

Feminist Technoscience

-trying transformations

Professor Lena Trojer
Blekinge Institute of Technology (BTH), Sweden
Lund University (LU), Faculty of Engineering, Sweden
Nelson Mandela African Institute of Science & Technology (NMAIST), Tanzania

My concern

To open up for and foster epistemological pluralism at faculties of technology AND to make it work in practice.

My rationale

Presently situated at
a profiled (applied ICT) university of technology / BTH
an old Swedish university / LU
an Tanzanian university / NMAIST

My presentation

Elaborate around how feminist research ***within*** faculties of technology and engineering (**feminist technoscience**) can be understood and confirmed as quality contribution in **research and survival** and with focus on **reality production**.

The central idea of combining established forms of scientific inquiry with a social pragmatics of developing and legitimating goals, methods, theories and products, can be realised by epistemological pluralism and partial translations between situated knowledges of different communities. Ina Wagner 1994

"Lena says it is not even about gender"

Per Eriksson, 1998, Vice Chancellor BTH

"Precisely so, you have understood correctly"

me, Lena, newly recruited

as full professor in ICT and gender research

I use theories and epistemological questions from gender research (feminist technoscience) in order to foster and advance our understanding of knowledge production and development practices **within** technology and engineering.





It matters what concepts we think to think other concepts with.

It matters what thoughts we think thoughts with.

It matters what stories we tell to tell other stories with.

It matters what stories make worlds, what worlds make stories.

(Donna Haraway 2010, 2011)

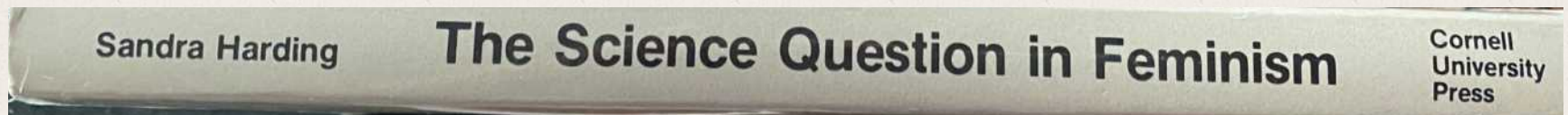
Gender Research within Engineering Science (feminist technoscience)

An academic story within a time frame of more than 30 years in Sweden

from the gender equality question

over the woman question

to **the science question** (the Harding turn)



No simple and chronological links

Key concepts for our transdisciplinary practices of feminist technoscience

Co-evolution / Involution

Situated knowledges

Contexts of implication

REALITY PRODUCTION

Accountability / Responsibility (respons-ability)

Technologies of humility

Mode 2 (distributed) knowledge production

Feminist TechnoScience

Reality Production (worlding)
co-evolving processes

Situated Knowledges

provide **alternatives to** "... developing at home that voice of entitlement, the voice of control, that accompanies the conquest of empires far from home" (Sharon Traweek)

Accountability / Responsibility
No innocent positions exist

Technologies of Humility

Learning processes

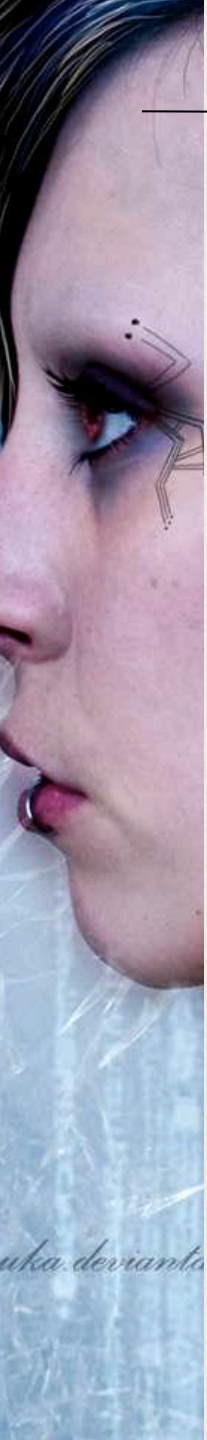
Open minds in distributed knowledge processes

Asses the unknown, uncontrollable

Be with the trouble

point to

Socially Robust Knowledge and Technology



WHY

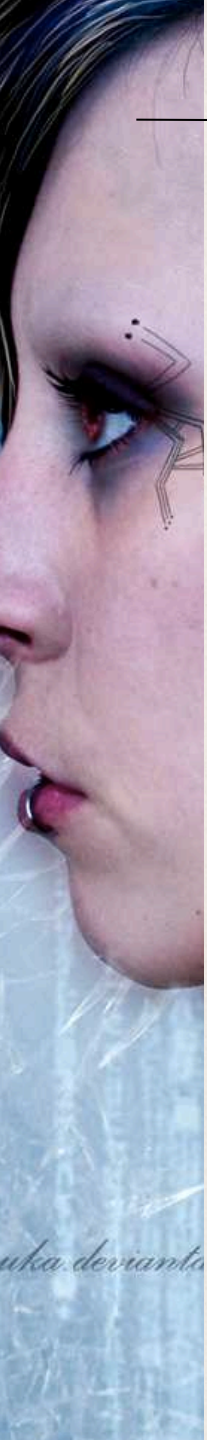
REALITY PRODUCTION

reality producing technology

BECAUSE

you/we as researchers, students, engineers, technologists
etc

create realities
for ourselves and for others

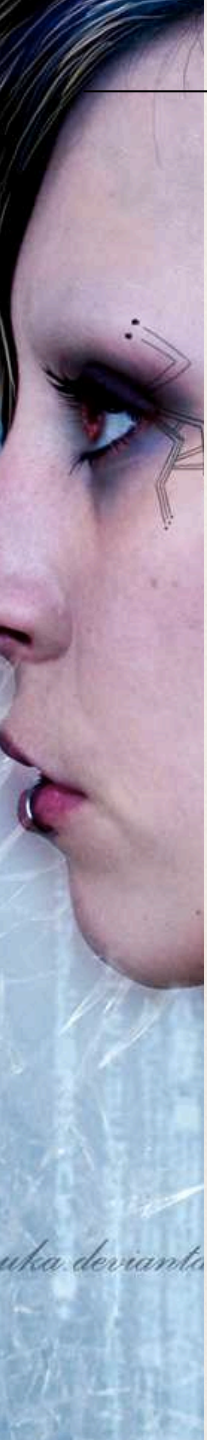


Ok? But how?

before more concrete comments

(It matters what concepts we think to think other concepts with.)

reality producing technology,
isn't research and technology neutral stuff?



*Technology is not neutral. We're inside what we make,
and it's inside us.*

*We're living in a world of connections – and it matters
which ones get made and unmade.*

Donna Haraway 1997

Perspectives from within are vital!!!!
you have to stay with the trouble

Donna Haraway



Since 1984, professor in the History of Consciousness Program, University of California, Santa Cruz, now professor emerita

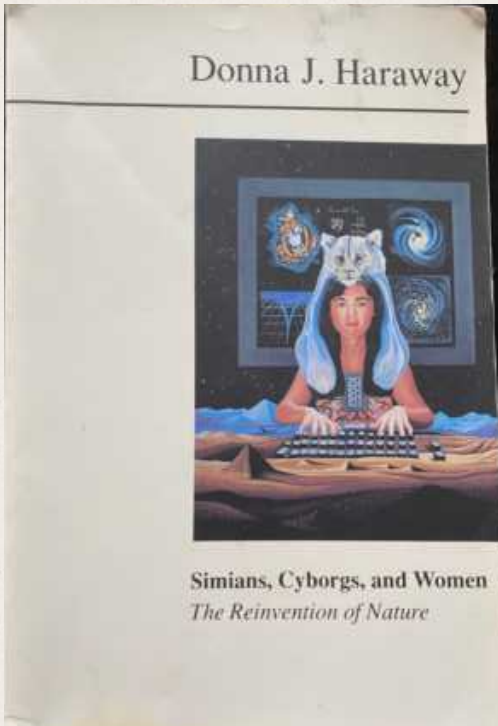
Situated knowledges

Cyborgs

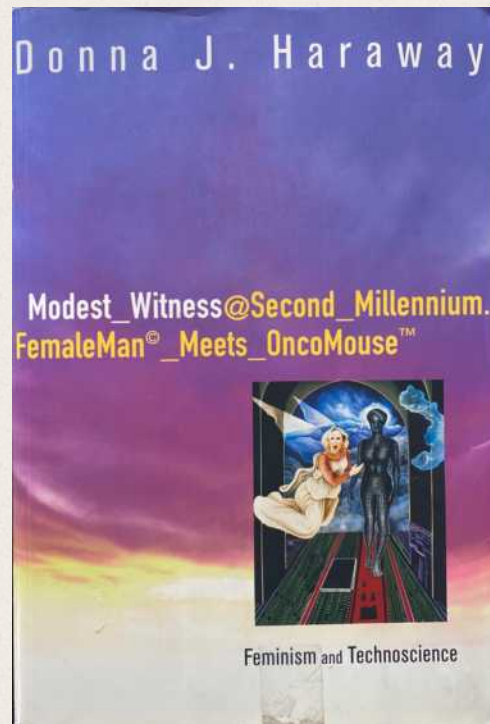
Companion species

No innocent positions

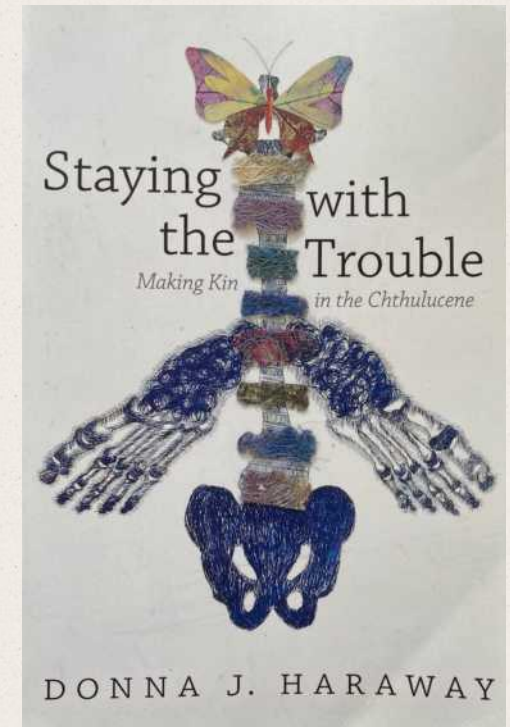
Involution



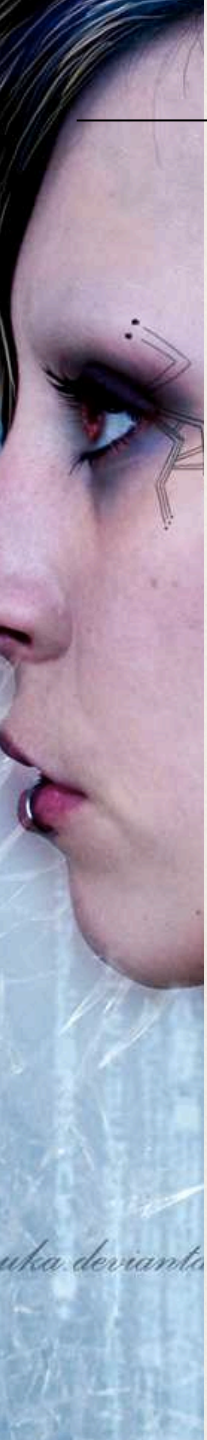
1991



1997



2016



Ok Reality Production! But how?

Some examples

The Cyborg



Manifesto for Cyborgs (Haraway 1985),

“the boundary
between science fiction
and social reality is an optical
illusion.”

Haraway 2014

SF is spun from

Science Fact

Speculative Fabulation

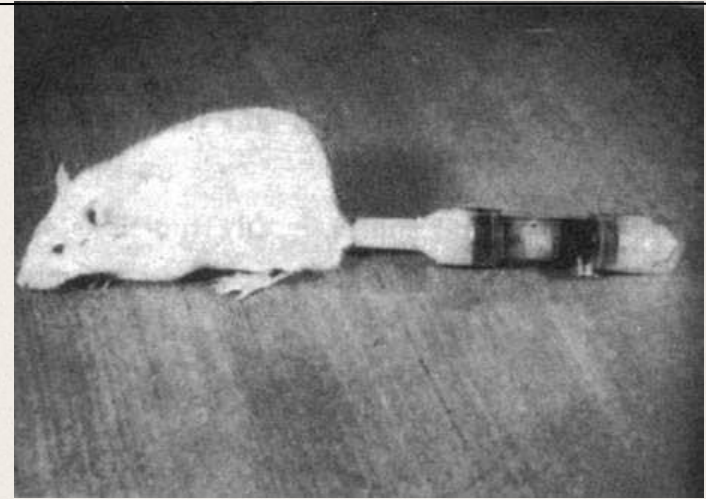
Speculative Feminism

Science Fiction

Soin de Ficelles

(care of/for the threads)

and So Far



[//en.wikipedia.org/wiki/Cyborg](https://en.wikipedia.org/wiki/Cyborg)

The term **cyborg**.... applies to an organism that has restored function or enhanced abilities due to the **integration** of some **artificial component** or technology that relies on some sort of **feedback**.





KAMERA
I ÖGAT OCH
KOPPLAT TILL
MONITOR

FÄRGENSÖR
OMVANDLAR FÄRGER
TILL VIBRATIONER
I SKALLBENET

COCHLEA-IMPLANTAT
I ÖRAT GÖR ATT
DÖVA KAN HÖRA

ROBOTARM
INOPERERAT MIKROCHIP
ÖVERFÖR NERSIGNALER
TILL ROBOTPROTESEN

RFID-CHIP
INOPERERAT
MIKROCHIP
ÖPPNAR TEX LAS

BENPROTES
FIXT VID TITAN-
SKRUVAR SOM XR
FASTVÄXTA
I SKELETET

Den välklippta luggen ligger slät över pannan, och kring den blonda pottfrisuren kröker sig en antenn i en elegant båge. Mina ögon söker sig reflexmässigt till den kamera som svävar som ett tredje öga framför det smala ansiktet. Neil Harbisson är van vid att folk stirra.

I tio år har den 32-årige brittisk-katalanske konstnären burit vad han kallar sin "eyeborg", en kamerautrustad huvudantenn som registrerar färger och översätter dessa till ljudvibrationer. Med hjälp av kameran och ett inopererat hörselimplantat kan Neil Harbisson, färgblind sedan födseln, höra färger.

2013 tog han det slutliga steget att låta en läkare på kirurgisk väg förankra antennen i hans skallben. Sedan dess är den en del av hans kropp. Rör du vid den känner han det, vrids den åt sidan vill han snabbt rätta till den.

– Jag är ingen bärare av teknik, jag är teknik. Jag har blivit en cyborg. Men det hände inte över en natt, det är en insikt som vuxit fram i takt med att min kropp och hjärna format sig efter och blivit ett med den nya tekniken, säger Neil Harbisson.

I dag hör han färger i sina drömmar. En nyligen genomförd magnetröntgen av konstnärens hjärna visade på ökad aktivitet i både syn- och hörselcentrat, enligt honom själv ett tecken på att hans hjärna anpassat sig till cyborgtekniken.

– Att handla i matbutiken är som att befinna sig mitt i en nattklubb, eftersom jag hör alla färger som finns runt omkring. Med hjälp av en kamera och mikrochip har jag skaffat mig ett sjätte sinne och det har berikat mitt liv.

Det är inte bara Neil Harbisson som ser sig själv som en cyborg. Han är en även på papperet, efter att han vunnit en uppmärksamhetsserieförstapad mot den brittiska passmyndigheten. Konstnären hävdade rätten att bära sin eyeborg, som då inte var permanent, på sitt passfoto med motiveringen att den är en del av hans person, och fick till slut igenom sitt krav.

En cyborg är en individ bestående av både mänskliga delar och maskindelar. Begreppet myntades 1960 av forskarna Manfred Clynes och Nathan Kline i en artikel om hur människokroppen med teknikens hjälp kan förbättras för att tåla de påfrestringar som en rymdfresa innebär. Duon såg framför sig en framtidens astronaut med ett hjärta vars slag reglerades av amfetamininjektioner och med lungor ersatta av ett radioaktivt batteri.

Idén om den mekaniserade människan var länge en forskningsmässig uto-

Cyborg?

*robot, prosthesis, cultural gaps/interfaces, politics
and / or what?*

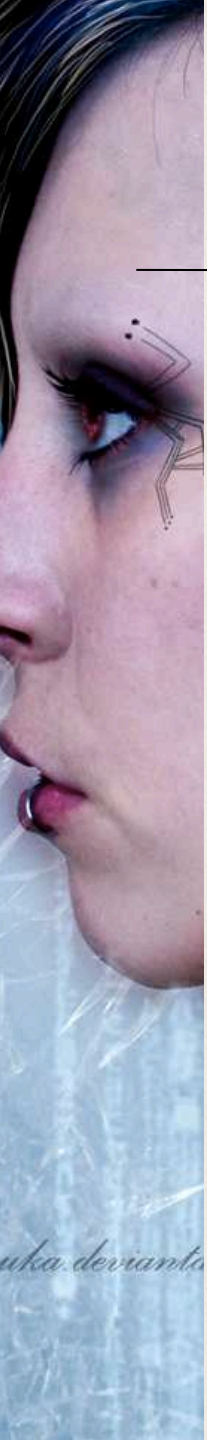
Media technology /

the mobile as prosthesis? the web as prosthesis? digital applications as prosthesis?

the things - the body - the brain
material components,
technical components

**Figurations to think with
Cyborgs**

It matters what thoughts / figurations we think thoughts with





Accountability Responsibility

Technology of Humility

Technology of Hybris

Sheila Jasanoff

science and society are co-evolving

greater degree of complexity, unpredictability
and irregularity in both spheres

To be accountable
requires to be situated

locally, historically, culturally, epistemologically etc.

(Donna Haraway / situated knowledges)

TO BE SITUATED
to be in the context of
application / implication

(Nowotny, Gibbons et al / mode 2)

Story: Uganda



Uganda

A Sida sponsored PhD student named Peter Okidi Lating, Makerere University, Kampala

Initial questions

Why so few female students at Faculty of Technology (FoT), MAK, and why so few students (male and female) coming from secondary schools outside Kampala, the capital of Uganda? More than 80% of Uganda inhabitants live in rural areas.

How to change the situation of few female students at FoT?

Can ICT be a transformative “tool”?



The Story

PhD project 2005 – 2009

- * Scarce resources – very few qualified teachers, no books, no laboratories, poor electricity and internet infrastructure.
- * Secondary public girl schools
- * Build conditions, implement and do research in a simultaneous, complex process
- * Main stakeholders – university, government, local businesses (triple helix) and secondary schools

Activities ICT centre with infrastructure
 training
 CD rom material production
 hybrid e-learning
 national tests as indicator

Impacts ICT/ GIS Research Centre of Arua
 More than 1 200 persons (2009) were trained in basic ICT skills, Internet use and
working
 with e-mails including District heads of Departments, secondary school teachers
together with their students and the general public.

The project involved
8 district and local government offices 10 schools
2 public hospitals 2 other governmental institutions
13 companies

Over 40% of the secondary girl school students studied passed and were eligible to apply for university education.



Ediofe Girls' Secondary School



Co-evolution

Arua Government
University
Local business



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Dr Peter Okidi-Lating

What started

as an e-learning project in order to increase the number of female students at Faculty of Technology, Makerere University,

Ended up in

an ICT Research Station in Arua facilitating 10 schools, district and local businesses and organizations, district and local governmental authorities, 2 hospitals, local authorities across the borders of South Sudan and Congo.

Continued with

the Government of Uganda decided 2010 to establish a new university – Muni University – with the ICT / GIS Research Centre in Arua as its starting hub and including a Faculty of Technoscience.



The Uganda story

>

reality producing technology

situated knowledges

context of application and implication

accountability, responsibility

Not done by itself.

It is based on / substantiated by research
resting on a foundation of
certain understandings of knowledge.

And what can this research be?



Technoscience Studies

- Focusing research, PhD training and development in advanced co-operations
- A research unit (1998 – 2016) and a PhD program at Department of Technology and Aesthetics (DITE), Faculty of Computer Science, BTH
- Main **aim** is to foster **complex understandings and practices of ICT as reality producing techniques** and as part of dominating societal transformations.
Innovation and Innovation systems out of awareness of the significance of local contexts / situated knowledges.

Postgraduate degrees awarded so far
16 Licentiate of Technology
20 Doctorate of Technology
5 PhD students presently active



Technoscience

I try to attend to the differently situated human and nonhuman actors and actants that encounter each other in interactions that materialize worlds in some forms rather than others.

*My purpose is to argue for a certain kind of practice of situated knowledges in the worlds of **technoscience**, worlds whose fibers reach deep and wide in the tissues of the planet. These are the worlds in which **the axes of the technical, organic, mythic, political, economic, and textual intersect** in optically and gravitationally dense nodes that function like wormholes to cast us into the turbulent and barely charted territories of **technoscience**.*

Donna Haraway, 1994

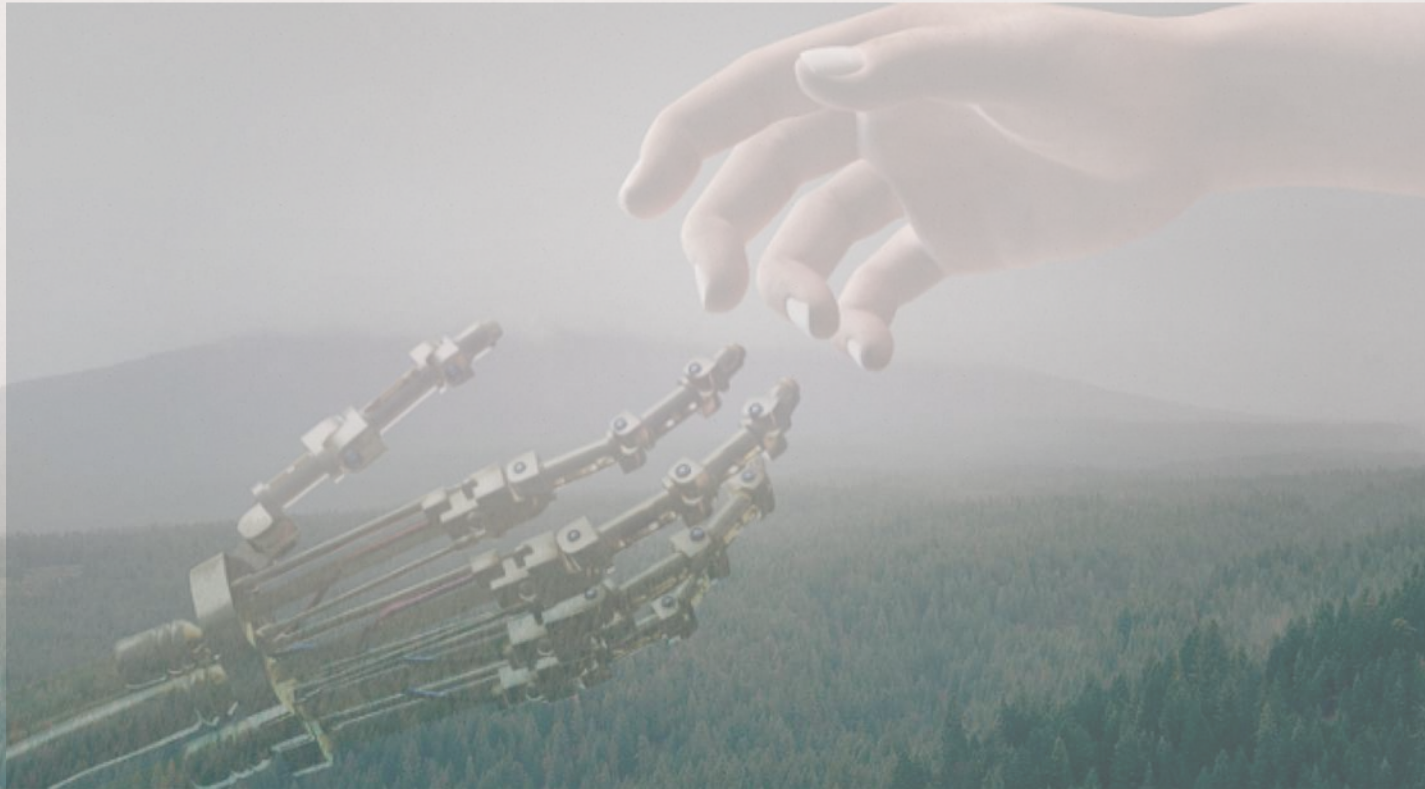
Feminist Technoscience is a resource

to

- **expand** the knowledge frames and practices for technology development in increasingly complex realities
- **open up** preferential rights of interpretation in selections of standards, which always are reality producing activities
- **develop epistemological infrastructures** relevant to a society heavily dependent on research and technology
- **establish new arenas** for developing understandings of relations between research, political sector and industry
- **develop driving forces** for inter- and transdisciplinary constellations

to strengthen knowledge processes by

- **emphasising** the importance of power relations and their impacts, including complex understanding of gender structures
- **process-oriented development** through a broader understanding of transformation practices
- **enforcement and integration** of situated knowledge and technology development



I agree with those understanding that

No innocent positions exist

**We have to stay with the trouble in our
knowledge (world) producing activities**

Sharing Fragile Future – feminist technoscience in contexts of implication (2018)

Like a winding string passing through things at risk, this book is my endeavour to make explicit the situatedness and responsibility of research and researchers in the trouble, let it be in the 'grand challenges' of our time or in the very local challenges of survival.

There is no doubt technologies co-evolve out of interactions in specific contexts. This implies the responsibility to be a collective one for where and how technologies travel and with what use.

The demand on us as knowledge and technology producers is focused on the direct reality producing consequences of our research and thus put us right into the context of implication.

- Part I - (onto)epistemological infrastructures
- Part II - feminist research and feminist technoscience
- Part III - research political initiatives
- Part IV - examples of research in contexts of application and implication.

Digital copy – mail lena.trojer@bth.se or directly at

