

# Minds and Machines

spring 2003

Content:  
psychosemantics

# preliminaries

- papers due in class #23

# “A recipe for thought”

- a sketch of a “naturalistic” account of intentional mental states (a “psychosemantics”)
- “Thought may be intentional, but that isn’t the property we are seeking a recipe to understand. As long as the intentionality we use is not itself mental, then we are as free to use intentionality in our recipe for making a mind as we are in using electrical conductors in building an amplifier or gumdrops in making cookies<sub>3</sub>”

Fred Dretske

## Dretske's example of "original" (underived) intentionality

the compass indicates (when used properly) the location of the north pole, not the whereabouts of the Three Bears (even if the Three Bears are at the north pole)

- so the way the compass represents seems importantly similar to how beliefs represent—one may believe that the location of the pole is over there and not believe that the location of the Three Bears is over there (even if the Three Bears are at the north pole)
- see "[Intentionality](#)" on intentionality/intensionality

“Intentional systems, then, are not the problem. They can be picked up for a few dollars at your local hardware store.”

But:

“We are...trying to build systems that exhibit what Chisholm describes as the first mark of intentionality, the power to say that so-and-so is the case when so-and-so is not the case, the power to misrepresent how things stand in the world. Unlike compasses, these fancy items are not to be found on the shelves of hardware stores.”

# misrepresentation

- when the compass is used correctly (in particular, with no magnetic interference), the needle will always point north
- that is, without interference, if the needle points in direction  $d$ , then  $d$  is the direction of the north pole
- this fact is does not depend on the purposes and attitudes of the designers and users of compasses
- this is the sense in which the compass has underived/original intentionality: without interference, it infallibly indicates the direction of the north pole

# misrepresentation

- interference is possible: a tv set might cause the needle to point east
- in this situation, the compass *misrepresents* the location of the north pole
- but: the compass only misrepresents the location of the north pole because of “the purposes and attitudes of its designers”
- so the compass doesn’t help us understand how a physical system could exhibit the “first mark of intentionality”—the power to *misrepresent*

# natural functions

- “if an information-carrying element in a system could somehow acquire the function of carrying information, and acquire this function in a way that did not depend on our intentions, purposes, and attitudes, then it would thereby acquire...the power to misrepresent the conditions it had the function of informing about”
- two possible ways of acquiring such functions: phylogenic, ontogenic



# phylogenetic

- “If the heart has the function of pumping blood...then...the senses...might have an information processing function...There would thus exist, inside the animal, representations of its environment, elements capable of saying something false”
- but this could not explain how an animal might acquire representations of its environment through *learning*

# ontogenic

- assume the system has a need for the information that  $p$  (e.g. that there is a poisonous thing nearby)
- assume it has an internal state  $S$  that indicates that  $p$
- add a natural process, one capable of conferring on  $S$  the function of indicating that  $p$

# ontogenic

- “...the result will be a system with internal resources for representing (with the associated power of misrepresenting) its surroundings. Furthermore, that this system represents, as well as what it represents, will be independent of what we know or believe about it...The entire process can happen spontaneously and, when it does, the system will have its own cache of original intentionality.”

# ontogenic

- but is this a recipe for *thought*?
- “To acquire the function of indicating F, to become (thereby) a representation of F...a structure must play a part in the production of behavior that is rational from the point of view of the organism’s well-being.”
- had the structure indicated G, “a condition unrelated to a useful outcome, [it] would not have been selected for producing a response to F.”
- “Rationality emerges as a by-product in the very process in which representations are created.”

# limitations and problems

- not clear how to extend the story to thoughts (beliefs) that do not concern environmental conditions relevant to the organism's survival (e.g. that Dretske's paper is interesting)
- not clear how to extend the story to other sorts of intentional states (intentions, wants, hopes, etc.)
- why would a poison-representing internal state have the *function* of indicating that there's something poisonous nearby?
- supposing that not all red things are poisonous, might not the state's function be to indicate that a red thing is nearby? (false positives don't matter much; false negatives are to be avoided at all costs)

# a different approach: “True believers”

- Dretske gives a *reductive* account of thought—an account that does not help itself to any mental ingredients
- Dennett, like Dretske, wants to show how a merely physical system could have thoughts
- but Dennett’s account is *nonreductive*—it does use mental ingredients<sup>14</sup>

Daniel Dennett

# three predictive strategies

- the *physical stance*
- the *design stance*
- the *intentional stance*

# the physical stance

- use the system's physical properties and the laws of physics to predict its behavior



# the design stance

- assume that the system is designed to do such-and-such, and predict its behavior on this basis

# the intentional stance

- treat the system as a rational agent, figure out what beliefs and desires it ought to have, given its place in the world

“A little practical reasoning from the chosen set of beliefs and desires will in many—but not all—instances yield a decision about what the agent ought to do; that is what you predict the agent will do” (558)

# the power of the intentional stance

- “a fact largely concealed by our typical concentration on the cases in which it yields dubious or unreliable results”
- the prediction contest: Martian super-physicists vs. Earthlings



where will *you* be in exactly one week?



# the “perverse claim”

- “*all there is* to being a true believer is being a system whose behavior is reliably predictable via the intentional strategy, and hence *all there is* to really and truly believing... $p$  (for any proposition  $p$ ) is being an intentional system for which  $p$  occurs as a belief in the best (most predictive) interpretation”
- this is a “nonreductive” account of believing  $p$  because ‘being an intentional system for which...’ contains mental vocabulary

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- read Davidson, Kim