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|---------------------|------------------------|
| Agenda | 1. Administrative |
| Social construction | 2. Social construction |
| & the real | 3. Epistemology in STS |
| | 4. Next three readings |

Worksheet grades

- ∴ Worksheet 1 has been marked.
- ∴ Comments and total grade (out of 10) is in the document.

Reminder: Topic submission

- ∴ **Dont' forget:** your poster topic is due Wed, Oct 2 on Teams.

Discussion question assignments

- ∴ *Everyone should have received an email that looks like this:*

Your assignments for discussion question submission for SOCI 325 are as follows:

- Class of **2024-10-02**
(question due on Teams by 11:59pm **Tuesday, October 1**)
- Class of **2024-10-21**
(question due on Teams by 11:59pm **Sunday, October 20**)
- Class of **2024-11-06**
(question due on Teams by 11:59pm **Tuesday, November 5**)

If any of these dates pose a conflict for you, please let me know as soon as possible so we can reschedule.

- ∴ These list the date of the class period that your question should relate to and the due date for submitting the question.
- ∴ E.g. the question for the class of November 11 (Poudrier 2007) is due on November 5.
- ∴ Turn these in on the "Assignments" section on Teams.

Two-part submissions: *Example:*

1. Prompt

- ⋮ One (broad) idea, described in a few sentences
- ⋮ Can contain multiple, related “questions”
- ⋮ Can contain quotes from text
- ⋮ Should use in-text (parenthetical) citations
- ⋮ A **single prompt** (one of the numbered items on the worksheets)

2. Motivation

- ⋮ A few sentences describing where the question is coming from and where I hope it may lead
- ⋮ Counts toward score, but will not be published if your question is chosen for inclusion

Prompt:

Merton wrote *The normative structure of science* early in his career in 1942 (during World War II) and included it in a collection of his work on the sociology of science in 1973 (during the Cold War). How might the political climate of this time span in America have influenced his work? Do his theories cast science in a particular light? How does this work look through the lens of Wolfe’s (2018) depiction of science during the Cold War?

Motivation:

I was thinking about the age of Merton’s piece, (published more than 80 years ago!) in the context of the course theme “history of science is a social history.” Rather than just understanding the reading as an example of the sociology of science, I thought it would be interesting to treat it as the object of our inquiry. In addition to helping us understand Merton’s arguments in context, I hope this will raise the larger issue of whether we can apply the tools of the sociology of science to the sociology of science itself.

Social Construction

SOCIAL CONSTRUCTION

5

Social construction in popular discourse

- ∴ “If something is a ‘socially construct’, that means it can be whatever you want it to be.”
- ∴ “Socially constructed = fake”
- ∴ ***These interpretations are usually based on a serious misunderstanding (or deliberate misrepresentation) of social construction.***



Gender's a social construct, remember. Just have half the scientists "identify" as female. [#problemsolved](#)

2:10 AM · May 5, 2017



James Lindsay, honorary Canuck, eh
@ConceptualJames



"Unvaccinated" is a social construct. So is "fully vaccinated." All artificial. All hyperreal.

1:20 PM · Oct 1, 2021



Dr Jordan B Peterson ✓
@jordanbpeterson



Science is a social construct, remember? That's why planes fly....



Feb 16, 2018

Replying to @jordanbpeterson

Both of the statements singled out as discriminatory & harassing are scientifically established. I guess they didn't bother to consult the literature.

11:54 PM · Feb 16, 2018

SOCIAL CONSTRUCTION

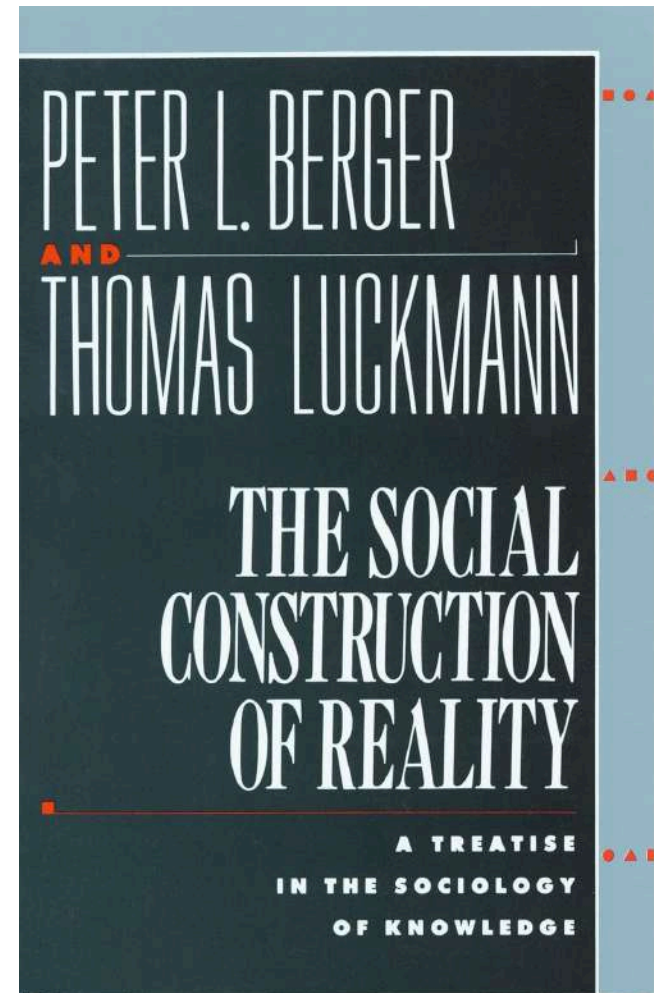
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Sociology of knowledge

- ∴ The Social Construction of Reality (1966)
Peter Berger & Thomas Luckman

Basic argument:

- ∴ Humans learn about the world through social interaction.
- ∴ Interactions reinforce the things we agree on, and push us to come to agreement on everything else.
- ∴ This process reinforces *norms* — how the world *ought* to be.
- ∴ Over time, shared expectations become so regular that we do not think of them as something we came to agree on. They become something we *know*.



Symbolic interactionism

- ∴ The *meaning* of things is not essential to those things. It is *negotiated* through social interactions.



A popular critique of social construction is that it denies the reality of the world.



Katherine Cross

@Quinnae_Moon

Follow



This is false. Religion is socially constructed, but I can't declare that a table is now a cathedral and have it mean anything. That last bit, meaning, is the key. We can play however we like. But most social constructs are like their physical counterparts: durable.

11:38 PM · Jul 27, 2018

The social is real

- ⋮ We often think of the social as somehow less real than the physical or biological.
- ⋮ A social construct is real because it has real consequences. It 'pushes back' on our attempts to alter it.
- ⋮ Sociologists study how social systems are consequential and durable.

In short: social constructs ...

- ⋮ ... have socially-negotiated definition and meaning
- ⋮ ... have real consequences in the world to
- ⋮ ... require widespread, collective action to subvert or change

Three terms (loosely)

Social construct

- ∴ A '***social fact***' that is actively maintained, widely held to be true, and consequential.
- ∴ E.g.: race, gender, customs, scientific method, ...

Social constructionism

- ∴ A ***sociological stance*** that focuses on social constructs, their maintenance, and their meanings.

Social constructivism

- ∴ An epistemological stance that focuses on the ways that social constructs inform what people know

Epistemology in STS

Epistemology

- ∴ Branch of philosophy concerned with understanding human knowledge
- ∴ What does it mean for knowledge to be *correct*?
- ∴ What makes knowledge different from "*mere belief*"?
- ∴ How can one justify knowledge?

Knowledge

Truth/reality

Belief

Justification

Two prominent epistemological stances in STS:

Scientific realism

- ‡ The real world is *independent of human experience*
- ‡ Science *describes* the real world
- ‡ Scientific knowledge is either: **True** (describes accurately) or **False** (describes inaccurately)

Scientific constructivism

- ‡ The real world is, at best, accessible only through *human experience*
- ‡ The processes that justify belief as knowledge are *social*
- ‡ Scientific knowledge is *contingent*



Describing reality

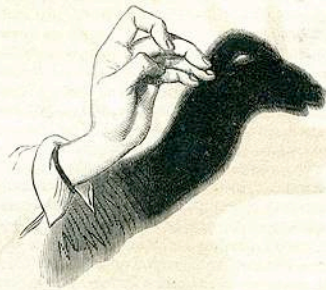
- ‡ Scientists' job is to objectively describe the real world (*nature*).
- ‡ Descriptions may be flawed due to measurement error, undetected phenomena, bias, etc.
- ‡ But the **object** of description—the thing described—is consistent.

Ian Hacking

- ‡ Prominent Canadian scientific realist.
- ‡ "So far as I'm concerned, if you can spray them then they are real."

Hacking (1983) on the reality of positrons





Le Chameau.



L'Oie.



Le Lièvre.



Le Loup.



Le Lapin.



La Chèvre.

Describing phenomena

- ‡ Focus on scientific knowledge as it exist for humans.
- ‡ The truth of a scientific claim is based in its accepted meaning and social consequences.
- ‡ *True scientific claims can change.*

Umbrella term

- ‡ Constructivism means a lot of different things.
- ‡ Sometimes compatible with realism, sometimes not.

REALISM-COMPATIBLE CONSTRUCTIVISM

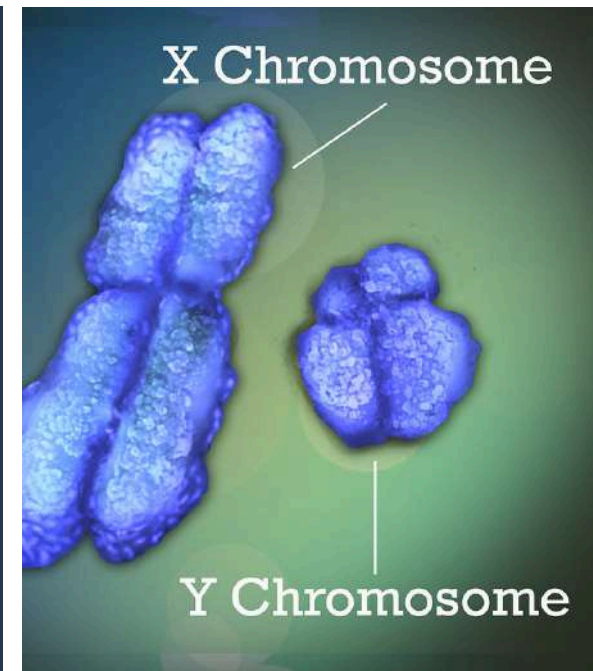


Science constructs the objects it studies

- ∴ The substances and phenomena in a lab are not *natural*.
- ∴ Scientific practice creates contexts to make sense of phenomena.

Science and tech shape the social

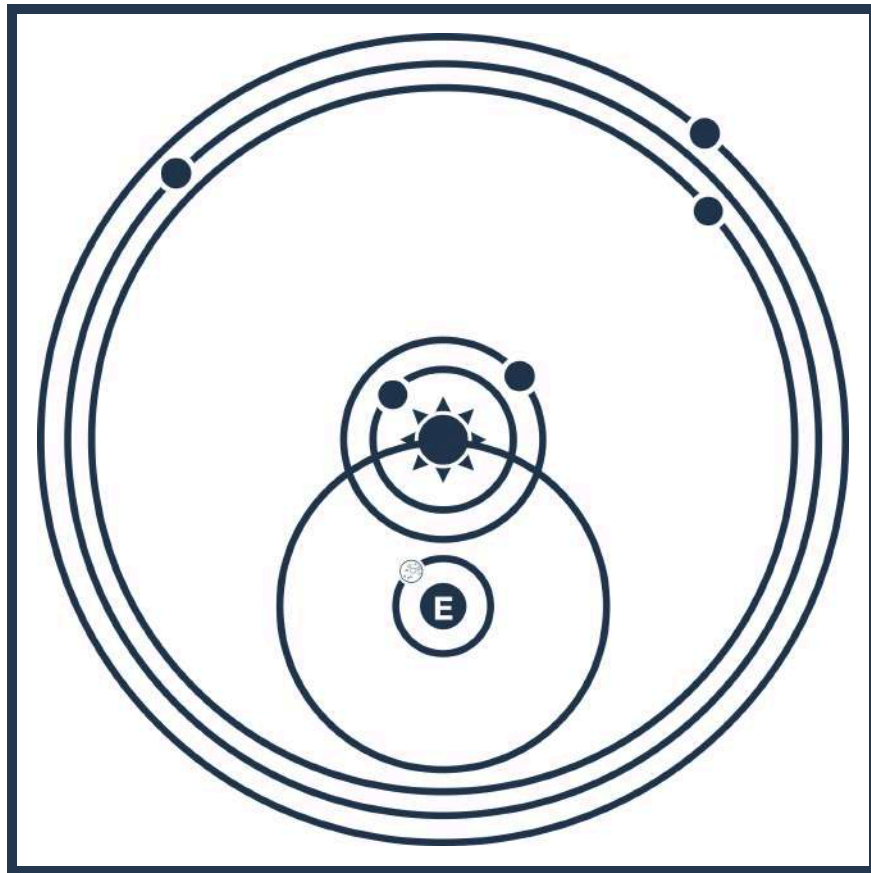
- ∴ Scientific articulations of gender, disability, etc.
- ∴ Technology changes the social environment.



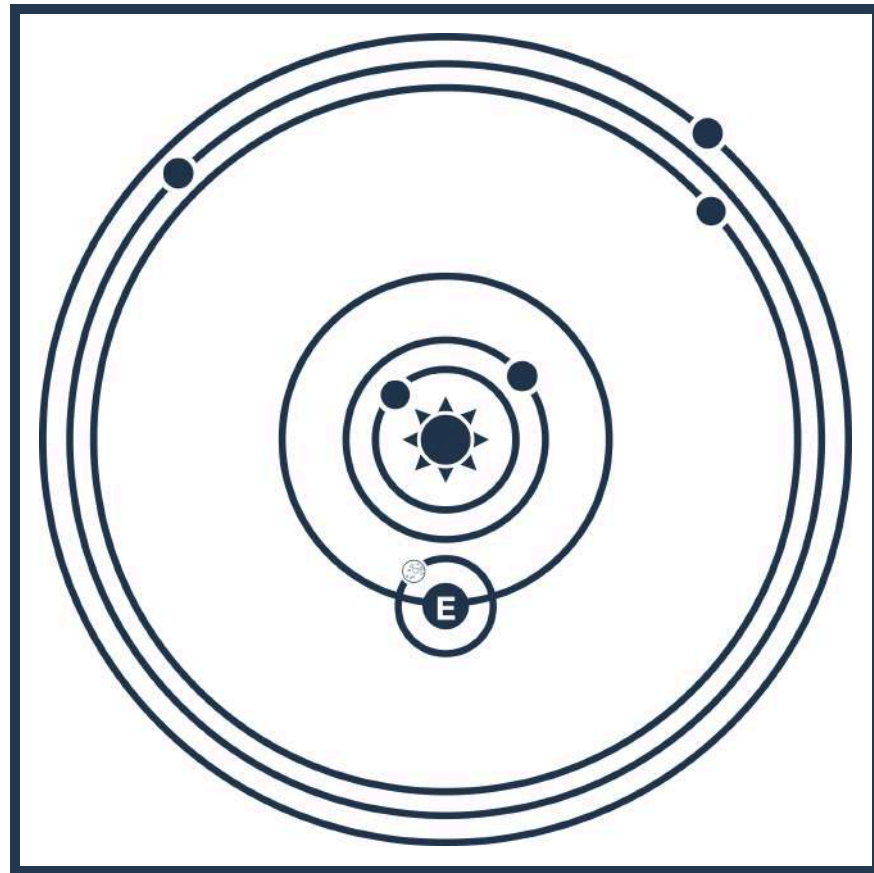


- ⋮ If phenomena are all we have to work with, then everything we know is filtered through our experience of it.
- ⋮ There is no objective way to select among competing theories if they do not contradict empirical evidence.
- ⋮ Trying to decide whether a theory is true in some fundamental sense is meaningless.
- ⋮ Explicitly anti-realist.
- ⋮ **"We have to remember that what we observe is not nature in itself, but nature exposed to our method of questioning."**

Werner Heisenberg
Physics and Philosophy (1958)



Tycho Brahe's geocentric model



Nicolaus Copernicus' heliocentric model



Construction of categories

- ∴ **Nominalism**: the distinction between kinds of objects in the world is a human creation
- ∴ Categories are therefore socially constructed
- ∴ Science is formalized categorization

Construction of nature itself

- ∴ Truth is fundamentally defined by human experience
- ∴ Critiques:
 - Is there a basis to question established truth?
 - Difficult causal link from consensus to reality
- ∴ As a perspective, can be useful



The 'strong programme' and scientific anti-realism

∴ Bloor ([1974] 1991)

The strong programme in the sociology of knowledge

Feminist epistemologies

∴ Haraway (1988)

Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective

∴ Martin (1991)

The Egg and the Sperm

Scientific realism

∴ Hacking (1983)

What is scientific realism?

Image credit



Photo of Hore Abbey by [Christian Bowen](#) on [Unsplash](#)



Illustration from *Children's Classics in Dramatic Form* (1909), via [Wikimedia](#)



Image via [Wikimedia](#)



Photo by Janet Stephens via [Wikimedia](#)

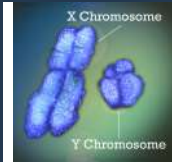


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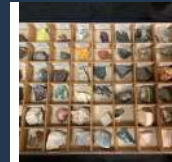


Photo of mineral collection via [Apple Tree Auction Center](#)



Animation from *The Matrix* series, via [giphy](#)