

Dirty Secrets: Consciousness

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We Can't Define It

consciousness: that annoying time between naps

But

we have some useful distinctions

intelligence (objective behavior)

vs.

consciousness (subjective experience)

access consciousness (access to information)

reflective consciousness (access to internal states)

phenomenal consciousness (experience)

a system is (phenomenally) conscious if there's something it's like to be that system

a state is (phenomenally) conscious if there's something it's like to be in that state

We Can't Measure It

consciousness is private and subjective

directly observable from the first-person point
of view

not directly observable from the third-person
point of view

But

in practice we measure consciousness in humans by verbal reports

this grounds a robust science of consciousness in humans

there's no uncontroversial measure in nonhuman systems

We Can't Explain It

standard methods are designed to explain
behavior (the easy problems)

explaining behavior doesn't explain
consciousness

so standard methods don't explain
consciousness (the hard problem)

stronger claim: no explanation wholly in terms
of physics explains consciousness

consciousness is fundamental?

But

this means no *reductionist* theory of consciousness (in purely physical terms)

nonreductionist theories are still possible

e.g. theories of the psychophysical laws connecting physics and consciousness

most of the current science of consciousness is not reductionist

e.g. Tononi's integrated information theory of consciousness:

consciousness—phi

doesn't reduce consciousness, but assumes it and connects it to physical processes

**We Don't Know What
It Does**

just about any behavior that we think
consciousness might explain can be explained
without invoking consciousness

But

possible roles for observation in physics suggest
possible roles for consciousness?

We Can't Ignore It

consciousness is a datum: arguably the central datum of our existence

we won't have a theory of everything without a
theory of consciousness

also: we can't understand observers without understanding consciousness

What's an Observer?

sense I: observation = registration

observation = any reliable effect of one entity
on another

even a classical particle is an observer?

for many purposes (e.g. QM, cosmology), this
isn't the relevant sense

but then: what distinguishes observation from registration?

obvious suggestion: what marks the difference is something mental: perception, knowledge, consciousness.

sense 2: observation = conscious perception

observers = conscious perceivers

**What's the Theoretical
Role of Observation?**

there are different roles for observation in e.g.
cosmology, quantum mechanics, relativity.

some roles are epistemological: observation is a guide to the correct theory, not part of the theory.

e.g. weak anthropic reasoning in cosmology

some roles are ontological: observation is part of the theory, e.g. playing a role in the dynamics
e.g. traditional (“Copenhagen”) quantum mechanics with collapse upon measurement
a possible role for consciousness?

Observers in Quantum Mechanics

traditional collapse-on-measurement
interpretations are often rejected *because* they
gives an ontological role to observers

- worry 1: the notion of observation is imprecise (unfit for a role in the dynamics)
- worry 2: the notion of observation is nonfundamental (unfit for a role in the dynamics)

But

if we had a rigorous fundamental theory of consciousness (precise psychophysical laws) this would remove both worries, yielding a precise collapse interpretation of QM

e.g. the IIT + collapse theory:

(1) phi above threshold \rightarrow consciousness

(2) consciousness \rightarrow collapse

there's a whole range of precise collapse interpretations of QM, corresponding to different precise theories of consciousness
each can be experimentally distinguished in principle

project

(i) articulate precise collapse theories of QM of this sort

(ii) experimentally test them [eventually]

if successful (longshot!), this project would yield

- a verified interpretation of QM
- a theory of consciousness
- a role for consciousness
- a way of measuring consciousness

that's a reason for theorists of consciousness to pay some attention to physics, and for physicists to pay some attention to consciousness