis, Ph.D.), University of Washington, Seattle, WA, 2005

Conducted Web-based study on the efficacy of electronically delivered information. Worked on refining an Internet-based research tool, study of information design on users' behavior and performance in computer supported cooperative work environments, with a specific focus on the assessment of wikis. Identified questions and subjects for study, read relevant literature and collaborated on experiment design.

Graduate Research Associate, (Jonathan Drezner, M.D.)
University of Washington, Seattle, WA, 2005

Developed the first iteration of AEDSports.com, a data-gathering site for Dr. Drezner's research. Assembled Web design team and supervised two undergraduate Research Assistants. Managed the development of two Web sites: (a) a Web-based survey on NCAA AED use and (b) a Web-based interface for online survey database administration.

Computer Games (Beth Kolko, Ph.D.)
University of Washington, Seattle, WA, 2005

Researched the cultural aspects of games, including a project of player-avatar identification in EverQuest.

Teaching Experience

Visiting Lecturer, Robotics and Social Inclusion, Designskolen Kolding,
Kolding, DK, January 18-22

Participated during the first week of the "Robotics and Social Inclusion" course. Lectures included "Culture and human-robot interaction in militarized spaces," "Romantic relationships with Robotic Sex Workers" and "An introduction to qualitative research methods."

Teaching Assistant, College of Education, University of Washington, Seattle, WA, 2009-2011
Managed the College of Education Writing Center. Created center schedules, tracked usage, offered writing workshops, and visited classes to promote the writing center services. Developed workshops for undergraduate and graduate students in the College of Education.

Teaching Assistant, College of Education, University of Washington, Seattle, WA, 2008-2009
Collaborated on curriculum development and led discussions for "Math Methods, Dilemmas of Teaching and Learning, Arts & Technology" and "Teaching for Learning & Adolescent Development" courses, part of the Teacher Education Program.

Teaching Assistant, College of Engineering, University of Washington, Seattle, WA, 2008
Co-taught "Empirical Traditions in Technical Communication" with Dr. Tom Williams (TC 502). Collaborated on curriculum development; lead discussions. Graded all course work.

Teaching Assistant, College of Engineering, University of Washington, Seattle, WA, 2007
"Introduction to Theories, Methods, and Materials of Writing Center Tutoring" (TC 499). Developed curriculum, wrote syllabus, taught all classes. Integrated learning activities, graded all course work.

Teaching Assistant, College of Engineering, University of Washington, Seattle, WA 2005-2007 & 2008
"Advanced Technical Writing and Oral Presentation" (TC 333). Taught all lectures. Developed course materials and learning activities, met with students, and graded all written work and oral presentations.

Teaching Assistant, College of Engineering, University of Washington, Seattle, WA, 2004, 2008
"Introduction to Technical Writing" (TC 231). Taught all lectures. Collaborated in curriculum and exam development, met with students and graded all written work, including mid-term and final exam papers.

Lead Tutor, College of Engineering, University of Washington, Seattle, WA, 2007
Lead Graduate tutor at the Engineering Writing Center. Supported undergraduate engineering students improving and learning new writing skills. Focused on developing student skills through discussion and discovery in individual sessions.

University and Academic Service

Graduate & Professional Student Senate (GPSS), University of Washington, Seattle, WA, 2006-2007
Senator/Graduate Student Representative

UWTC Undergraduate Admissions Committee, University of Washington, Seattle, WA, 2005-2007
Graduate Student Representative (voting member)

Association for Computing Machinery Special Interest Group - Computer-Human Interaction, University of Washington, Seattle, WA, 2004-2006
Officer (UW Chapter)

Forum on Science Ethics & Policy, University of Washington, Seattle, WA, 2007
Member

Professional Service

The Science and Entertainment Exchange, 2015-Present

Volunteer Service

Operation War Diary, 2014
Soldiers' Angels, 2006-2012
PatchWorx, Inc., 2002-2004

Organizations

Design & Emotion Society
Association for the Advancement of Artificial Intelligence (AAAI)

Selected Media Coverage

Ackerman, A. (2013, September 19). Soldiers can get emotionally attached to robots, and that may not be a good thing. *IEEE Spectrum.* Retrieved from http://spectrum.ieee.org/automaton/robotics/military-robots/soldiers-can-get-emotionally-attached-to-robots-and-that-may-not-be-a-good-thing

Chayka, K. (2014, 18 February). As military robots increase, so does the complexity of their relationship with soldiers. *Newsweek.* Retrieved from http://mag.newsweek.com/2014/02/21/military-robots-increase-complexity-relationship-soldiers.html

Dattaro, L. (2015, 4 February). 'Bot looks like a lady: Should robots have gender? *Slate.* Retrieved from http://www.slate.com/articles/technology/future_tense/2015/02/robot_gender_is_it_bad_for_human_women.html

Estes, A.C. (2013, October 30). We aren't doing enough to prepare ourselves for robot love. *Gizmodo*. Retrieved from http://gizmodo.com/we-arent-doing-enough-to-prepare-ourselves-for-robot-l-1455275396

Fung, B. (2013, November 11, updated). What'll happen to Veterans' Day when many of our warriors are drones? *The Washington Post.* Retrieved from http://www.washingtonpost.com/blogs/the-switch/wp/2013/11/11/whatll-happen-to-veterans-day-when-many-of-our-warriors-become-drones/

Garber, M. (2013, September 20). Funerals for fallen robots. *The Atlantic.* Retrieved from http://www.theatlantic.com/technology/archive/2013/09/funerals-for-fallen-robots/279861/

Lin, P. (2016, February 1). Relationships with robots: Good or bad for humans? *Forbes*. Retrieved from http://www.forbes.com/sites/patricklin/2016/02/01/relationships-with-robots-good-or-bad-for-humans/#1c0c518b291e

PBS.org. (2013, September 18). *Empathy for military robots could affect outcomes on the battlefield.* Retrieved from http://www.pbs.org/newshour/rundown/2013/09/empathy-for-military-robots-could-affect-outcomes-on-the-battlefield.html

Rutkin, A. *What game should artificial intelligence play next?* (2016, March 16). New Scientist. Retrieved from https://www.newscientist.com/article/2081021-what-game-should-artificial-intelligence-take-on-next/

Subbaraman, N. (2013, September 28). Soldiers <3 robots: Military robots get awards, nicknames, funerals. *NBC News*. Retrieved from http://www.nbcnews.com