the identity theory, cont'd.
the identity theory

proposed by JJC Smart and UT
Place in the 1950s

a ‘theoretical identity’
water=H₂O
heat=molecular kinetic energy
pain=c-fibers firing

‘c-fibers’ is just a placeholder
for a more realistic candidate

Dorsal Root
Dorsal Root Ganglion
A-delta fibers: sharp, shooting pain
A-delta and C fibers
Prolonged activation of primary afferent nociceptors sensitize spinal cord neurons
Corticospinal tract
Spinothalamic tract

Class I, II, III neurons become hyperexcitable
To brain

C fibers: dull, aching, burning pain

Image by MIT OpenCourseWare.
identity

an equivalence relation

correlation vs. identity

footprints $\approx$ the burglar / Bill Sykes $=$ the burglar

‘is’ of predication / identity

Sting is famous / Sting is ( = ) Gordon Sumner

strict or numerical identity vs. ‘identical twins’

‘analytic’ vs. ‘synthetic’ identities

the shortest bachelor $=$ the shortest adult unmarried male / the morning star $=$ the evening star
this terminology is due to the ‘American Pragmatist’ C. S. Peirce (1839-1914), and is in the reading from Kripke for wednesday

example 1

how many words in this sentence?

‘The cat sat on the mat’

6 tokens, 5 types
how many flags?

6 tokens, 3 types

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type-type and token-token identity theories

‘type-type’

pain = c-fibers firing

‘token-token’

Smith’s pain at 10am = c-fibers firing in Smith at 10am

Jones’ pain at 11am = d-fibers firing in Jones at 11am... (etc.)
type-type identity theories explained

despite the terminology, ‘type-type’ identity theories are not best understood in terms of the ‘type-token’ distinction

it is better to think of the ‘type-type’ theory as identifying properties rather than types

note that the American flag—taken either as a type or a token—is not a property

the property of being in pain = the property of having firing c-fibers
identity as the best explanation

Gordon Sumner: born in Newcastle, England on 2 October, 1951, blond hair, plays the bass, has 16 Grammy awards...

Sting: born in Newcastle, England on 2 October, 1951, blond hair, plays the bass, has 16 Grammy awards...

Image courtesy of qippy.com on Flickr.

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what are some ‘correlational’ hypotheses?
why is the identity hypothesis better?
what’s the similarity with Smart’s motivation for the mind-brain identity theory?
Fred sees a satsuma (and so has an ‘experience of seeing something orange’)

the object of experience

the object of Fred’s experience

the object of the experience is colored orange, not the experience itself
the identity theory and the object of experience

such-and-such brain process
= the experience of seeing something orange

the identity theory does not identify the object of the experience with a brain process
what about afterimages?

the identity theory identifies the experience of having an afterimage with a brain process.

but what about the afterimages themselves—are they non-physical things?
according Smart, there are no afterimages

‘There is, in a sense, no such thing as an after-image or a sense-datum, though there is such a thing as the experience of having such an image’

see also Place on the ‘phenomenological fallacy’
recap: possibility, necessity, etc.

false : true

might have been true

possible

contingent

might have been false

necessary
possible worlds are ‘complete stories’—maximal ways the world might have been

a proposition is necessary iff it is true at every possible world

a proposition is possible iff it is true at some possible world
consider any object $\bullet$

$\bullet$ is identical to itself

further, $\bullet$ couldn’t possibly have been identical to something else

in other words, necessarily $\bullet$ is identical to itself

(in every possible world, $\bullet$ is identical to itself)*

do not confuse this thesis with the claim that names or other expressions in natural languages are ‘rigid designators’—the necessity of identity is not a thesis about language at all

*don’t worry about worlds in which $\bullet$ does not exist
Kripke, excerpt 2 from *Naming and Necessity*