

24.09 Minds and Machines

spring 2007

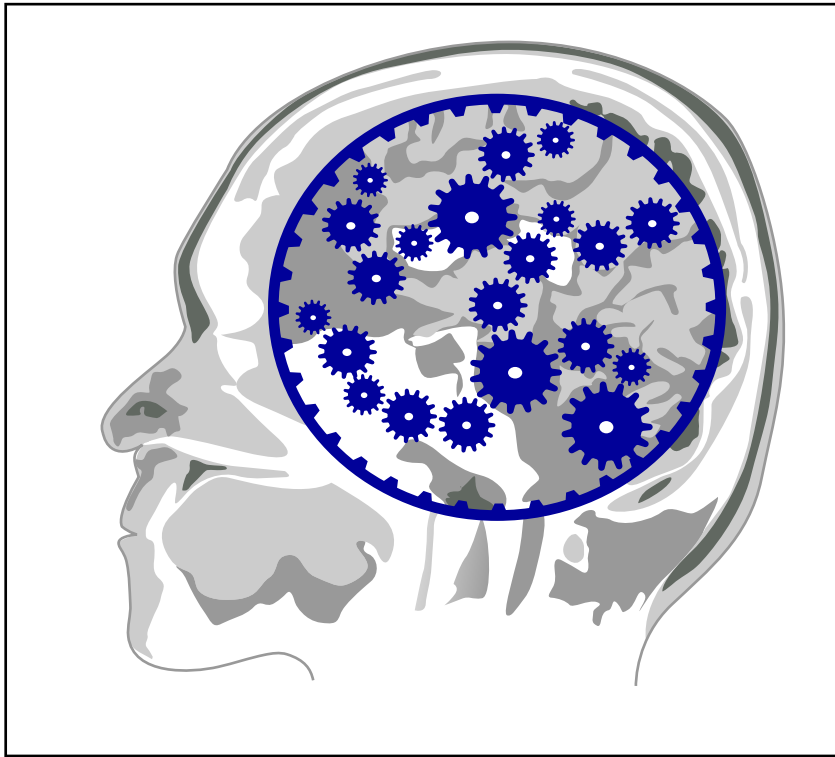


Figure by MIT OCW.

- externalism, contd.

“The meaning of ‘meaning’”

- this contains the original presentation of the “twin earth” thought experiment
- Putnam drew the conclusion that meanings aren’t “in the head” (i.e. aren’t intrinsic), not that thoughts aren’t in the head
- this paper is quite difficult, and we won’t discuss everything in it

“The meaning of ‘meaning’”

- **intension** and **extension**
 - the extension of a term (e.g. ‘rabbit’, ‘creature with a kidney’) is “the set of things the term is true of”
 - so ‘creature with a kidney’ and ‘creature with a heart’ have the same extension
 - the intension of a term is its “meaning”, in the intuitive sense
 - so ‘creature with a kidney’ and ‘creature with a heart’ have different intensions

“two unchallenged assumptions”

- 1) knowing the meaning of a term is just a matter of being in a certain psychological state
- 2) the intension of a term determines its extension (in the sense that sameness of intension entails sameness of extension)

“two unchallenged assumptions”

- “I shall argue that these two assumptions are not jointly satisfied by any notion, let alone any notion of meaning. The traditional concept of meaning is a concept which rests on a false theory.”

“methodological solipsism”

“no psychological state, properly so-called, presupposes the existence of any individual other than the subject to whom that state is ascribed.”

if this is right, then:

- being jealous of Smith
- seeing Jones
- knowing that the cat is on the mat
- remembering last night’s party

are not psychological states, properly so-called

- psychological states, according to **ms**, are “narrow”

the first “unchallenged assumption”,
stated more precisely

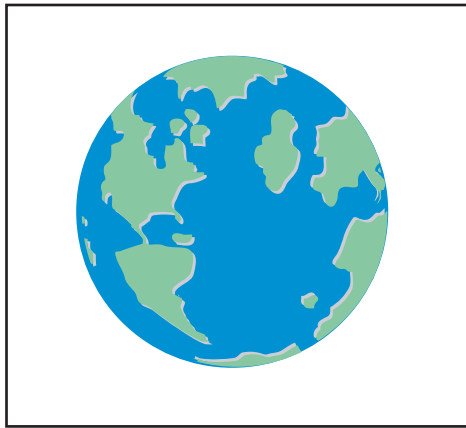
- 1) knowing the meaning of a term
(knowing that intension I is the
meaning of term A) is just a matter of
being in a certain narrow
psychological state

consequences of (1) and (2)

- suppose Oscar₁ and Oscar₂ are in the same narrow psychological states, and that Oscar₁ knows that intension I is the meaning of term A
- by (1), if Oscar₁ knows that I is the meaning of A, then Oscar₂ knows that I is the meaning of A
- if Oscar₁ and Oscar₂ both know that I is the meaning of A then Oscar₁ and Oscar₂ both use A with the same meaning or intension
- by (2), A as used by Oscar₁ has the same extension as A as used by Oscar₂

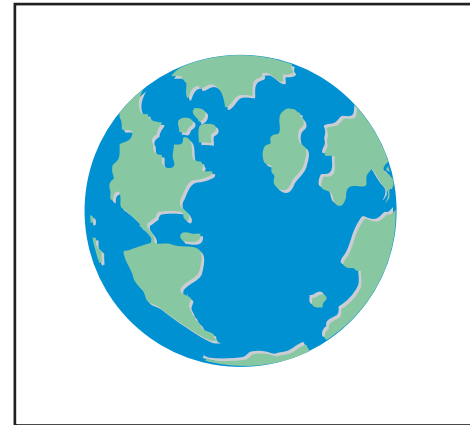
- “It is this last consequence...that we claim to be false. We claim that it is possible for two speakers to be in exactly the same psychological state (in the narrow sense), even though the extension of the term A in the idiolect of the one is different from the extension of the term A in the idiolect of the other. Extension is not determined by psychological state.”

Putnam's twin earth



earth

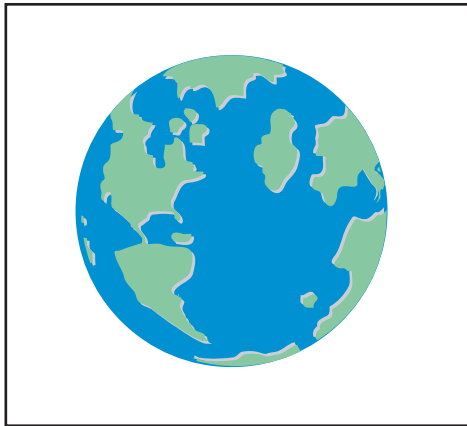
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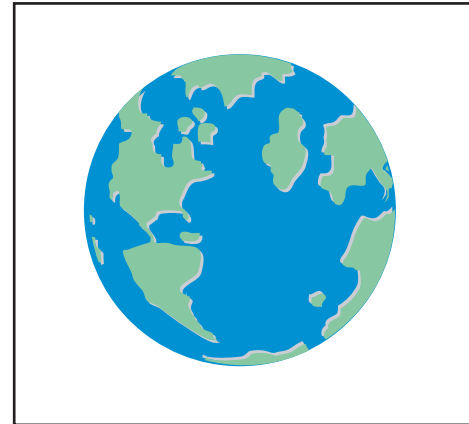
twin earth

a perfect duplicate of earth,
except...

Putnam's twin earth

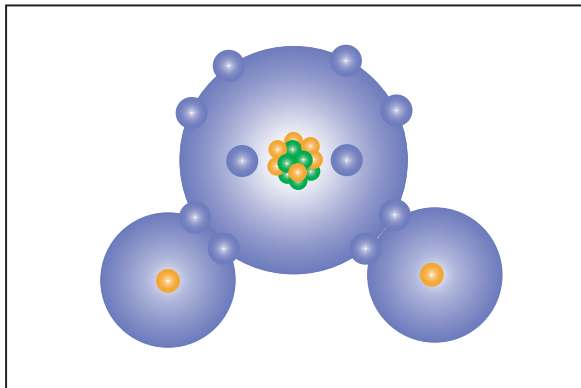


earth



twin earth

Figures by MIT OCW.



...the oceans and lakes contain “XYZ”, which is a very different chemical kind from H_2O , although superficially like it at normal temperatures and pressures

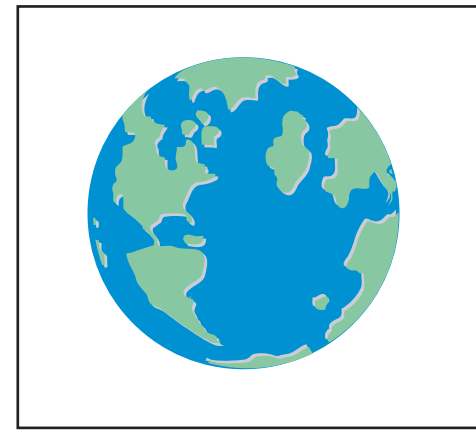


Figure by MIT OCW.

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Movie poster for Singin' In the Rain starring Gene Kelly, Donald O'Connor, and Debbie Reynolds.

- let us ignore the complication that our bodies contain lots of H_2O
- further, let's pretend that no one (on earth or twin earth) knows any chemistry (accomplished in Putnam's example by "rolling the time back to about 1750")

twin-Gene singing in XYZ
on twin earth

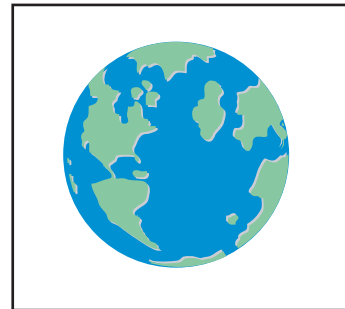
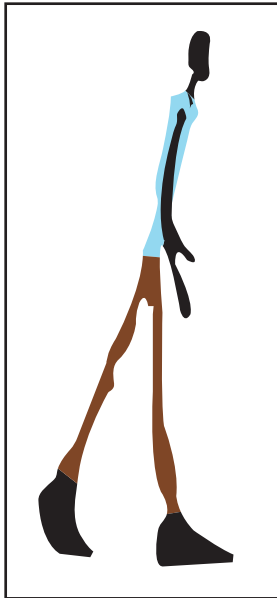


Figure by MIT OCW.

“water is wet”

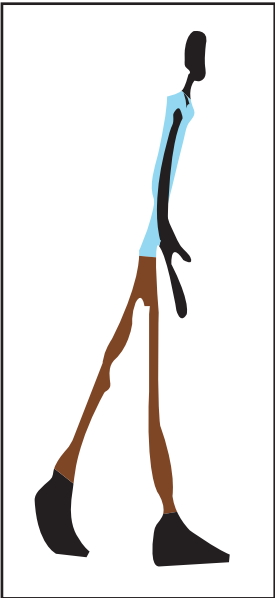


true just in
case H_2O is
wet

Figures by MIT OCW.

Oscar₁ (on earth)

“water is wet”



true just in
case XYZ is
wet

Oscar₂ (on twin earth)

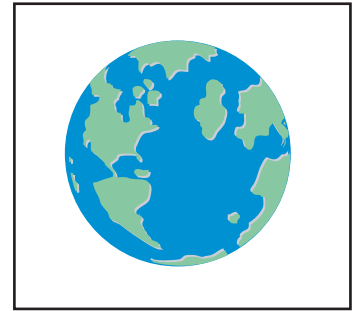


Figure by MIT OCW.

So, the extension of ‘water’ as used by Oscar₁ is different from the extension of ‘water’ as used by Oscar₂, despite the fact that they are “*in the same psychological state*”

“Cut the pie any way you like, “meanings” just ain’t in the head!”

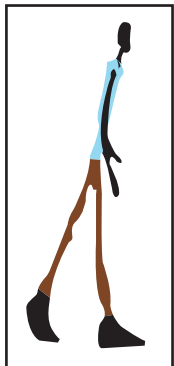


Figure by MIT OCW.



Figure by MIT OCW.

But doesn't Putnam's example also show that thoughts aren't in the head? Oscar₁ has beliefs about water, Oscar₂ has beliefs about water

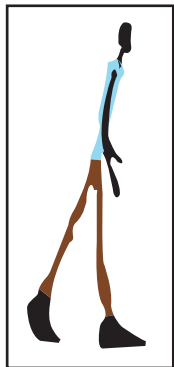


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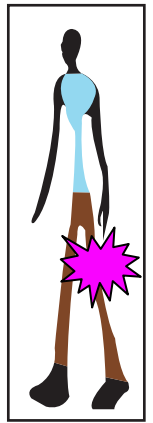
- it was soon realized that Putnam's example, if it shows anything at all, shows that some mental properties (like the property of believing that water is wet) are not intrinsic

“Individualism and the mental”

- Putnam’s example arguably shows that differences in the subject’s environment (e.g. H₂O vs. XYZ) can by themselves make a mental difference
- Burge’s examples purport to show that differences in the subject’s linguistic community can by themselves make a mental difference

Burge's thought experiment

Figure by MIT OCW.



- **stage 1**
- Alfred has various beliefs about arthritis: that he has had arthritis for years, that stiffening joints are a symptom of arthritis... (all true)
and:
- that he has arthritis in his thigh (false, because arthritis is an inflammation of the joints)

Burge's thought experiment

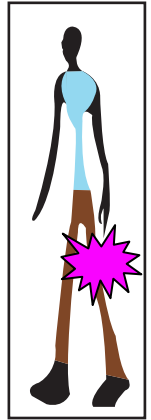


Figure by MIT OCW.

- **stage II**
- a “counterfactual situation” (a non-actual possible world) in which Alfred is exactly the same in all intrinsic respects, but lives in a slightly different linguistic community
- in this community, ‘arthritis’ applies “not only to arthritis, but to various other rheumatoid ailments”
- in the language of this community, ‘Alfred has arthritis in his thigh’ is true

Burge's thought experiment

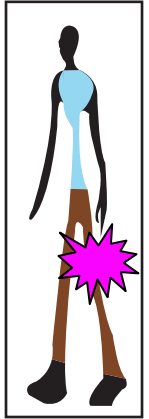
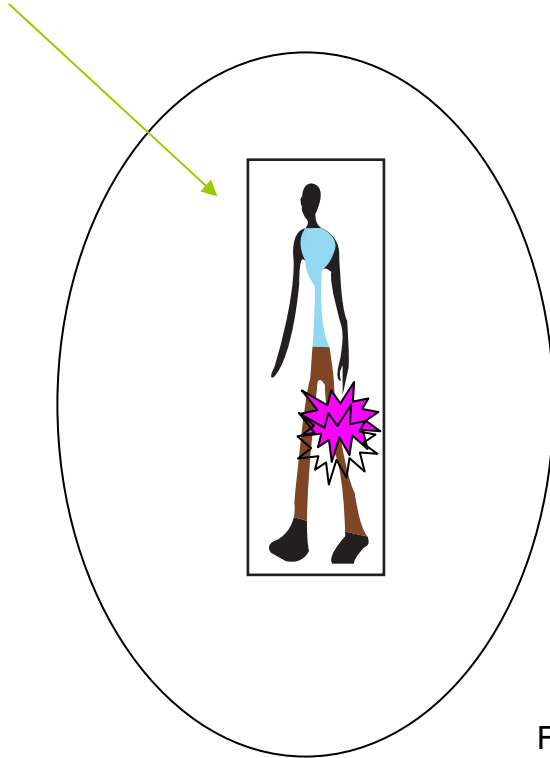


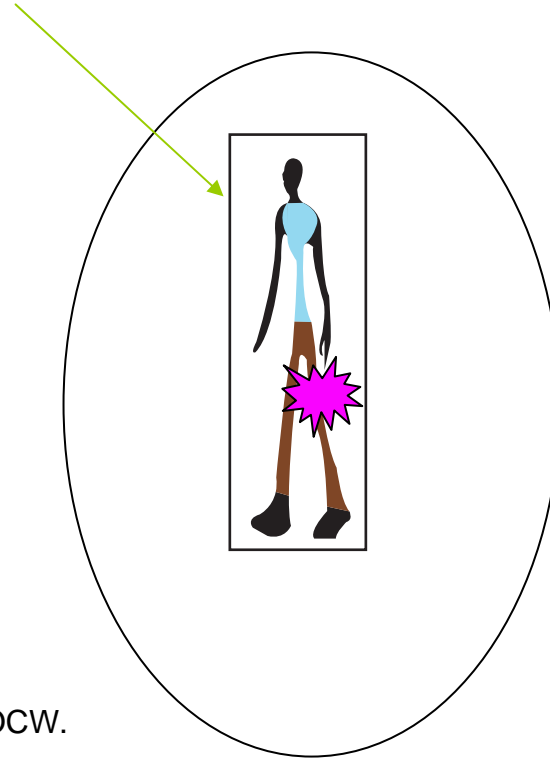
Figure by MIT OCW.

- **stage III**
 - an “interpretation of the counterfactual case”
 - Alfred has no beliefs about arthritis (in particular, he doesn't believe that he has arthritis in his thigh)
 - instead, he has beliefs about the sort of general rheumatoid ailment that is labeled in his community by the word ‘arthritis’
 - if we call that ailment tharthritis, then Alfred believes that he has tharthritis in his thigh

Alfred with arthritis beliefs



Alfred (a duplicate of Alfred as he is in @) without arthritis beliefs



Figures by MIT OCW.

@ (the actual world)

w_1 (the counterfactual situation)

“the extended mind”

- three positions:
 1. internalism
 2. externalism (of the Putnam and Burge sort)
 3. “we propose to pursue a third position...an active externalism, based on the active role of the environment in driving cognitive processes”

three “tetris” examples

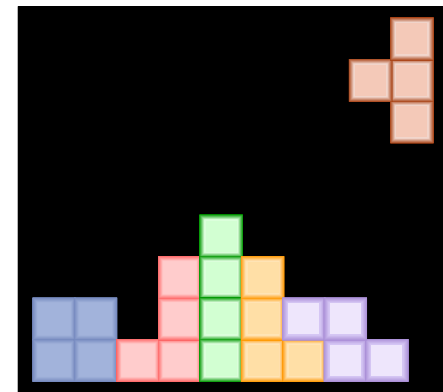


Figure by MIT OCW.

1. mental rotation to assess fit into “socket”
 2. physical rotation (actual tetris)
 3. “a neural implant which can perform the rotation as fast as the computer in [2]”
- “...all three cases are similar”
 - “cognitive processes ain’t (all) in the head!”

another example

- “one can explain my choice of words in scrabble...as the outcome of an extended cognitive process involving the rearrangement of tiles on my tray...the rearrangement is part of thought”

Image removed due to copyright restrictions.
A Scrabble game in action.

a comparison with “passive externalism”

- whether there’s water or twater in the rivers and streams, that “plays no role in driving the cognitive processes in the here-and-now”
- in the C&C examples, “if we remove the external component the system’s behavioral competence will drop, just as it would if we removed part of its brain”

- “in the distant future we may be able to plug various modules into our brain to help us out”

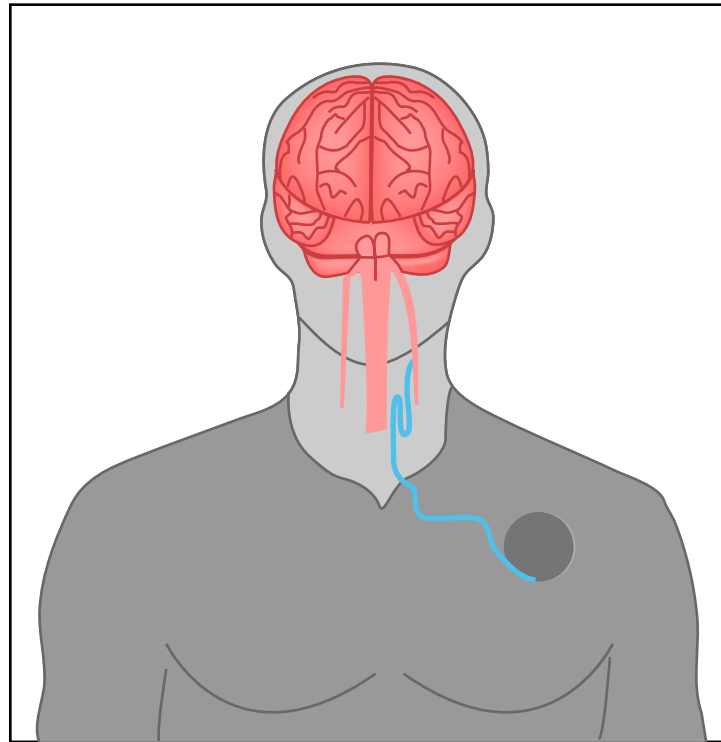


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- “perhaps some processing takes place in the environment, but what of mind?”
- perhaps “truly mental states—experiences, beliefs, desires, emotions, and so on—are all determined by states of the brain”
- C&C seem to concede at this point that the rearrangement of the scrabble tiles (etc.) may not be “part of thought”
- the next step of C&C’s argument attempts to show that beliefs, in particular, “extend into the world”

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Photograph of MoMA.

- Inga wants to go to MoMA; she recalls that it's on 53rd, and that's where she walks
- Inga believed that MoMA is on 53rd before she consulted her memory
- this “standing belief” of Inga's is part of the explanation of how she successfully arrives at MoMA

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Photograph of MoMA.

- Otto (with damaged biological memory) wants to go to MoMA; he recalls that it's on 53rd by consulting his notebook, and that's where he walks
- Otto believed that MoMA is on 53rd before he consulted his notebook
- “for in relevant respects the cases are entirely analogous: the notebook plays for Otto the same role that memory plays for Inga”

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- but don't Otto's beliefs disappear when he's not actually consulting his notebook?
- that "seems to miss the big picture"
- "in both cases the information is reliably there when needed...in just the way we expect a belief to be"

MoMA
is on
53rd

MoMA
is on
51st

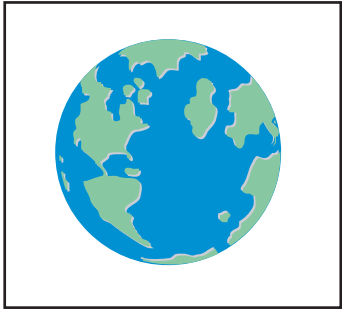


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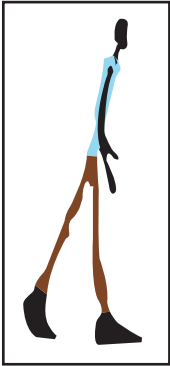


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believes that
MoMA is on
53rd

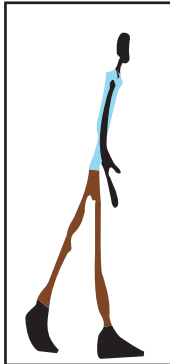


Figure by MIT OCW.

believes that
MoMA is on
51st

Otto₁ (on earth)

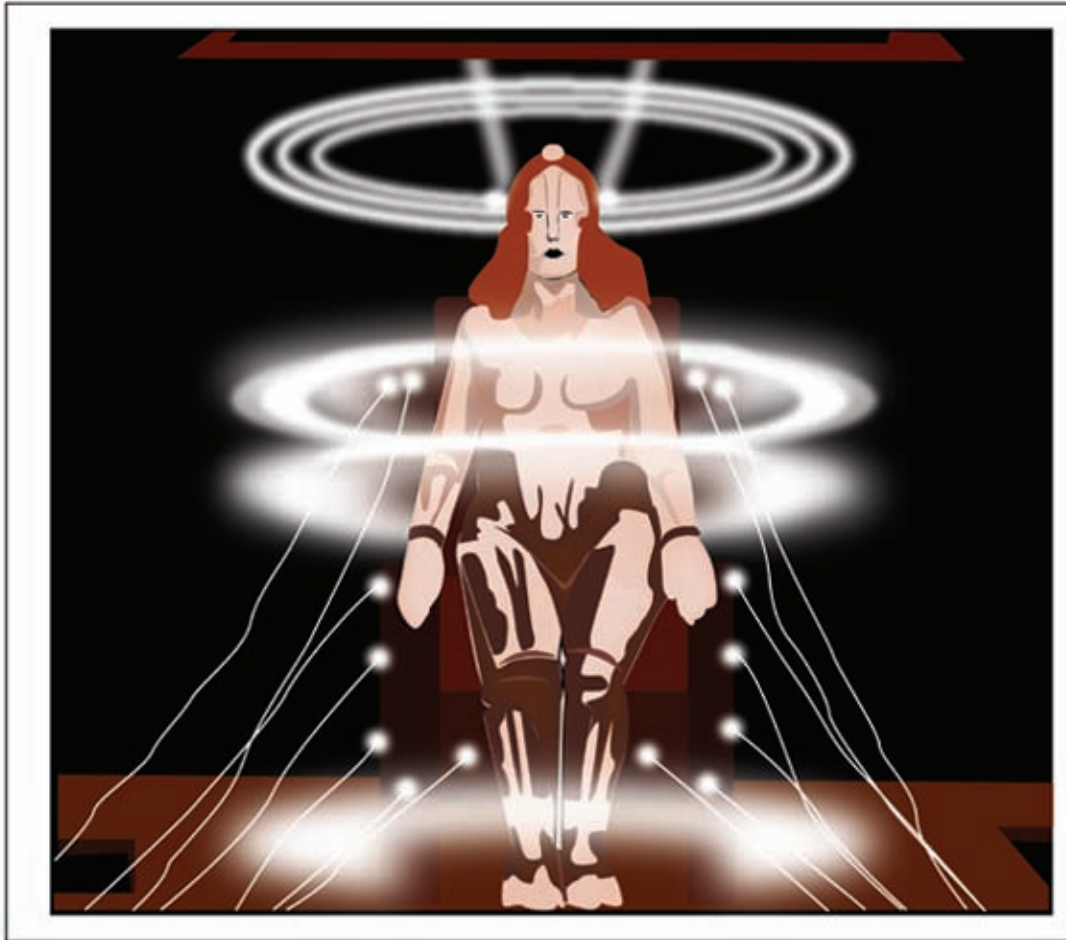
Otto₂ (on twin earth)

- doesn't this mean that our beliefs are “spread out across the internet”!?

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- read McKinsey, Brueckner

Figure by MIT OCW.