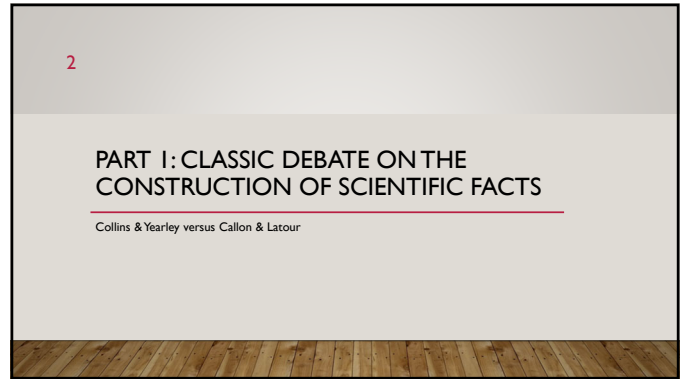
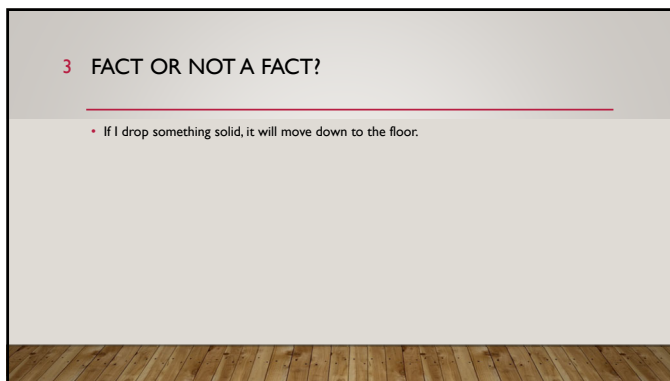


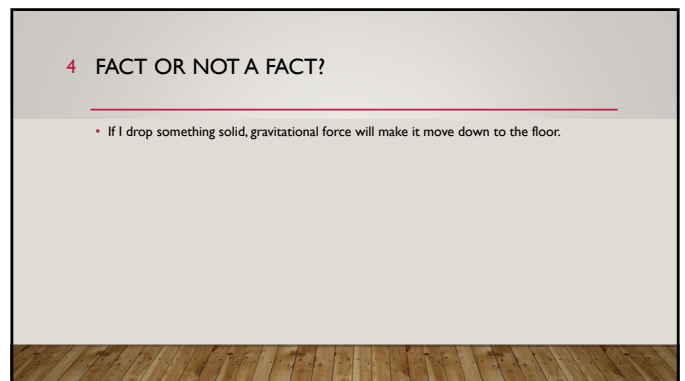
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4

5 FACT OR NOT A FACT?

- Climate change is real, at least in the sense that the average weather phenomena today are different than they were 100 years ago.

5

6 FACT OR NOT A FACT?

- Climate change is the result of human action.

6

7 FACT OR NOT A FACT?

- It is essential for human survival that we act upon climate change today.

7

8 FACT OR NOT A FACT?

- COVID-19 vaccines have contributed to conquering the COVID-19 virus.
- The COVID-19 virus most likely came from bats.

8

9 THOUGHT EXPERIMENT

Suppose we want to establish the following fact:

"Smoking tobacco causes lung cancer."

- What would that require?
- What are the things that "go into" (or "have gone into") this fact?
- What does/did/will the process of "arriving at agreement" (=closure) look like?

Discuss this for 5 minutes in groups of 3.

9

10 ... WELL... THAT'S JUST AN OPINION!

- It is not so difficult to argue about all kinds of facts that they are
 - Made up by humans
 - Constructed
 - Politically informed or even contaminated
- The interesting part is when people (you, me, scientists, presidents) drop the disputation and start acting *as if the fact were true*.
- This is the moment of **closure**.

10

11 CLOSURE (1)

When contestation of a claim stops,

- all relevant parties start accepting it as a fact,
- the controversy will fade out of view,
- and it will start appearing as if the fact has always been true.

11

12 CLOSURE (2)

Closure raises questions for the social study of science:

- Why do people start to treat the fact as a fact? What eliminates their doubts?
- Why and how do they forget about the controversy?
- What kind of work does it take to get the fact accepted and the controversy forgotten?

12

13 CLOSURE (3)

What does this imply?

- Of course, looking at closure as a social phenomenon *makes* it a social phenomenon. (But that is what keeps us social scientists off the street.)
- In this view, *true* is a social attribute, not a judgment passed from correspondence-model view from nowhere.
- Truth is relative to a particular culture and a particular place and time.

13

14 CLOSURE (4)

What does this **not** imply?

- That facts are made of thin air.
- But rather:
- Facts can be true in many meaningful senses, and still be argued to be 'constructed'.

14

15 NATURAL OR SOCIAL CAUSES OF CLOSURE?

- What do you think:
 - Our facts are determined by nature.
 - Our facts are determined by human action.
- (Side question: what is the literal meaning of the Latin word 'factum'?)

15

16 COLLINS & YEARLEY

CALLON & LATOUR

- Facts are human-made, right?
 - Right. Kind-of.
- Ok then, more precisely: people put a lot of work in building the boundary between *false* and *true* statements.
 - Yes. Kind-of.
- What's with this "kind of"??? Yes or no!
 - Yes. Kind-of.

16

17 COLLINS & YEARLEY CALLON & LATOUR

- Because we sociologists have specialized in human action.
- Well... How do you know what results from humans and what results from elsewhere?
- Ah! So you first assume that you know what is human action, then you show us: look, this is human action! Clever...
- What else can we do? A social-realist perspective is the only way to show continuity between culture and science.

17

18 COLLINS & YEARLEY CALLON & LATOUR

- CHICKEN!!!
- But the point is: you cannot know beforehand where culture ends and nature begins.
- Neh, come on. You're the ones who cheaply buy into 'knowledge of the social'. We criticize your 'social realism' and give proper attention to the role of nature.

18

19 COLLINS & YEARLEY CALLON & LATOUR

- Funny. Your 'following the artifacts' is equally dependent on natural-realist accounts of nature: you assume you know nature.
- Ok, fair enough. But the real problem is that your terms are so clean that they obscure the messiness of relations.
- Said so: chicken...
- We contest hegemony of natural science just as much as you do. Just not by simply showing they are social practices, but by arguing that they unjustly assume power over the separation between *nature* and *society*.

19

20 COLLINS & YEARLEY CALLON & LATOUR

- ...
- On a side note, how can you contest scientists' hegemony over the definition of nature, while you limit yourself to social explanations?
- We avoid this by making the boundary between nature and society *itself* to be the explanandum, rather than the explanans.

20

21 COLLINS & YEARLEY CALLON & LATOUR

... contest

"... meaning: to the best of my knowledge, C&Y offer no convincing argument against this. A little bit comes in the 13th chapter, *A Journey Into Space*. There the argument seems to be that C&L's framework is good for description, but then falls short of providing any meaning [and hence value or action perspective]. It is a big story that crumbles in face of real problems. Instead, Collins and Yearly prefer to have a system that can accomplish some things, while recognizing the imperfections. The main accomplishment is that it gives a proper place to the pivotal roles of humans and their meanings.

21

22 NATURAL OR SOCIAL CAUSES OF CLOSURE? (1)

From: Callon & Latour in A. Pickering: *Science as practice and culture*, p. 346

22

23 NATURAL OR SOCIAL CAUSES OF CLOSURE? (2)

From: Callon & Latour in A. Pickering: *Science as practice and culture*, p. 349

23

24 RECAP QUESTIONS

- Is truth made up from thin air?
- What can we say about the politicization of
 - Facts in general?
 - Science in particular?
- Further to that: what can we say about the boundary between
 - Science and opinion in particular?
 - Facts and values in general?

24

25 WHY STUDY CONTROVERSIES, AND WHY STUDY SCIENCE AS PRACTICE?

- Controversies are where *closure* is accomplished (eventually).
- Prior to closure, the inner workings of science and technology are visible.
- Only by looking at what *scientists actually do* and how *scientific facts travel and gain stability*, can you begin to glean all that goes into this closure and the production of facts.
- And, following Callon&Latour, not only look at the *scientists*, but at all the (human and non-human) relations that are established.

Discussion: revisit the "tobacco causes lung cancer" experiment...

25

26

PART 2: FACTS AND PRACTICES IN 2023

Marres

26

30 MARRES: GETTING OUR FACTS BACK?

Main problem:

- "Facts" in the public sphere have become unstable, denied, and fake.

Common answer:

- Let's put fact-checkers to work!

30

31 MARRES: GETTING OUR FACTS BACK?

Problem-with-the-problem:

- Not so much about where the lies come from, but how truth is validated:
- Quality is no longer an attribute / property of the information itself.
- Nor is it "straightforwardly" social: no understanding is involved.
- Also, the problem is not with facts as such. Experts still produce and use them. It is about dissolution of facts *specifically in the public sphere*.



31

32 MARRES: GETTING OUR FACTS BACK?

Problem with common solution of fact-checking:

- Over-reliance on experts
- Re-installation of hierarchy of knowledge above non-knowledge (expert superior to lay)
- Return to **correspondence model of truth**
- Does not provide understanding of problem of non-knowledge
- AI makes it worse: correspondence model *without interpretation*.

32

33 MARRES: GETTING OUR FACTS BACK?

Marres' alternative to solution of fact-checkers:

- Recognition of epistemic diversity.
- Recognition of need to validate knowledge *in public*.
- Recognition that this is a dynamic process.
- Recognition that experts cannot and should not be secure (or: complacent...) in their public authority.

33

34 CONCLUSION

- What connections do you see between Marres, Callon&Latour, and Collins&Yearley?
- How does it (not) make sense to think of scientific research as a social practice?
- How do you, as an academic, contribute to the production of facts?
- How is your academic research connected to
 - politics?
 - opinions?
 - fake-news?

34