

Aktør-Netværks Teori

Billeder:

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Aktør(-Netværk)



(Aktør)-Netværk

5 NAVIGATING



6 SWAPPING BATTERY



1 CHARGING (HOME)



2 HEADING OUT



3 DRIVING



4 CHARGING (WORK)

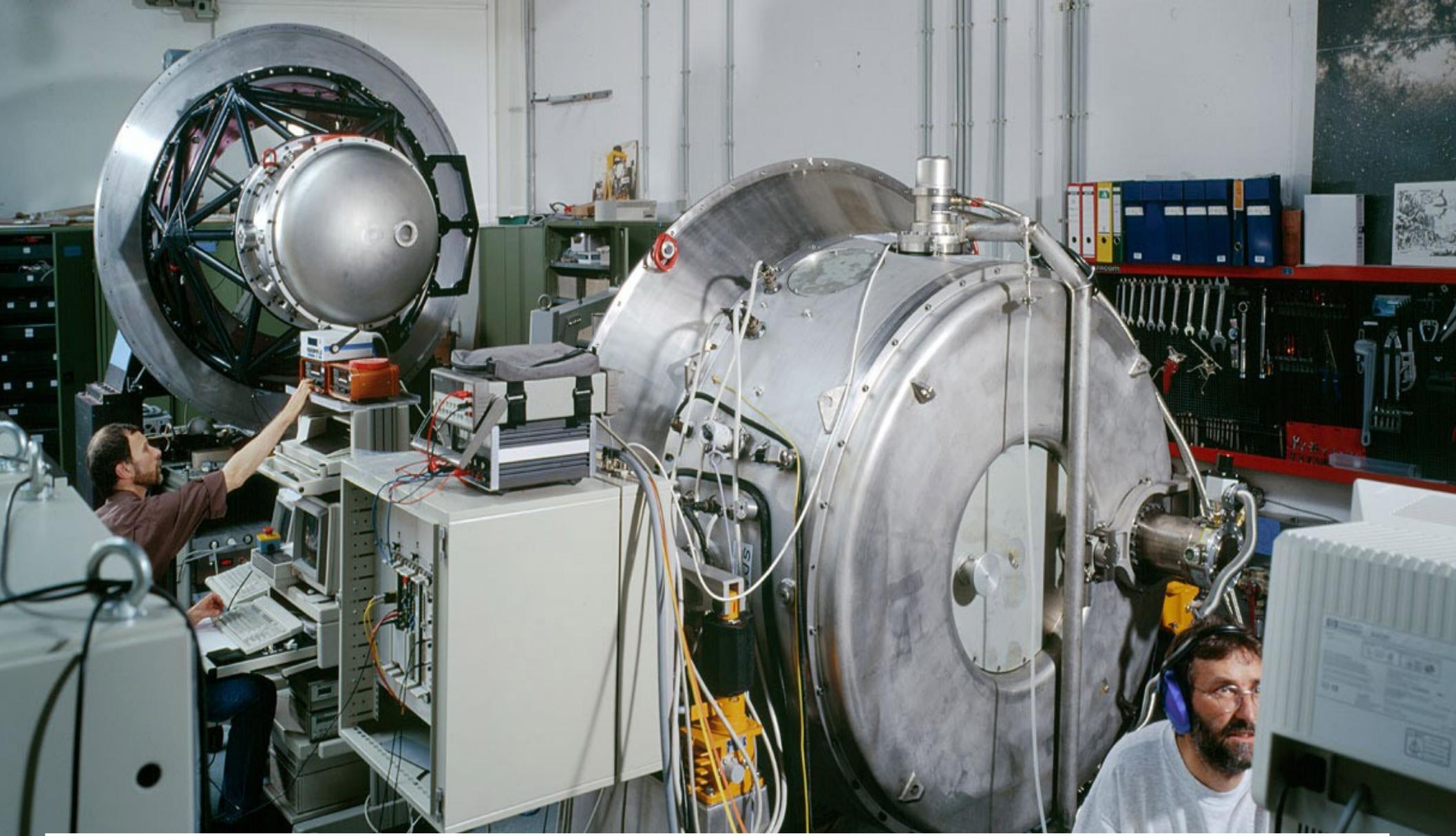


Dagsorden – 5 sessioner

1. Lidt videnskabsteori
2. Metode & Ontologi
3. Tænke tænke, hvad er på spil?
4. Begrebet om translation
5. ANT Biografi a la Latour

- **Næste gang (d. 20/3)**
 - Fornyet rund-bords tam tam med 5-7 min præs'
 1. Hvordan skal dit tema undersøges i praksis?
 2. Hvad er analytisk interessant i forhold til ANT?
 3. Hvilke afsnit skal eksamen innehålle?  Står også på wiki





Session 1

Videnskabsteoretisk indplacering

Akademiske relationer

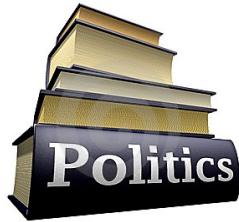
- Michel Foucault's begreb om **magt**
- Michel Serres' notion of **translation**
- Harold Garfinkel's **etnomethodologi**
- Algirdas Greimas' **semiotik**
- Michel Serres' begreb om **translation**
- Deleuze's tråd-agtige beskrivelse af **ontologi**

Se fx Latour 2013

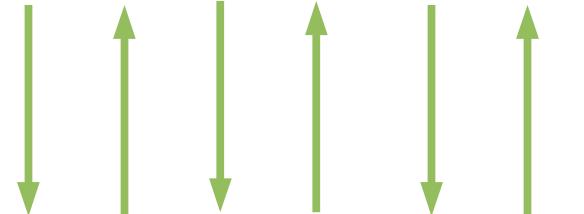


Inspireret af Kurt Riezlers tre virkeligheder gengivet af Rheinberger (2010) – an epistemology of the concrete

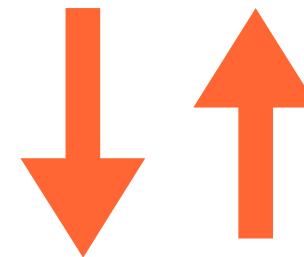
De tre virkeligheder



Den sociale virkelighed



Videnskabelige fakta

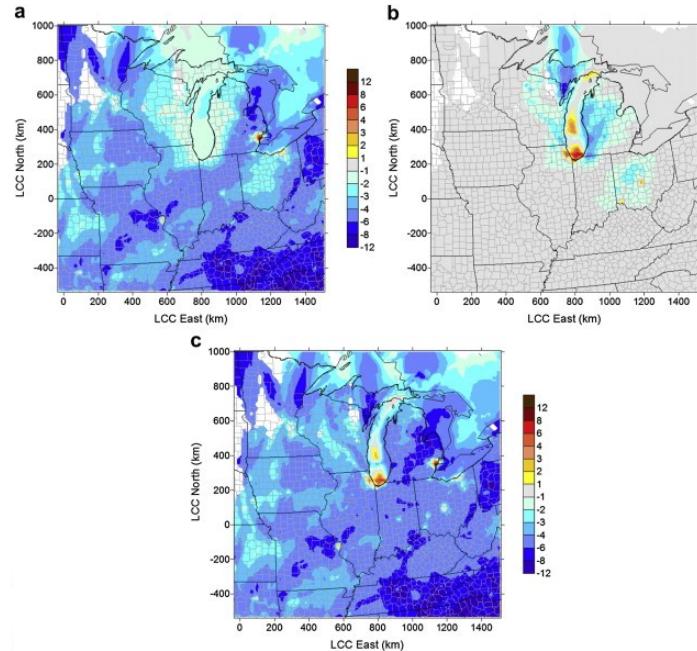


Den virkelige virkelighed



Science, Technology, Society studies

- ANT er en del af STS (www.stscenter.dk)
- Hvilken type problem udgør huller i ozon laget?



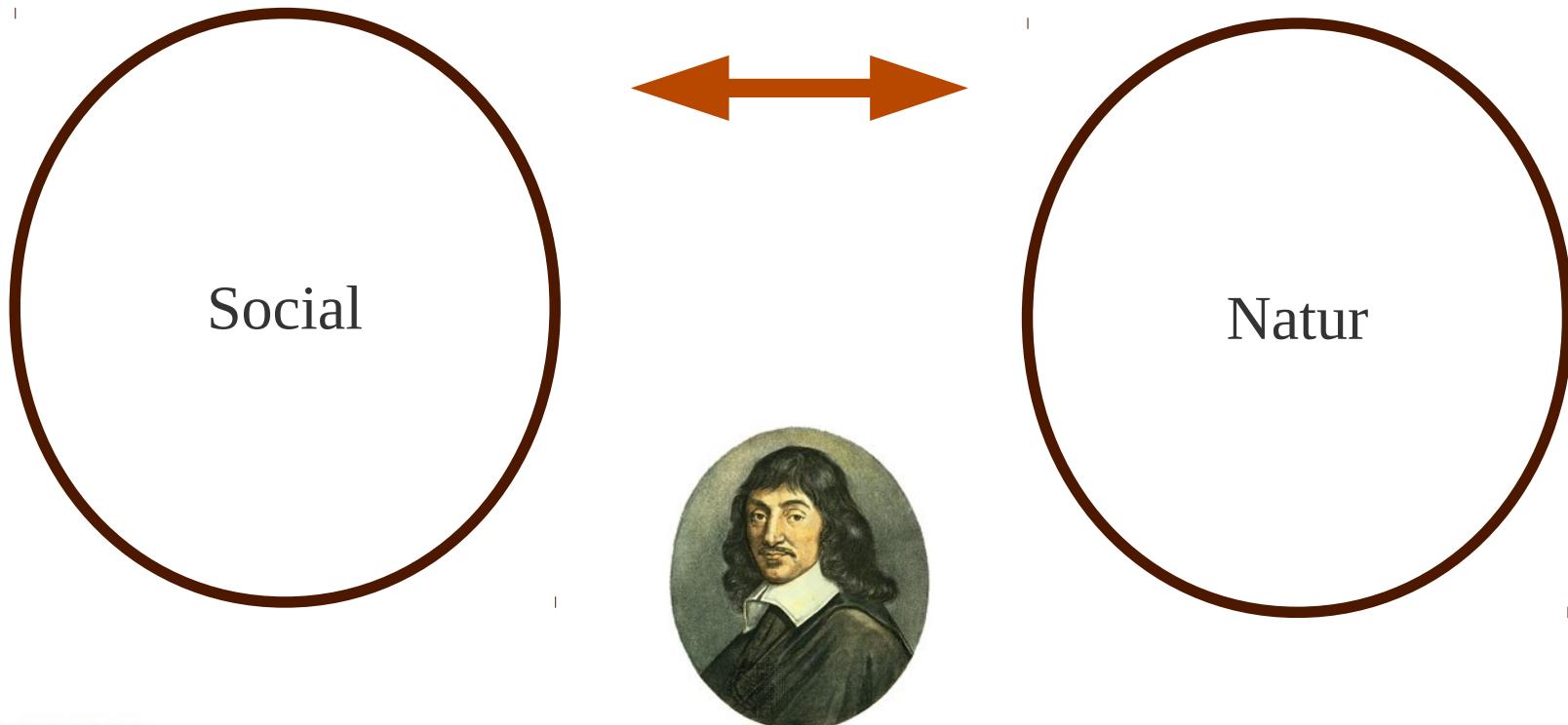
Videnskabsstudier

Traditionelt og generelt

- **External conditions of the social**

vs.

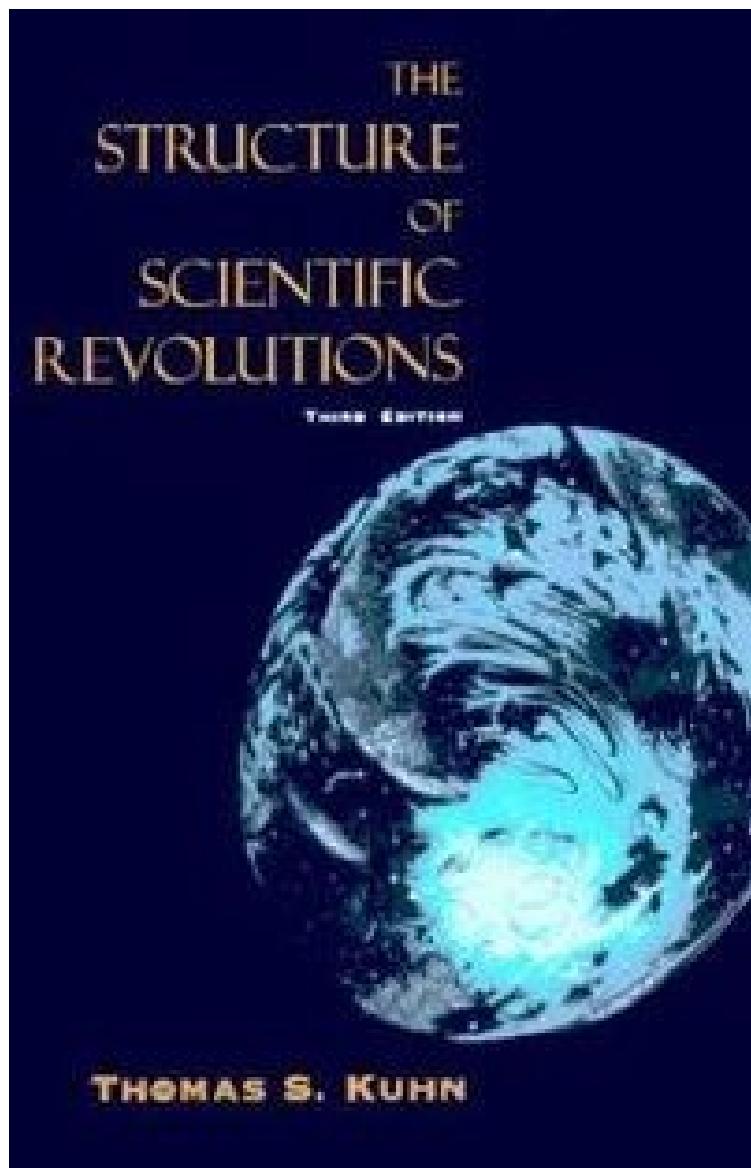
Internal investigations of objective reality





Newton saw the scientific world not as a way to refute theology, but as a way to explain it. He believed that all of creation was mandated and set in motion by God and that it was simply waiting to be "discovered" by man. Because of his diligence in both scientific and biblical study, **Newton had a tremendous impact on religious thought** that is still evident today...

(Fra Isaac Newton - Christian Encounters Series)



Det sociale vokser sig stort...



The Strong Programme

- **Symmetridoktrinen**

- Alle domme, om de er politiske, religiøse eller videnskabelige, er ligeværdige i grundten* til deres sand/falskhed eller ir/rationalitet
 - *Grunden er dog altid social!
- Afvisning af særlige selvforklarende privilegier

Our equivalence postulate is that all beliefs are on a par with one another with respect to the **causes of their credibility**. It is not that all beliefs are equally true or equally false, but that regardless of truth and falsity the fact of their credibility is to be seen as equally problematic.

(Barnes & Bloor 1982, p. 23)

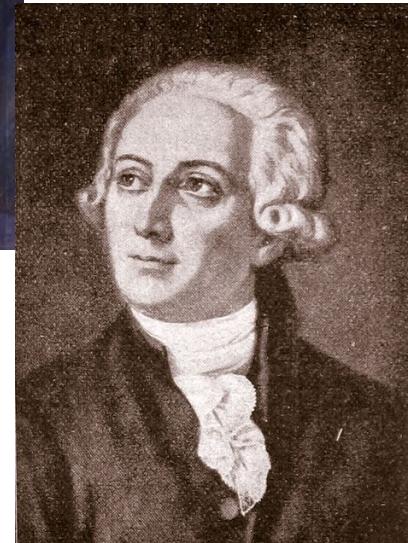
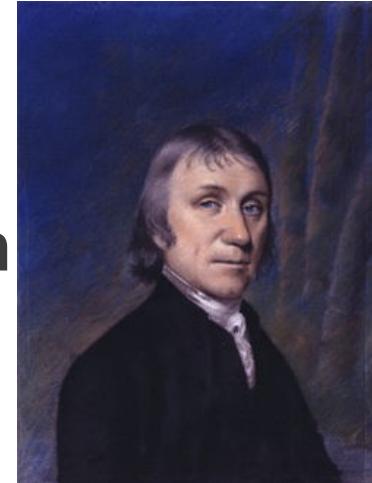




Spøgelser er sande i deres konsekvenser – vi sætter farten op i den mørke skov!

The Strong Programme

- **Joseph Priestley**
 - Teori om en gas kaldet **plogiston** hvori **oxygen** har en rolle
- **Antoine Laurent Lavoisier**
 - Teori om en gas kaldet **oxygen** uden plads til plogiston
- Barnes & Bloor 1982:
 - while physical nature is indeed a common factor in scientific work, we need the social to explain “all the vastly different cognitive responses that men produce to it” (p. 34).



Social Construction of Technology (SCOT)

- Det første forsøg på en symmetrisk forklaringsmodel:
alt er socialt
- Afvisning af teknologi som nødvendig-i-sig-selv
- Indtil en teknologi har *stabiliseret* sig har den en
multi-direktionel karakter



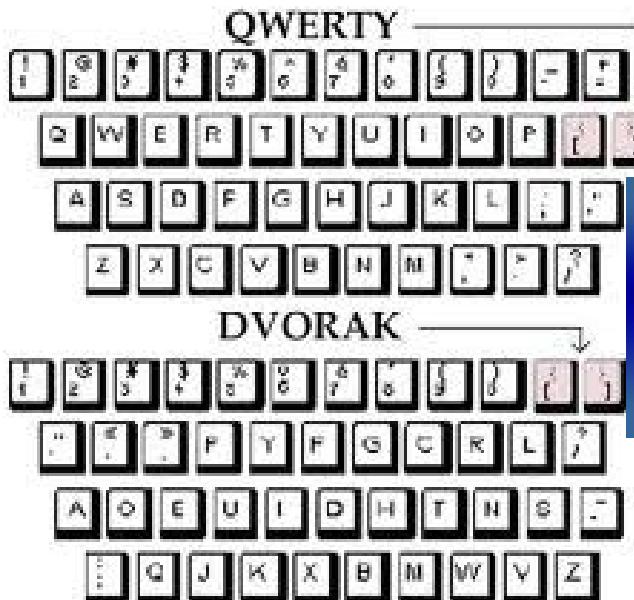
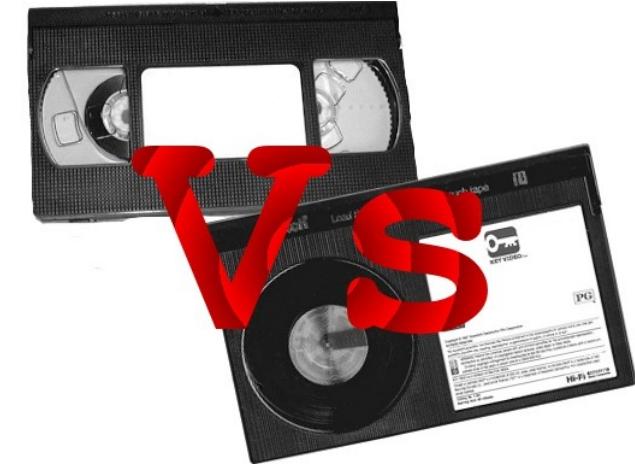
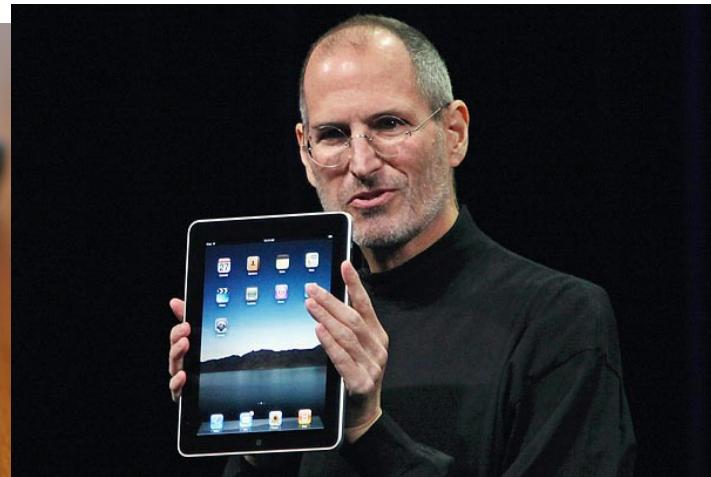
Teknisk underlegen



Socialt underlegen

Lars Bo Andersen – larsbo@larsbo.org

Hvorfor lige dem?





Science Wars

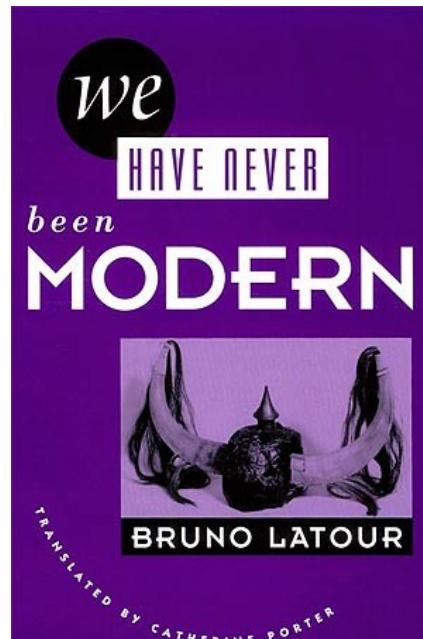
- I 1990erne starter føler nogle videnskabsmænd, at nu er det for meget, **den fysiske virkelighed vil altid trumfe!**

In the second paragraph I declare, without the slightest evidence or argument, that “physical ‘reality’ [note the scare quotes] ... is at bottom a social and linguistic construct.” Not our theories of physical reality, mind you, but the **reality itself**. Fair enough: anyone who believes that the laws of physics are mere social conventions is invited to try transgressing those conventions from the windows of my apartment. (I live on the twenty-first floor.) [...] **There is a real world; its properties are not merely social constructions;** facts and evidence do matter. **What sane person would contend otherwise?** (Sokal 1996, pp. 2-4)



En krig om virkelighed

- Hvem kan gøre krav på den **virkelige virkelighed**?
 - Bruno Latour: Et **renselsesarbejde** sikrer freden for de Moderne. Videnskab må ikke blande sig i politik og Politik må ikke blande sig i videnskab.
 - Videnskabsstudierne var et **traktatbrud** (ligeså ozon debatten, eller undervisning i skabelsesberetningen i biologi)



Teoretisk indplacering

- Samfund, teknologi, videnskab er “rensede” konstruktioner, der hviler på et langt mere sammenblandet fundament
 - Fx: Videnskabelig faktum **stabiliseres** i en slidsom proces med mange kontroverser
 - Først efter en dom er blevet til kendsgerning, opstår den Natur, som dommen beskriver
- **Religionen**, **Fremskridtet**, **Rationaliteten**, **det Sociale**, **Naturen**, **Økonomien**, etc. kæmper om at få forklaringsmagten
 - Men ingen kan helt rumme den



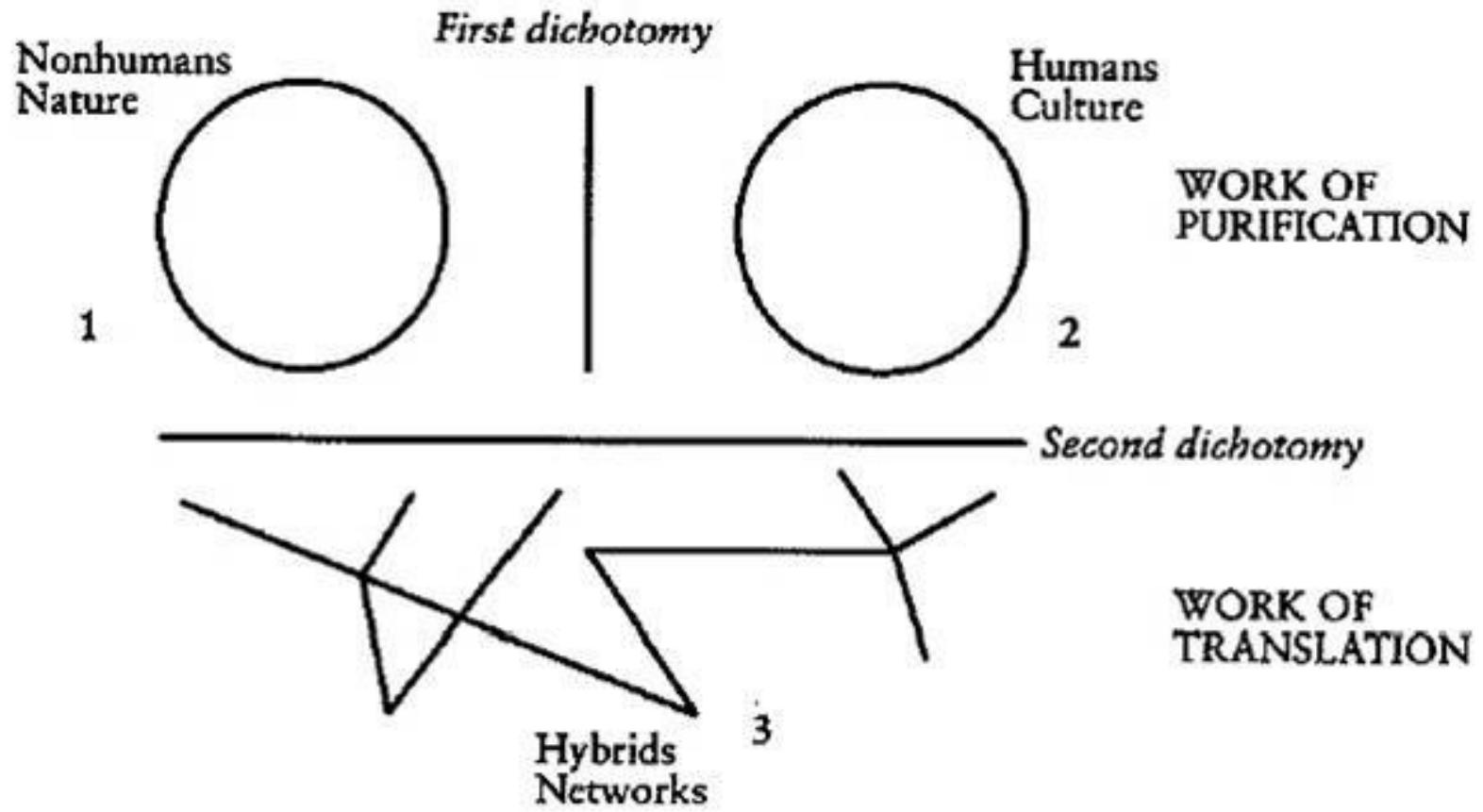
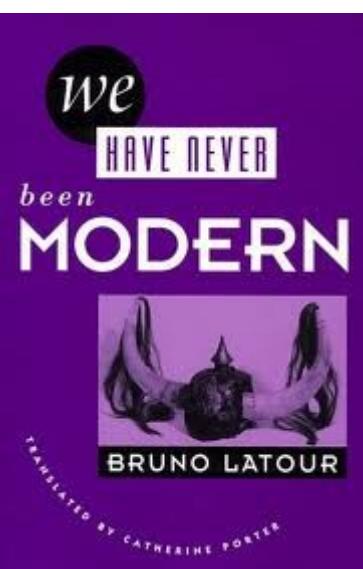


Figure I.1 Purification and translation

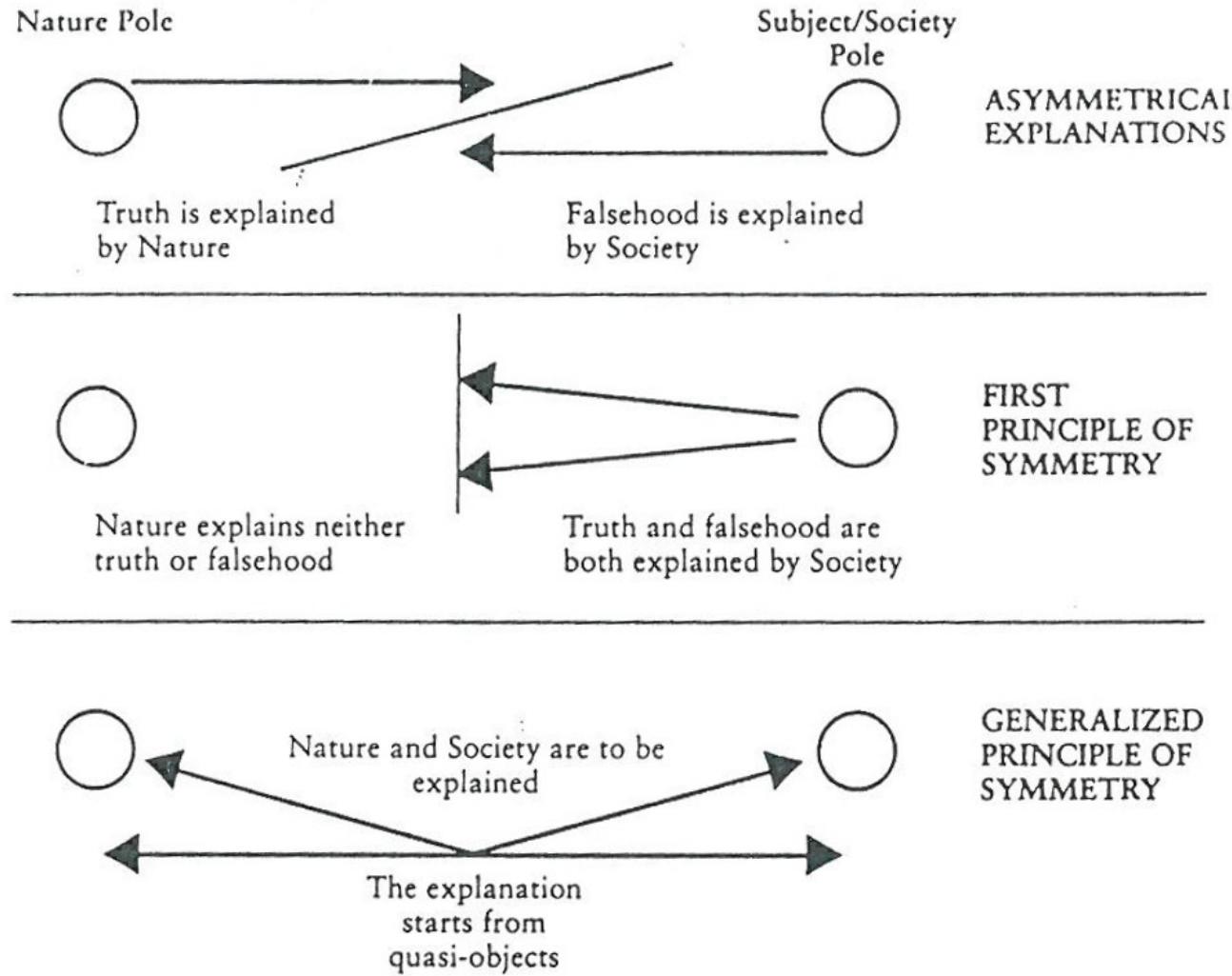


Aktør-Netværks Teori

- Socialkonstruktivisme <ANT> Videnskabelig Realisme
- Socialkonstruktivisme <ANT> Tekno. Determinisme
- Subjekter <ANT> Objekter
- Mennesker <ANT> Teknologi
- Samfund <ANT> Natur
 - ANT beskæftiger sig med **collectives of hybrids** (humans and non-humans) (Latour 2005, s. 75)

Those advocating the actor-network approach agree with the social constructivist claim that sociotechnical systems are developed through negotiations between people, institutions and organizations. But they make the additional argument that artifacts are part of these negotiations as well. (Latour 1992, s. 151)

Aktør-Netværks Teori

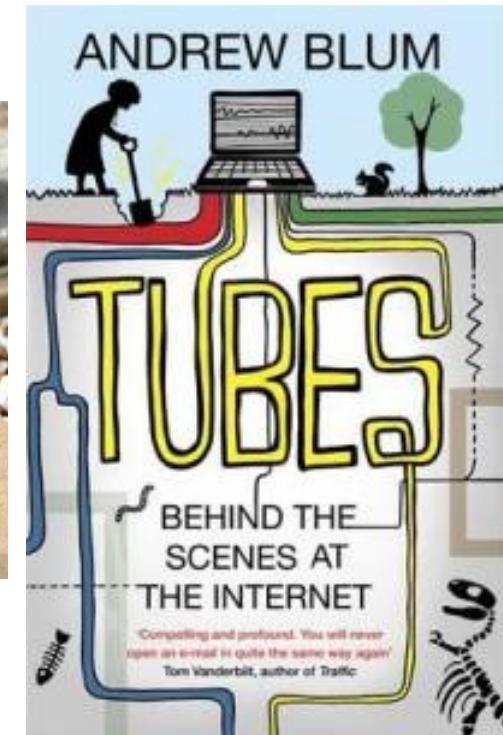


When your informants **mix up** organization, hardware, psychology, and politics in one sentence, don't break it down first into nice little pots; **try to follow the link they make** among those elements that would have looked completely incommensurable if you had followed normal procedures. (Latour 2005, p. 141-142)

Networks are not social

If human beings form a social network, it is not because they interact with other human beings. It is because they interact with human beings *and* endless other materials too.

(Law 1992, s. 382)



Menneske == Maskine?

...a difference is not a divide. Toddlers are much more reasonable than humanists: although they recognize the many differences between billiard balls and people, this does not preclude them to follow how their actions are woven into the same stories.

(Latour 2005, s. 77)



Summa Summarum

Med ANT er vi usikre på hvad der forklarer hvad, hvad der handler hvornår, hvori et fænomen består, hvad der kan forklare det:

derfor må vi altid undersøge det empirisk før vi afgiver domme

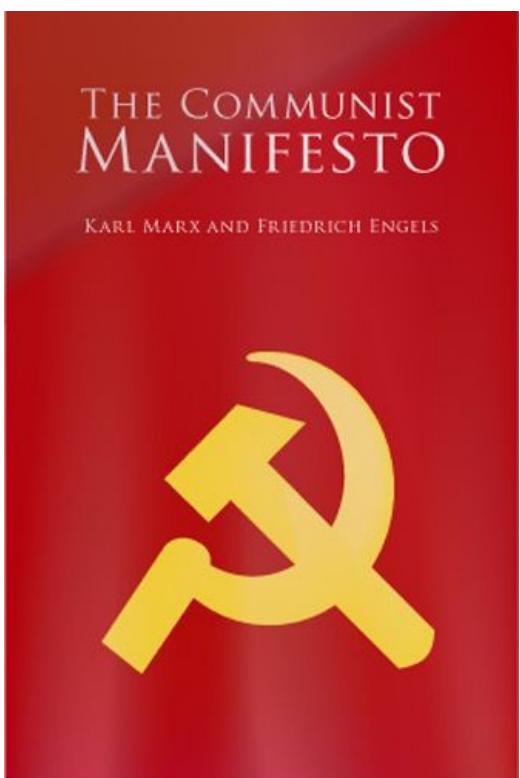
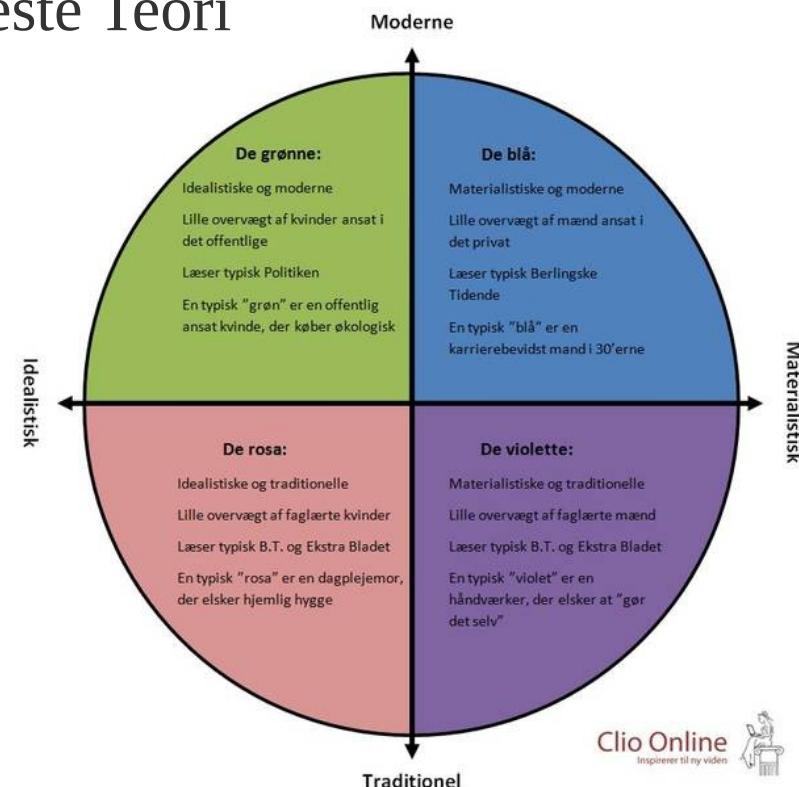
- **[usikker på] the nature of groups**
 - there exist many contradictory ways for actors to be given an identity
- **[usikker på] the nature of actions**
 - in each course of action a great variety of agents seem to barge in and displace the original goals
- **[usikker på] the nature of objects**
 - the type of agencies participating in interaction seems to remain wide open
- **[usikker på] the nature of facts:**
 - the links of natural sciences with the rest of society seems to be the source of continuous disputes;

(Latour 2005, s. 22)



Men hvem er sikre?

Det er vel det meste Teori





Session 2

Metode & Ontologi

Verden ifølge ANT

...fibrous, thread-like, wiry, stringy, ropy, capillary.. (Latour 1990)

Tomás Saraceno

<http://www.tomassaraceno.com>

Et aktør-netværk er et aktør-netværk er et aktør-netværk er et....

Verden ifølge ANT

As Mike Lynch said some time ago, ANT should really be called 'actant-rhizome ontology' (Latour, 1999a, p. 19)

[the principle of irredution]...nothing can be reduced to anything else, nothing can be deduced from anything else, everything may be allied to everything else.

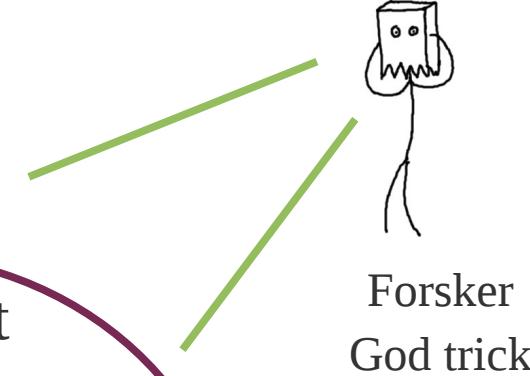
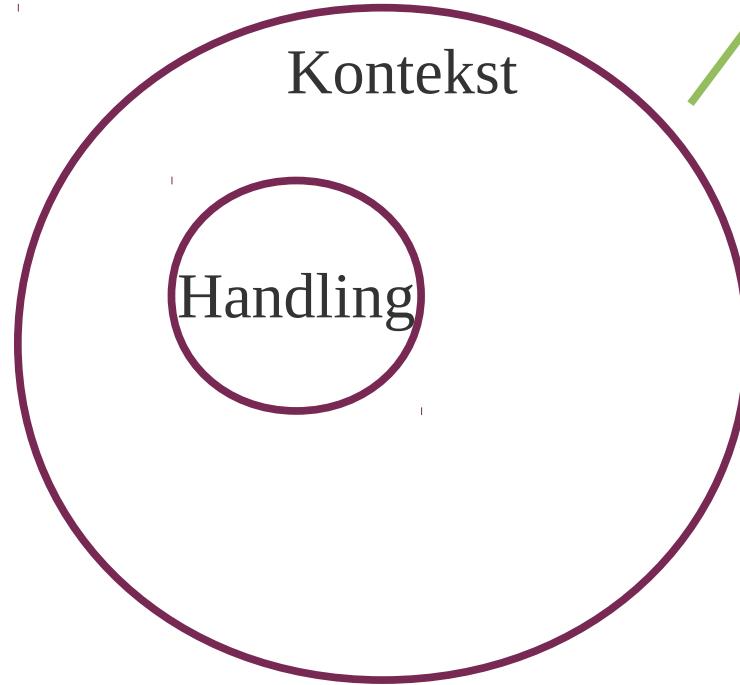
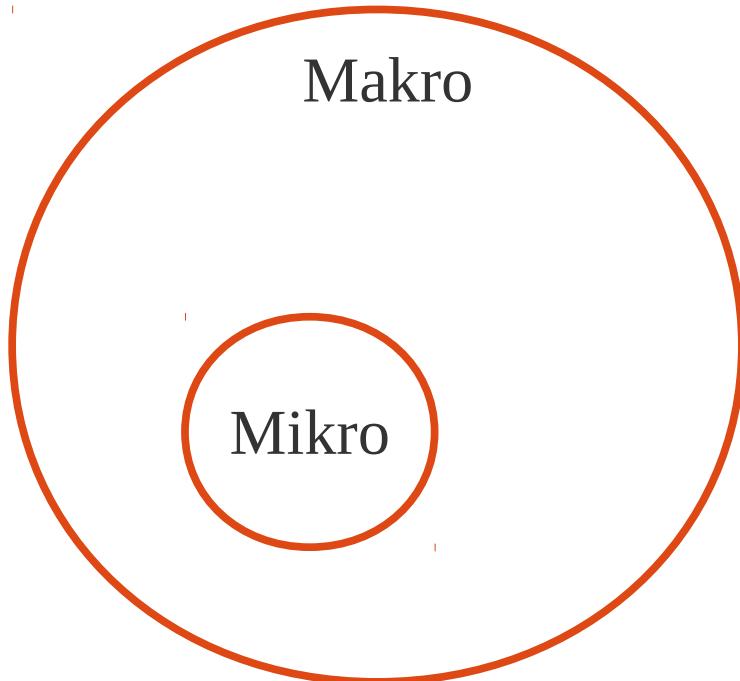
(Latour, 1993a, p. 163)

The actor network is reducible neither to an actor alone nor to a network [...] An actor network is simultaneously an actor whose activity is networking heterogeneous elements and a network that is able to redefine and transform what it is made of.

(Callon, 1987, p. 93)

Translation...

Kontekst?

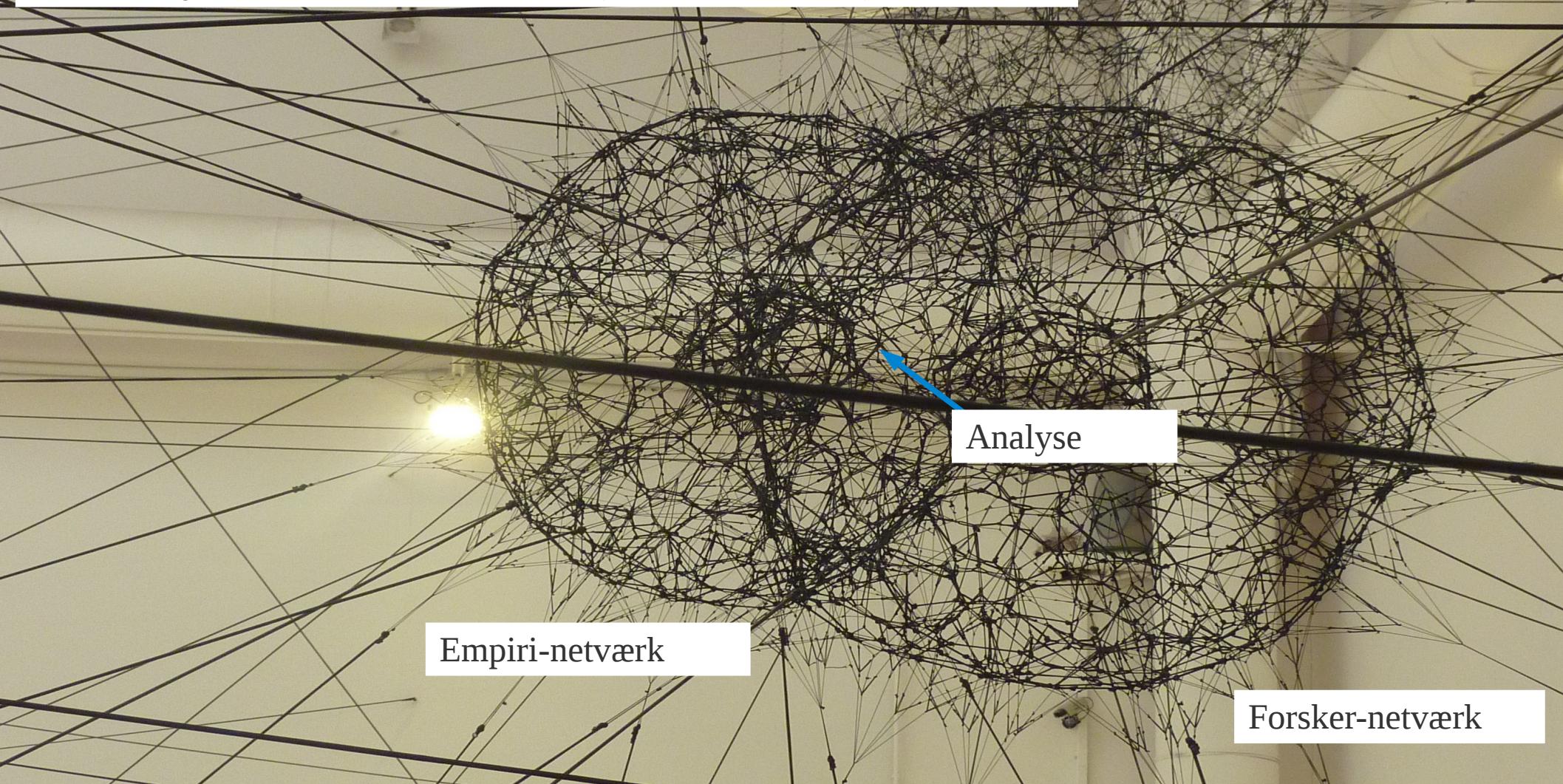


Ikke-ANT:

Teorien/Kulturen/Konteksten forklarer alt **det** der falder uden for det empiriske...

Forskning ifølge ANT

Every network surround itself with its own frame of reference, its own definition of growth, or referring, of framing, of explaining. In this process the frame of reference of the analyst does not disappear [...] on the contrary, it is able to extend itself... (Latour 1990, s. 11)



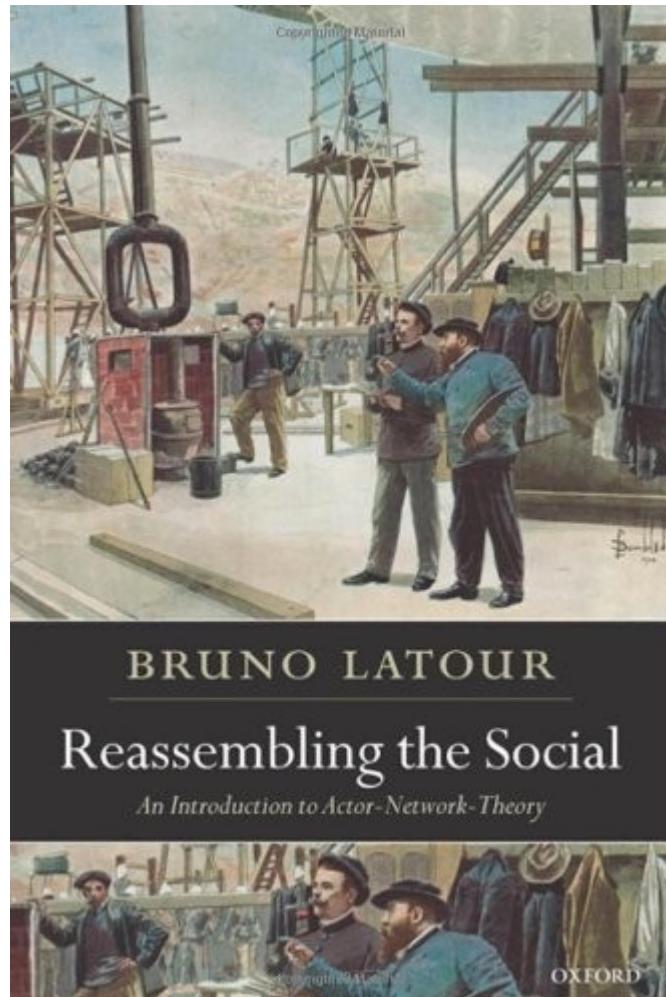
Michel Callon teksten om muslinger – er ”ekstra” på pensum

Studiet af Aktør-Netværk

- En verden uden a priori orden
 - Law (1992, s. 380): ”we should start with a clean slate. For instance, we might start with interaction and assume that **interaction is all there is**”.
 - Vi må være **agnostikere**: “no point of view is privileged and no interpretation is censored” (Callon 1986B , p. 200)
 - Geografisk afstand siger ikke noget om relationel nærhed
 - **Ingen mikro-makro**, kun mere eller mindre intens
 - Intet ydre, der er **ingen kontekst!**
- ANT er en svag teori, en metode, et infra-sprog
 - ANT doesn’t take as its job to stabilize the social on behalf of the people it studies” (Latour 2005, p. 30).
 - **Følg aktørerne**, lyder parolen!



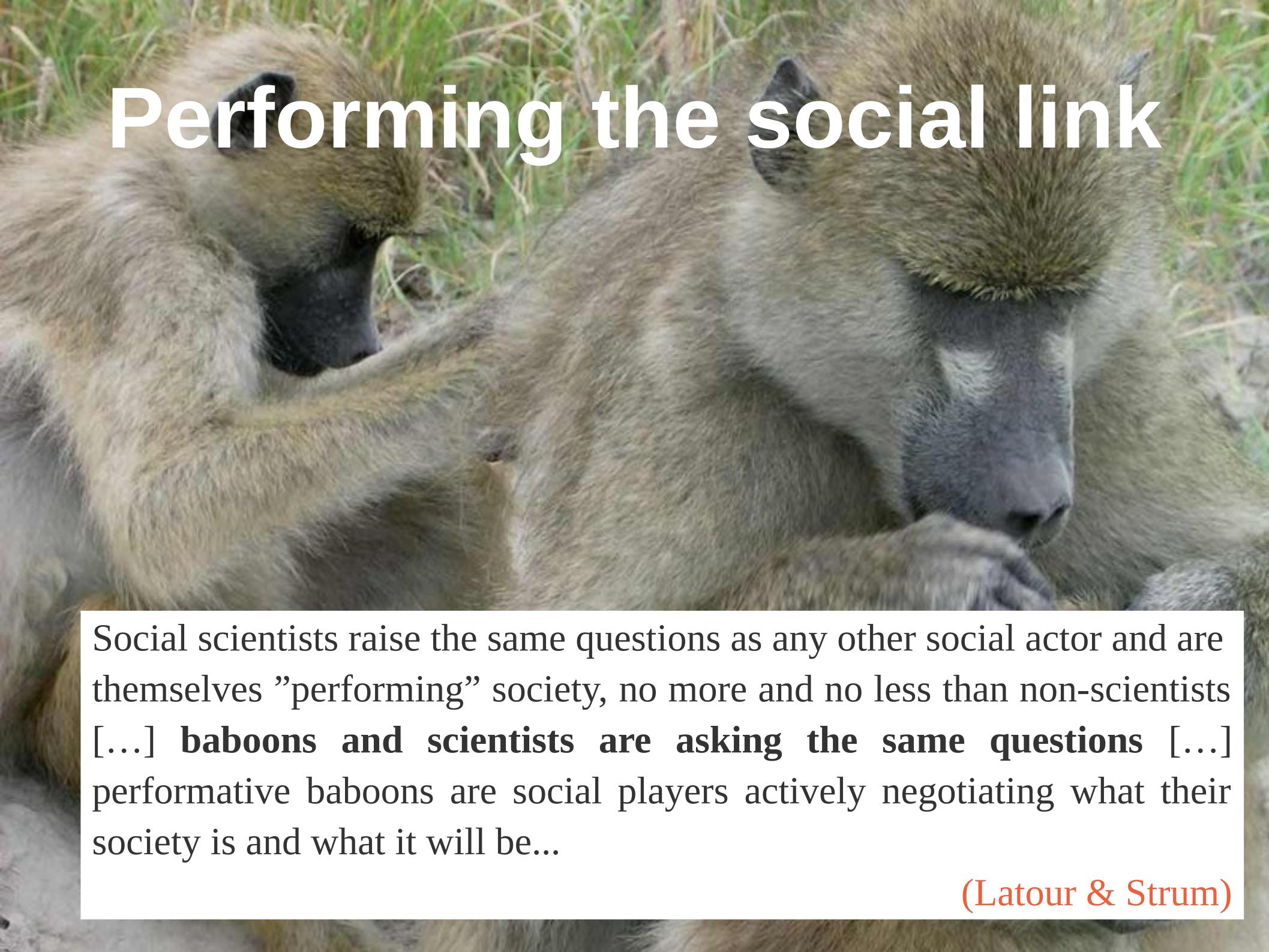
Law (1992): the crucial move made by actor-network writers: the suggestion that the social is ***nothing other than patterned networks of heterogeneous materials.***



...there is no social dimension of any sort, no 'social context', no distinct domain of reality to which the label ‘social’ or ‘society’ could be attributed; that no ‘social force’ is available to ‘explain’ the residual features other domains cannot account for (s.4)

...the definition of the term [social...] a
movement, a displacement, a transformation, a translation, an enrollment
(s. 64)

Performing the social link

A close-up photograph of two baboons in a grassy field. One baboon is facing away from the camera, its back and head visible. Another baboon is positioned behind it, facing away, and is grooming the first baboon's back. Their dark fur contrasts with the green grass.

Social scientists raise the same questions as any other social actor and are themselves "performing" society, no more and no less than non-scientists [...] **baboons and scientists are asking the same questions** [...] performative baboons are social players actively negotiating what their society is and what it will be...

(Latour & Strum)

Performing the social link

- Aktør-netværk er performativ!
 - De skaber og de bliver skabt
- Men mennesker's netværk er mere stabile end bavianers: "what differs is the *practical means*"
 - Vores sociale er materielt
 - Vi stabiliserer vore aktør-netværk så de kan indgå i hinanden
 - Vi bygger makro hvor bavianer må nøjes med mikro





Session 3

Tænke, tænke – hvad er på spil?

Hvad døde Ramses II af?

Latour (1996): On the Partial Existence of Existing and Non-existing Objects

- Tuberkulose vs. Saodowaoth
 - **Socialkonstruktivisme:** tuberkulose fandtes ikke på Ramses' tid, så det kunne han ikke dø af
 - **Cartesiansk opdeling / videnskabelig realisme:** bacillen (*Mycobacterium tuberculosis*) har altid eksisteret
 - Never-nowhere
 - Always-everywhere

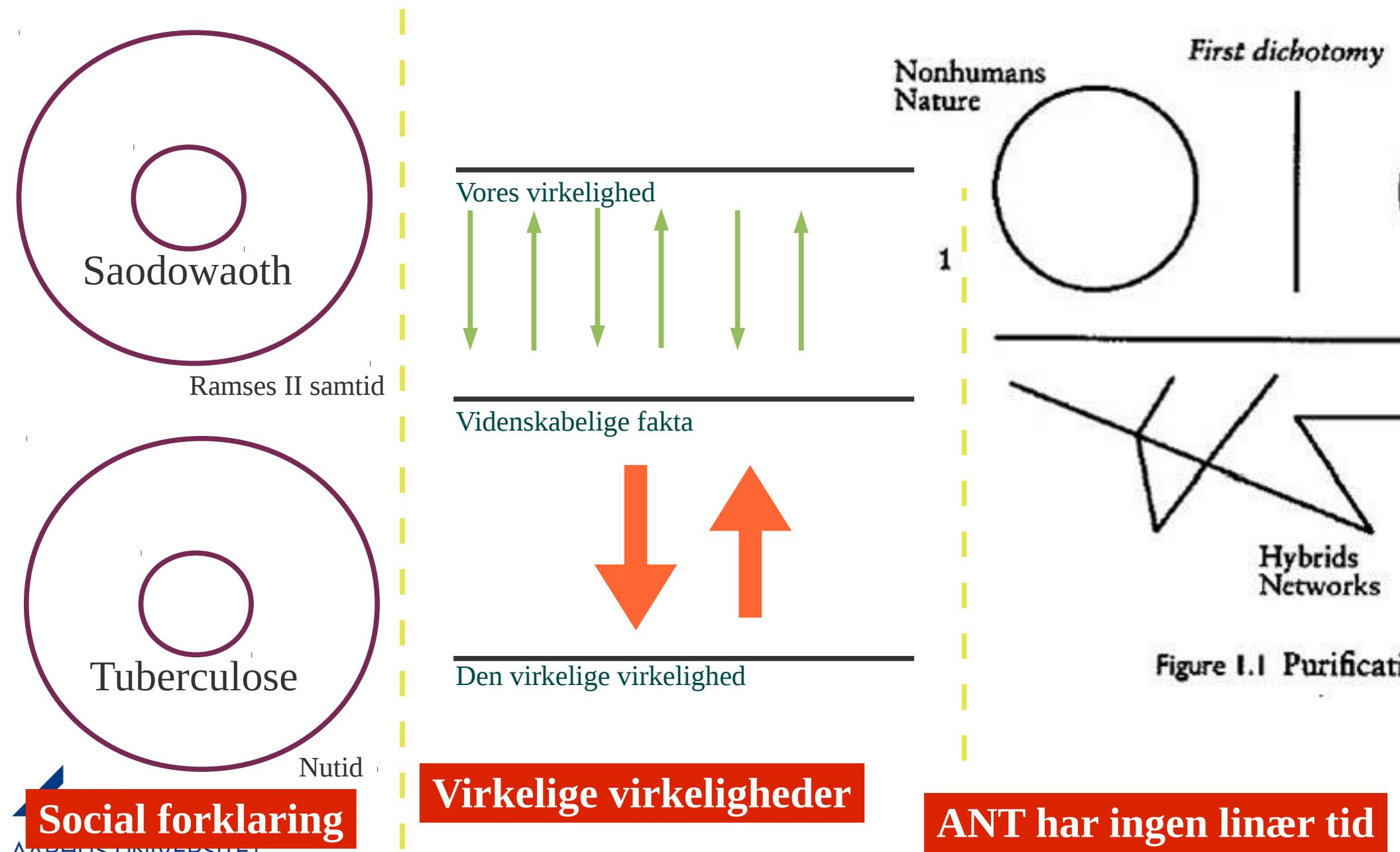


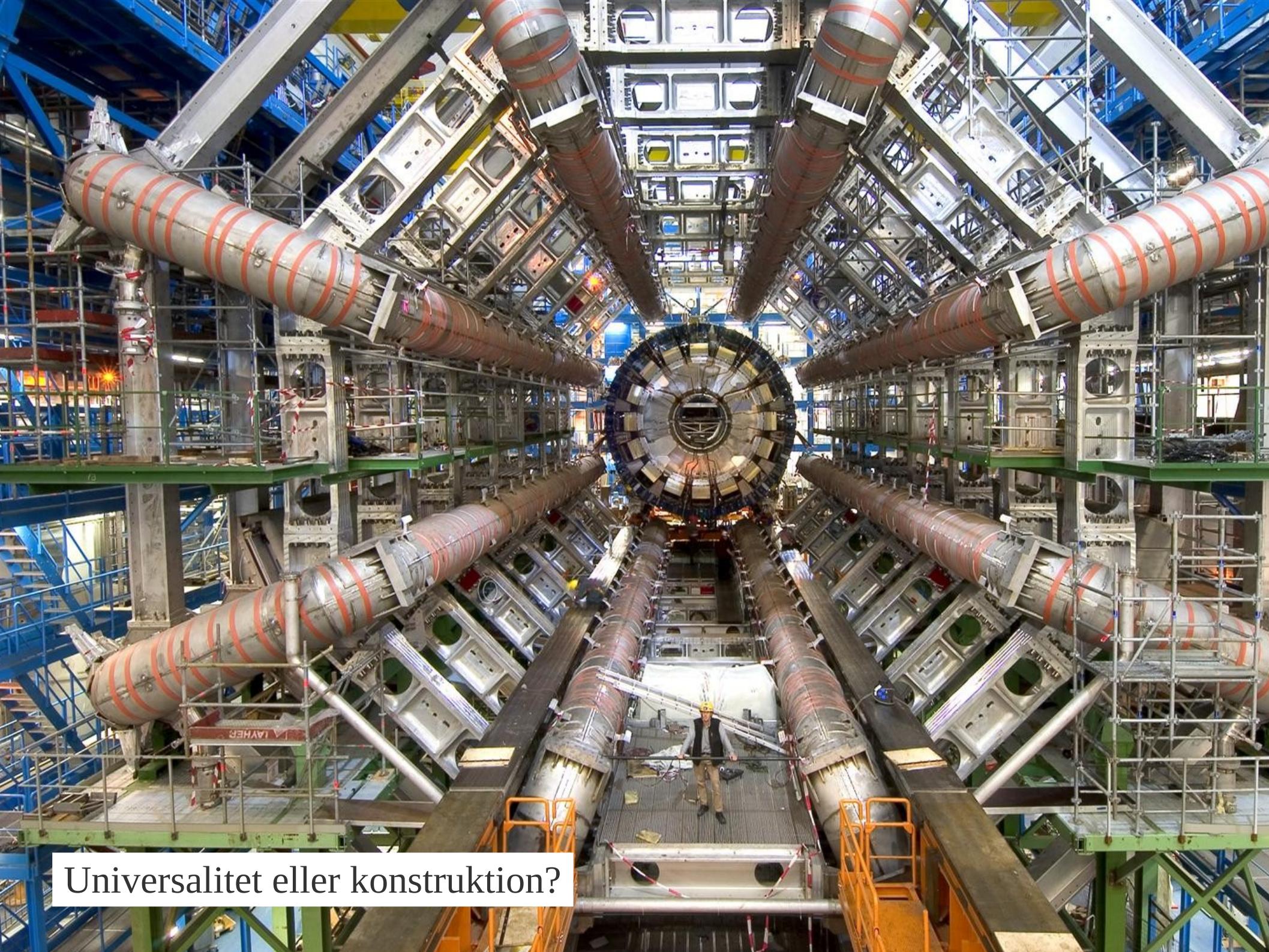
Hvad døde Ramses II af?

- Mycobacterium tuberculosis **kan bringes tilbage i tiden** af et fler-tidsligt aktør-netværk
 - Koch må opdage en bacille, artikler må skrives, instrumenter opfindes, Ramses må mumificeres og flyves til Paris, målinger må udføres..
- De andre glemmer "at betale prisen", siger Latour (1996, s. 255)
 - I den forbindelse er socialkonstruktivisme, videnskabelig realisme, religiøs eller politisk dogmatisme (osv.) synonymer for samme argumentationstype



Ramses II grafik

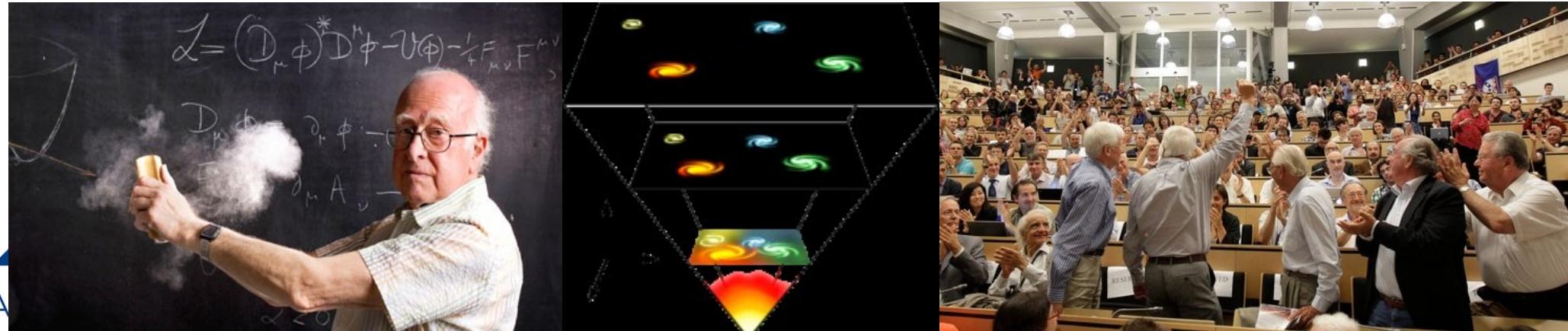




Universalitet eller konstruktion?

Higgs partiklen

- Tese: Elektricitet, magnetisme, lys og radioaktivitet er alle manifestationer af én underliggende kraft: **the electroweak force**
 - Men det vil matematisk kræve, at kraft-bærende partikler ikke har nogen masse
- Peter Higgs mf. foreslår derfor at kraft-bærende partikler får sin masse ved interaktion med et usynligt felt (<Higgs partiklen)
- Ingen har dog kunnet observere Higgs partiklen!



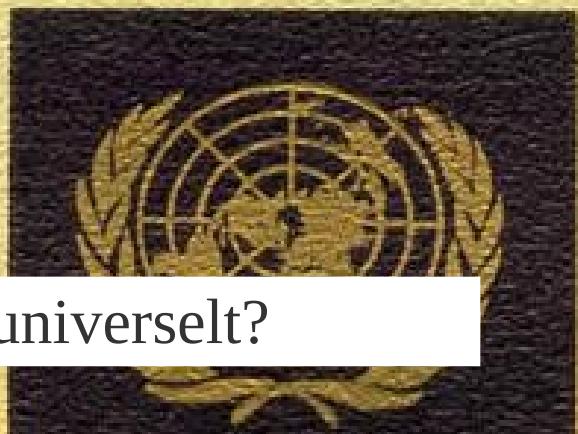
Higgs Partiklen

Det opfører sig som Higgsen, men at bevise at det er Higgsen, det kan man næsten reelt set aldrigøre. Man kan sandsynliggøre det, men det kræver meget mere data, og det er en langsom proces, der er meget teknisk...

Troels Petersen – Niels Bohr Institutet



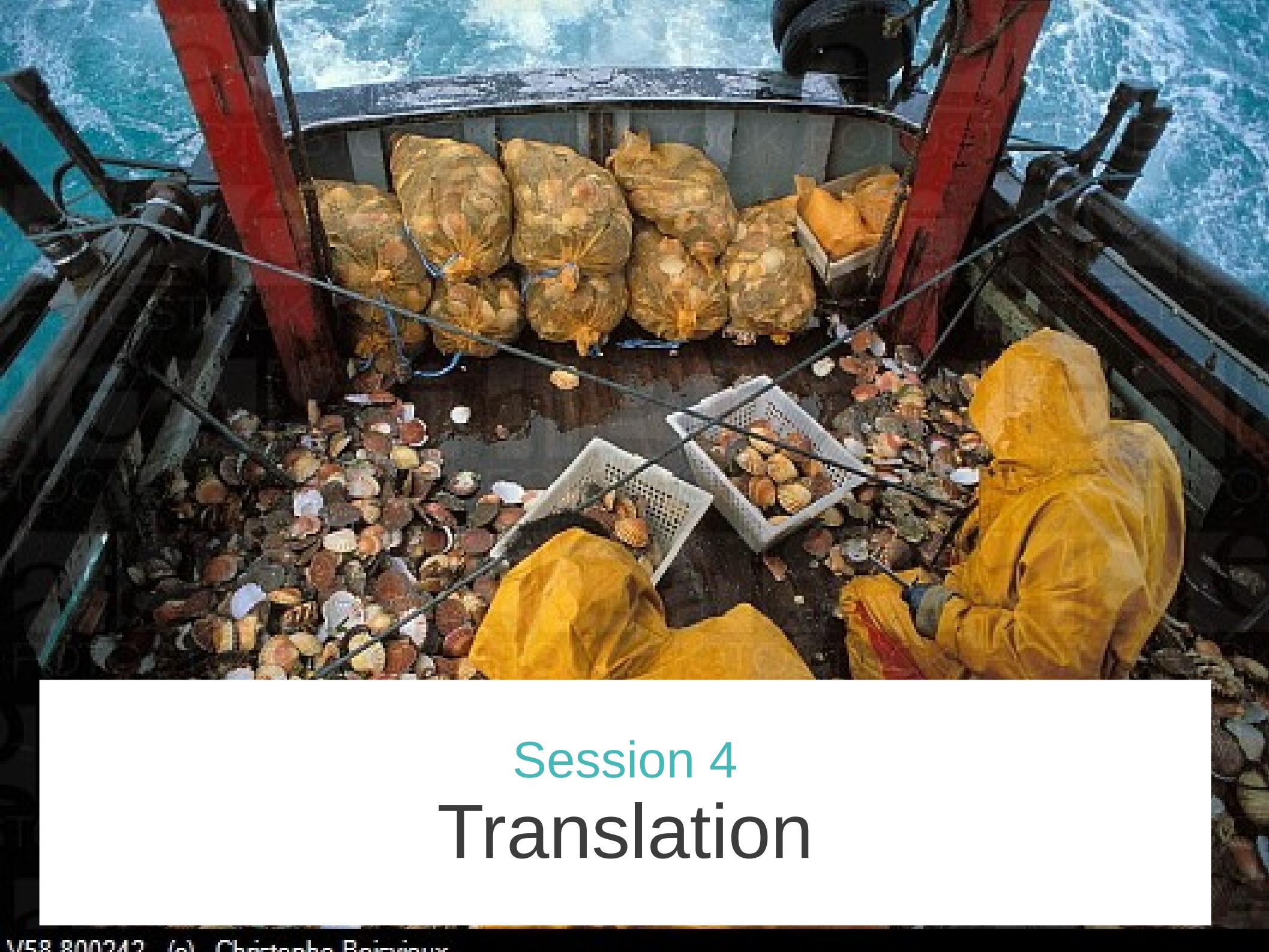
THE UNIVERSAL DECLARATION
OF Human Rights



Hvad er mest universelt?

ADOPTED BY THE UNITED NATIONS GENERAL ASSEMBLY AT
ITS 183RD MEETING, HELD IN PARIS ON 10 DECEMBER, 1948





Session 4

Translation

Translations begrebet

- Et infra-begreb om de relationer, associationer, tråde eller kæder, der udgør aktør-netværk
- Limen der får det hele til at hænge sammen
- Beskrevet på mange måder, har mange aspekter
 - Relationer er ikke neutrale, de indebærer en form for **oversættelsesarbejde**





I use *translation* to mean displacement, drift, invention, mediation, the creation of a link that did not exist before and that to some degree modifies two elements or agents.

(Latour 1994, s. 32)

Latour's translation – Technical *mediation* artiklen

...all things deviate from the straight line...



Drift of Goals

- Drift, ambiguity, betrayal
 - Bringing what is inequivalent into alignment through some form of transformation of the situation
 - Ingen linear relation mellem **dedikeret medarbejder** og **aktionærernes profit**
 - Jeg vil hvad du vil, *men kun fordi vi ikke vil det samme*
- Leo Szilard
 - Hvad hvis tyskerne laver en A-bombe?
 - Et drift fra at vinde krigen ved konventionel krigsførelse til at vinde en potentiel atomkrig



Komposition & Konstruktion

- **Guns kill people!** People kill people, not guns!
 - Teknologisk vs. socialt problem
- Aktør A er sur på aktør B
 - Men person B er stærkere end A
 - Så associerer A sig med en pistol



You had wanted only to hurt but, with a gun in your hand, you want to kill [...] The gun is no longer the **gun-in-the-armory** or the **gun-in-the-drawer**, but the **gun-in-your-hand**, aimed at someone who is screaming. (Latour 1994, s. 33)

Stabilisering, punktualisering, black boxing

- Aktør-netværk der fremtræder singulært, som en enkel essens, objekt, faktum, person...
- I stabiliseringen af aktør-netværk forsvinder det før så tydelige fællesskab
 - **Indtil noget bryder sammen:** "As the repairmen swarm around it, adjusting this lens, tightening that bulb, we remember that the projector is made of several parts..." (Latour 1994, s. 36)

This, then, is the core of the actor-network approach: a concern with how actors and organizations mobilize, juxtapose, and hold together the bits and pieces out of which they are composed...



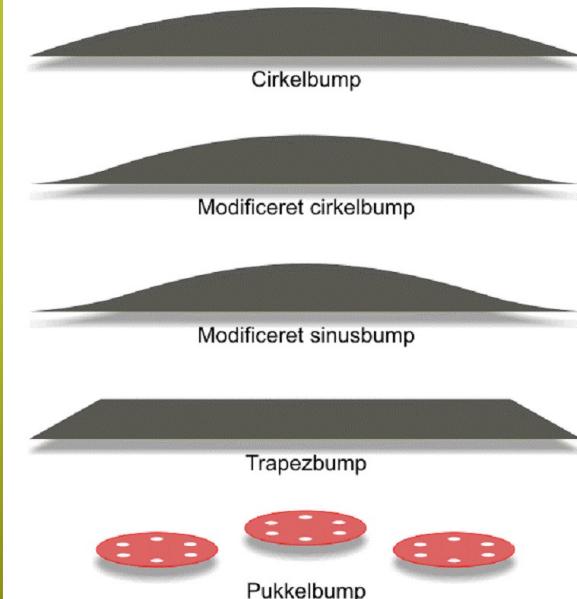
(Law 1992, s. 386)



Latour 1994, s. 38 eller artiklen "Where are the missing masses"

Delegation

1. Den moralske bilist
2. Tegn og symboler
3. Fartbump og chikaner



Students of technology are never faced with people on the one hand and things on the other, **they are faced with programs of action**, sections of which are endowed to *parts* of humans, while other sections are entrusted to parts of nonhumans. (Latour 1992, s. 174)



Her er hvad Latour mener med *Reassembling the social..*

Moralitet & Materialitet

- I wished to break it, but I could not. Where is the morality?
 - Car+Driver Aktør
- Program of action (~**handlingsforløb**)
 - IF car is moving THEN driver seat belt is fastened
- Sociologer anerkender ikke det materielle; objekterne, teknologierne, mediatorerne
 - Men de er "the missing masses" siger Latour
- Moralitet er også materialitet



Obligatoriske Passagepunkter

- Roterbare vindmøller allierer sig med vinden
- Møllereren/møllen bliver **obligatorisk passagepunkt**

No matter what they [the peasants] want, no matter how good they were at handling the pestle, they now have to pass through the mill. Thus they are kept in line *just as much* as the wind is.

(Latour 1987, p. 129)





Callon's translation – De to tekster fra 1986



Fra den supplerende Callon tekst..

Moments of Translation

- Videnskabsmænd foreslår en **problematisering**
 - Hvis fiskerne er interesseret i langsigtet bæredygtighed
 - Hvis muslingerne er interesseret i at overleve
 - Hvis det videnskabelige fællesskab er interesseret i mere viden
 - Så er muslinge-kultivering et obligatorisk passagepunkt.
- Hvis problematiseringen kan gøres stabil *mobiliseres* aktør-netværket i den variant foreslået af videnskabsmændene



VEL problematiseringen

- The VEL actor-world (problematisering)
 - (post-industrielle) forbrugere afer
forbrændingsmotor
 - Staten sætter støj grænser
 - Renault accepterer en omstilling
 - Bedre akkumulatorer og brændselsceller udvikles

...technical objects must be seen as a result of the shaping of many associated and heterogeneous elements. They will be as durable as these associations, neither more nor less.

(Callon 1986, s. 23)



Eksempel! Problematisk

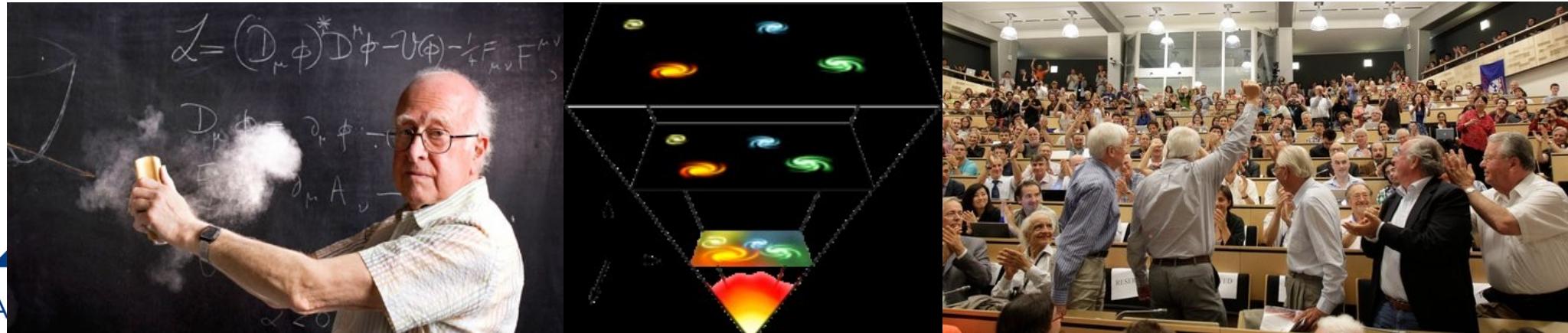
- Poverty is the principal problem!
 - The principal solution is education!
- Education can not be sufficiently dealt with by schools
 - Laptops are a learning media which can circumvent the deficiencies of school
- Laptops are also a way of bridging the digital divide
- OLPC has a way of providing one laptop per child at the cheapest possible price
 - you must collaborate with OLPC if you want a big, big push in development.



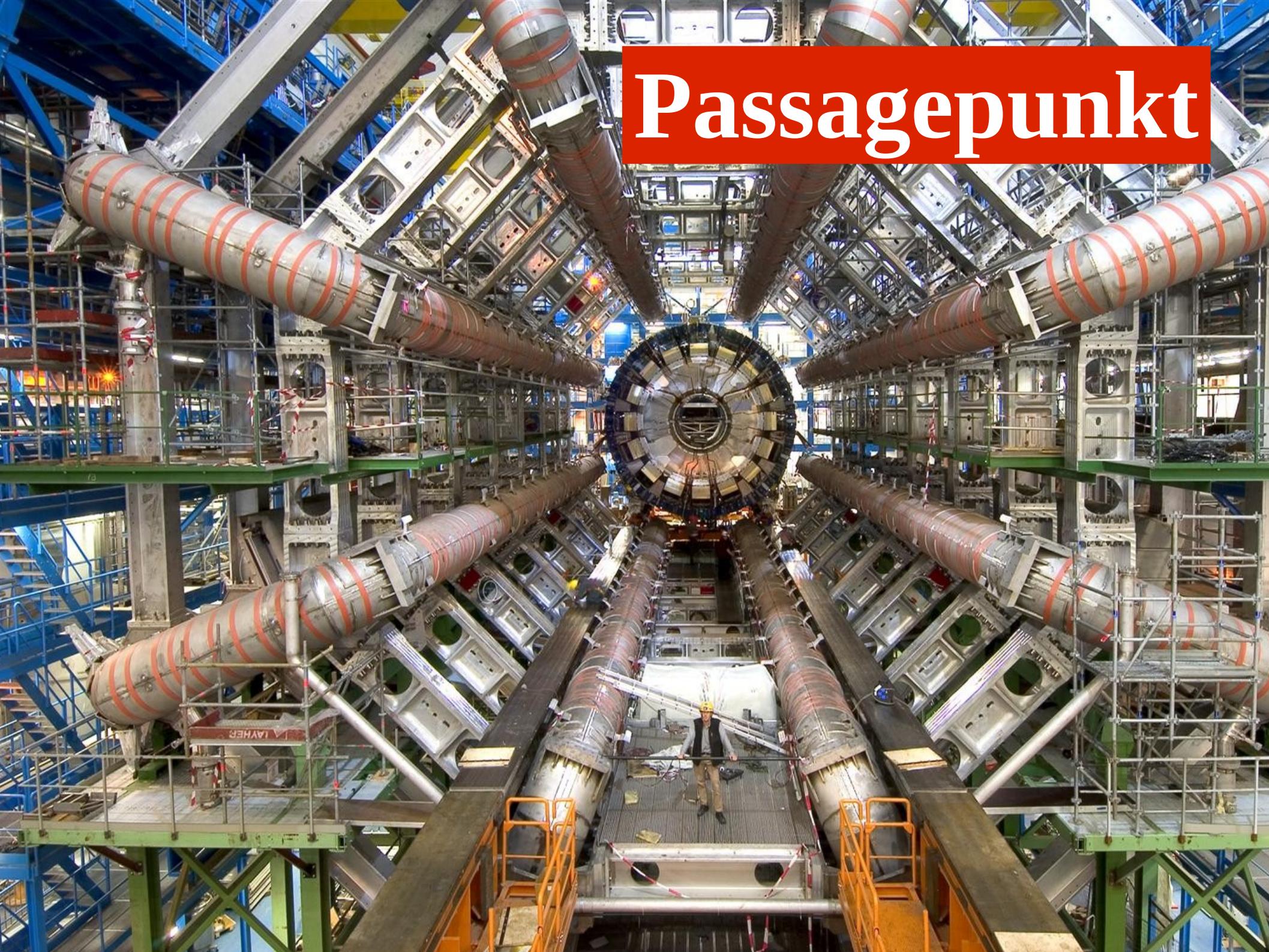
Eksempel!

Higgs problematisering

- Tese: Elektricitet, magnetisme, lys og radioaktivitet er alle manifestationer af én underliggende kraft: **the electroweak force**
 - Men det vil matematisk kræve, at kraft-bærende partikler ikke har nogen masse
- Peter Higgs mf. foreslår derfor at kraft-bærende partikler får sin masse ved interaktion med et usynligt felt (<Higgs partiklen)
- Ingen har dog kunnet observere Higgs partiklen!



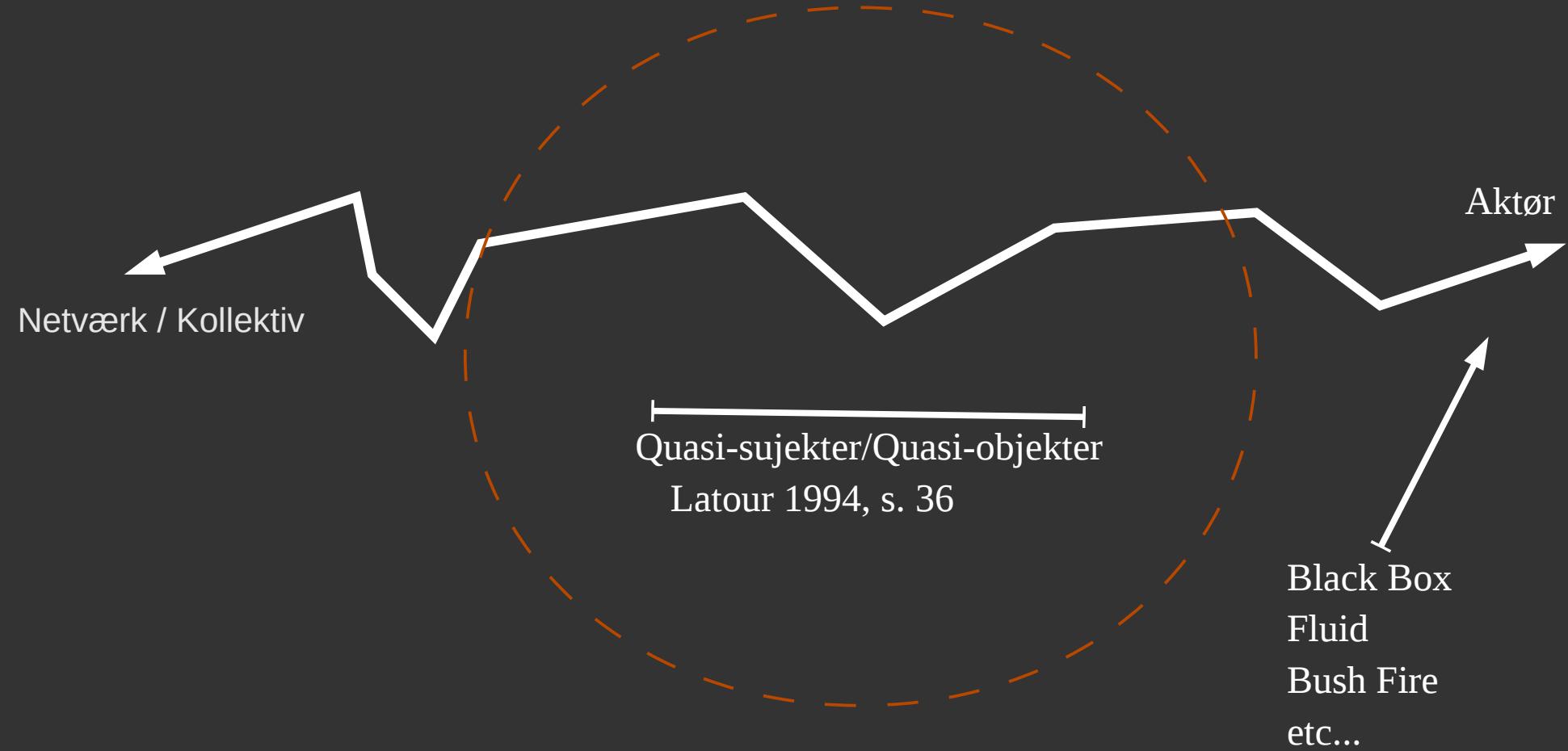
Passagepunkt





OLPC og Higgs partiklen bliver obligatoriske passagepunkter hvis verden (aktør-netværket) kan translatere problematiseringen

Translation



Diffusionsmodellen

- Der er to forståelser af hvordan noget* bevæger sig gennem tid og rum
 - * magt, kraft, handling, påstand, teknologi.... (the token)
- **Diffusion:** iPads eller en **politisk beslutning** udstyres med en kraft af ophavet (opfinder, beslutningstager, Naturen)
 - Besidder herefter enerti til at udbredes, påvirke, påtvinge... (**kanonkugler**)
 - Samfundet er et medie som kan hindre eller støtte "diffusion"

...when an order is faithfully executed, one simply says that the masters had a lot of power; when it is not, one merely argues that the masters' power met with a lot of resistance. (Latour 1986, p. 267)



Translationsmodellen

- The token er i hånden på aktører som kan modifcere, forræde, eller frakaste
- Energien, magten, kraften indskydes af hvert enkel led i netværket
 - Kraften er heterogene kæder
- Aktører translaterer hvad de giver videre

Instead of the *transmission* of the same token [...] you get, in the second model, the continuous *transformation* of the token. When, as a result of unusual circumstances, it is made to stay the same, this is what requires explanation.

(Latour 1986, s. 268)

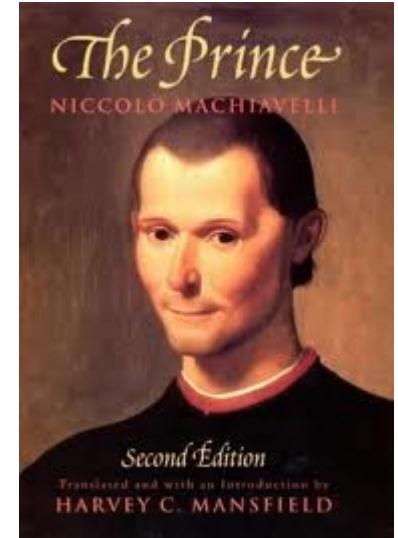




Translation eller kanonkugle? Er iPhone et aktør-netværk?

Kritik af ANT

- Fokuserer på netværksbyggeren
 - Giver ingen stemme til de marginaliserede
- Susan Leigh Star
 - Tag udgangspunkt i the high tension zone!
 - Dem der lever i friktion med translationerne



Those who have no doors, or who resist delegation, those in wheelchairs, as well as door-makers and keepers, are good points of departure for our analysis.” (Star 1991, s. 52-53)



Kritik af ANT

- Post-ANT beskriver andre *modes of existence* end passage points og black boxes
 - Det kommer vi til senere i pensum
- ANT er ikke en teori men en *translateret praksis*
 - Business Schools: The Development of Actor-Network Leaders
 - Ivan Marques: colonised-coloniser
 - ANT translateres af aktører (også af dig!)

...the more actors are seen to be equal, in principle, the more the practical differences between them become apparent in the means available to them to achieve society.

(Strum & Latour, 1987, p. 786)

Lars Bo Andersen – larsbo@larsbo.org





Session 5

ANT Biography a la Latour

Et opgør med Moderne forståelser

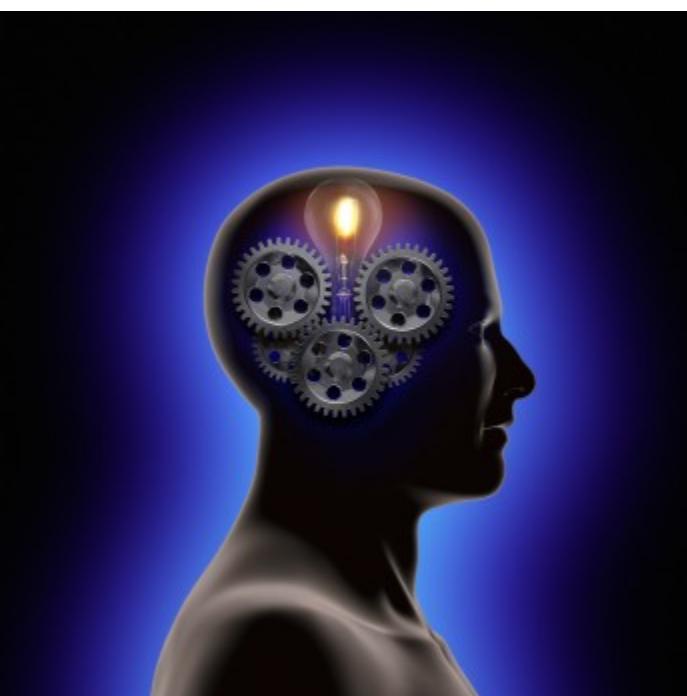
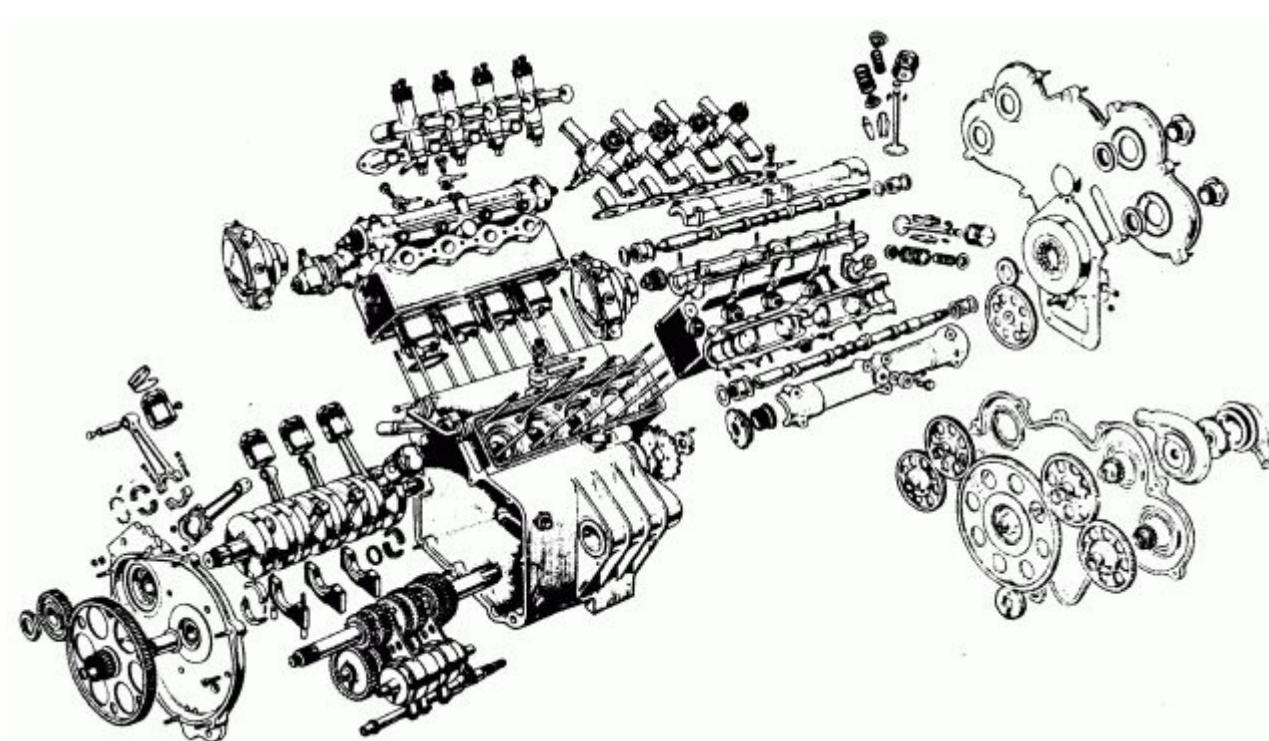
- From savage minds to tribal science
 - “why it was so difficult for black executives to adapt to modern industrial life” (Latour & Woolgar, 1986, p. 273)

Not for a moment have I forgotten the shock of Africa, of neocolonialism, of the advance of the modernizing frontier. How can one practice a truly symmetrical anthropology?

(Latour, 2013a, p. 17)

There was a **flagrant asymmetry** here: the Whites anthropologized the Blacks, yes, quite well, but they avoided anthropologizing themselves. Or else they did so in a falsely distant, “exotic” fashion, by focusing on the most archaic aspects of their own society. (Latour, 2013a)





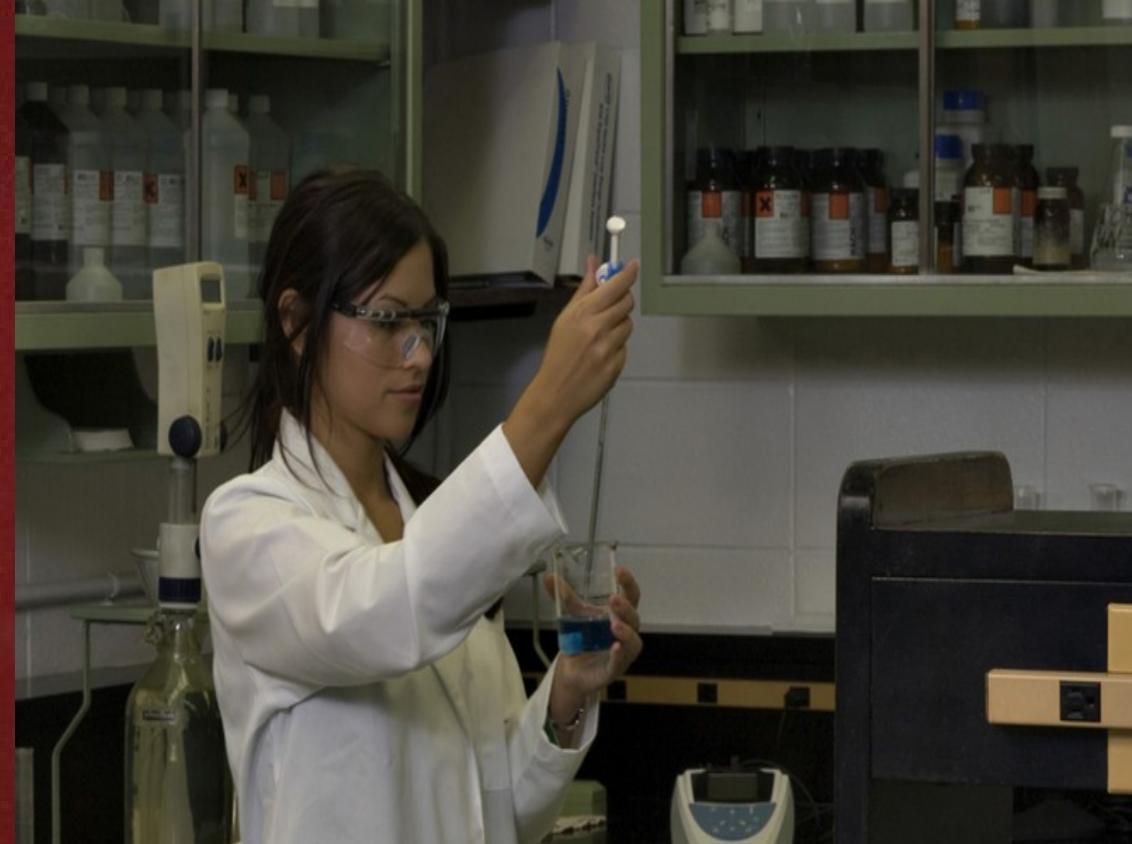
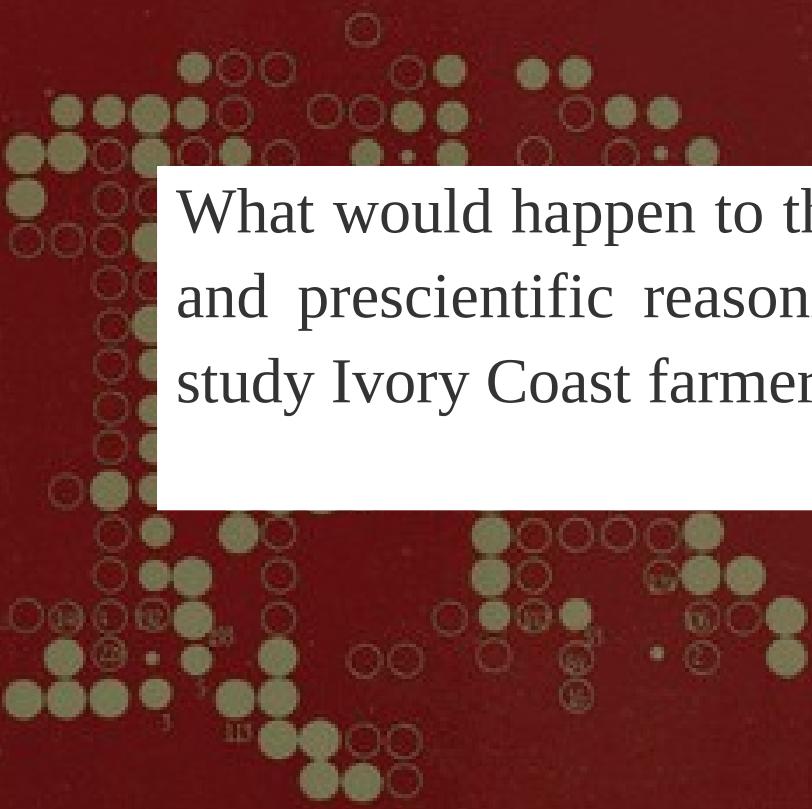
Laboratory Life

The Construction of
Scientific Facts

Bruno Latour • Steve Woolgar

Introduction by Jonas Salk

With a new postscript by the authors



What would happen to the great Great Divide between scientific and prescientific reasoning if the same field methods used to study Ivory Coast farmers were applied to first-rate scientists?

(Latour & Woolgar, 1986, p. 274)

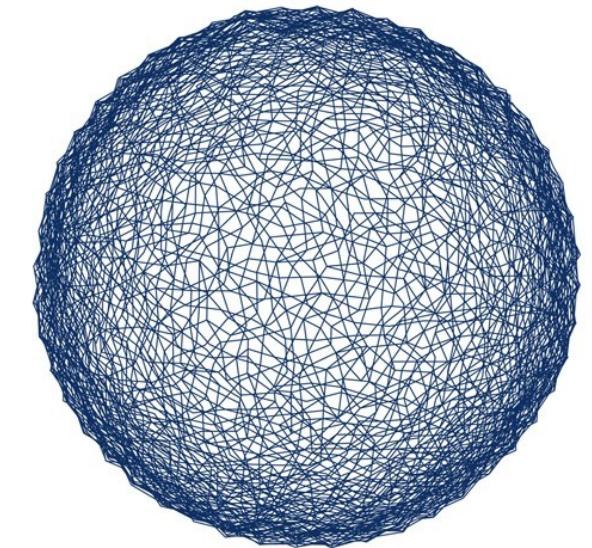


Et nyt vokabular til at diskutere politik og forskelle

- ANT er også et forsøg på at undgå relativitet (social konstruktivisme)
- Hvis domæner ikke findes a priori er der så forskelle imellem dem?

But no, to my great surprise, he [climate researcher] responds after a long, drawn-out sigh: “If people don’t trust the institution of science, we’re in serious trouble.” And he begins to lay out before his audience the large number of researchers involved in climate analysis, the complex system for verifying data

(Forord til ny bog om modes of existence)



COP15
COPENHAGEN
UN CLIMATE CHANGE CONFERENCE 2009



Latour's politiske projekt

The relevant question for the diplomats would no longer be, “Is it or isn’t it constructed?” but rather: “**How do you manufacture them?**” And, above all, “**How do you verify that they are well constructed?**” Here is where negotiations could begin: with the question of the right ways to build.

(Latour: 40)



På Dansk....

- Uagtet alt det ovenstående, så....
- Studerer vi "the coming into being, falling out of being" af fænomener ved at betragte dem som heterogene aktør-netværk involveret i translaterende praksis, handlen, gøren, relateren med hinanden