Science in context

Introduction and conference preparation

KULT8850/1 Spring/Summer 2025

thomas.berker@ntnu.no

Plan Day 3+4

- Today
  - Thomas: Minilecture "On failure in science - and on joy in science"
  - Govert: Theories about science as practice
  - Thomas: How to make academic conferences work for you
  - Group work preparing our conference
- Tomorrow: The past
  - Terje: History of science, of the PhD degree, etc
  - Knut: Navigating universities

Days 1+2

- What do you remember most vividly?
- What was particularly unclear?
- Some revelation since then?

Days 3+4: Starting points

What if we approach science as something which

- has a history (there was a time when it did not exist, it changes, and it may cease to exist)
- and it changes entangled with politics, society and culture
- and it has consequences for politics, society and culture that matter for science

A new approach to theories of science (in the 1970s)

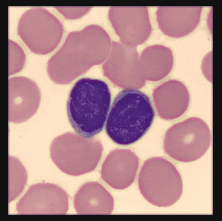
- Laboratory studies (1970s/80s), the first empirical studies of scientific knowledge production: no secret sauce, no brilliant thinking, just regular practices that can be found elsewhere
- The strong programme of empirical relativism (Bloor 1976) in the sociology of scientific knowledge (SSK)
  - assumes that there are causes for truth claims to be made and accepted and identifies these causes
  - seeks to understand - with the same types of explanations - both successful and unsuccessful truth claims (symmetry-principle)
  - must be applicable to itself

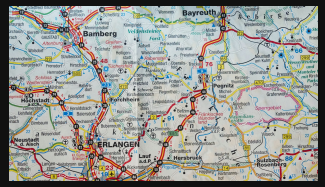
Latour

- On the reading list a classic text from Science Studies
- After the empirical studies of laboratories: what does all this mean?
  - Macro-level: How society/culture/politics creates certain forms of science
  - Micro-level: The nitty-gritty of what happens in laboratories
  - Latour: How micro and macro is connected in a very special way in scientific practices
- Science = scaling/movement + inscription devices + **trial and error**

Three movements

- ...to connect the world outside the laboratory with the laboratory
- Movement 1: Moving the problem from the world into the laboratory (Pasteur: anthrax = the virus, cows = chicken)
- Movement 2: Solving the problem in the laboratory (through trial and error: kill the virus, save the chicken)
- Movement 3: Implementing the solution outside the laboratory (e.g., inviting the press, transporting the vaccine)





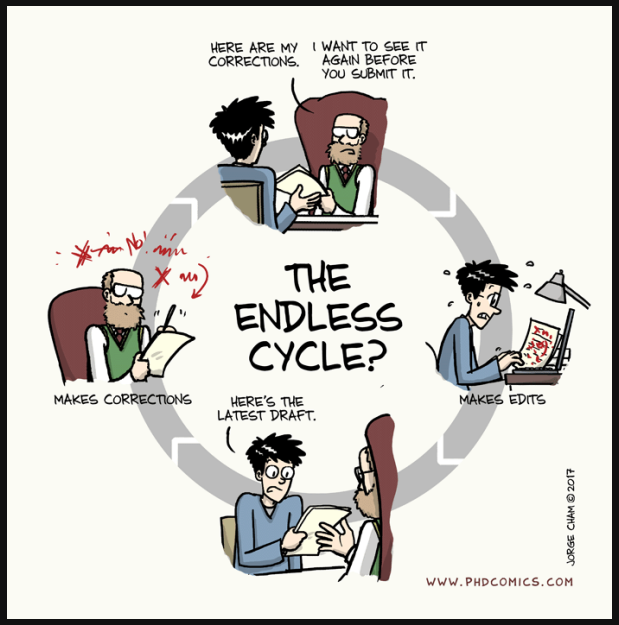
Inscription devices

- Create "valid" representations of "real world phenomena) that can be shared, combined, and compared
- Example 1: a chart of chicken deaths after intake of various substances
- Example 2: maps as valid representations of the world (for the goal of navigation)

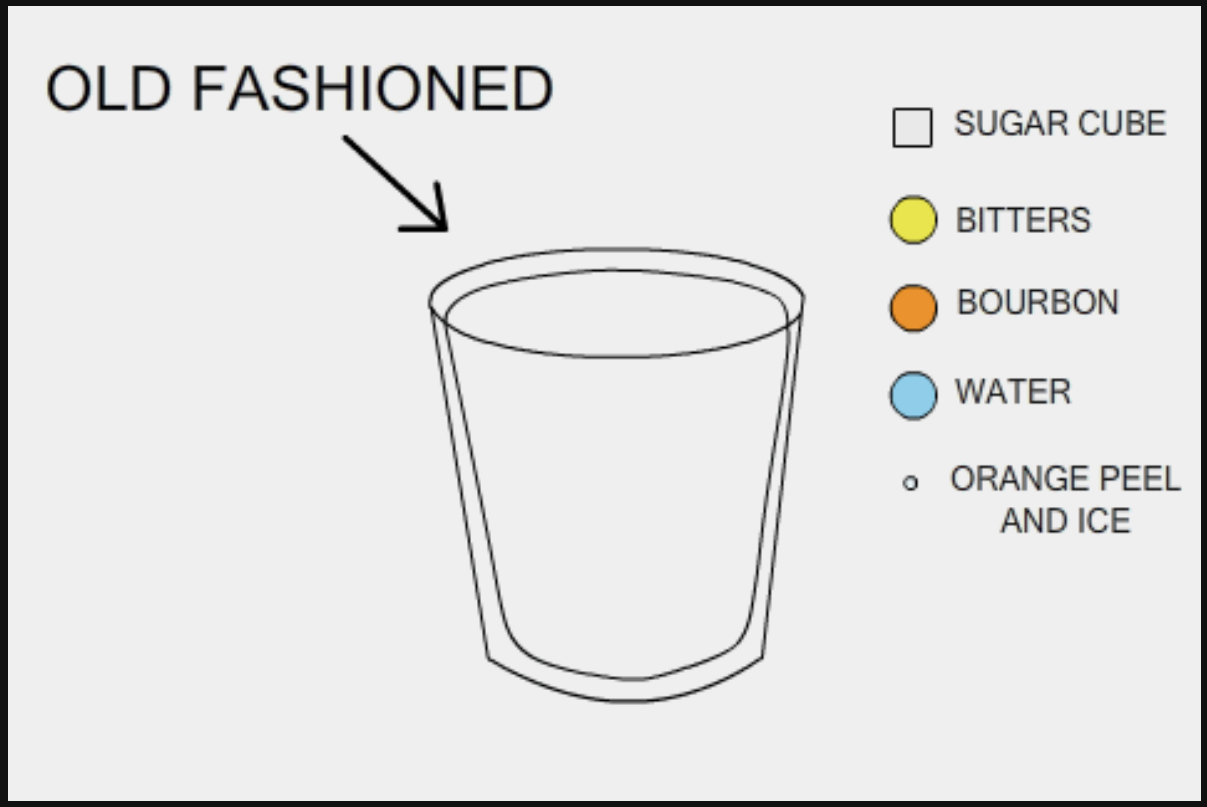
Inscription devices in SSH?

- Pre-modern knowledge production: no inscription devices!
- Modern SSH can remain completely self-referential: no inscription devices!
- In the very moment when things and processes outside science are addressed by SSH:
  - Coded interview transcripts (e.g., NVIVO)
  - Digital humanities
  - New devices are maybe changing the SSH game: Summarising-machines as inscription devices?

Navigating when there is no (complete) map



No recipes for a successful PhD project!

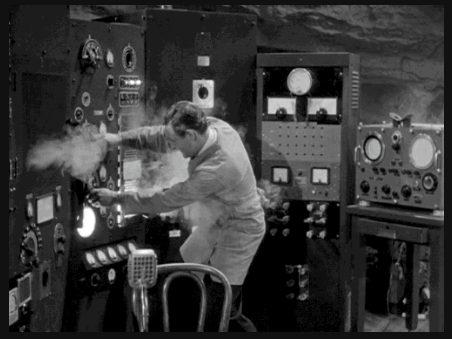


The horrors!

- Every PhD thesis is **unique** because of (slightly) different **research questions** but more importantly because of the **specific constellation** (time/space/people) it is written in
- An expectation that the thesis contributes some **new knowledge**
- There is no map! You will enter territories which are not mapped (yet) and **navigate** through them

"Pre-map" Navigation

- Short periods of "getting lost" are part of every navigation as you probe a course and correct quickly
- "Publish" often, "release" early: Enables you to make many small corrections to the course, instead of waiting for the scary big "jump" to the destination
- At stake: being accepted by one of the many academic communities as peer



Science as the art of learning through trial and error

- Collective failing
  - many scientists - many failures - worldwide!
  - the laboratory
  - The (forgotten) art of publishing failures
- Productive failing
  - failing despite the best preparations
  - the system of constructive critique (peer review)

And science has created tools that are there to help you to fail and to do so productively

- Earlier research
- Methods and theories
- Supervision
- ...

Earlier research as navigational aid

- Following earlier research can give you important breaks from the constant fights of trial and error
- Your predecessors can provide partial maps but be careful when combining them into a new map: different "scales", purposes, contexts (time, geography, etc.)
- In fact: the art of stitching together "maps" is what most of PhD work is about

Theories and Methods as navigational aid

- They tell you how to do the research but doing it is another thing
- They help you to avoid the most common and therefore uninteresting failures
- Learning how to implement your theories and methods (involving errors and failures) is part of your PhD education (i.e., methods are both aid and goal)

Notes on supervisors

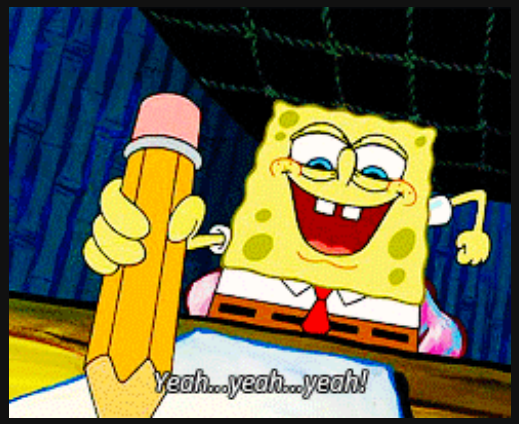
- The more s/he has failed productively before the better s/he is in supervising process/person/product
- But
  - Unfortunately we tend to forget our failures (e.g., "post-defence amnesia")
  - Your supervisors have most likely failed in another world

And the joys of science?

- Not much joy in failing! It is scary!
- Three years is not much time for detours
- But there is still joy in science, isn't it? What keeps you going?

The joy of writing

- Our laboratory where small detours are common and improve the end product: thinking through writing
- Weaving others' texts together with your own text
- Publishing: All text is unfinished and flawed, but this is the best text I was able to write at a certain moment



The joy of learning

- Presupposes that I was wrong or clueless before!
- A new perspective on something: new possibilities!
- So many people and texts that I cannot learn anything from: learning to read fast to identify when learning is possible
- Unfortunately, not always a good idea to try to publish based on what one has just learned

And many other joys

- Teaching
- Developing projects together
- ...

Practising science: Ex. conference

Scientific conferences

- Who has been at one?
- How was it?

What are scientific conferences?

- Bridging the temporal gap between research and publication
  - early feedback on "preliminary" findings but also
  - a conversation around plans
- See and be seen: Where a scientific community manifests itself, discusses its priorities, fights about future directions, "field configuring events"
- PhD students: "legitimate peripheral participation" at larger events, but also potential innovators

Types of conferences

- Big regular meetings of basically "everyone" in a discipline or field
  - an overview of what is done right now: keynotes and the overall program
  - finding the small conference within the conference (session) which is most relevant for you
  - always useful to co-organise your own session (first step out of the periphery)
- Workshops on a specific topic, often part of funded projects
  - more difficult to "get in"
  - often connected to a publication (special issue, book)
  - in-depth discussion and networking

"New" formats

- Problems with the traditional format of large conferences (keynotes+sessions+talks+posters)
  - Extensive travel not sustainable
  - Reproduces hierarchies
  - Often regular presentations are very short (10-15 mins), posters attract little attention
- Alternatives
  - Online/Hybrid conference
  - Alternative formats: walking sessions, artistic elements, invited activists, ...
  - ...

Organising committee

- **decides topic** and formulates the call
- receives, reviews and chooses abstracts
- practical organisation (advertisement, room, time, conference dinner)
- organises the publication

Group work

My proposals for an overarching topic this year:

"**Failure** in/of/through/... science"

"**Joy** in/of/through/... science"

"**Joy through failure** in/of/through/... science"

- Group work I (ca 45 min)
  - How does the overarching topic relate to your PhD project's topic
  - A session at our conference - what could be a topic that relates to the course's themes (reflection, navigation, critique)
- Presentation of results (ca 10 min each group)
- Group work II (ca 45 min)
  - Formulate a session description together