

Oct 18

- 1. Administrative**
- 2. Types of scientific realism (Hacking)**
- 3. Reading discussion**

Administrative

Mid-term peer evaluation

- ∴ Next week, each student will receive a rubric for evaluating your group-mate's contribution
- ∴ The results *will not affect the final grade*

Some team re-shuffling

- ∴ For logistical reasons, I had to make a few changes to some groups' membership
- ∴ I've notified the affected teams

Types of scientific realism

Types of scientific realism

Ian Hacking's realism

∴ Hacking is one of the major proponents of scientific realism in STS.

“... if you can spray them then they are real”

∴ A “soft” rather than “hard” realism.

∴ Focus on *entities* and *causal* reality.



Types of scientific realism

Realism about *entities*

- ∴ The unobservable, abstract *entities* that science theorizes about can be real.
- ∴ An entity's reality does not depend on "direct" observation.
- ∴ Atoms, gravity, and genes can be real.
- ∴ *Not* a statement that *all* theoretical entities are real.

Can be realist about *entities* but not *theories*

Realism about *theories*

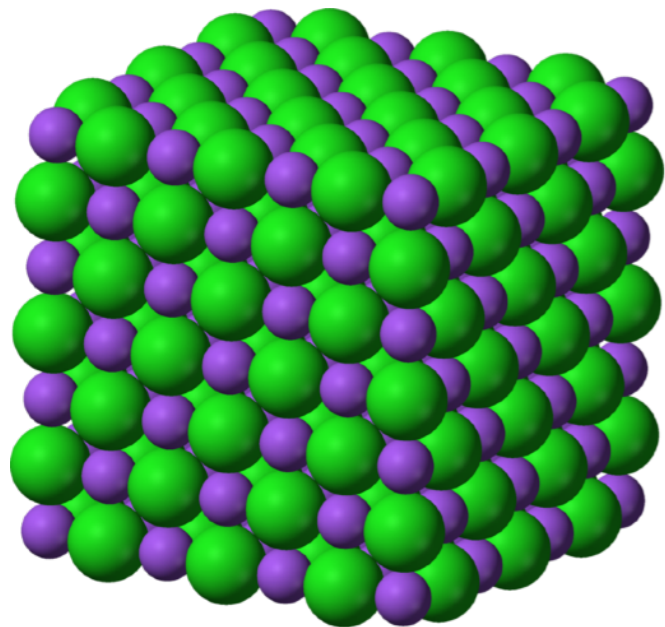
- ∴ Scientific *theories* about entities are either true or false.
- ∴ The truth or falsehood of a theory reflects an underlying, real world.
- ∴ Geocentrism, quantum theory, and Mendelian inheritance are each either true or false.

Can be realist about *theories* but not *entities*

Types of scientific realism

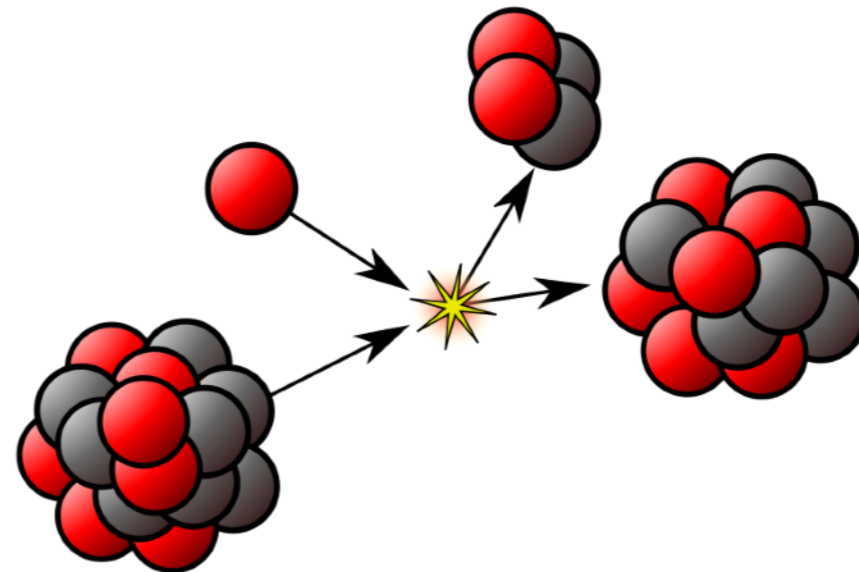
Materialism

- ∴ For an entity to be 'real' it must have a *material* reality.
- ∴ Historically, this was about actual matter/mass.
- ∴ Contemporary materialism is about physical composition.
- ∴ Electrons are real because things can be made of them.



Causalism

- ∴ For an entity to be real it must have effects on the world.
- ∴ Often focusses on *mechanism*.
- ∴ Hacking: to say that A *causes* B, you need to say *how* A causes B.
- ∴ Implicitly about theory.



Types of scientific realism

“Representing and intervening”

Representing

- ∴ One aim of science is to create ‘correct’ (in some sense) *representations* of the world around us.
- ∴ Realists and anti-realists argue about what that ‘correct’ means.

Intervening

- ∴ But another aim of science is to create experimental and technological *interventions* in the world around us.
- ∴ Less epistemological debate around this aspect

Ways of understanding

- ∴ Hacking presents the realism / anti-realism distinction in terms of “movements.”
- ∴ He proposes a practical approach based on how scientists work with scientific knowledge.

Tacit knowledge and experimental reproduction

Required reading:

- **Collins (1975)**

The Seven Sexes: A Study in the Sociology of a Phenomenon, or the Replication of Experiments in Physics

Discussion

Image credit



Animation from [Queer Eye \(2018\)](#) via [giphy](#)

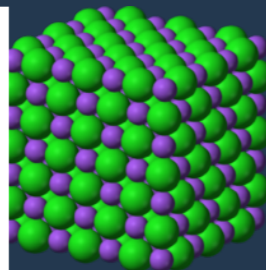


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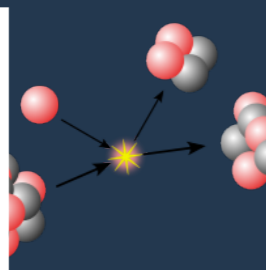


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