

## Class 11 - Natural Kinds

### I. Putnam's conclusions

Our topic, since starting with Frege's sense/reference distinction, has been how we refer, how language hooks onto the world.

In one way, we have sharpened our focus, to the status of names.

In another way, our view has widened.

Kripke's arguments about rigid designation led to some startlingly broad conclusions about necessity and apriority.

Putnam's article, like Kripke's has both a narrow focus and broad implications.

Putnam argues for two conclusions.

First, natural kind terms are rigid designators, like names.

Second, what we mean is not exclusively determined by what we think.

Putnam's argument bridges Kripkean insights about rigid designation with what has come to be known as semantic externalism, that the meanings of our terms are, in surprising ways, independent of our thoughts.

### II. Burge's externalism

Tyler Burge developed semantic externalism around the same time as Putnam, especially in an article we are not reading, called "Individualism and the Mental."

Burge asks us to consider two possible worlds,  $w_1$  and  $w_2$ .

In  $w_1$ , which is relevantly like ours, people speak English<sub>1</sub>.

One of the English<sub>1</sub> speakers, let's call him Tyler<sub>1</sub>, thinks (mistakenly) that he has arthritis in his thigh.

But, arthritis only afflicts joints, and the thigh is not a joint.

So, he has a false belief.

He expresses this false belief by uttering:

1. I have arthritis.

Tyler, using 1, makes a false statement.

In  $w_2$ , Tyler<sub>2</sub>'s personal history and experiences are exactly the same as those of Tyler<sub>1</sub>.

The only difference between  $w_1$  and  $w_2$  is that in  $w_2$ , the word 'arthritis' refers, not to arthritis, but to a different disease, which we can call tharthritus.

Tharthritus is like arthritis, but it afflicts bones and joints.

Tyler<sub>2</sub> lacks any beliefs about arthritis, since no one in  $w_2$  has any beliefs about arthritis.

People in  $w_2$  have beliefs about something to which they refer using 'arthritis', but which really is tharthritus.

So, in  $w_2$ , 'I have arthritis' means that one has tharthritus.

Tyler<sub>2</sub> thus believes, truly, that he has tharthritus.

The statement that Tyler<sub>2</sub> makes by uttering 1 is true.

But that is the very same sentence with which Tyler<sub>1</sub> expresses a false belief that he has arthritis.

And Tyler<sub>1</sub> has exactly the same history and experiences as Tyler<sub>2</sub>.

Thus, whether one or the other Tyler has a true belief about tharthritis or a false belief about arthritis depends wholly on matters external to Tyler.

All that matter to whether Tyler's statement is true or false, and to whether his reference is successful or not, are the practices of the linguistic community in which he finds himself.

### III. Putnam's Twin Earth case

Putnam argues for externalism about natural kinds, specifically water.

He frames the argument in terms of the differences between intension and extension.

'Creature with a heart' and 'creature with a kidney' differ in intension, while having the same extension.

So, Putnam an intensionalist of some sort.

We can use the intensionalist's language to describe the Burge case by saying that 'arthritis' has two different extensions, while having the same intension.

In Putnam's Twin Earth case, we are also asked to imagine two worlds.

The first world is ours, before chemical analysis, around 1750.

The second world is called Twin Earth, and it is almost exactly like Earth.

The only difference between Earth and Twin Earth is that where we have H<sub>2</sub>O, Twin Earth has XYZ, a completely alien compound, which looks, and tastes, and acts just like water.

Everywhere that we have H<sub>2</sub>O, they have XYZ, and vice-versa.

The Twin Earthlings call XYZ water, just as we call H<sub>2</sub>O water, p 307.

When an Earthling uses the term 'water', s/he is referring to H<sub>2</sub>O.

If, somehow, Earthlings were able to manufacture or discover XYZ, we would be wrong to call it water.

Similarly Twin Earthlings use the term 'water' to refer to XYZ.

Thus, 'water' refers-in-English to water (i.e. H<sub>2</sub>O).

But 'water' refers-in-Twinglish to twater (i.e. XYZ).

The terms have the same meaning in both languages.

Earthlings and their Twin Earth counterparts (or, dopplegangers) think of themselves as drinking water, swimming in the water, and washing themselves with water.

When they think about 'water' they think the same thoughts.

But, 'water<sub>E</sub>' and 'water<sub>TE</sub>' have different referents.

Note that this conclusion entails, or at lends support to, the claim that the term 'water' is rigid.

Just as names were rigid because they referred to the same individual in all possible worlds, Putnam says that natural kind terms, like water, refer to the same thing in all possible worlds.

Natural kinds, like names, have hidden indexicals that make them refer rigidly, p 312.

So, 'water' designates rigidly.

And 'H<sub>2</sub>O' designates rigidly, as the name of a particular kind of molecule.

Thus, 'water is H<sub>2</sub>O', like 'Hesperus is Phosphorus', is necessary, but discovered a posteriori.

It is one of the necessary, a posteriori theoretical identifications that Kripke discusses.

There is an essence to a natural kind, which is only discoverable within a scientific theory.

We pick out water by pointing to it, or describing it.

But, when we want to know what water really is, we ask the scientists.

Artifacts, on the contrary, presumably lack essences, and so lack the indexical quality of natural kinds. There is no essence to a chair, or a shirt, that scientists could discover.

Artifacts may be made of varying materials.

They might have some functional essence.

But, the rules governing the uses of artifact terms are likely to be mainly pragmatic.

There are cases which are ambiguous between natural kinds and artifacts.

Elsewhere, Putnam discusses a jadeite/nephrite case.

The term 'jade' actually refers to two different elements (jadeite and nephrite) with two different microstructures.

'Jade' refers not to a single substance with a single essence.

Similarly, 'autism', and other disease terms, might refer to a range of different essential structures.

In Putnam's Twin Earth case, the date is 1750, and no one knows anything about chemical analysis.

No one knows that the referents of their terms are different.

Me and my Twin Earth doppelganger have the same thoughts.

So, whatever way we think about 'water' is the same.

Yet, our references are to different substances.

As in the Burge case, the reference of 'water' is determined by factors external to anything to which an individual has access.

I can not know that the reference of my term 'water' is water or twater.

A similar conclusion arises from the elm/beech case.

Here, what Putnam thinks does not determine that to which he refers.

He associates the same thoughts with either elm trees or beech trees, depending on which word is used.

Thus, my thoughts do not determine the reference of my terms.

#### IV. The division of linguistic labor

Consider how far we have come from Locke's thesis that words stand for ideas in our minds.

Locke claimed that communication was only possible, in fact society was only possible, because the meanings (the referents!) of my words were internal to my thoughts.

Frege divided our grasp of a sense (internal) from the reference it determines (external).

Kripke argued that reference depends on a causal history leading back to a baptism.

The historical factors are external to a person's thoughts.

In general our reference depends not just on what we think ourselves, but on other people in the community, the history of how the name reached one, and things like that. It is by following such a history that one gets to the reference. (300)

Similarly, for Putnam, the reference of 'water' is determined not by the individual, but by a small group of experts, the scientists, who determine what the essence of the natural kind is.

The class of people who need to acquire a given natural kind term is larger than the class who need to know how to recognize it.

With the rise of science, it is too time-consuming and inefficient for members of a community to all know how to identify surely each term.

Thus, reference is determined only by the experts in a division of linguistic labor.

The average speaker does not acquire anything which fixes the extension of the term.

Ordinary people have facility with stereotypes, which they can indicate through ostensive definition or by description.

In describing, one might refer to a stereotype, an exemplar with typical features.

Speakers are required to know about the stereotype in order to count as having acquired a word.

These requirements vary with the community and its needs.

When we call something 'water', we imply that the microstructure must be the same for anything else to be water.

Some terms do not exhibit any division of linguistic labor, e.g. 'chair', but many do.

Consider the tools analogy, p 310.

#### V. Ramifications of externalism

Frege, recall, thought that when we refer to an object, we do so, privately, by apprehending a public (if not concrete) meaning which determines the referent of my term.

The Fregean picture results in the following puzzle.

- A. Our thoughts determine the meanings (senses) of our sentences. Even if we accept Frege's claim that meanings are public abstracta, the psychological state of grasping that concept is still private.
- B. Sense determines reference. That is, it is impossible for terms to differ in extension while having the same intension.
- C. Reference can vary without variation in thought, as the externalist cases show.

A, B, and C are internally inconsistent.

On pain of contradiction, we have to give up one of the claims.

C is a datum from the thought experiments.

One might deny the plausibility of the thought experiments, though their results are pretty robust.

Putnam suggests abandoning A.

Thus, he concludes, meanings have a component outside the head.

That is the externalist solution.

The third option would be to give up on the determination of reference by sense, B.

We have been assuming so far that intensionalism is Fregean intensionalism.

But, it is possible to have a theory of meaning on which senses do not determine references.

That will be Katz's route, which we examine at the end of the meaning section of the course.