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)

Technofeminism

…embraching Cyberfeminism

Technofeminism

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)

## …embraching New Materialism

Technofeminism

Cyberfeminism
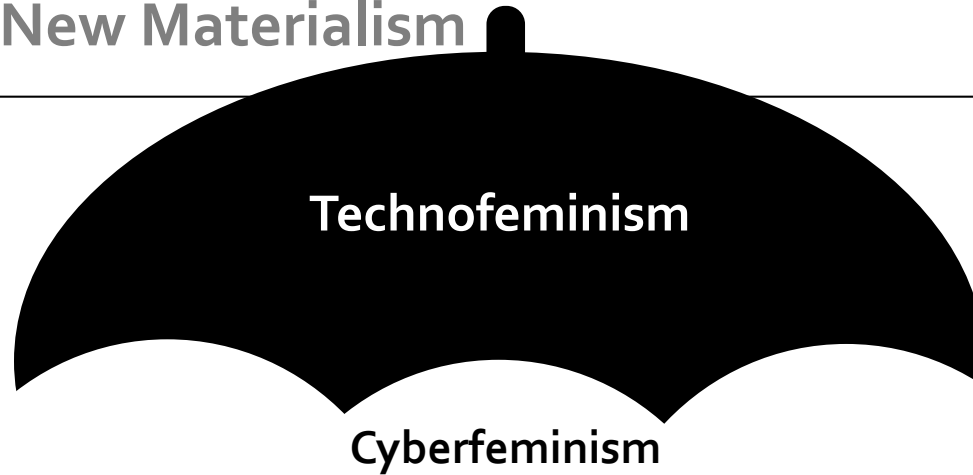
New Materialism(s)
The current feminist epistemology that values matter over symbolic representation and regards knowledge as a result from an entangled process of knowing and being that constitute each other. It looks at the mechanisms how boundaries or differences are constructed; as a feminist ethico-onto-epistemology 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.

…needing Critical Computing
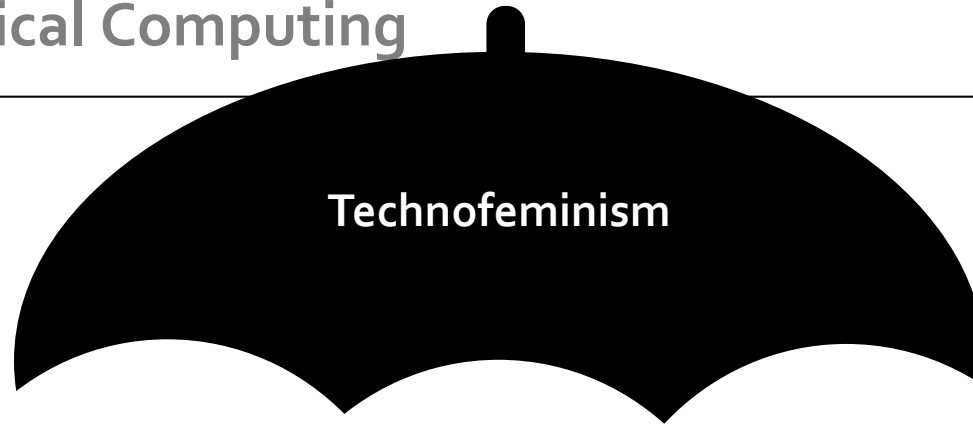
Technofeminism

Cyberfeminism

New Materialism(s)

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
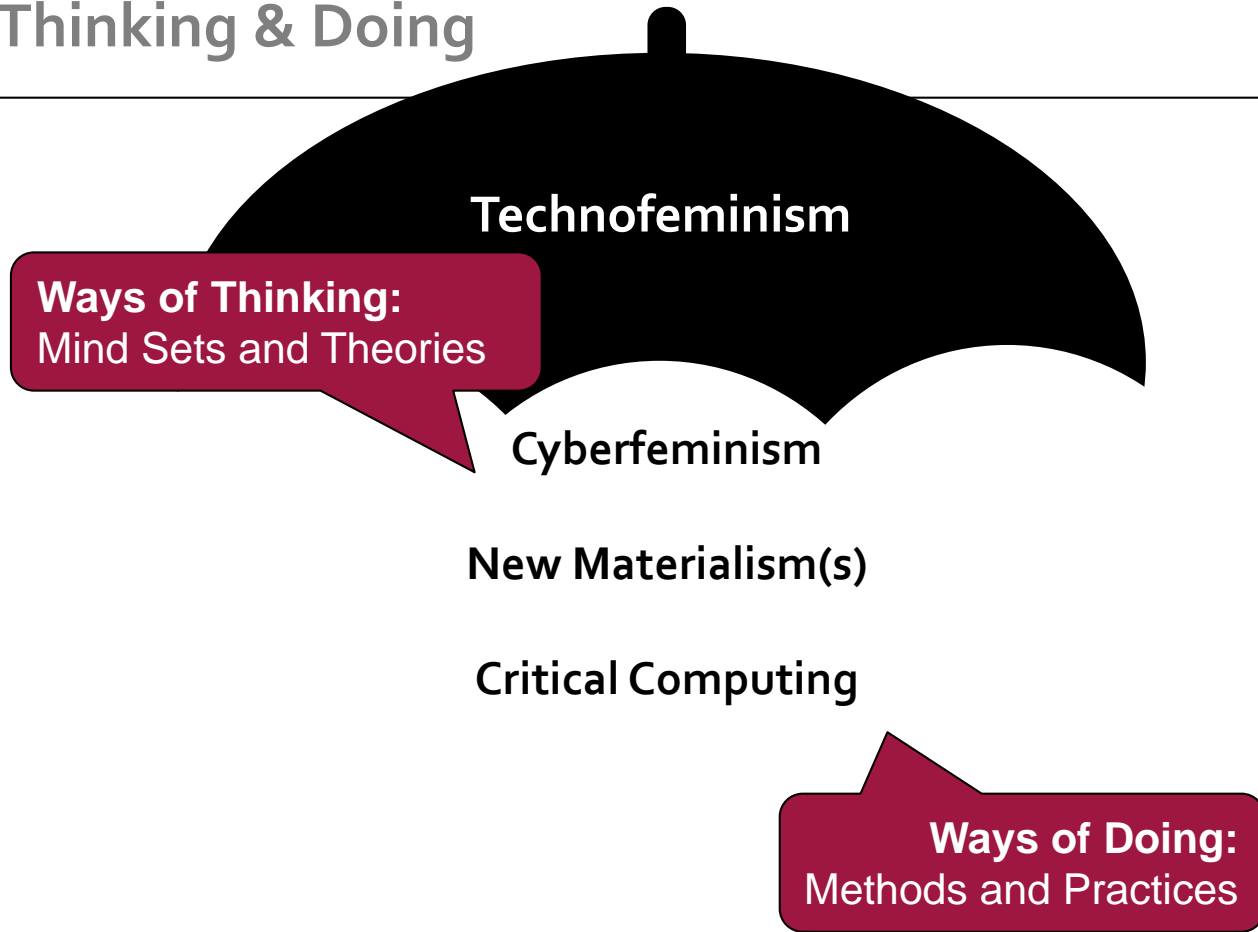
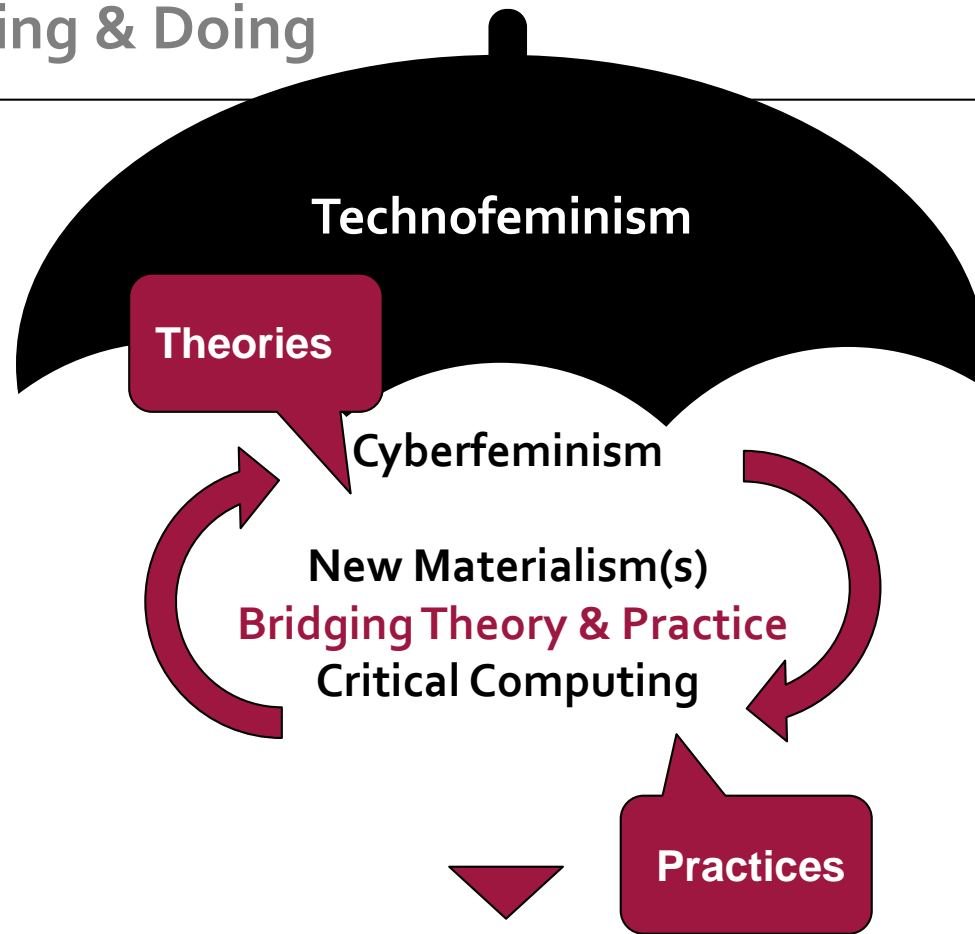**Technofeminism**

Ways of Thinking:
Mind Sets and Theories

Cyberfeminism

New Materialism(s)

Critical Computing

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)
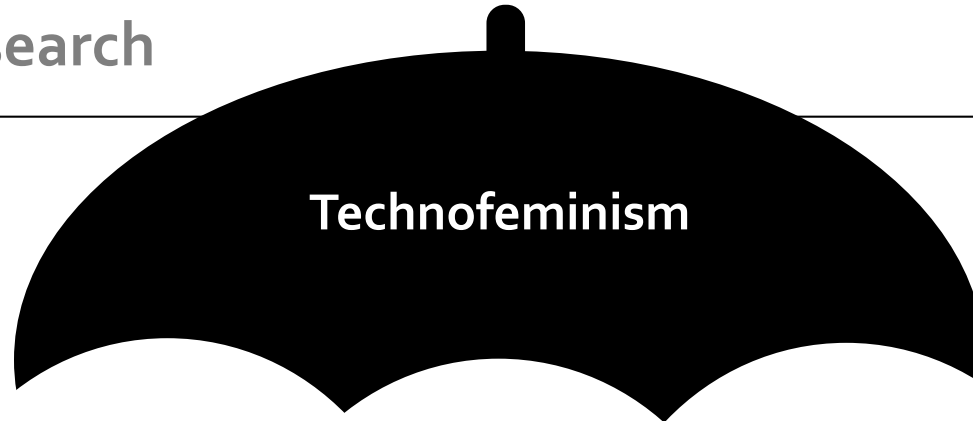Bridging Theory & Practice
Critical Computing

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
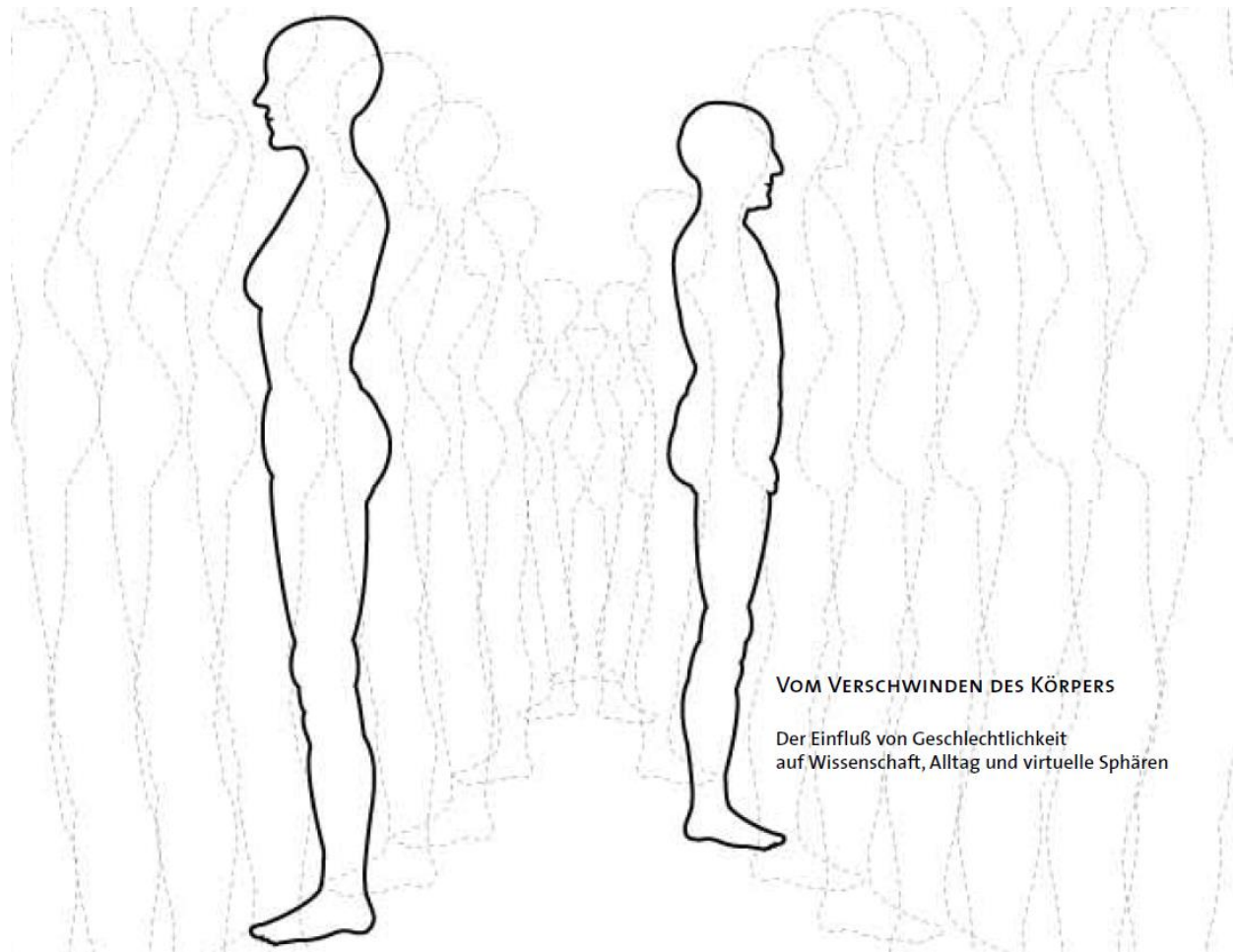## My Design Research

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

VOM VERSCHWINDEN DES KÖRPERS

Der Einfluß von Geschlechtlichkeit
auf Wissenschaft, Alltag und virtuelle Sphären

The influence of gender on science, everyday life and virtual spaces

2001 Diploma@Köln International School of Design
Virtual body Representations, inspired by **Cyperfeminist** Visions

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

2001 Diploma@Köln International School of Design
Virtual body Representations, inspired by Cyperfeminist Visions

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."*

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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.

2007 Telekom Innovation Lab
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

2007 Telekom Innovation Lab
Virtual bodily 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

Default Set of avatars with two gender categories

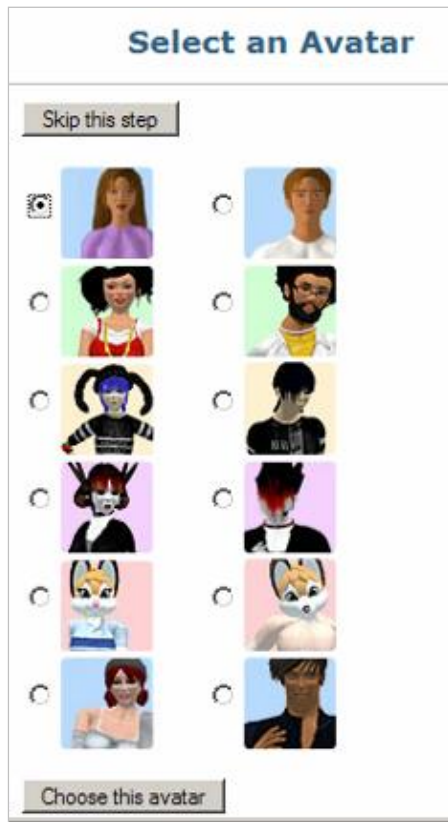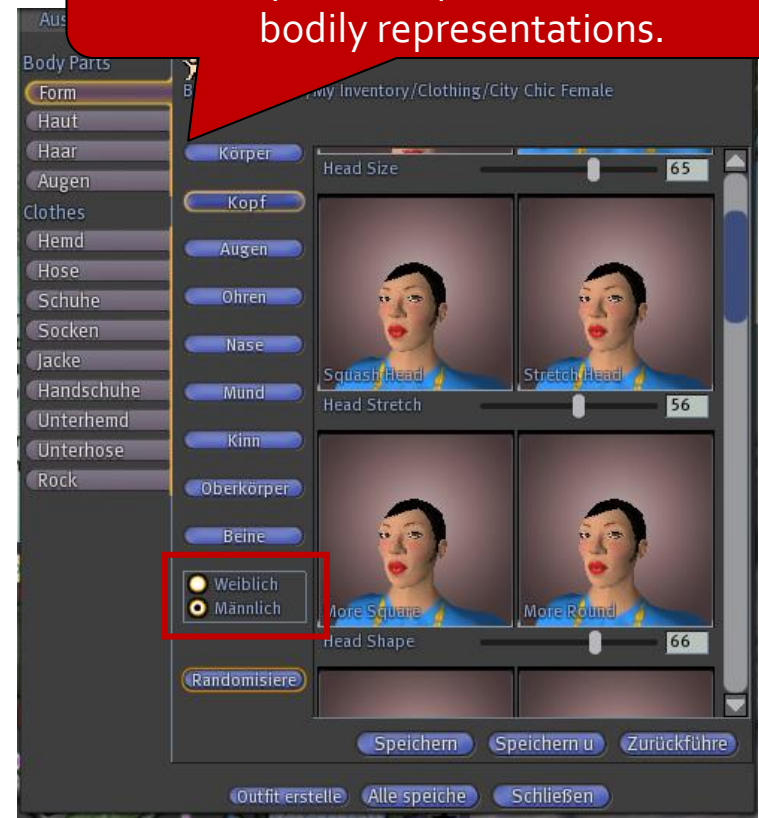Appearance editor with two gender categories

2007 Telekom Innovation Lab
Virtual bodily 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

The Appearance Editor can be used in order to produce queer-inter-transsexual bodily representations.

Appearance editor with two gender categories

2007 Telekom Innovation Lab
Cyberfeminist Evaluation of Second Life and LambdaMOO

The attempt to create inbetween-, trans- or mixed gendered avatars was a play against the binary and heterosexual gender norm inscripted 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 Resarch 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 ware Reflective Practioner (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…

Research Paradigms - Concepts of Knowledge - Methods & Tools - Epistemologies -

a Critique of the male dominated, objectivist paradigms of natural and technical sciences
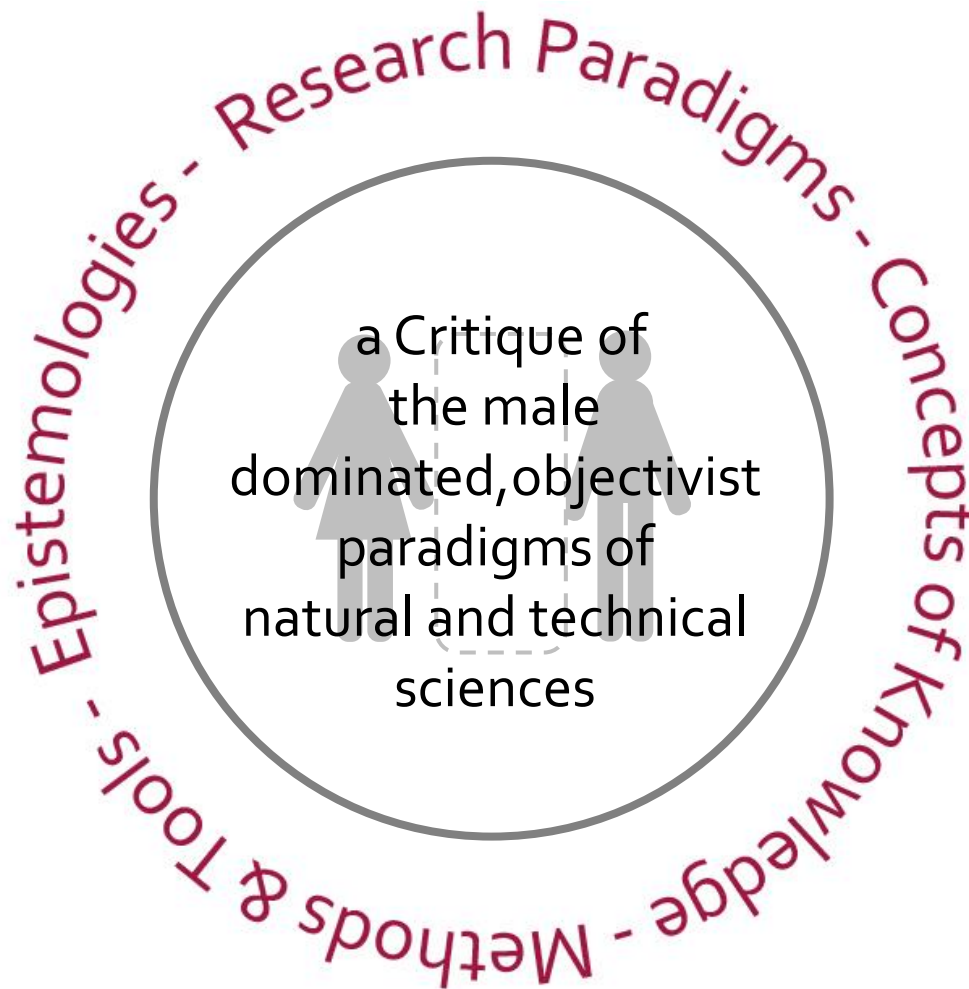
Feminist Concepts of Science and Technology
consider that facts and artefacts are made by humans

They are related to human experiences that are embodied and gendered.

Feminist Science and Technology Studies (STS)
Co-Construction of Society, Science, Technology and Gender
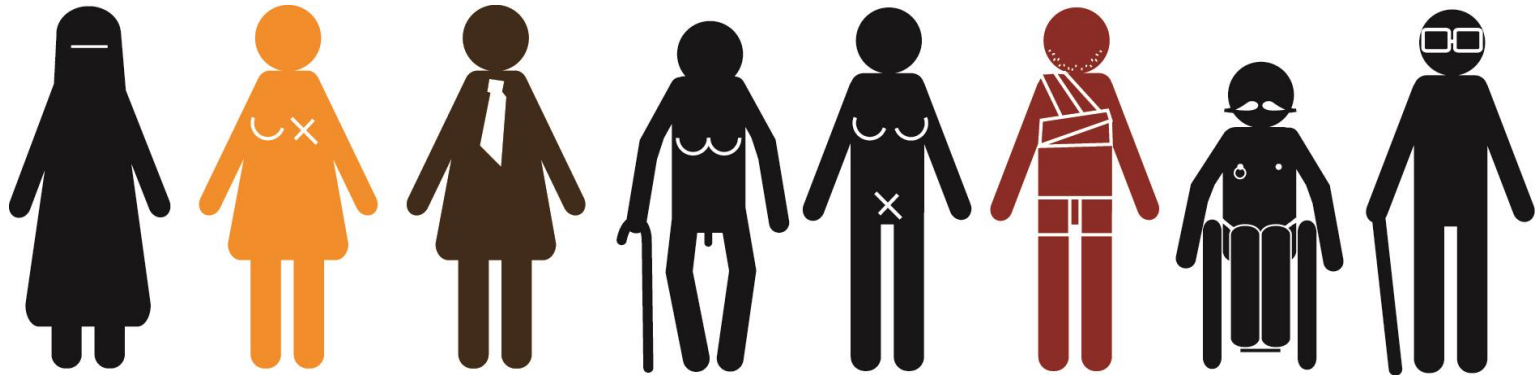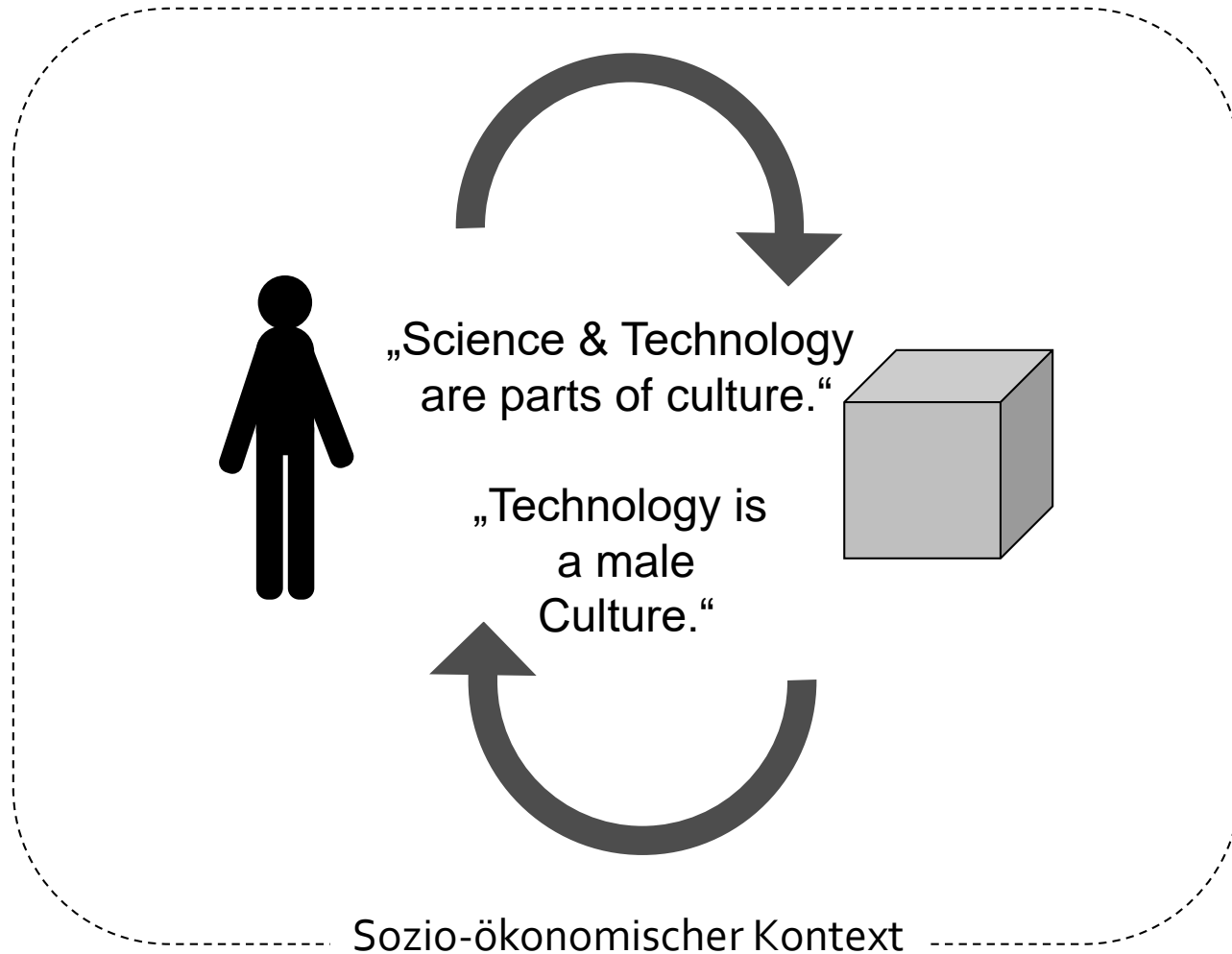
„Science & Technology
are parts of culture."

„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
Facts and Artefacts

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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).

Science and Technology from a feminist View
Facts and Artefacts

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Design is feminist!

Science and Technology from a feminist View
Facts and Artefacts

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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)

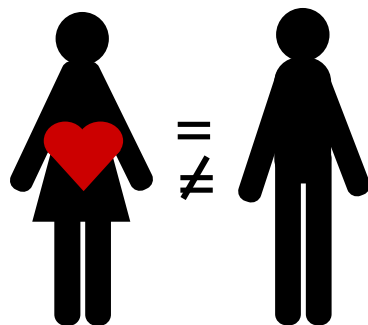# How can feminist Epistemologies inform Design Research & Practice?

Feminist Epistemologies, their Gender Concepts & Focus
## and Consequences for the Design of Technologies
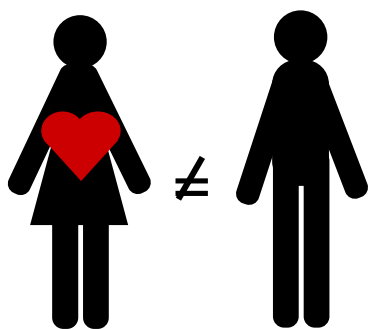
Eco-Feminism

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 their are treated and grow up
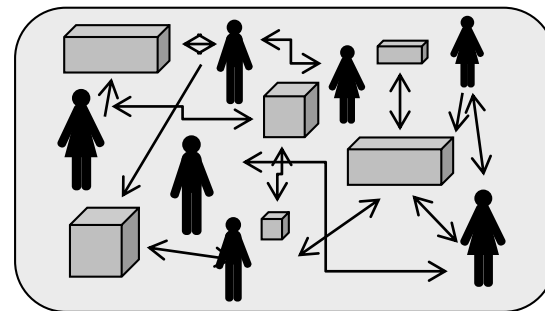**> Technical Training for women**

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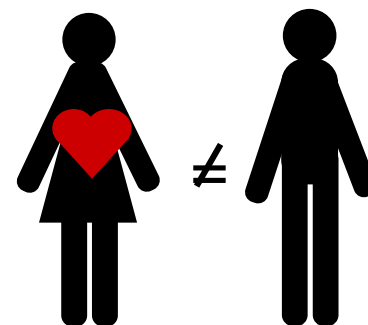
Technology is a result of patriarchal und capitalist conditions that ignore women's experiences and disadvantage their use of technology
> Design for marginalized users, e.g. women

Poststrukturalist Feminism / Cyberfeminism
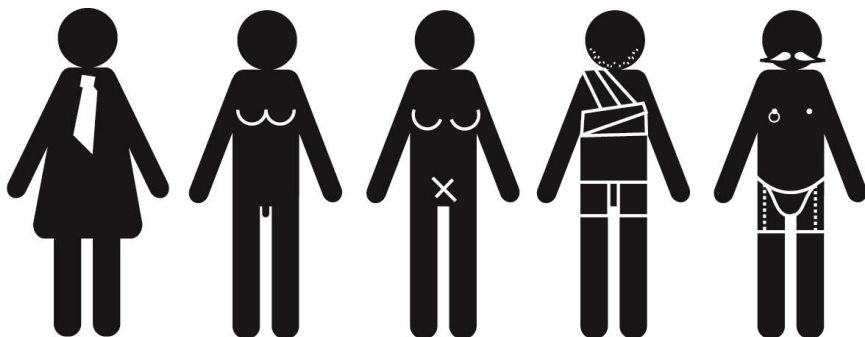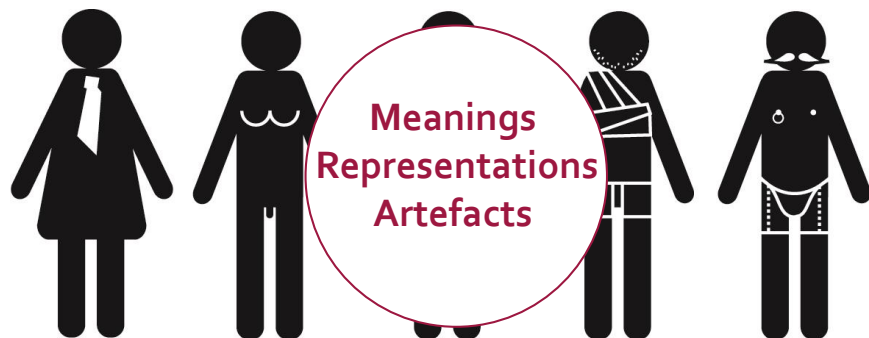
Co-Construction of Gender und Technology **> New ways of doing design and using technology as possibilities to establish new gender-technology-identities and relations**
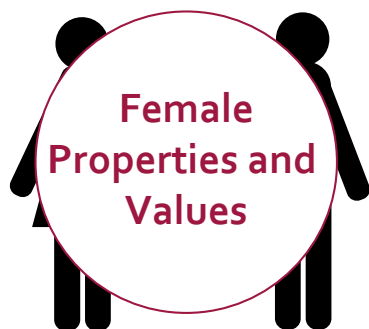
Agential Realism/ Technofeminism

Socio-material intraactions within networks of distributed agency between human and non-human actors **> Establish socially fair and ecologically sustainable human-machine-configurations** 32

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 their are treated and grow up
> Technical Training for women

Feminist Standpoint Theory

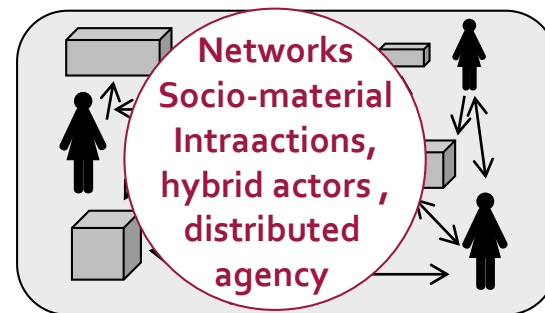**Humans & Experiences, e.g. female experiences**

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

Poststrukturalist Feminism / Cyberfeminism

Meanings Representations Artefacts

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

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** 33
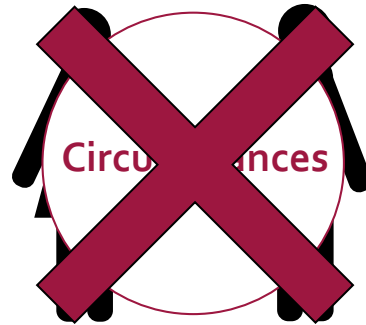
Relevant Feminist Epistemologies for Design Research & Practice
because they correspond to…

Eco-Feminism

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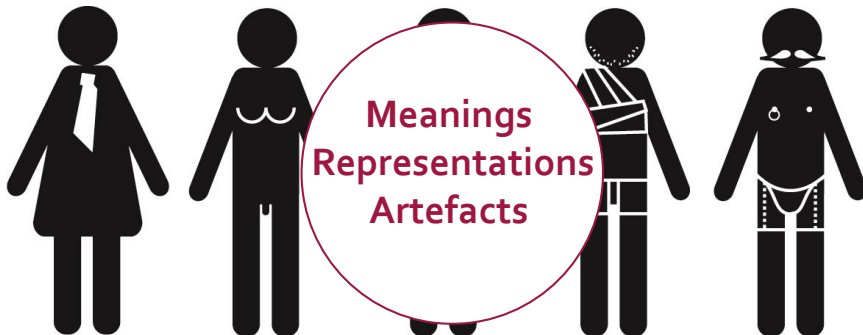
Liberal Feminism

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Feminist Standpoint Theory

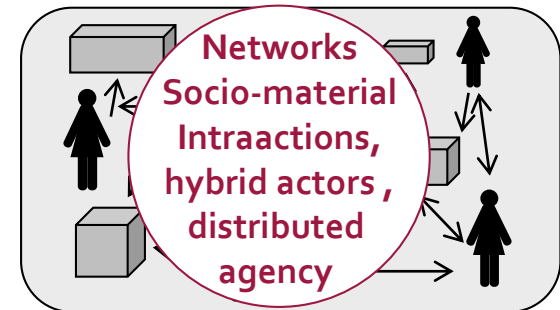**Humans & Experiences, e.g. female experiences**

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Poststrukturalist Feminism / Cyberfeminism

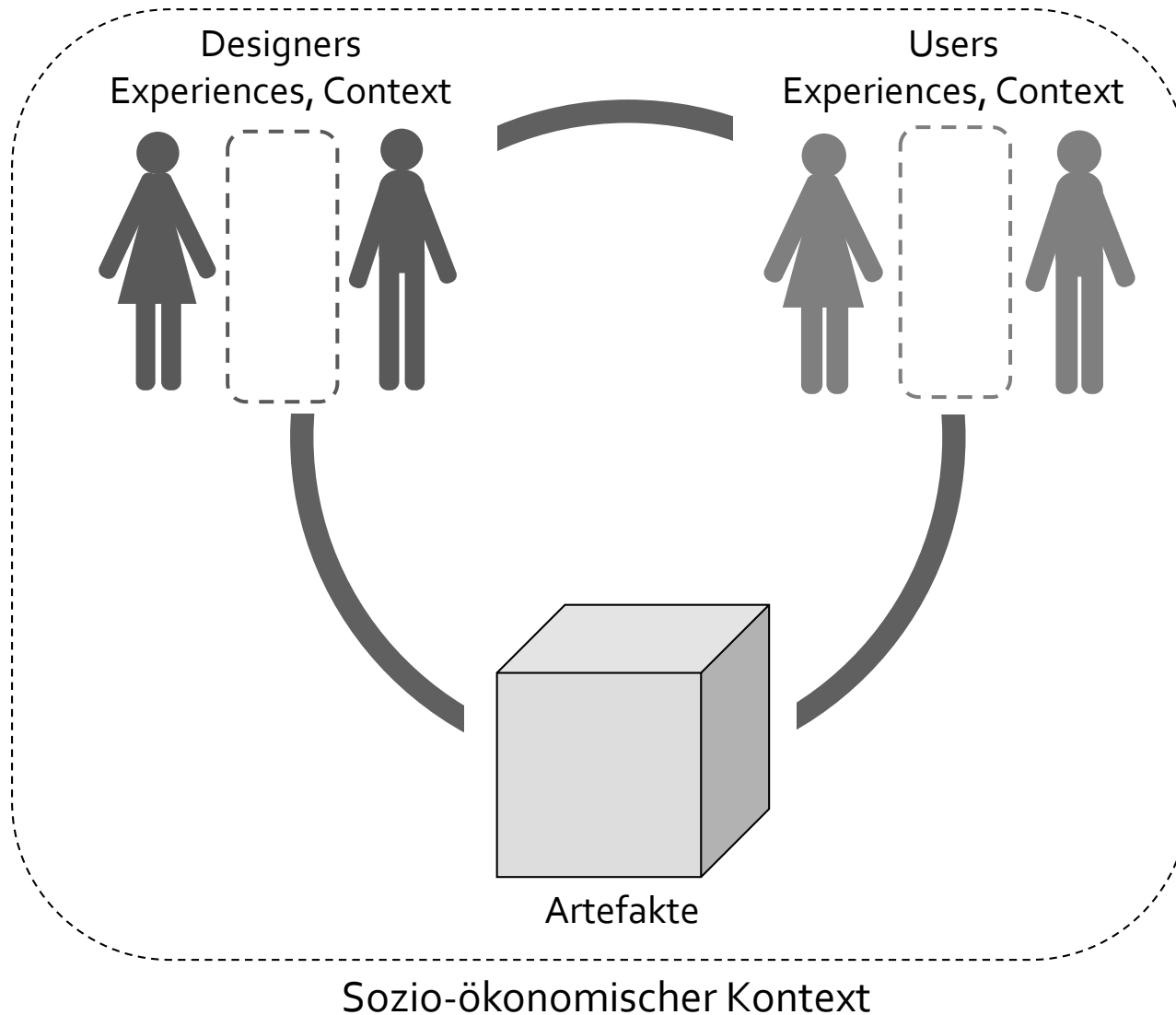**Meanings Representations Artefacts**

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

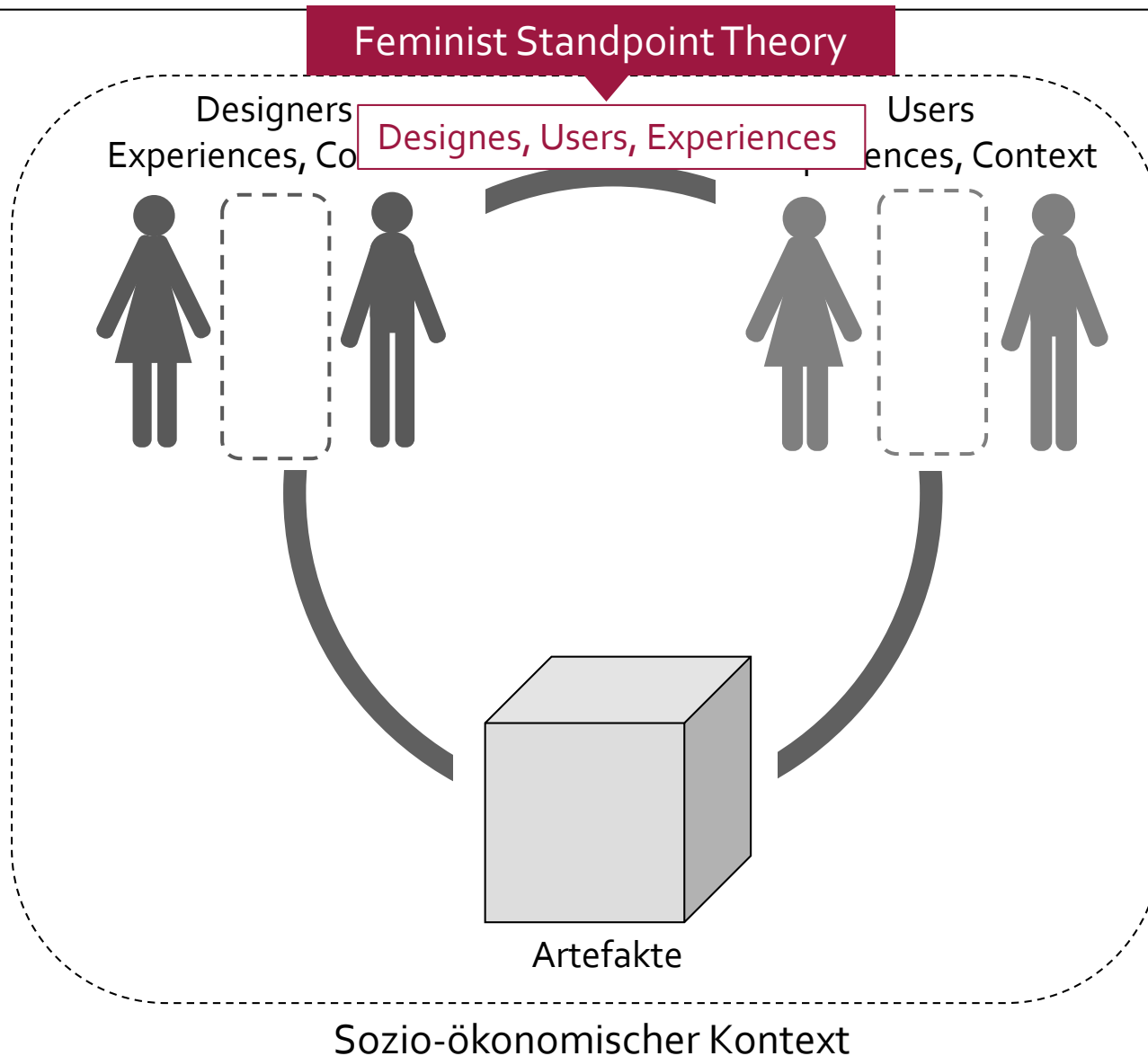**Networks Socio-material Intraactions, hybrid actors , distributed agency**

Socio-material intraactions within networks of distributed agency between human and non-human actors **> Establish socially fair and ecologically sustainable human-machine-configurations** 34
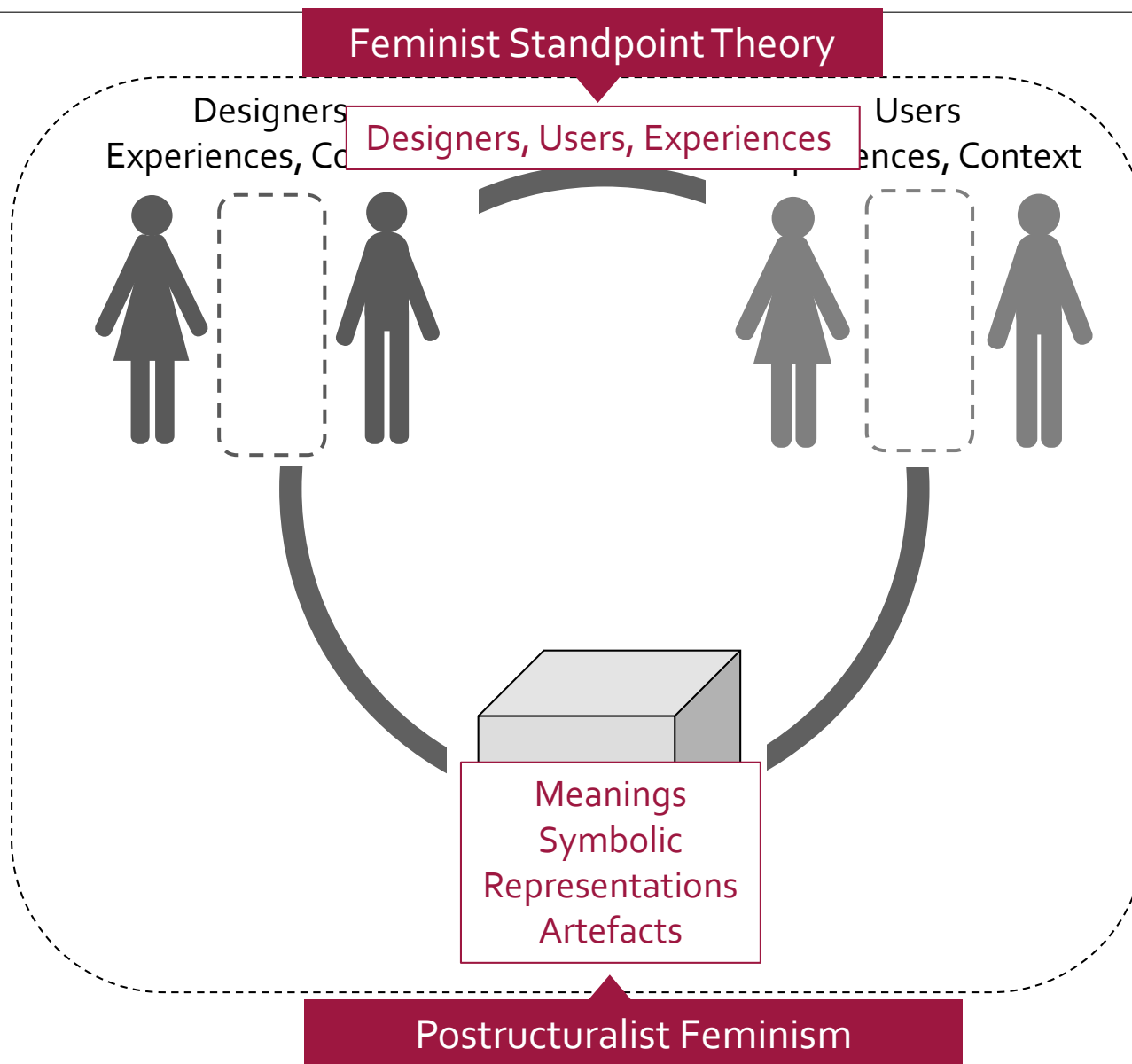
...the Dimensions /Actors of human-centred Design

Designers
Experiences, Context

Users
Experiences, Context

Artefakte

Sozio-ökonomischer Kontext

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

Feminist Standpoint Theory

Designers
Experiences, Context

Designes, Users, Experiences

Users
Experiences, Context

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...the Dimensions /Actors of human-centred Design
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Feminist Standpoint Theory

Designers
Experiences, Context

Designers, Users, Experiences

Users
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Meanings
Symbolic
Representations
Artefacts

Postructuralist Feminism

...the Dimensions /Actors of human-centred Design

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Feminist Standpoint Theory

Designers
Experiences, Co...

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Postructuralist Feminism

...the Dimensions /Actors of human-centred Design

in the following way....

Feminist Standpoint Theory

Designers

Experiences, Co...

Designers, Users, Experiences

Users

...ences, Context

Agentieller Realismus

Socio-material intraactions, Human-artefact-reconfigurations within the process of design and use

Meanings
Symbolic
Representations
Artefacts

Postructuralist Feminism

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

Feminist Standpoint Theory

Designers

Users

Reflection of the researchers', designers' standpoints and interests, transparancy 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 intraaction and human-artefacts-relations

Changing meanings by establishing new modes of representation and behaviors

Postructuralist Feminism

My Design Research and Development Framework (FEDELOP)

Feminist Checklist: Recommendations to reflect design decisions, anticipate and evaluate effects

FEMINIST STANDPOINT THEORY	POSTSTRUCTURALIST FEMINISM	AGENTIAL REALISM
Designer-User Relation Designer User	Meanings, Representations, Artefacts (digital, material)	Intra-actions Human-Artefact Configurations (socio-material/ socio-technical)
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!	• 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 Focus on Gender: • Pluralize, modify, confuse gender!	• 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

FEMINIST STANDPOINT THEORY		POSTSTRUCTURALIST FEMINISM	AGENTIAL REALISM
Designer-User Relation		Meanings, Representations, Artefacts (digital, material)	Intra-actions Human-Artefact Configurations (socio-material/ socio-technical)
Designer	User		
• 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 Intraactions during research, ideation and use*?*
• Critical technical Practice	• Underdetermined Design • Participtatory Design • Non-Intentional Design		
• Value Sensitive Design • De-Gendering Design			
		• Critical Design • Design noir • Ludic Design	
			• Undesigning Design
	• Reflective Design		
		• Feminist Interaction Design Methodology	

Feminist Checklist: Recommendations for methods that challenge/modify the power structures within design and use

FEMINIST STANDPOINT THEORY		POSTSTRUCTURALIST FEMINISM	AGENTIAL REALISM
Designer-User Relation		Meanings, Representations, Artefacts (digital, material)	Intra-actions Human-Artefact Configurations (socio-material/ socio-technical)
Designer	User		

enhance the designers' self-reflection of their research and design conditions (a part of the apparatus of observation and bodily/ material production)

- 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 Intraactions during research, ideation and use*?*

- technical Practice
  - Participtatory Design
  - Non-Intentional Design
- Value Sensitive Design
  - De-Gendering Design
    - Critical Design
    - Design noir
    - Ludic Design
  - Reflective Design
    - Feminist Interaction Design Methodology

- Undesigning 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, ... (...ial)	Intra-actions Human-Artefact Configurations (socio-material/ socio-technical)
Designer	User		
• Increase your self-reflection	• Empower marginalized users! • Increase the use... self-reflection	...er to change ...d behaviour for	• Evaluate the approach due to the distribution of agency & gender within the Intraactions during research, ideation and use?
• Critical technical Practice	• Underdetermined Design • Participtatory Design • Non-Intentional Design		
• Value Sensitive Design • De-Gendering Design			
		• Critical Design • Design noir • Ludic Design	
			• Undesigning Design
• Reflective Design			
		• Feminist Interaction Design Methodology	

recommends 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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Designer-User Relation		Meanings, Representations, Artefacts (digital, material)	Intra-actions Human-Artefact Configurations (socio-material/ socio-technical)
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• Critical technical Practice	• Underdetermined Design • Participtatory Design • Non-Intentional Design		

• Value Sensitive Design
  • De-Gendering Design

shares design responsibility between designers and user equally

  • Critical Design
  • Design noir
  • Ludic Design

    • Reflective Design
      • Feminist Interaction Design Methodology

  • Undesigning Design

Feminist Checklist: Recommendations for methods that challenge/modify the power structures within design and use

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• Critical technical Practice	• Underdetermined Design • Participtatory Design • Non-Intentional Design		
• Value	• D		

acknowledges use as a continuation/ further iteration of design

• ...tical Design
• ...sign noir
• Ludic Design

• Reflective Design

• Feminist Interaction Design Methodology

• Undesigning Design

Feminist Checklist: Recommendations for methods that challenge/modify the power structures within design and use

FEMINIST STANDPOINT THEORY		POSTSTRUCTURALIST FEMINISM	AGENTIAL REALISM
Designer-User Relation		Meanings, Representations, Artefacts (digital, material)	Intra-actions Human-Artefact Configurations (socio-material/ socio-technical)
Designer	User		
• 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 Intraactions during research, ideation and use*?*
• Critical technical Practice	• Underdetermined Design • Participtatory Design • Non-Intentional Design		
• Value Sensitive Design • De-Gendering Design			
		• Critical Design • Design noir • Ludic Design	
			• Undesigning Design
• Reflective Design • Feminist Interaction Design Methodology			

Increases the self-awareness of designers and users

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puts artefacts in charge of agency

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questions rationality and efficiency while considering amusement, playfulness and fun as relevant factors of design

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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 Designmethodology is related to Techno-/Cyberfeminism, New Materialism and Critical Computung in the following way

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New materialism is one essential epistemological reference point

Approaches of critical computing provide the methodical basis

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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 intraactions?
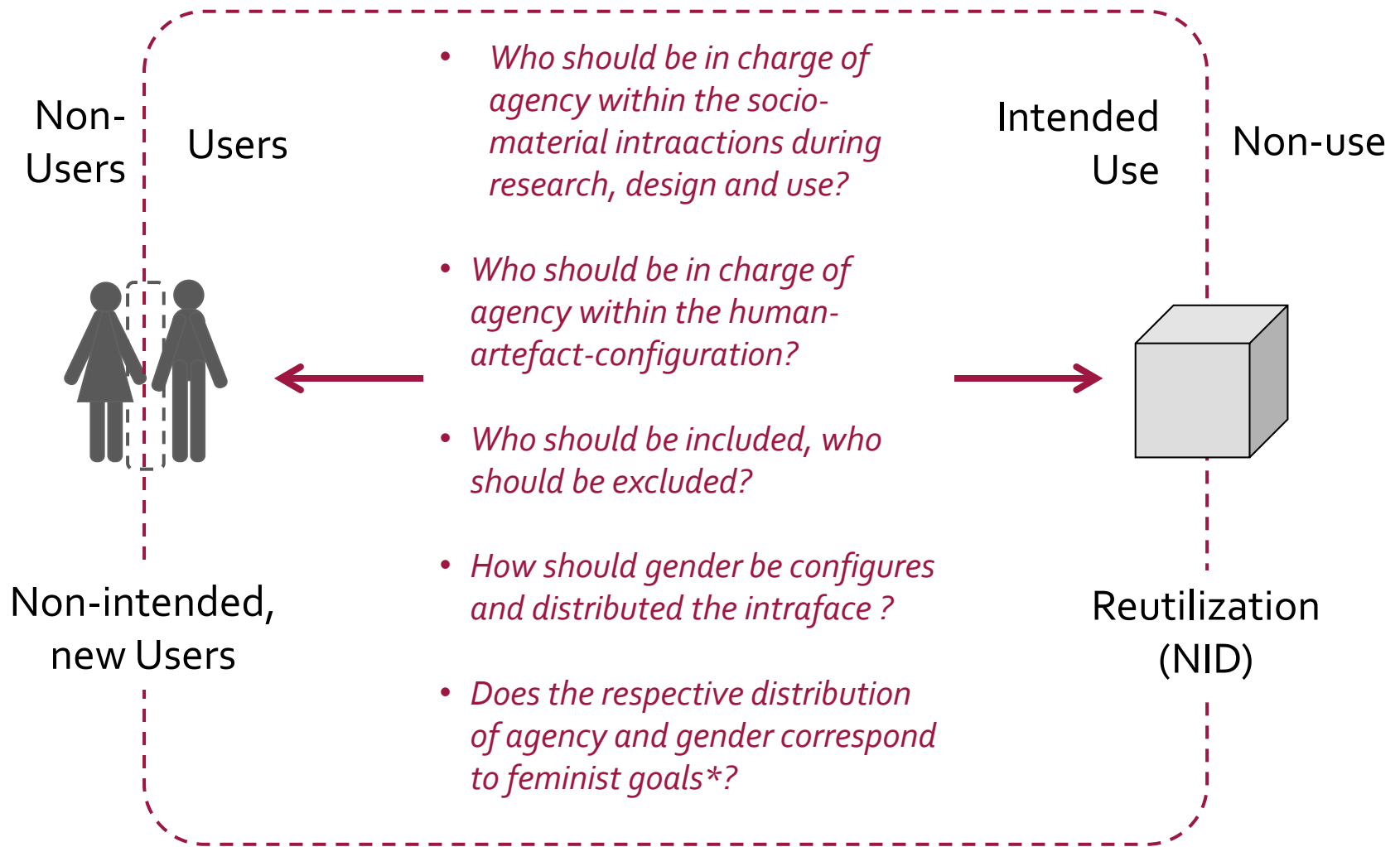
Non-Users

Users

- *Who should be in charge of agency within the socio-material intraactions 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 configures and distributed the intraface ?*

- *Does the respective distribution of agency and gender correspond to feminist goals*?*

Intended Use

Non-use

Non-intended, new Users

Reutilization (NID)

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)

Design Project

Design Goal
Improvement of
a certain situation

Research Answers

Design Answers
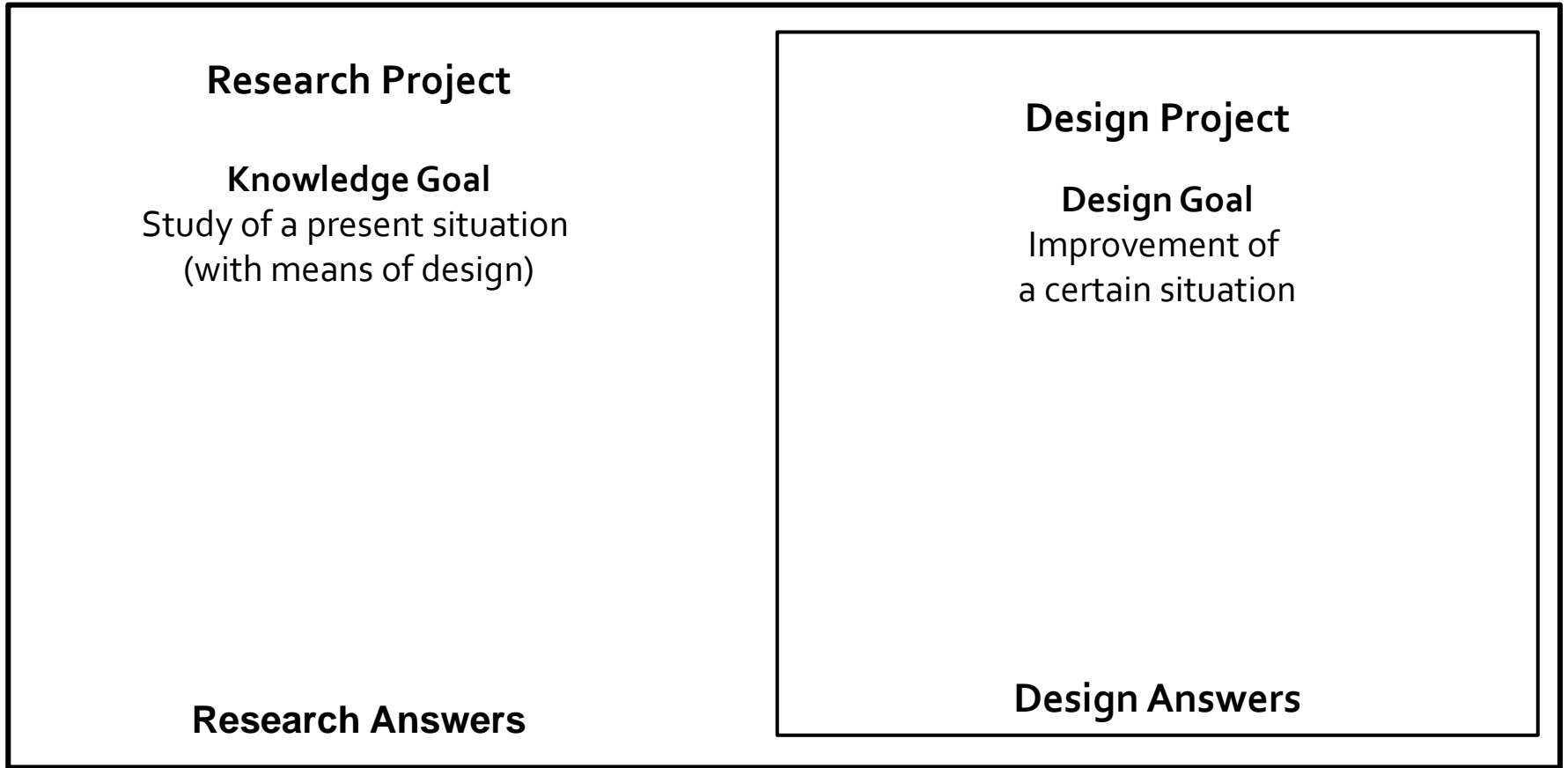
"Research through Design": The Artefact has a double role.

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...

Research Project

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

Ethico-onto-epistemic thing

Research Answers

Design Project

Design Goal
Improvement of
a certain situation

Object of empowerment, participation, liberation, self-determination etc., a new piece of matter (irritates, ask questions, makes you think etc.)

Design Answers

"Research through Design"
as a Model for Technofeminist Research & Practice

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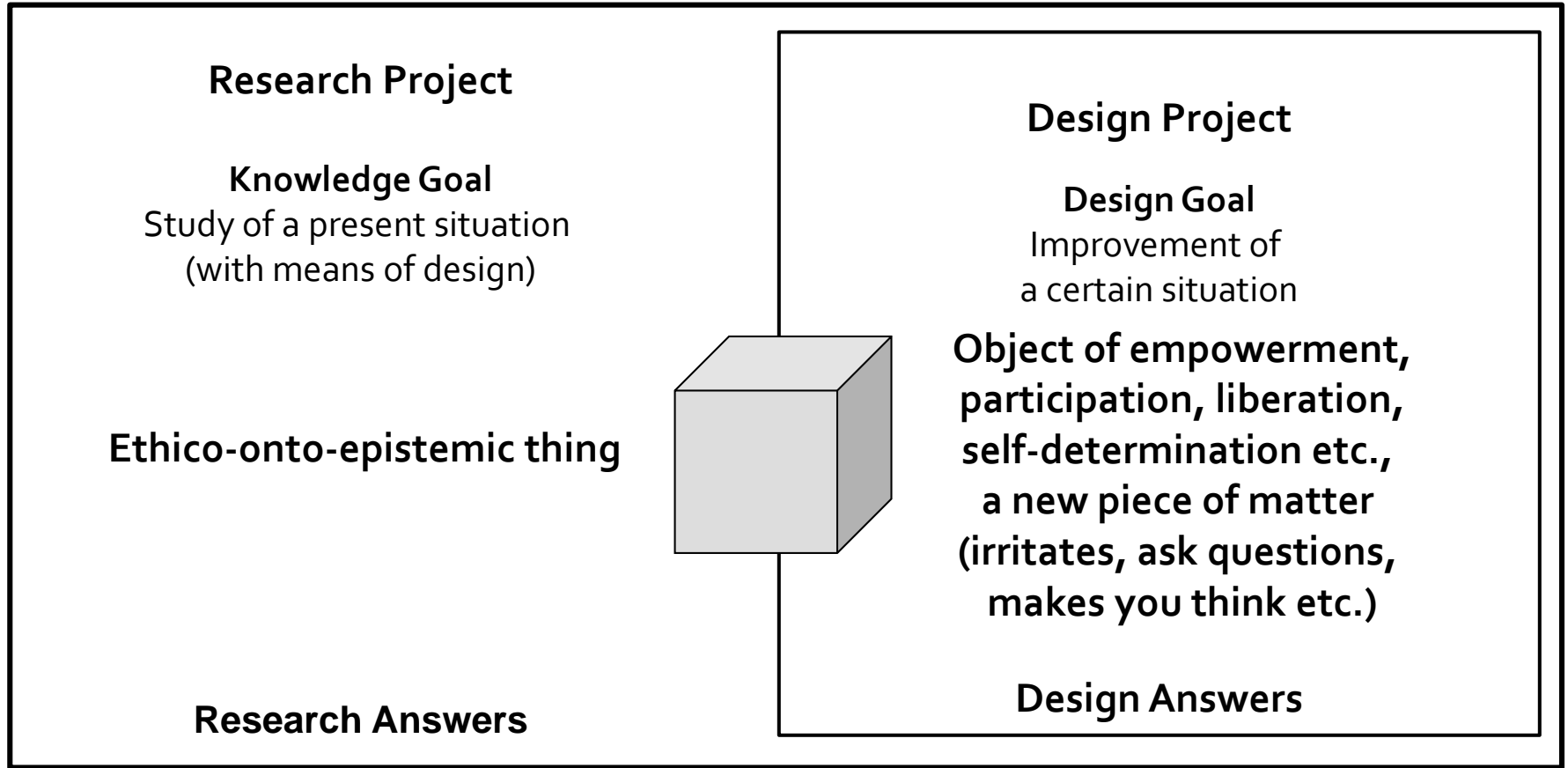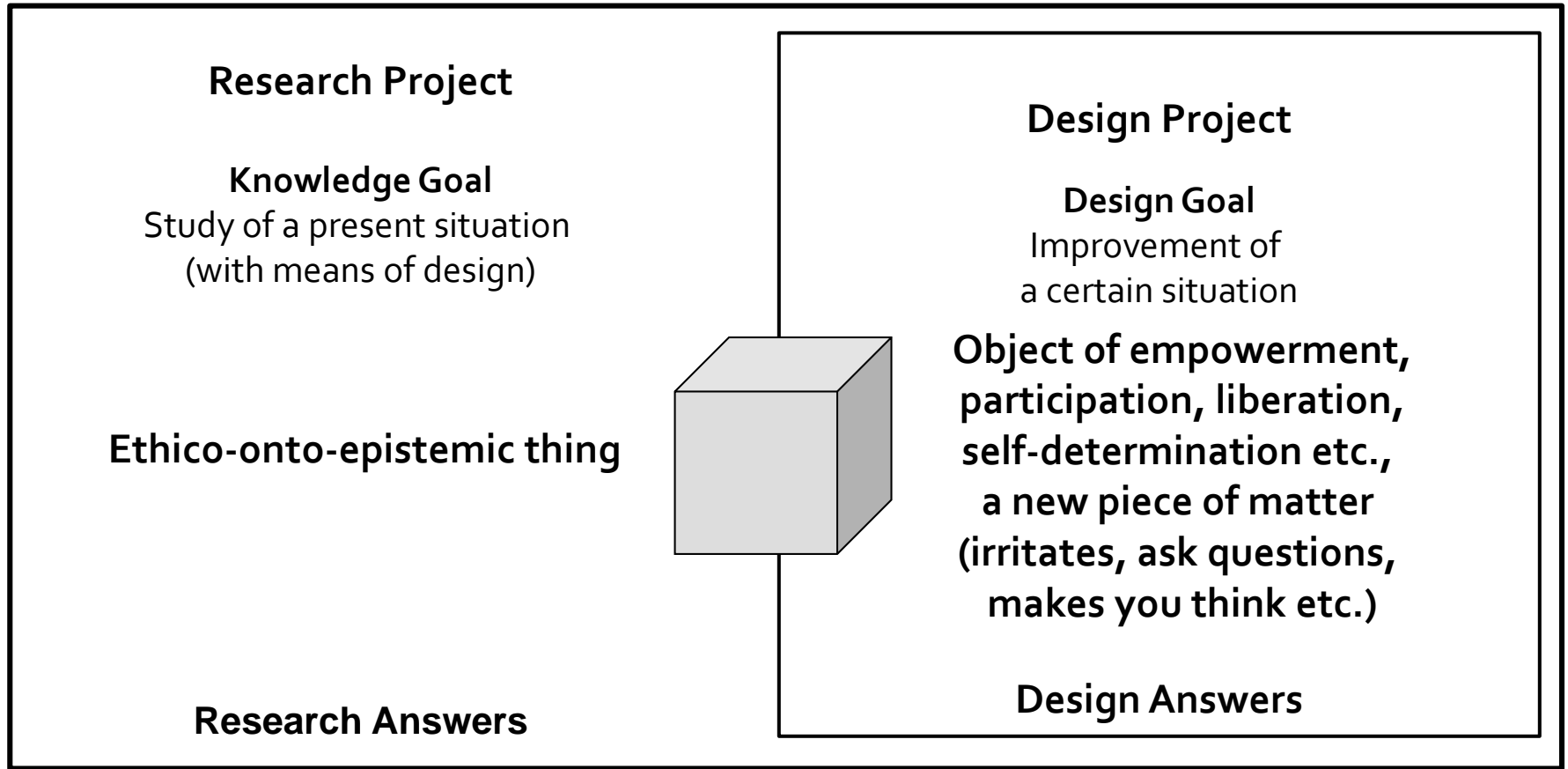## as a Model for Technofeminist Research & Practice

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**Object of empowerment,
participation, liberation,
self-determination etc.,
a new piece of matter
(irritates, ask questions,
makes you think etc.)**

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