24.09 Minds and Machines
Hass-D CI spring 2007
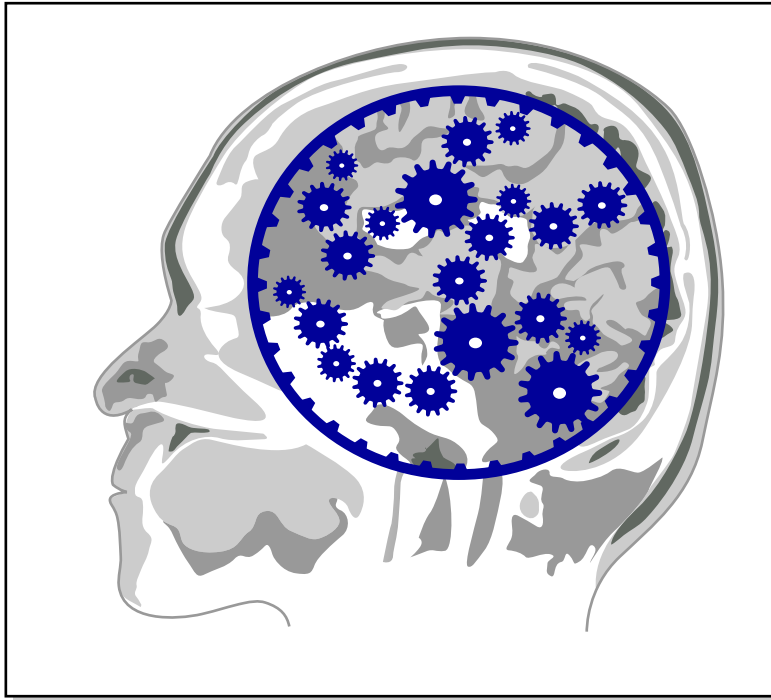
Figure by MIT OCW.

- times and places
- books
- assignments
- grading
- recitations
- writing tutor
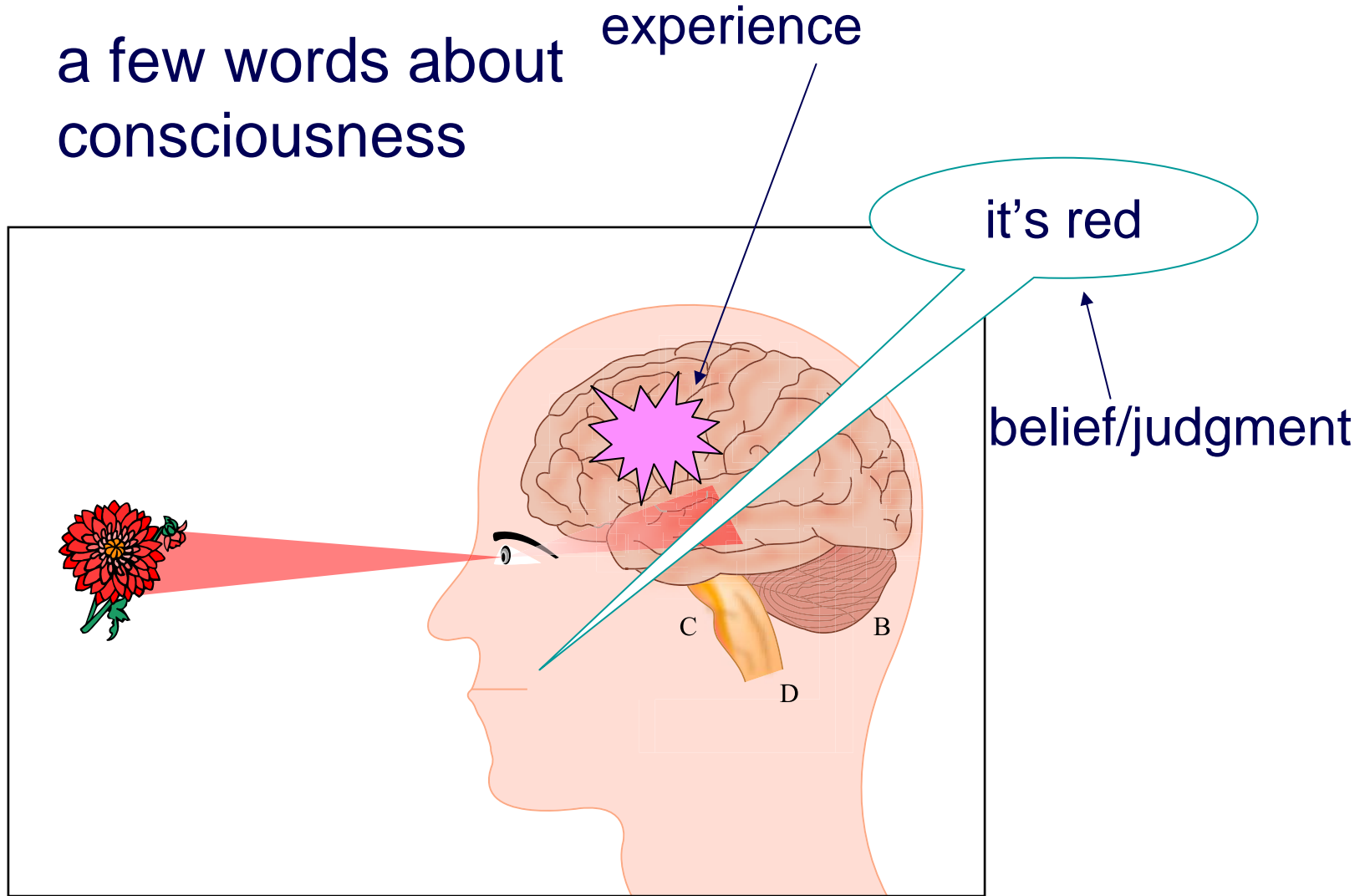
a few words about consciousness

experience

it's red

belief/judgment

C   B

D

24.09 spring 07

The Hard Problem… is why it feels like something to have a conscious process going on in one's head—why there is first-person, subjective experience. Not only does a green thing look different from a red thing, remind us of other green things and inspire us to say, "That's green" (the Easy Problem), but it also actually looks green: it produces an experience of sheer greenness that isn't reducible to anything else… The Hard Problem is explaining how subjective experience arises from neural computation. The problem is hard because no one knows what a solution might look like or even whether it is a genuine scientific problem in the first place. And not surprisingly, everyone agrees that the hard problem (if it is a problem) remains a mystery. (Pinker in *Time*)

- see also the recent *New Yorker* article on the Churchlands

Without consciousness the mind-body problem would be much less interesting. With consciousness it seems hopeless.
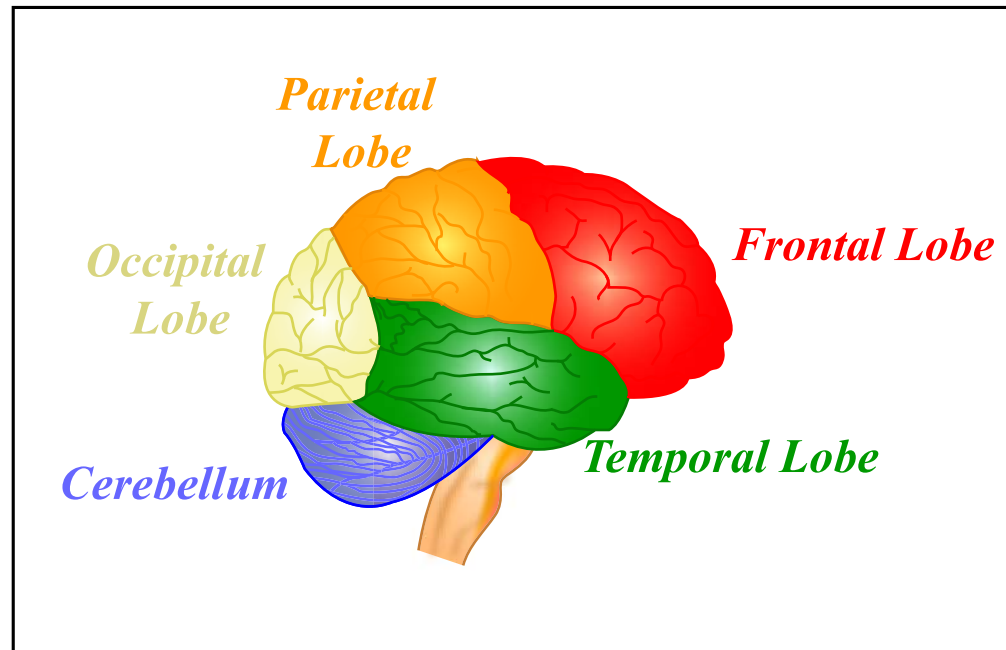
Nagel, "What Is It Like to Be a Bat?"
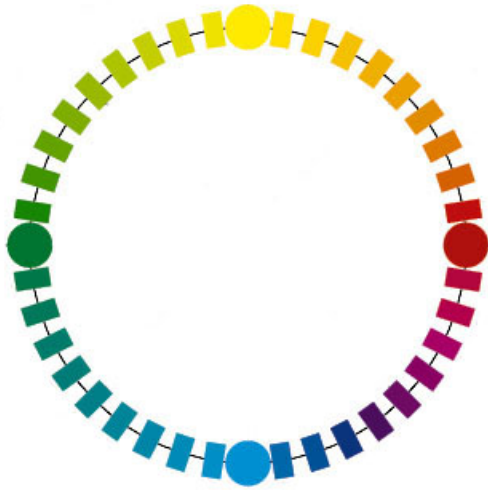

Figure by MIT OCW.

- cf. the "digestion-body problem"

zombies

- not Hollywood zombies
- physical duplicates of us, but lacking conscious experience entirely
- zombies are imaginable, but are they possible—could zombies have existed?
- "materialists" say no; "dualists" say yes
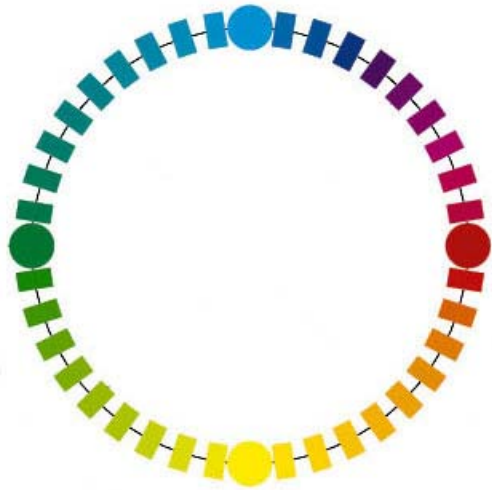- cf. a "digestion zombie"

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the "inverted spectrum"

- devised by Locke, *An Essay Concerning Human Understanding* (1689)
- someone might have color experiences that are "inverted" with respect to yours

Invert's experiences

- arguably, an empirical possibility
- some philosophers think the thought experiment refutes various "materialist" theories of the mind
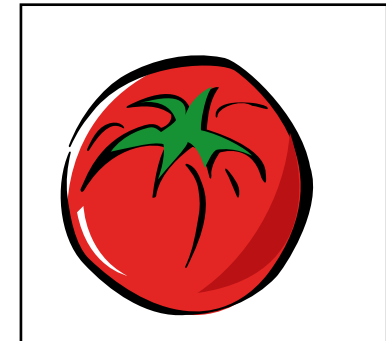
black and white Mary

Figure by MIT OCW.

Figure by MIT OCW.

our first topic

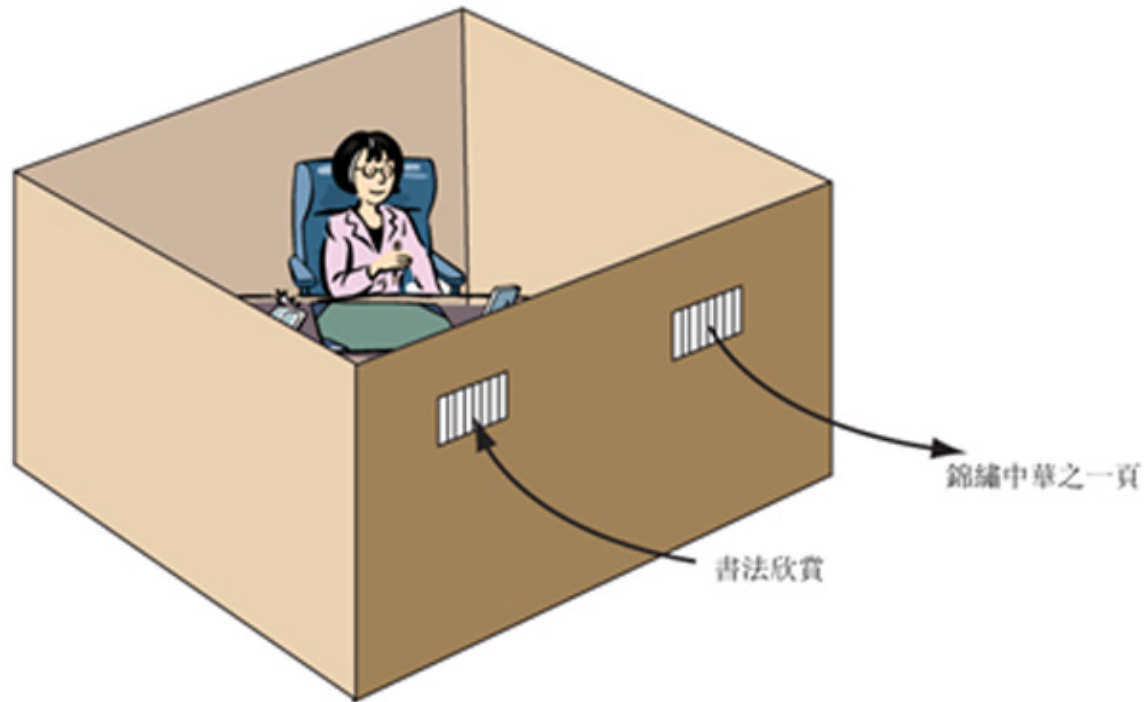- ## Searle's "Chinese room argument"

錦繡中華之一頁

書法欣賞

Figure by MIT OCW.

can computers think?

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- according to "Strong AI", "the mind is to the brain, as the program is to the computer hardware"

- Searle's "Chinese room argument" purports to show that Strong AI is false

Sound by MIT OCW.

WEAK AI

- the principle value of the computer in the study of the mind is that it gives us a very powerful tool—e.g. it enables us to simulate various kinds of mental processes

- cf. WEAK ARTIFICIAL METEOROLOGY

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- WEAK AI is obviously correct (ditto WEAK AM)

STRONG AI

- an appropriately programmed computer literally has mental states (in particular, cognitive states)

- cf. STRONG AM—an appropriately programmed computer literally has meteorological states

- STRONG AI is disputable, and disputed by Searle

- STRONG AM, at least, is obviously false

the Chinese room

- a program: an algorithm (mechanical recipe) for transforming symbols into symbols

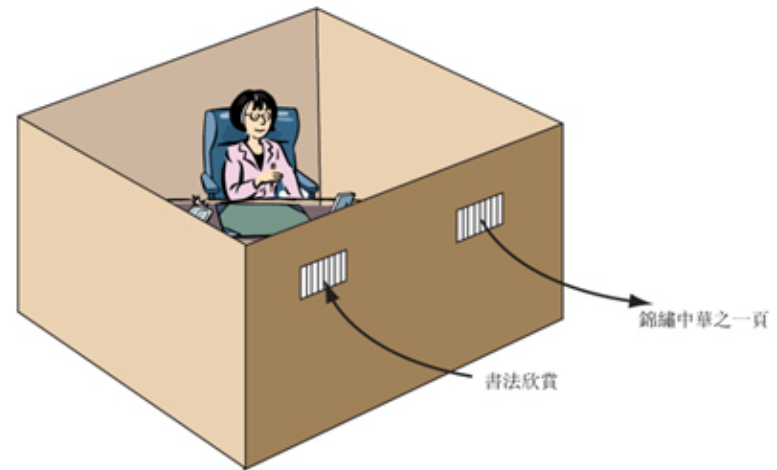- the thought experiment exploits the fact that computer programs can be "multiply realized"

Figure by MIT OCW.

"…you behave exactly as if you understood Chinese, but all the same you don't understand a word of Chinese. But if going through the appropriate computer program for understanding Chinese is not enough to give you an understanding of Chinese, then it is not enough to give any other digital computer an understanding of Chinese"
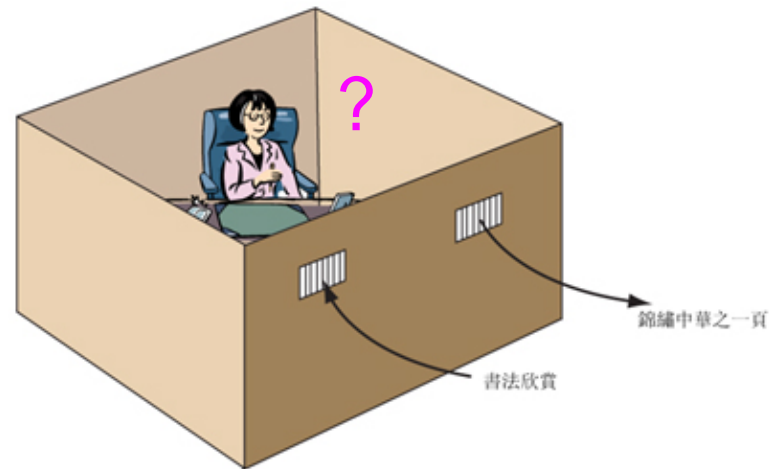
So, strong AI is false

Figure by MIT OCW.

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Figure by MIT OCW.

- no recitation on friday

- read Searle for next monday