

---

# Acceptability by Design: Integrating Gender Research in HCI

**Claude Draude**

Gender/Diversity in Informatics  
Systems (GeDIS)  
Kassel University  
34121 Kassel, Germany  
claude.draude@uni-kassel.de

**Goda Klumbyte**

Gender/Diversity in Informatics  
Systems (GeDIS)  
Kassel University  
34121 Kassel, Germany  
goda.klumbyte@uni-kassel.de

Copyright is held by the author/owner(s).

CHI'18 Workshop on (Un)Acceptable – Re-thinking the Social  
Acceptability of Emerging Technologies, April 21, 2018, Montreal, QC,  
Canada.

**Abstract**

This paper discusses social acceptability of technology from a gender studies research perspective. It asks how questions regarding power relations, social inequalities, situated and partial perspectives (in contrast to universalism) relate to knowledge production in computing, and how this critical thinking can be made productive for human-computer interaction and the design of interactive systems. To integrate theoretical insights from gender research into practice, the “Gender Extended Research and Development” (GERD) process model is proposed.

**Author Keywords**

gender; diversity; values; social acceptability of technology; information system design; interactive systems; human-computer interaction; GERD model; sociotechnical approach.

**ACM Classification Keywords**

*Human-centered computing~HCI theory, concepts and models*

**Introduction**

A broad societal acceptability as well as acceptance from individual users and user groups are important for new technological developments - if they want to be functional, successful and socially responsible. The

**Acceptance** can be defined as user acceptance of a certain technology – an empirical, observable and thus measurable variable. **Social acceptability** is a broader concept that characterizes technology's congruence with values, norms and ethics.

**Gender studies** deals not only with relations among genders, but critically reflects on systems of classification as such (man/woman, nature/culture, human/animal) and asks how these systems (re-)produce inequalities. **Gender** must be understood as intersecting with other social markers, such as race, ethnicity, religion, dis\_ability, sexual orientation.

*"The I-methodology refers to a design practice in which designers consider themselves as representative of the users." [7]*

approach presented here, views social acceptability through the methodological lens of gender studies. Major concerns are who defines social acceptability and whose values and norms are accounted for. Furthermore, the question remains what a complex, diversified account of social acceptability means for technological development. Hence, this paper provides a short insight into relevant gender studies concepts, followed by a process model that integrates these theoretical insights into interactive system design.

### **Questioning Universalism, Introducing Diversity**

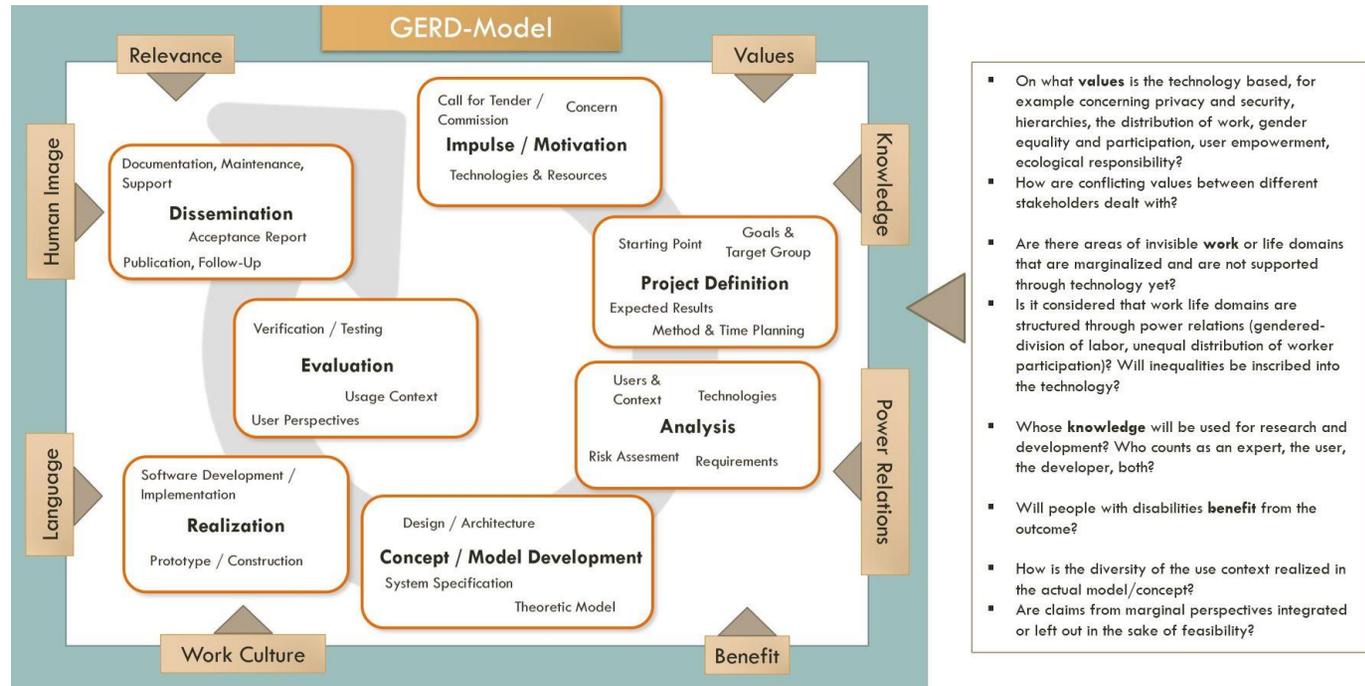
Gender studies question the premises of universalism and its link to knowledge production and technological development. By showing that there is no "view from nowhere" [6], gender studies emphasize the social, political and cultural embeddedness of science. Values and social norms are context-dependent, they change significantly throughout history and they mirror the power relations that exist in a particular society [10]. Thus, what is claimed to be universal and broadly applicable represents only a certain point of view. Importantly, *what* counts as acceptable and *who* has the authority to decide upon it, is contested. Due to societal power structures, which are influenced by gender in intersection with other social markers, not everybody can equally participate and is heard in this process. Based on this, notions of social acceptability need to reflect critically upon power relations that are embodied in technology and that provide the context for its design and use. In particular, more awareness of situatedness and marginalization is needed to diversify standpoints. An important question is: From whose perspective is a certain technology socially acceptable?

### **Biases and "I-Methodology"**

Prominently, power relations and unquestioned universalism have been criticized in computing research and development through identifying the concept of "I-methodology" [7]. The biases that result from the narrow vision that is produced with I-methodology are still countless [3,9]. Approaches like human-centered design [11], value-sensitive design [5], and participatory design [8] bring specificity, context and means for user participation to the design of HCI and interactive systems. A consolidated approach which integrates gender and diversity research into computing R&D is still missing, however. Acknowledging questions of social acceptability by factoring in multiple standpoints of users and usage contexts and marginalized perspectives *while developing* interactive systems, is challenging. In the following, the "Gender Extended Research and Development" (GERD) model is introduced as a means of filling this gap.

### **The GERD Model**

The goal of the GERD model is to make concepts from gender research understandable and usable for work in computing and interactive systems development. By doing so, the model aims at "acceptability by design." Grand terms like "social acceptability" or "social responsibility" are contextualized and situated by relating them to societal power relations, to in- and exclusion depending on gender, class, dis\_ability etc., *and* to their role at each step along the R&D process. The model follows the sociotechnical approach: sociopolitical and technological factors are seen as interdependent throughout the whole development process [4].



**Figure 1:** Seven core phases of the GERD model with reflection aspects and example questions informing the process.

Fig. 1 gives a basic overview of the GERD model. It consists of seven core phases with examples of sub-tasks framed by reflections aspects and a set of guiding questions. Six of the core phases have been identified through combining existing software engineering and HCI process, design and research models [1,2,10]. Phase "impulse/motivation" was added to the cycle to

highlight which societal topics are covered in computing or where resources for research come from. The eight reflection aspects correspond to basic concepts from gender research. In the GERD model, they connect the technological design with issues of social inequality and the questioning of universalism, all the way through the

R&D cycle. A detailed version of the model<sup>1</sup> explains each reflection aspect with respect to each core phase and gives a set of guiding questions to consider. Fig. 1 gives examples of guiding questions for reflection aspects “values”, “work”, “knowledge” and “benefit”<sup>2</sup>.

### Concluding Remark

This paper discussed social acceptability of interactive systems design against the background of gender studies. Concepts of universalism, such as “the view from nowhere” and the “I-methodology” were questioned in favor of situated, localized, diversified perspectives on knowledge and technology production. While gender studies provide excellent resources for discussions on social acceptability, expertise from the field still lacks interdisciplinary transference to computing R&D. The GERD model addresses this gap with its aim to operationalize knowledge from gender studies for HCI, interactive systems and information systems design.

### Acknowledgments

The GERD model is joint work with Susanne Maaß and Kamilla Wajda, partially supported by the German BMBF and the ESF, grants 01FP1040 and 01FP1041.

### References

1. Barry W. Boehm. 1988. A Spiral Model of Software Development and Enhancement. In *IEEE Computer Society Press* 21 (5), 61–72.
2. Kenneth Bordens, Bruce Barrington Abbott. 2010. *Research Design and Methods: A Process Approach*. Vol. 8. McGraw-Hill Education.
3. Danah Boyd. 2014. Is the Oculus Rift Sexist? *Quarz Media*, March 28, 2014. Retrieved on January 27, 2018, from <https://qz.com/192874/is-the-oculus-rift-designed-to-be-sexist/>.
4. Klaus David, Kurt Geihs, Jan Marco Leimeister, Alexander Roßnagel, Ludger Schmidt, Arno Wacker (Eds.). 2014. *Socio-technical design of ubiquitous computing systems*. Springer.
5. Batya Friedman (Ed.). 1997. *Human values and the design of computer technology*. Stanford Calif: CSLI Publ (CSLI Lecture notes, 72).
6. Donna Haraway. 1988. Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective. In *Feminist Studies* 14(3), 575–599.
7. Nelly Oudshoorn, Els Rommes, Marcelle Stienstra. 2004. Configuring the User as Everybody: Gender and Design Cultures in Information and Communication Technologies. In *Science, Technology, & Human Values* 29 (1), 30–63.
8. Toni Robertson, Jesper Simonsen (Eds.). 2013. *Routledge international handbook of participatory design*. Routledge.
9. Tom Simonite. 2017. Machines Taught by Photos Learn a Sexist View of Women. *Wired*, August 21, 2017. Retrieved January 27, 2018, from <https://www.wired.com/story/machines-taught-by-photos-learn-a-sexist-view-of-women>.
10. Jeroen van den Hoven, John Weckert (Eds.). 2008. *Information Technology and Moral Philosophy*. Cambridge University Press.
11. Chauncey Wilson. 2010. *Handbook of user-centered design methods*. Morgan Kaufmann.

<sup>1</sup> A full version of the GERD model is currently available only in German, in form of a website: <http://www.informatik.uni-bremen.de/soteg/gerd/?action=modell> and as a book chapter: <https://elib.suub.uni-bremen.de/edocs/00104194-1.pdf>.

<sup>2</sup> In Fig. 1, the questions are not matched to the specific core phases as in the full model due to the brevity of this paper.