Design Research in the light of
* Techno-/Cyberfeminism
* Critical Computing
* New Materialism(s)

CF+ Workshop, University Kassel
Dr. Sandra Buchmüller, Technische Universität Braunschweig, Institut für Flugführung
Wissenschaftliche Mitarbeit an der Professur „Gender, Technik, Mobilität“
Overview

• What I’ve learned/refreshed from CF+ Workshops: Techno-/ Cyberfeminism, Critical Computing, New Materialism and their relations to each other

• A Personal Survey: My Design Research in the Light of the three Perspectives/ Paradigms (?)
  • Feminist Theories turns Design into a scientific discipline
  • How can feminist epistemologies inform the design research and development process: My feminist Design Research and Development Framework (FEDELOP)

• Points of Criticism and for Discussion

• Outlook: „Research through Design“ as a Model for Technofeminist Future Perspectives for power critical and gender aware Design Research and Practice
What I’ve learned or refreshed from CF+ Workshops
What I’ve learned so far or refreshed from CF+ Workshops
Technofeminism as an umbrella term (Caroline Sollfrank)
What I’ve learned so far or refreshed from CF+ Workshops
…embracing Cyberfeminism

Cyberfeminism
(1991-2001)
Optimistic view on technology regarding it - especially the internet („cyberspace“) – as emancipating, liberating and empowering space to establish new identities/ontologies besides discriminating bodily representations and properties and new forms of practices and participation (for women)
What I’ve learned so far or refreshed from CF+ Workshops
…embracing New Materialism

New Materialism(s)

The current feminist epistemology that values matter over symbolic representation and regards knowledge as a result from an entangled process of knowing and being that constitute each other. It looks at the mechanisms how boundaries or differences are constructed; as a feminist ethico-onto-epistemology it also contains an ethic that strives for the responsible production of any matter as a process of intra-action of human and non-human actors based on the attitude of care for the made cuts and materializations and its socio-material consequences.
Critical Computing

implies that technology – including the practices and fabrics of informatics (e.g. algorithms) – has politics and can be done critically; it provides methods and tools that can be used to counteract oppressions, discriminations, inequalities, e.g. by shifting boundaries, modifying power structures including categories / ontologies like nature/ culture, mind/ body, human/ machine, rationality/ emotionality, subjectivity/ objectivity....
What I’ve learned so far or refreshed from CF+ Workshops
Ways of Thinking & Doing

Technofeminism

Cyberfeminism

New Materialism(s)

Critical Computing

Ways of Thinking:
Mind Sets and Theories

Ways of Doing:
Methods and Practices
What I’ve learned so far or refreshed from CF+ Workshops
Ways of Thinking & Doing

Technofeminism

Theories

Cyberfeminism

New Materialism(s)
Bridging Theory & Practice
Critical Computing

Practices

Technofeminist-reflective Techno-Practice that produces matter based on an attitude of care for liveable, sustainable human and non-human worlds
Focus of my Talk
My Design Research

Technofeminism

Cyberfeminism

New Materialism(s)

Critical Computing

I take the invitation to this CF+ Workshop an opportunity to make a kind of a personal survey to reflect my work and projects at the intersection of gender and design from the early days of my design education up to now with reference to the mentioned concepts.
My Design Research
The influence of gender on science, everyday life and virtual spaces
Virtual body Representations, inspired by Cyperfeminist Visions

Analysis of the Online-Role-Playing Game LambdaMOO with a text-based interface
Analysis of the Online-Role-Playing Game LambdaMOO with a text-based interface

Available genders: neuter, male, female, either, Spivak, splat, plural, egotistical, royal, or 2nd

Offer of 10 gender categories
Default gender category: 'neuter'
Category of 'genderlessness': Spivak

“To adopt the Spivak gender means to abjure the gendering of the body, to refuse to be cast as male, female or transsexual.”
Analysis of the **Online-Role-Playing Game LambdaMOO** with a text-based interface

Available genders: **neuter**, male, female, either, **Spivak**, splat, plural, egotistical, royal, or 2nd

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LambdaMOO was founded by Pavel Curtis at Xerox Parc in 1990; at that time, online role-playing games became very popular by social scientific scholars who examined issues like the cultural construction of bodies and identities; the “Spivak” Category might be inspired by the female philosopher **Gayatri Chakravorty Spivak** who is a co-founder of the postcolonial theory that also evolved and spread in the 1990s.
Virtual body Representations of Second Life

Analysis of the graphical interface and interaction design of the most popular Online-Role-Playing Game at that time and compared it to LambdaMOO.
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The Appearance Editor can be used in order to produce queer-inter-transsexual bodily representations.

Appearance editor with two gender categories.
The attempt to create inbetween-, trans- or mixed gendered avatars was a play against the binary and heterosexual gender norm inscribed in the interface and interaction design of Second Life.

Conclusions about the semiotic code in reference to gender performativity/ Cyberfeminist visions

- text based interfaces are much more suitable to deconstruct binary gender representations in favour for postmodern, fluid, plural and dynamic identities, because they allow to design identities progressively during communication
- graphical user interfaces have a much more iconic quality that fixe your gendered identity based on details of outer appearances

Second Life’s can be regarded as a betrayal of cyberfeminist visions because it its gender scripts do not really allow for new forms of identities, gendered and bodily experiences.
2007 Thinking about Design Research from a feminist view in theoretical and methodological terms

My Research Questions:

- How can Feminism contribute to Design?
- How can concepts and approaches from gender studies, feminist science and technology studies guide design processes?
- Which existing design approaches correspond to feminist requirements and therefore can be tailored to or specified for a feminist design research and practice?
- What makes a Designer a power critical and gender aware Reflective Practitioner (Donald Schön 1984)?
- What makes the result a feminist artefact?
Design Research – an Oxymoron/ an inherent contradiction?
Klaus Krippendorff* (2007)

- Criticism about the imprudent transfer of concepts and paradigms from other disciplines into design that produce incommensurabilities.

- While natural sciences aim at explaining and describing the way the world is (status quo), design strives for something that could or should be (projection).

- So, when traditional, objectivist concepts of science and research are transferred to design, the answer to the question above is:

Yes, design research is an oxymoron.

*Professor for Cybernetics, Language, Culture at the University of Pennsylvania
Design Research – an Oxymoron/ an inherent contradiction? Referring to feminist Concepts of Science and Research....

... the answer is:

No! Design research is not a contradiction.
Feminist Concepts of Science and Research result from a Critique of the male-dominated, objectivist paradigms of natural and technical sciences.
Feminist Concepts of Science and Technology consider that facts and artefacts are made by humans.

They are related to human experiences that are embodied and gendered.
"Science & Technology are parts of culture."

"Technology is a male Culture."

Sozio-ökonomischer Kontext
Science and Technology from a feminist View
Facts and Artefacts

- ....are neither objective nor neutral.
- ....are made by humans and relate to a certain time and context.
- ...mirror the conditions, power structures and gender order of the respective context.
- ...are just, Situated Knowledges (Donna Haraway) that base on parameters like contextuality, perspectivity, partiality, situatedness
Science and Technology from a feminist View
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- ...that corresponds to the Parameters of Design Research and Practice:

  Designers create their (arte-)facts with regard to a certain target group (perspective, partial) assuming certain properties, skills and purposes of use (embodied, gendered, situated, contextual).
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Referring to feminist epistemologies, justify design research and practice as a scientific discipline that was a controversial issue within the discipline itself for a long time.
Following Sharon Bardzell, a feminist HCI Researcher...

„Feminism is a natural ally to interaction design, due to its central commitments to issues such as agency, fulfillment, identity, equity, empowerment, and social justice“
(Bardzell 2010: 1301)
How can feminist Epistemologies inform Design Research & Practice?
Feminist Epistemologies, their Gender Concepts & Focus and Consequences for the Design of Technologies

Eco-Feminism

- Rejection of technology based on male values that are destructive, exploiting
- Design on female values provide better technology

Liberal Feminism

- Women needs technological training to overcome deficits resulting from their socialization/ education, the way they are treated and grow up
- Technical Training for women

Feminist Standpoint Theory

- Technology is a result of patriarchal und capitalist conditions that ignore women's experiences and disadvantage their use of technology
- Design for marginalized users, e.g. women

Poststruktualist Feminism / Cyberfeminism

- Co-Construction of Gender und Technology
- New ways of doing design and using technology as possibilities to establish new gender-technology-identities and relations

Agential Realism/ Technofeminism

- Socio-material intraactions within networks of distributed agency between human and non-human actors
- Establish socially fair and ecologically sustainable human-machine-configurations
Feminist Epistemologies, their Gender Concepts & Focus and Consequences for the Design of Technologies

**Eco-Feminism**
- Female Properties and Values
- Rejection of technology based on male values that are destructive, exploiting
- >Design on female values provide better technology

**Liberal Feminism**
- Circumstances
- Women needs technological training to overcome deficits resulting from their socialization/education, the way they are treated and grow up
- >Technical Training for women

**Feminist Standpoint Theory**
- Humans & Experiences, e.g. female experiences
- Technology is a result of patriarchal and capitalist conditions that ignore women's experiences and disadvantage their use of technology
- > Design for marginalized users, e.g. women

**Poststructuralist Feminism / Cyberfeminism**
- Meanings Representations Artefacts
- Co-Construction of Gender and Technology
- > New ways of doing design and using technology as possibilities to establish new gender-technology-identities and relations

**Agential Realism/ Technofeminism**
- Networks Socio-material Intraactions, hybrid actors, distributed agency
- Socio-material intraactions within networks of distributed agency between human and non-human actors
- > Establish socially fair and ecologically sustainable human-machine-configurations
Relevant Feminist Epistemologies for Design Research & Practice because they correspond to...

**Eco-Feminism**
- Rejection of technology based on male values that are destructive, exploiting
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**Agential Realism/ Technofeminism**
- Socio-material intraactions within networks of distributed agency
- **Establish socially fair and ecologically sustainable human-machine-configurations**
...the Dimensions / Actors of human-centred Design

Designers Experiences, Context

Artefakte

Users Experiences, Context

Sozio-ökonomischer Kontext
...the Dimensions /Actors of human-centred Design in the following way....
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...the Dimensions /Actors of human-centred Design in the following way....

Feminist Standpoint Theory

Postructuralist Feminism

Designers, Users, Experiences

Artefacts

Meanings
Symbolic Representations
...the Dimensions / Actors of human-centred Design in the following way....
...the Dimensions /Actors of human-centred Design in the following way: Tasks and Aims

Feminist Standpoint Theory

Reflection of the researchers', designers' standpoints and interests, transparency of power relations; focus explicitly on marginalized users and experiences

Agential Realism

Aiming at a socially fair and ecologically sustainable distribution of agency within socio-material interaction and human-artefacts-relations

Postructuralist Feminism

Changing meanings by establishing new modes of representation and behaviors
My Design Research and Development Framework (FEDELOP)
Feminist Checklist: Recommendations to reflect design decisions, anticipate and evaluate effects

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**Focus on Designers**
- Reflect your own standpoint and (stereotypical) assumptions
- Make the power structures, the interests and goals of each stakeholder visible

**Focus in Users:**
- Identify and empower marginalized users in the respective context
- Side with their voice
- Regard them as experts of their daily lives
- Establish an emancipated relationship with them
- Integrate them in the whole development process
- Increase their societal visibility, acceptance and participation and freedom of action

**Focus on Gender:**
- Equalize all genders!
- Degender or undo gender!

**Focus on Gender:**
- Support heterogeneity & diversity
- Break with ontological believes, societal conventions and norms
- Invent nonconformist, ambiguous, controversial representations and meanings
- Offer new experiences, perspectives, courses of action
- Support critical reflection
- Avoid stereotypes, discrimination, stigmatization

**Evaluate Gender Configurations:**
- Evaluate your design interventions and decisions according to the previously defined goals:
  - Who is in charge of agency within the intraactions during research, design and the context of use?
  - Who is included, who is excluded?
  - Who is in charge of agency within the human-artefact-configuration?
  - How is gender configured at the intraface of the human-artefact-relation?
  - Does the respective distribution of agency and gender correspond to feminist goals?

- Evaluate Gender Configurations:
  - Is gender equalized, modified, pluralized, undone?

---

*social justice, gender equality, social participation, inclusion, critical reflection, empowerment and freedom of action*
Feminist Checklist: Recommendations for methods that challenge/modify power structures within design and use

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• Critical technical Practice
  • Underdetermined Design
  • Participatory Design
  • Non-Intentional Design

• Critical Design
  • Design noir
  • Ludic Design

• Value Sensitive Design
  • De-Gendering Design

• Reflective Design
  • Feminist Interaction Design Methodology

• Undesigning Design
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- Enhance the designers’ self-reflection of their research and design conditions (a part of the apparatus of observation and bodily/material production)

- Critical technical Practice
  - Participatory Design
  - Non-Intentional Design

- Value Sensitive Design
  - De-Gendering Design

- Reflective Design
  - Feminist Interaction Design Methodology

- Evaluation of the approach due to the distribution of agency & gender within the Intraactions during research, ideation and use?
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**• Increase the use of self-reflection** | **• Consider whether to change the users’ perspectives and behaviour for the better!**  
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| **• Critical technical Practice** | **• Underdetermined Design**  
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*recommend to provide designs that complete within the process of use*
**Feminist Checklist:** Recommendations for methods that challenge/modify the power structures within design and use

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  - Increase your self-reflection
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  - Increase the users’ self-reflection

- **Meanings, Representations, Artefacts**
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- **Intra-actions Human-Artefact Configurations**
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**Shares design responsibility between designers and user equally**

- **Critical technical Practice**
  - Underdetermined Design
  - Participatory Design
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- **Value Sensitive Design**
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**acknowledges use as a continuation/ further iteration of design**
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*Increases the self-awareness of designers and users*
**Feminist Checklist:** Recommendations for methods that challenge/modify the power structures within design and use

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- **Empower marginalized users!**
- **Increase the users’ self-reflection**
- **Empower artefacts in order to change the users’ perspectives and behaviour for the better!**
- **Evaluate the approach due to the distribution of agency & gender within the Intra-actions during research, ideation and use?**

- **Critical technical Practice**
  - Underdetermined Design
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**puts artefacts in charge of agency**
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- Increase your self-reflection
- Empower marginalized users!
- Increase the users’ self-reflection
- Empower artefacts in order to change the users’ perspectives and behaviour for the better!
- Evaluate the approach due to the distribution of agency & gender within the Intra-actions during research, ideation and use?

- Critical technical Practice
  - Underdetermined Design
  - Participatory Design
  - Non-Intentional Design

- Value Sensitive Design
  - De-Gendering Design

- Reflective Design
  - Feminist Interaction Design

- Critical Design
- Design noir
- Ludic Design

- Undesigning Design

"questions rationality and efficiency while considering amusement, playfulness and fun as relevant factors of design"
## Feminist Checklist: Recommendations for methods that challenge/modify the power structures within design and use

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### Designer-User Relation

- **Meanings, Representations, Artefacts**
  - Meanings, Representations, Artefacts (digital, material)

- **Intra-Actions**
  - Human-Artefact Configurations (socio-material/ socio-technical)

### Critical technical Practice

- Underdetermined Design
- Participatory Design
- Non-Intentional Design

### Value Sensitive Design

- De-Gendering Design

### Reflective Design

- Feminist Interaction Design Methodology

### Critical Design

- Design noir
- Ludic Design

### Undesigning Design

**Aims at reflecting every design decision with regard to their consequences, social inclusions, exclusions**
## Overall Benefit and Effect of my Design Methodology

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**Challenging & questioning the power relations between designers and users**

Challenging, questioning conventional ways of representations, advocating for irritation, ambiguity, provocation, deviations in order to break with norms and (ontological) beliefs

Observing the real effects and consequences of design decisions in real intraactions and evaluating them according to feminist goals during the phase of design anticipating use that is regarded as another phase of design
My Design methodology is related to Techno-/Cyberfeminism, New Materialism and Critical Computing in the following way:

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New materialism is one essential epistemological reference point.

Approaches of critical computing provide the methodical basis.
### Feminist Checklist is related to Techno-/Cyberfeminism, New Materialism and Critical Computing in the following way

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New materialism is one essential epistemological reference point.

...they all together nurture the techno-/cyberfeminist vision that technology design can be used as means for feminist ends*, to make the world a better place for everyone, humans and non-humans.

Approaches of critical computing provide the methodical basis.

*social justice, gender equality, social participation, inclusion, critical reflection, empowerment and freedom of action
Results of my PhD Thesis
My feminist Design Research & Development Framework (FEDELOP)

- 3 dimensional Modell of Design Research & Practice

- **Feminist Checklist**: Recommendations for a power critical and gender aware reflection, evaluation and methodical organization of research and design processes

- **Agential-feminist Concept of Design as socio-material Intraaction Design**
  - Design as practice of gendered materializations
  - Design as boundary making activity that decides about inclusions and exclusions
  - Designers as powerful and responsible actors/participants within the production of facts and artefacts
Using FEDELOP supports answers to the question:
How should agency be distributed with socio-material interactions?

- Who should be in charge of agency within the socio-material interactions during research, design and use?
- Who should be in charge of agency within the human-artefact-configuration?
- Who should be included, who should be excluded?
- How should gender be configured and distributed the interface?
- Does the respective distribution of agency and gender correspond to feminist goals*

*social justice, gender equality, social participation, inclusion, critical reflection, empowerment and freedom of action
Points of Criticisms and Discussions
Points of Criticism

• It tries to establish Design Research & Practice as a boundary-making and -shifting activity, naming it Intraaction Design in reference to Barads terminology, but refers to entities like designers, users, artefacts. What do you think about that? How to handle that?

• What is the benefit of thinking about technology design as intraaction design? Just an (empty) play with words and terms?

• Generally speaking: What does new materialism contribute to a power critical and gender aware technofeminist research & practice? What does it really modify and change?

• Thinking about power relations and power distribution I often ask myself as a feminist design researcher: How much am I allowed to express my own point view and to implement my own desires/imaginations of a perfect world into the design process and finally into the designed result?
Outlook

What about “Research through Design” as a Model of Technofeminist Research & Practice?
“Research through Design”

**Research Project**

**Knowledge Goal**
Study of a present situation (with means of design)

**Research Answers**

**Design Project**

**Design Goal**
Improvement of a certain situation

**Design Answers**
“Research through Design”: The Artefact has a double role.

Research Project

Knowledge Goal
Study of a present situation
(with means of design)

Epistemic thing
Piece of knowledge

Research Answers

Design Project

Design Goal
Improvement of a certain situation

Product/Application
Object of use

Design Answers
“Research through Design” as a Model for Technofeminist Research & Practice

May offer possibilities to bridge or even transcends gaps between theory & practice, reflecting and acting, academia & everyday life? An change the artefact into an…

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Design Answers

When we regard the artefact as an epistemic thing (another form of materialized knowledge), it questions the differentiation between basic and applied research, doesn’t it?
Thank you for your attention