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Thoughts on Twin Earth

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Abstract: The questions at issue in this discussion of Hilary Putnam’s Twin Earth thought experiment include the scope and limits of narrow versus wide meaning, the role of attempting to successfully refer as opposed to successfully referring in determining where meaning resides and how thought functions in relation to the meanings of words and sentences. Twin Earth is supposed to challenge the Fregean thesis that intensional sense (*Sinn*) determines extensional reference (*Bedeutung*), and that meanings are ‘in the head’. Putnam in ‘The Meaning of “Meaning”’ (1975) concludes emphatically that the Twin Earth thought experiment definitively shows that meanings are not in the head. It is argued here in a previously unexplored criticism that there are several senses in which meanings can appropriately be said to reside in the intending thinker’s head, especially under available interpretations of the metaphysics of and identity conditions for intending mental acts and their intended objects. The thought experiment loses force if it is said that the identity requirements for a ‘simultaneously’ intending mental act involving ‘Water’ imply achieved reference to H₂O on Earth and to XYZ on Twin-Earth. Then the intending mental acts on Earth and Twin-Earth involving the thought ‘Water’ will not in fact, despite superficial appearances, belong even to the same relevant general types or kinds of psychological events.

Keywords: Externalism (narrow and wide), intentionality, internalism (narrow and wide), meaning and theory of meaning, natural kinds, philosophy of language, philosophy of mind, Putnam, Hilary, reference, semantics, thought experiment, Twin Earth

1 Earth and Twin Earth

Hilary Putnam’s provocative frequently discussed Twin Earth thought experiment appears for the first time in his 1975 essay, ‘The Meaning of “Meaning”’.¹ The

¹ Putnam 1975.

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assumptions on which the thought experiment depends are offered in support of momentous conclusions in the theory of meaning in thought and its expression for philosophy of mind and philosophy of language. Upon critical scrutiny, Putnam's thought experiment conditions are shown in the argument that follows to be conjointly logically incoherent. Putnam's interpretation of the Twin Earth scenario is meant to show at least that, contrary to Franz Brentano and the intentionalist and phenomenological tradition, *meanings are not in the head*, and that, contrary to Gottlob Frege and variants of the *Sinn-Bedeutung* distinction, *sense or intension does not determine reference or extension*. Putnam's Twin Earth thought experiment with its demonstrated inconsistent starting place consequently leaves both of these interesting philosophical questions unanswered.²

The objection provides occasion for a concise re-examination of the deeper metaphilosophical issues surrounding what we may want and what we may be entitled to expect from philosophical thought experiments. The success or failure of test cases like Putnam's Twin Earth cannot always be satisfactorily judged only in relation to the explanatory purposes for which they are designed and to which they are applied. They may need to be appreciated in some instances for the sake of remotely related virtues that the thought experiment's author need not have anticipated or intended. Putnam debuts the Twin Earth scenario with the purpose specifically of addressing and answering negatively the question as to whether meanings in thought and language are internally psychological:

Are meanings in the head? That psychological state does not determine extension will now be shown with the aid of a little science fiction. For the purpose of the following science-fiction examples, we shall suppose that somewhere in the galaxy there is a planet we shall call Twin Earth. Twin Earth is very much like Earth; in fact, people on Twin Earth even speak English. In fact, apart from the differences we shall specify in our science-fiction examples, the reader may suppose that Twin Earth is *exactly* like Earth. He may even suppose that he has a Doppelgänger – an identical copy – on Twin Earth, if he wishes, although my stories will not depend on this...One of the peculiarities of Twin Earth is that the liquid called "water" is not H₂O but a different liquid whose chemical formula is very long and complicated. I shall abbreviate this chemical formula simply as XYZ.³

There is obviously more to be said about how Putnam conceives of the Twin Earth thought experiment and the frequently explained conditions that the scenario is supposed to satisfy.⁴ We shall focus on a particular selection of the

² See Jacquette 2013.

³ Putnam 1975, 139–40.

⁴ See, *inter alia*, the papers collected in Pessin and Goldberg, eds. 1996. See also Norris 2002, esp. pp. 8–39. For more general background on Putnam's philosophy, see Ben-Menahem 2005. Conant 2002.

problems main features that are directly relevant to the semantics of thought and its expression, and the role of intentionality in reference.

Putnam in drawing implications from the Twin Earth thought experiment does not propose to argue that referential extension is part of meaning. This presupposition, as shall be seen, is Putnam's thought experiment's Achilles' heel. We concentrate on a small family of applications that are especially problematic for Putnam's purposes. Here, for example, is a thought entertained by twins on Earth and Twin Earth: 'There are thoughts on Earth.' Twin Earth is an exact physical duplicate of Earth, charitably interpreting Putnam's example, discounting the difference whereby water is constituted as H₂O on Earth and as XYZ on Twin Earth. Supervenience of the events of consciousness on neurophysiological events within the thinker's body is assumed by Putnam universally to hold. If there are thoughts on Earth, then there are in some sense the *same* thoughts supervening on the neurophysiologies of duplicate Twin Earth Doppelgänger, as for thinkers like ourselves engaged in thinking thoughts on planet Earth, including the thought, whatever it means referentially and pre-dicationally, that 'There are thoughts on Earth.'⁵

2 Stereo Thought Contents on Earth and Twin Earth

Corresponding thoughts on Earth and Twin Earth are obviously not numerically identically the same *token* thoughts. Earth me thinks 'Water', and my Twin Earth Doppelgänger at the same or corresponding moment of real time thinks 'Water'. These are numerically two different thoughts or thought tokens, regardless of any type similarity in their contents or what it is that as the entities they denote, and irrespective of the abbreviated propositions the two thinkers may be considering, such as 'Water is here'. They are two different events occurring in two different consciousnesses residing on two different planets.

⁵ We may speak loosely here for the moment of a Twin Earth Doppelgänger as any thinker on that planet with the same *type* neurophysiology, however type-sameness is interpreted, under universal supervenience as anyone on Earth who thinks 'Water'. Such Twin Earth Doppelgänger would not need to resemble their Earth counterparts very closely, although with even duplication of physical conditions, one imagines that Earth and Twin Earth mirror image Doppelgänger must also be not only logically possible, but physically, causally inevitable.

The question Putnam's thought experiment raises is what happens when one of these thinkers on Earth or Twin Earth thinks a thought and uses the same words to entertain a proposition such as 'There are thoughts on Earth', or even to utter a single word with meaningful intent, such as the word 'Water', perhaps emphatically with more heartfelt feeling as 'Water!' Are these two phonetic utterances or inward entertainment in two acts of consciousness on Earth and Twin Earth consequently the *same* or merely *equivocal* in meaning? Here is a dilemma. If the thought 'There are thoughts on Earth' is the *same* in meaning on both Earth and Twin Earth, then we shall have trouble understanding how the meaning of 'Water' can be the same on Earth and Twin Earth, if Earth water is H₂O, Twin Earth water is XYZ, and H₂O ≠ XYZ. If the occurrence of 'Water' utterances on Earth and Twin Earth are *equivocal* in meaning because they alternately intend H₂O and not XYZ, or XYZ and not H₂O, then it would appear that meaning is not simply a property of the consciousnesses by which these thoughts are thought. The latter choice would seem to imply that not all of a word or sentence's *meaning* is contained in or fully determined by states of consciousness alone. In rough terms, this is approximately the conclusion at which Putnam aims.

The equivocation on 'Water' (and 'Earth', and finally all words) between Earth and Twin Earth Doppelgängers threatens to undermine Putnam's assumptions for and interpretation of the implications of his Twin Earth thought experiment. If all the words used on Twin Earth actually have different meanings than they have on Earth, then the two linguistic communities are not speaking the same language after all. Nor, for the same reason, can they possibly be involved in thinking thoughts possessing the same sense, Fregean *Sinn*, Brentanian *Inhalt*, or Husserlian *noema*.⁶ They are instead speaking a homophonic image of one another's languages, concerning which we cannot even say with confidence which is the original and which the homophonic copy.

⁶ Twardowski 1894 speaking for the Brentano school, but significantly not for Brentano 1874, distinguishes Brentano's category of a thought's content (*Inhalt*) from the intended objects (*Gegenstände*) of mental acts, connecting mental act to intended object through the sometimes irrelevant intermediary of the thought's content. Frege [1892] 1980, 62–66 offers a very different account of the abstract sense (*Sinn*) of a proper name including definite descriptions in intensional Leibnizian self-identity terms as a distinguishing complement of constitutive properties. See Husserl 2004 for extensive discussion of *Noemata* as occurring in real time and lived through by the thinking subject. A reductive conflationary account for Fregean *Sinn* and Husserlian *Noemata* is defended by Føllesdal 1969; 1990. Føllesdal is undoubtedly correct to remark a structural isomorphism between the two categories of thought and the meaning of thought and its expression, even if *Noemata* are subjectively lived-through in Husserl's conception, and *Sinne* are objectively abstract and anti-psychologically mind-independent.

3 Intentionality and Reductive Natural Science of the Mind

The argument is sometimes made that thought can never be fully explained by natural science.⁷ The reason is supposed to be that thought is essentially semantic, and there is no natural law-governed science of meaning. There is no natural law-governed semantic science, not because meaning is supernatural, but because meaning involves intentionality. Intentionality is often considered to be a physically causally irreducible relation in which thought as a basic mental act intends specific (intended) objects instantiating an abstract semantic relation. Action, including basic mental acts of intending, can only be explained in a structure of *reasons*, as we may agree with Donald Davidson in his 1963 essay, ‘Actions, Reasons, and Causes’. Despite this, going beyond Davidson to a suggestion advanced by Jaegwon Kim, if thoughts are not natural law-governed occurrences, mental and physical events can nevertheless stand in relation to one another as counterfactual causes of events that would not occur if counterfactually their causally contributing factors did not first exist. Davidson holds only that thoughts are not the kinds of things to be physically determined or undetermined by application of causally necessary natural laws.⁸

If we ask, *How* does intentionality do this? *How* does thought intend specific intended objects?, then we are certainly missing the point. Intentionality is not an *agency* that *does* anything in a special way that we can capture on film, even metaphorically speaking. Intentionality is merely the name for the fact that a thought is *about* something, even if in sensations like pleasure and pain it is only about the occurrently experienced sensations themselves.⁹ *Thought*, the intentionalist usually believes, in the simplest instance and in all instances under logical

7 Interesting recent discussion in consciousness theory has focused on the relation of third-person objective phenomena to first-person psychological occurrences, rather than seeking to reduce or eliminate first-person to or in favor of third-person phenomena. See *inter alia* Davidson 1963; Nagel 1979; Margolis 1978; 1984; Levine 1983; Chalmers 1996.

8 Davidson 1963.

9 The classic recent source on the concept of intentionality is Brentano 1973 [1874], 88. The relevant literature is vast. Criticism of the general intentionality of thought, that all thought in something like the fully encompassing Cartesian sense is mentioned by Rorty 1979, 22 specifically in the case of sensations like pains that he maintains commonsensically do not seem to be *about* anything. See also Rorty 1970, 409 for a precursor of Rorty’s 1979 objection and Anscombe 1965 for suggestions toward sustaining the general intentionality of thought against such objections anticipated years preceding writers like Rorty. I have addressed Rorty’s objection in Jacquette 1985 and 2009, 180–182.

analysis, is the attributing of a property to an object.¹⁰ Twin Earth scenarios generally, inspired by Putnam's thought experiment, are supposed to show that two thinkers with type-identical duplicate neurophysiologies in type-identical physical circumstances can entertain thoughts with identical *content*, that are identical in propositional *sense* (*Sinn*), and phenomenologically qualitatively indistinguishable (in *Inhalt*, *Noema*), given the universal or in any case interplanetary type-identical corresponding local superveniences of conscious (and other brain) states on supervenience base neurophysiological states transpiring in the bodies of psychological subjects hypothetically existing on Earth and Twin Earth. Significantly, Earth and Twin Earth thoughts are not supposed to agree on reference, exact denotation, or ultimate extension. If ultimate extension is part of *meaning*, then Putnam's Twin Earth thought experiment undoubtedly proves as advertised that meanings, so construed, are not in the head, and that sense or intension does not fully determine reference or extension, again, so construed.

Supervenience is understood as a limiting case of counterfactual causation. The supervenience base and ontically dependent supervenient event occupy precisely the same extended moment of time, rather than being temporally ordered, one event occurring before and the other after the first, as in the case of what is otherwise called counterfactual causation. We say in both applications that if event E1 did not occur, then event E2 would not have occurred. If E1 and E2 are exactly cotemporal, we speak of ontic dependence, and hence of some generality and modality of supervenience. If E1 occurs in real or ideal imaginary time before or after E2 occurs, then either E1 counterfactually causes E2, or the reverse. Supervenient events generally possess both an *ontic* and *qualitative* dependence on the existence and condition of their supervenience base. The same is true in particular, if the supervenient event is the occurrence of a conscious thought, such as 'Water', or 'I am standing on Earth, and not on Twin-Earth'. Where the supervenient event in question is a conscious thought, we are taught to expect in many cases that the thought will possess both semantic *meaning* and phenomenological *qualia*. Thought can only be adequately explained as a supervenient conscious occurrence, supervening on a specifically functioning neurophysiology, with both an adequate account of a thought's semantic meaning and each thinker's distinctive phenomenology.¹¹

¹⁰ Searle 1983, esp. Chapter 8, 197–230.

¹¹ Type-type body-mind or neurophysiology-consciousness supervenience is deemed problematic in lieu of an adequate characterization of the relevant types. Token-token specificity of correlation guarantees counterfactual causal as well as ontic dependence relations and makes specific supervenient conscious states, moments or events, mental phenomena generally, signature occurrences by which particular neurophysiological states, moments or events are in principle identifiable.

Putnam is circumspect about the implications of Twin Earth thought experiment assumptions. Perhaps he senses problems in the Earth and Twin Earth Doppelgänger concept, and its literal semantic interpretation. Whatever the reason, Putnam distances himself from the possibility of Earth and Twin Earth Doppelgängers exercising intention in a narrower sense than has so far been contemplated, as not essential to the thought experiment's semantic motivations. Part of the charm of Putnam's Twin Earth thought experiment is its suggestion that Doppelgängers are scarcely avoidable if physical environmental conditions, ignoring the presumed inconvenient fact that $H_2O \neq XYZ$, are truly type-duplicated on Twin Earth as on Earth.

We must make many problematic assumptions in order to arrive at Putnam's interpretation of the Twin Earth thought experiment. *If*, first, the *intended object* in any of its characterizations is part of the *meaning* of a thought like 'Water', and derivatively thereby of the reference-expressing word, especially as used in language to characterize the corresponding thought content. Second, *if* the intended objects of the thought 'Water' by Earth and Twin Earth thinkers in Putnam's Twin Earth thought experiment are respectively $H_2O \neq XYZ$, and *if* these are different *types* of liquid, different *natural kinds*, one indigenous to Earth and the other to Twin Earth, a concept in similar application that is also challenged in other parts of Putnam's enormously rich and rewarding essay. Only then, as Putnam wants explicitly to conclude, can we validly infer:

- (1) Meaning is not (all) in the head, but determined by external circumstantial extant factors as well as the intentionality of thought.
- (2) Sense does not fully determine reference, contrary to Frege, whose theory of meaning is mentioned explicitly by Putnam as having promoted the thesis brought under challenge by the Twin Earth thought experiment.

These are not easy matters to settle. Do we have an argument ready to hand, for example, to show that the same natural kind cannot have a different chemical composition in different places? I am doubtful, as by now is easily surmised, of these kinds of implications in Putnam's Twin Earth thought experiment. It depends on how the category of natural kinds is precisely understood.

As Putnam also explains his thought experiment conditions, H_2O and XYZ are supposed to be 'indistinguishable...at normal temperatures and pressures' (presumably those are the normal conditions on Earth, and by stipulation in the thought experiment on Earth's twin). Putnam continues, with my editorial questioning inserted in brackets: 'In particular [XYZ] tastes like *water* [! What

is *that* supposed to be? *What IS water?* Is it H₂O or XYZ?], and quenches thirst like *water* [Again the word intrudes, as though we know what it means!].¹² If *that* superficially non-microscopically or by chemical reagent indistinguishable liquid stuff on Earth and Twin Earth is intended in any moment of conscious thought by thinkers on both planets, then the meaning of their thoughts upon each thinking 'Water', exists entirely in their two heads, centered somewhere within the confines of their two ≠ skulls. It is not determined even in part by the actual chemical compositions of their local planetary liquids, but only by what they think about, what they intend concerning, whatever it is that they, without the benefits of advanced science (leaving us to wonder how advanced such a science needs to be) cannot without special instrumentation distinguish experientially as different natural kinds.

What general semantic lessons shall we then try to draw from assumptions as contingently dependent on cultural factors of local knowledge and ignorance, especially of terrestrial and extraterrestrial molecular chemistry, in understanding *meaning* conditions in the broadest sense? To say that Earth and Twin Earth thinkers intend *b* because they intend *a* and $a = b$, as Putnam seems to do, expects an *intentional* relation to behave like an *extensional* one. If that assumption is built into general semantics, then it is a foregone and to my thinking philosophically uninteresting conclusion that meaning is not in the head and sense does not determine intended reference, taken extensionally all the way down to the ground. The more abrasive way to make the point is to say that Putnam commits the fallacy of supposing intentional contexts to support intersubstitution of coreferential terms (or equivalent propositions) *salva veritate*.¹³ The semantic relations and contexts in question, where the complete description of meaning and phenomenology of a conscious propositional thought are concerned, are nevertheless frequently defined or otherwise singled-out criteriologically on the grounds of their failing to support precisely such truth-preserving intersubstitutions of extensionally coreferential terms and truth functionally equivalent propositions.

If Earth and Twin Earth residents are understood as intending what they find phenomenologically indistinguishable upon experientially sampling quantities of both H₂O and XYZ, serving all the same geographical and biological explanatory functions in both worlds and nothing more, intensionally expressed

¹² Putnam 1975, 140 (emphases added).

¹³ An exception is perhaps Berg 2012 who allows intersubstitution of coreferential terms and materially equivalent sentences in belief contexts *salva veritate*, while accounting for semantic anomalies as a consequence of substitution failure *salva propria* under Gricean conversational implicature conditions.

with such fine-grained referential specificity as not to support substitutions of coreferential terms and equivalent propositions *salva veritate*, if that and that alone is the intended referential meaning of Earth and Twin Earth ‘Water’ thinkers, then there is after all no *type*-distinction in their intentions. They actually agree on the referential meaning of their thoughts under proper semantic interpretation, including both *Bedeutung* as intended object of reference, or their thought contents understood intentionally and phenomenologically, the *Sinne, Inhalte, Gedanken, Noemata* and more generally the phenomenology of their respective occurrent thoughts. We need not conflate these distinct philosophical concepts in order to appreciate the similar explanatory purposes they are designed to serve.

The intended objects of Earth and Twin Earth ‘Water’ thinkers remain identical, although not all properties of Earth water and Twin Earth water are made part of the *meaning* of every use of the same object-intending thought fragment type or corresponding word. That (Earth) water is H₂O is a fine thing to know. There are nevertheless literally endless truths about H₂O, including all its relational properties to all individual existent things (to start there), and to abstract entities, and all other natural kinds, including those on both Earth and Twin Earth, assuming for the sake of argument throughout this part of exposition and criticism that Putnam’s hypothesis makes sense. When I think ‘Water’, do I then have as the meaning of my thought all the infinitely many truths that *might* be mentioned about water, including those involving concepts that have never crossed my mind or that of any other finite consciousness? Must I *intend* concepts I have never heard of, and of which under the best of imaginable circumstances I could offer absolutely no account, merely when the thoughts I do explicitly consciousnessless entertain are logically related to others I do not consider? Shall all truths about water be insisted upon as part of my *intended meaning*, when I think or say ‘Water’? Who would have guessed such a thing?

4 Meaning for Wide and Narrow Intending on Earth and Twin Earth

If Earth and Twin Earth thinkers become aware of the discrepancy in their Earth usages, although the semantic difficulties already highlighted are attended by consequent epistemic difficulties, if and when they learn that Earth water = H₂O and Twin Earth water = XYZ, then, if they continue to think ‘Water’, and use the same word, they will simply be *equivocating*. The semantics of what Earth and Twin Earth residents must say and mean for any of this to make sense in their

duplicate thoughts and language usages are the ultimate downfall of the intelligibility of Putnam's thought experiment.

From the fact of Earth and Twin Earth thinkers equivocating on the meaning of 'Water' we can hardly expect to draw any interesting logical, semantic, or generally philosophical conclusions. If the thoughts of Earth and Twin Earth thinkers were to be properly explicated in terms of their ultimate molecular (only) intentions (but why stop there?), Earth thinker would be thinking 'WaterE' and Twin Earth thinker would be thinking 'WaterTE'. Then their thought contents would *not* be identical, after all, and as such there should be no grounds for expecting them to be intending the same object transparently through their thought contents. Now they are intending respectively H₂O and XYZ, but not everything else that is true about what they are phenomenologically acquainted with as water, in the first instance, nor even chemically analyzed alternatively as H₂O or XYZ. If the latter were implied, then semantic theory would be burdened with a referentially explosive counterpart of the slingshot argument.¹⁴ We would effectively require *everything* existent to be part of the *meaning* of any given thought, just as the slingshot argument is supposed to show, on the usual correspondence theory assumptions for the concepts of meaning and truth, that there is only one collective massive internally homogenous truth-making fact or state of affairs, the world or existence in its entirety and taken as a whole, for each of a language's true propositions.

Effective language use is as much lazy as it is brilliant and inventive, energetic and insightful. Just as for convenience we speak of 'the thing we were going to do today', as a shortcut to stir the memory of someone sharing in overlapping expectations of conversational implicature, broadly conceived, for whom the expanded abbreviated reference is assumed to be well-known, so Earth and Twin Earth language users, on their home planets, can indulge in the shortcut of thinking merely of 'Water' meaning 'WaterE' or 'WaterTE' in each case. If what Earth thinkers *mean* by 'Water' without the E and TE subscripts, in thus equivocating, is (shorthand for) 'WaterE', then water as H₂O remains part of their meaning. Importantly, however, contrary to Putnam's conclusion, it also remains entirely in their individual heads. They grasp that Earth water = H₂O

¹⁴ Church 1943 credits Frege's 1892, as the origin of the slingshot argument, and it has become customary to mention him as the argument's originator. Compare Føllesdal 1983, especially p. 92. Føllesdal points out some of the differences between Frege's inspiration and Church's application of a style of reasoning related to the family of slingshot arguments, which he also traces to Quine's 1976. Gödel 1944. Barwise and Perry 1981. See also Perry's more recent essay 1996. Neale 1995. Also, Neale 2001. Young 2002. Levine 2006. Oppy 1997. Shramko and Wansing 2009.

(although for purposes of disambiguation Twin Earth Doppelgängers must think and say Twin Earth, just as we do), and the intended object of reference does not depend on external facts and factors beyond those grasped referentially within their respective dispositional awarenesses. The natural kind possessing the specific complement of constitutive properties of WaterE as a natural kind is then their potentially explicitly intended object. As such, the reference to H₂O remains part of the meaning of their thought and its expression. Similarly, if what is *meant* on Twin Earth by a lazy use of ‘Water’ is WaterTE, on the assumption in both instances that Twin Earth subjects are not actually thinking only about the phenomenologically indistinguishable liquid on their planet’s twin, on Earth as well or rather than Twin Earth, however they may be thinking of and referring to it independently of any knowledge of its molecular constitution.

Remarkably, Putnam writes: ‘Symmetrically, if a spaceship from Twin Earth ever visits Earth, then the supposition at first will be that the word “water” has the same meaning on Twin Earth and on Earth. This supposition will be corrected when it is discovered that “water” on Earth is H₂O, and the Twin Earthian spaceship will report: “On Earth the word ‘water’ means H₂O.”’¹⁵ In the final sentence, in the interplanetary traveler’s report, Putnam attaches to the word ‘Earth’, his footnote 5, appearing at the bottom of the page, where he explains: ‘Or rather, they [the Twin Earth visitors to Earth] will report: “On Twin Earth (the Twin Earthian name for Terra – H.P.) the word ‘water’ means H₂O.”’¹⁶

This is precisely the point at which Putnam’s Twin Earth thought experiment begins to unravel. Followed out in its full implications, this admission on Putnam’s part undermines the assumptions on which the imaginability and intelligibility of the Twin Earth thought experiment finally depend. First of all, if by ‘Earth’ Twin Earth visitors mean what we Terra-Earthlings would call ‘Twin Earth’, as Putnam acknowledges, why does the same not hold for the report’s use of the words ‘water’ AND ‘H₂O’? Why does Twin Earth EnglishTE term ‘H₂O’ not mean ‘XYZ’? If such things are allowed, then we will never have our feet so securely on the ground as to be able to understand what either Earth or Twin Earth residents mean by any of their homophonic thoughts or pronouncements. Something, clearly, must be held *fixed* if there is to be determinate meaning available for coherent semantic analysis and comparison of accomplished reference on the two planets. Suppose that we try to regard Earth as the touchstone for the Twin Earth thought experiment. That seems fair enough. Together with Putnam we are considering the problem on Earth as our base of cognitive

¹⁵ Putnam 1975, 140.

¹⁶ *Ibid.*

operations. Wait, though. Which planet is meant by ‘Earth’? Which planet is Earth and which is Twin Earth, if residents of both planets are compelled by universal supervenience and the type-duplication of their neurophysiologies to use the same words with the same thought content in their respective spheres of linguistic action and coordinate behavior as they refer to numerically different planets? Like us, Twin Earthlings think that they live on Earth, and that we live on Twin Earth, the planet that is their ‘Earth’s twin. We think that we live on Earth and that Twin Earthlings obviously live not on Earth but on Twin Earth. What we need impossibly it seems to decide is who are the Earthlings and who are the Twin Earthlings, which planet is Earth and which is Twin Earth, when both sides use the same referring expressions to mark presumably the same distinction in mirroring their counterpart thoughts and language usage. Which entity in the universe is the planet Earth and which is Twin Earth? Putnam seems to have disabled referential meaning in language from intelligibly asking or answering any such vital questions. What basis can there be for distinguishing even stipulatively or hypothetically between the objective reference of the terms ‘Earth’ and ‘Twin Earth’ when primitive intentionality is excluded, and the supervenient contents of thoughts and relevant expressive uses of language are assumed to be the same on both planets? How, for that matter, in challenging the deepest conceptual stratum of Putnam’s Twin Earth thought experiment, can we intelligibly speak of two distinct planets if they cannot be univocally designated?

For that matter, if the two planets actually exist, which planet do we (let us allow the word for the moment) Terra-Earthlings inhabit? We are supposed to assume that universal supervenience guarantees that the thoughts of some Twin Earth residents will exactly duplicate the thoughts of some Earth residents. This means that if an Earth resident thinks something like ‘I live on Earth’, then a Twin Earth resident must also under type-duplicate neurophysiological circumstances think in a supervenient moment of type-duplicate consciousness, not, what is true, ‘I live on Twin Earth’, but the iterative, ‘I live on Earth’. Both Earth and Twin Earth residents use the word ‘Earth’ for their home planets, and might do so even if they knew of the other’s existence. Indeed, they *must* do so, *if* they are neurophysiological duplicates of one another existing and living in duplicate physical circumstances, and if universal physical → mental supervenience is assumed, as is explicitly done in Putnam’s thought experiment. If they do not both think ‘Earth’, then either supervenience has broken down locally, or the two thinkers are not after all in the same neurophysiological or environmental condition type. We call their planet Twin Earth, but they call it Earth, and they call our Earth Twin Earth. This almost clears things up. But *which* Earth is ‘ours’, in what neutral terminology is it now to be denoted, and *who*, exactly *which* planet inhabitants, are ‘we’?

Putnam tries to anticipate the semantic collision that these assumptions jointly imply, trying to step outside of these mutually interpresuppositional meanings, by referring to 'Terra' (meaning presumably *our* Earth). Of course, assuming we know which Earth this is, both thinkers on Earth and Twin Earth must have the same thought and use these homophonically identical words in the same way in referring to their own respective place of business. Regression to another term for one's home planet accomplishes nothing useful in taking us beyond the motivating referential collision. Which planet is Terra, ours or theirs? Should we call our planet or theirs Twin Terra? Why? Why not? Which planet, limiting ourselves to the meanings of thoughts about Earth, Twin Earth, Terra, Twin Terra, are *we* on? And who are *we*? Resorting to the word 'Terra' accomplishes nothing semantically, given Putnam's Twin Earth thought experiment parameters.

The problem is to understand the meaning of 'Earth' in the two cases. Calling 'our' planet *Terra* does not settle the matter. Putnam tells us that in both cases the inhabitants of both planets use the word more or less indexically to refer to where they happen to live. What thought do they then attribute to one another? They cannot mean the same thing by the use of 'Earth' (or 'Twin Earth'), when they use the word, implying once again that Earth and Twin Earth thinkers can only be equivocating if intentionality seated in their individual heads is excluded as in Putnam's interpretation of the thought experiment. They use the homophonically same word between them in their thoughts and expressions of thoughts for what are entirely different things on the two planets. Rather than having the same type thoughts, they must be supposed to experience different type thoughts. They are thoughts that are only superficially identical in the sense that they can be equivocally expressed as involving the same syntax strings. They are otherwise, and perhaps even known as such to thinkers on the two planets as, equivocal.

It is only to remind ourselves of an empty tautology of which we can sometimes disastrously lose sight to declare that equivocal thoughts or expressions do not have the same sense-meaning. If thought_T and thought_{TE} do not have same sense-meaning, then it is as irrelevant to ask whether or not they have the same reference-meaning as it would be in the case generally of terms with different senses. No one is surprised and Frege does not take offense if the term 'the Evening Star' does not refer to the same existent entity as 'the least prime number'. An interesting Putnam-sponsored counterexample to meanings in the head and the determination of reference by sense needs two distinct thoughts or expressions involving terms with the *same* sense but in some semantic frameworks paradoxically *different* reference. Twin Earth thought experiments do not satisfy the essential combination of these conditions if

neurophysiology is exactly duplicated on the two planets under universal supervenience of occurrent conscious thought on occurrent neurophysiology.

5 Incoherence in Twin Earth Thought Experiment Assumptions

Therewith Putnam's Twin Earth thought experiment collapses. The assumptions in their implications are exposed as incoherent. We are supposed to have two different planets, alike in almost every respect, and alike in particular in the supervenient thoughts of duplicate individual thinkers who supposedly think the same type thoughts, but that cannot possibly be the same type thoughts, if thought types are to be identified at least in part as having the same specific content or sense-meaning, and if meaning generally includes not only sense but whatever is ultimately identical to a thinker's presumptive consciously considered referent or intended object of thought or language.

We can encounter the conceptual problem in Putnam's Twin Earth thought experiment also in another way. Consider the specific case of universal supervenience and physical, including neurophysiological, duplication of thinking subjects on Earth and Twin Earth, whereby every thinker on Earth has a Twin Earth generic Doppelgänger, and vice versa. If Putnam is right, then, as you think 'There are thoughts on Earth', your Twin Earth Doppelgänger thinks the same thought *type* (not of course the same thought *token*), with the same thought *content* (*Sinn*, sense-meaning), but a different *reference* (*Bedeutung* in Frege's sense, intended object). We should not imagine that our Doppelgänger's thought content is 'translated' from Earth-speak to Twin Earth-speak, so as to consider instead, 'There are thoughts (here) on Twin Earth'. The Doppelgänger nevertheless supposes that he or she is referring to the planet he or she inhabits, which we call Twin Earth, but the Doppelgängers of Twin Earth must, according to Putnam's thought experiment conditions, refer to as we do of our beloved home planet by the name 'Earth'. If Twin Earth Doppelgängers say 'Earth', but *mean* their own planet, which we putatively unequivocally named Earthlings refer to as Twin Earth, then Earth and Twin Earth inhabitants despite superficial syntactical appearance do not intend the same object by use of the common word 'Earth'. We can also say on the present application that what Twin Earth Doppelgängers think when they think 'There are thoughts on Earth' is made true by presumed Earthlings thinking thoughts, of whose existence the same Twin Earth Doppelgängers need not know and of which they need not have the least suspicion. Twin

Earth residents must intend, must be thinking about, *our* Earth even though they supposedly use the word 'Earth' to refer to their own planet, the rock rotating just like ours in another part of space that *we* assume not to be Earth at all, but *Twin Earth*.

These difficulties stand in need of further development. We can complicate Putnam's Twin Earth thought experiment in another way. Suppose that you could meet your Twin Earth Doppelgänger. If you did so, it appears that you would no more know what each other is thinking than you would in the case of any other distal subjectivity. Supervenience guarantees only type-identical thoughts being ontically dependent on corresponding type-identical functioning neurophysiologies. As soon as the interstellar traveler departs Earth for Twin Earth, so that the traveler and Doppelgänger can size each other up on common turf, or the Doppelgänger departs Twin Earth for Earth, the traveler and the Doppelgänger (they are both simultaneously travelers) are no longer experiencing the same type-identical environmental conditions as when they are at home.

Supervenience no longer implies that traveler and Doppelgänger will experience the same thoughts if they travel to one another's planet, nor if they try to meet somewhere in between. The Twin Earth Doppelgänger will think the motivating thought, 'I must travel to Twin Earth', as will the presumed traveler from Earth, at precisely the same time, before undertaking the voyage, although the expression is supposed to intend what presumed Earthlings call Twin Earth. Twin Earth Doppelgänger is thereby supposed to intend what presumed Earthlings call Earth. Are we still holding to all of this, conceptually or imaginatively? At least one individual, then, *S* or Twin-*S* (which is which, if there is no neutral or preferred available language capable of unequivocal reference under Putnam's thought experiment requirements?) is extracted from what had otherwise been supposed to be the same type local causal nexus and environmental conditions, and subjected thereafter to different local stimuli and influences that would not be experienced for either thinker at whatever is supposed to be home, on Earth or Twin Earth. If *S* and your Twin Earth Doppelgänger Twin-*S* meet somewhere between Earth and Twin Earth, then, if they can arrive together in space to stand side by side, they will still be subject to different environmental influences, even if they cannot tell the difference. Traveler *S* will in fact, on these assumptions, be situated on entirely different convergent causal chains than those of Doppelgänger Twin-*S*. Traveler *S* will no more be able to know the contents or sense- or reference-meanings of Doppelgänger Twin-*S*'s thoughts than *S* would if *S* had an identical genetic biological twin on Earth standing by *S*'s side, having experienced ever so slightly a different history of cause-and-effect interactions within the world.

Ironically, in a way, if *S* visits Twin Earth Doppelgänger Twin-*S*, rather than the reverse, then *S* and Twin-*S* could both intend the same substance with chemical structure XYZ in thinking ‘Water’. Similarly, of course, if the Twin Earth Doppelgänger visits what *S* calls Earth, whereby the two subjects could both intend the same H₂O in thinking ‘Water’ on Earth. The hitch is that if *S* and Doppelgänger Twin-*S* arrange a rendezvous on either Earth or Twin Earth, then, despite supervenience and being molecule-for-molecule identical (except for the approximately 61% of their bodies that are constituted at least for a time by two chemically different kinds of generically designated *water*), and despite universal supervenience, *S* and Twin-*S* of necessity will no longer be occupying the same duplicate physical environments. Rather, *S* and Doppelgänger Twin-*S* will be *de facto* occupying two distinct places within the same encompassing physical environment. Hence, *S* and Doppelgänger Twin-*S* will no longer be guaranteed by Putnam’s thought experiment assumptions to be simultaneously thinking the same thought types. The causal background is not exactly duplicated for the two thinkers once either one departs from either planet for its twin. There is thereupon no longer any reasonable expectation that the two thinkers must entertain the same thoughts with the same phenomenological thought content, sense-meaning or accompanying qualia under similar circumstances, when Earth and Twin Earth inhabitants are brought together somewhere, so that at least one of them is far from home.

The only way to generate interest in the Twin Earth thought experiment is to suppose that water is simultaneously a natural kind and not a natural kind. It must be designated alternatively and in proper constructions materially equivalently by means of a mass noun, count noun in the case of water drops or larger bodies, as well as by proper name, indexical, or definite description, serving as a natural kind term. From such a starting place, anything whatsoever is classically trivially logically deducible. Similarly, also, then, for refinements of Putnam’s original thought experiment, involving arthritis of muscle or joint on Twin Earth and Earth, as proposed by Tyler Burge, recognizing that Earthlings and Twin Earthlings can hardly be molecule-for-molecule identical, as Putnam requires, if Earth water, of all substances, is not identical in molecular substance or structure with Twin Earth water, and if, again, human bodies on Earth are composed of c. 61% H₂O, and there is no H₂O on Twin Earth.¹⁷

¹⁷ Burge 1979. Burge maintains that a language user’s thought contents are dependent on a linguistic community’s conventional meanings. Burge considers a patient on Earth who expresses a false belief in informing his doctor that he has arthritis in the thigh. The belief is false because arthritis is an affliction of a joint and by convention as the word is defined there are no joints in what the community speaks of as ‘arthritis’ and a ‘thigh’. The patient’s

6 Natural Kinds and Proper Name Reference Hazards

I on Earth (presumably) refer to Hilary Putnam on Earth (presumably) at two different times. Some of the accidental properties of Hilary Putnam are altered between these times. There are different facts about Hilary Putnam when I refer to him at time t and again later at time t' . Why not then say the same about water on Earth and on Twin Earth? The intending thinkers on Earth and Twin Earth both *refer* to water, it is just that water has different properties on Earth and Twin Earth at all times but in different places, on two different planets.

This description seems to fit a possible or imaginable occurrence, but its semantic significance is not immediate. The analogy is that just as I can refer to the same Hilary Putnam on Earth by using his locally proper name at different times, even though Hilary Putnam changes in the interval, has different properties at different times, so I should be able equally to refer to the same substance water on Earth and on Twin Earth by using the universal mass noun 'water' as referring to the same natural stuff in different places, even though water changes, has different properties from one place to another in those two different remote locations, on planets Earth and Twin Earth. The situation is no different in saying that in some instances Earth water is liquid, and in others solid ice or gaseous water vapor. These are different properties of the same substance water. Why should the same substance water not have a different chemical composition in its occurrences on isolated planets?

That such a thing could happen seems as obvious as anything else in the Twin Earth thought experiment. The question is rather the semantic significance if any of the putative possibilities. What if there were no Twin Earth, but water changed its chemical composition at the same place (perhaps even while we were drinking some) at different times, morphing from H₂O to XYZ, without our momentary knowledge? We think 'Water' on Earth at time t , and 'Water' on Earth at later time t' , while in between water changes its chemical composition from being H₂O to XYZ.

counterpart on Twin Earth is in the same situation, but there the word 'arthritis' has an expanded meaning relative to its meaning on Earth, including arthritis and other rheumatism, thus including the patient's thigh complaint. It follows in Burge's application that the two counterpart thinkers on Earth and Twin Earth can have identical thought content with distinct referents without qualifying Putnam's assumption that Earth and Twin Earth thinkers are molecule for molecule type-identical. An extraordinary fuss is made about all this. See also Burge 1982a; 1982b. Fodor 1982. Loar 1998. McLaughlin and Tye 1998.

Do we not refer univocally to water on both occasions, at t and t' ? Say first that we do. Then water itself has changed like grue emeralds that were thought to be green turning blue at a certain time, in Nelson Goodman's new riddle of induction. How is that imaginable situation supposed to be different than referring to Hilary Putnam who has property cluster $[P_1, P_2, P_3, \dots]$ at time t , and referring to Hilary Putnam with a different property cluster $[P_1, P_2, \text{non-}P_3, \dots]$ at another later time t' ? Could we say, were the water to get gruesome in the Goodman sense, 'It's no longer water'? Would we want to say, 'It's no longer an emerald?' in Goodman's original gemstone application? Perhaps. The main point to emphasize in contrast is that we are not obviously inclined or obligated to say by parity of form, in either case, 'It's no longer Hilary Putnam'. Although, in both situations presumably we could do adopt such a convention, the choice would only come at great expense disadvantaging the referential import of proper name usage in colloquial language.

After Putnam undergoes a change in his temporal property cluster, from one time to another on Earth in the actual world, from being non- P to being P , perhaps from being unhappy to being happy, we naturally suppose that there is an identical underlying Putnam entity all along that has undergone what an Aristotelian metaphysics categorizes as mere accidental alterations in an object's properties.¹⁸ If we can assume an identity of semantic reference in speaking of a rigidly designated existent entity like Putnam that changes over time, why not in the case of a rigidly designated natural kind like water that changes chemical composition from distant place to place.

7 Internalist versus Externalist Meaning Conditions

Are meanings in the head? As a mental act, we attempt to refer, but, as with other kinds of physical action efforts, we do not always succeed in referring to a particular intended object. I want to refer to the actor in that generically described movie where the guy gets killed, and the only name that comes to mind is of someone who had no role in the film. I know who I mean in at least a

¹⁸ Alterations preserve intact the persisting predication subject undergoing accidental change. Leibnizian identity of indiscernibles conditions can be spatiotemporally indexed to track every moment of identity-preserving and existence-preserving mere alterations in a subject of accidental rather than identity- and consequently existence-threatening essential change, to avoid confusion intensionally with any other dynamic entity.

vague sense, but it is unlikely that I will have much success in communicating my intention in this way to others. What happens instead when intention succeeds, when the intended object is referentially contacted like an arrow that hits a bullseye? Where does such intention, the meaning of thought, take place? This is Putnam's piercing question. The attempt at intending should be understood as taking place in the head, that much is clear. We are speaking for the moment about the fate of thoughts occurring in a living normally functioning brain, supervening if not emerging from the functioning neurophysiology within this skull rather than that skull. Narrow meaning even construed as attempting to intend is manifestly in the head. To argue that wide meaning is not in the head is therefore to argue that meaning is not merely a matter of the attempt to intend, but only of a certain kind of successful intention. However, this is a requirement connecting the philosophy of mind and theory of meaning that one does not find argued for in theoretical disputes about the facts of intentionality, its exact role if any in meaning, and the question whether meanings are in the head.

When Earth water changes mid-slurp from being H₂O to being XYZ, like Goodman's aforementioned grue emerald changing from green to blue in his 1983 essay, 'The New Riddle of Induction', appearing in *Fact, Fiction, and Forecast*, and in a 1946 *Journal of Philosophy* precursor, 'A Query on Confirmation', the question, 'Is this *still* water?', is *referentially ambiguous*.¹⁹ It is water, but water that has changed, as when Putnam is modified from being unhappy to being happy, or the reverse. It is water, in that case, although water's being H₂O does not fix the reference of 'water' as a natural kind mass noun. Like grue emeralds or gremeralds, water is sometimes H₂O but can imaginably by hypothesis evolve or otherwise be transformed into XYZ. The truth is that we have no certain guidelines about how to handle such putatively conceivable situations lexically because we have not actually had to absorb the fanciful facts of the matter conceptually. There are nevertheless multiple choices as to how a good analysis might proceed. It is open after all to insist that the thought experiment supposes from the outside as an obvious implication of its explicit assumptions that water is not a natural kind term. How else could the supposedly same word or syntax string be used to refer to different chemical substances in different parts of the universe? The only alternative is to conclude that the equivocation implies that in fact there is no water on Twin Earth, contrary to the experiment's conditions, or that there is in fact no water on Earth. If water on Earth is nevertheless molecularly different from water on Twin Earth, then water_E and water_{TE} might be distinct natural kinds, but water as

¹⁹ Goodman 1946; 1983 [1955]. Discussion in Stalker 1994 and in papers edited by Elgin 1997.

such or without qualification is not a natural kind and ‘water’ is not a natural kind mass noun.²⁰

Contrary to Putnam, there are after all several ways of cutting the pie so that meanings are entirely in the head. One method is to embrace radical ontic idealism, which Putnam says nothing to disallow. Short of going idealist, the attempt to intend, and with it narrow intended referential *meaning*, is entirely in the head. What is more, it has an enviable track record of often succeeding in achieving reference as attempted in normal circumstances, and without interference or deflection. The fact that in referring to water presumptive Earth thinkers intend something that is H₂O and presumptive Twin Earth Doppelgänger thinkers intend something that is XYZ and other than H₂O need not be understood as implying that meaning is not in the head, merely because the globally same thing referred to by both as water does not locally have all the same properties. To further illustrate, I may refer to ‘Thai food’ by the same gracious family resemblance comprehension both in and outside of Thailand, although the differences for those with experience of the relevant cultures can be many and conspicuous.

By making chemical composition the difference between presumptive Earth water and presumptive Twin Earth water, the Twin Earth thought experiment seeks to touch on something considered essential to a material substance as a natural kind. It is encapsulated in the assumption that presumptive Earth water and presumptive Twin Earth water are different in chemical composition that undermines the assumption that Earth and Twin Earth Doppelgänger intending thinkers think the same thought involving a univocal natural kind mass noun ‘water’ in thinking ‘Water’ in their respective causally parallel circumstances on Earth and Twin Earth.

Where Earth and Twin Earth Doppelgänger intending thinkers alike think ‘Water’, we should not expect the further intending of water on Earth or Twin Earth as substances of any particular chemical composition. Intentionality demonstrably is not transitive. If I narrowly intend to refer to Clark Kent, and Clark Kent = Superman, it does not follow that I narrowly or widely intend to

20 Putnam, to recapitulate one of his thought experiment conditions, is nevertheless committed to the assumption that the sense-meaning of the word ‘Water’ is univocally the same for Earth and Twin Earth thinkers, and only the reference or intention is different. If the sense-meaning of the Doppelgängers’ thought content is different in the two cases by virtue of an equivocation in their thinking simultaneously ‘Water’ as between ‘WaterE’ and ‘WaterTE’, then there are no interesting conclusions for Putnam to draw with respect to the relation between sense-meaning and reference or intention, or for that matter any noncircular reasoning concerning whether or not meanings are ‘in the head’.

refer to Superman.²¹ Likewise if I intend to refer on Earth to water and water on Earth = H₂O, it does not follow that I widely and certainly I do not narrowly intend to refer to H₂O (or to XYZ, if that is the chemical composition of water for my Twin Earth Doppelgänger). Intention puts thought in touch with, what else?, intended objects, but it does not always penetrate to the objects' hidden natures or essences. My Twin Earth Doppelgänger and I in some sense both *intend* water when we think the word on our respective planets, and the chemical composition is assumed to be different in the two cases.

Nevertheless, it appears that *meaning* is exhausted by sense and intention. The situation is by no means conceptually difficult, for we can say that the same intended object has different properties in different circumstances. Water in one sense is like this even on Earth, where we seem to understand one another's references to *water*, even before Henry Cavendish discovered around 1783 that on planet Earth water is H₂O, regardless of whether we are in more proximate contact with fresh or salt water, or any degree of brackish water between extremes. Just as intended water in different circumstances can be fresh or salty, so its pure form can turn out to be H₂O or XYZ. Contemporary chemistry does in fact recognize several different kinds of water, obviating much of the discussion of water as a natural kind, even without appeal to thought experiments. Logically speaking, and as previously emphasized, water can change from being H₂O to being XYZ, even as we are drinking it. If H₂O is not the same natural kind as XYZ, then in type-identically intending *water* as the sense-meaning or content of their respective thoughts, S and Twin Earth Twin-S supervenient counterpart will not be univocally intending a natural kind. The implication could perhaps be tolerated, *if*, as we know is not the case, the remaining thought experiment conditions were satisfied.

Otherwise, there may be no good reason to care. Unless we give up the word, or speak always unambiguously of water_E and water_{TE}, or simply fall back on referring to H₂O or XYZ, then in thinking only 'Water' S and Twin-S are already equivocating, making the category of natural kind appear at best to be an empirical *a posteriori* affair. Like other subjects of scientific and philosophical judgment, we put our best foot forward with the strongest hypothesis available, and keep an open mind. Until XYZ turns up, we appear fully justified, setting aside actual recent discoveries in chemistry, in considering water to be a natural kind, lacking any *a priori* reason to suppose otherwise. Then again, nothing prevents us from distinguishing between natural kinds_E and natural kinds_{TE}. Where is it written that natural kinds are universals? Alternatively, and Putnam leans in this direction himself, we can give up the

²¹ See Jacquette 2015.

metaphysical category of natural kinds altogether as incoherent in any conceivable application. Good idea, possibly. What happens then to Putnam's Twin Earth thought experiment?

We must look beyond an intending thinker's thoughts, outside the thinker's cranium, in order to make further determinations as to the properties of things to which the thinker refers as intended objects of thought and its expression. This further investigation admittedly out-distances the mental events supervening on neurophysiological occurrences buzzing around inside the intending thinker's brain. This implication is not a result of meaning itself being outside the intending thinker. Indeed, we have to know what an intending thinker intends before we can ask additional questions about the further properties of an intended object. Since we can do this endlessly in the case of dynamic objects like water droplets, there is nothing significant about fixing on the molecular composition of Earth or Twin Earth water. Even the simplest most straightforward transparent intention would then by implication transitively intend every existent object and state of affairs in the world that hosts the intending thought. Surely intentionality as the intensional referential component of a thought's meaning does not have such range, no matter how narrow or wide in scope.

Notice that the transitivity of meaning presupposed by Putnam's interpretation of the Twin Earth thought experiment to show that meaning is not internal to occurrent thought content is not ordinarily ascribed to intended referings. I intend to refer to Hilary Putnam by use of the proper name 'Hilary Putnam', and Hilary Putnam, unbeknownst to me but knownst to others, is Cogan University Professor Emeritus at Harvard University. Does it follow that I therefore intend to refer to the Cogan University Professor Emeritus at Harvard University? If you asked me, without this background information, I would deny that anything of the sort was any part of my intention. I would insist only that in using this proper name I mean only to refer to Hilary Putnam, and not to his having any particular additional properties, especially any I do not happen to know about. It might be a trick question for the uninformed, and there is no reason why in referring to Hilary Putnam I should agree that in so doing I am thereby referring to the Cogan University Professor Emeritus at Harvard, a combination of words that had never previously crossed my conscious thoughts. Why should we not then say exactly the same thing for the Doppelgänger Earth and Twin Earth intending thinkers when they each 'simultaneously' think 'Water'? The part of their thought over which they exercise intentional control in performing a mental act is referring by means of the same mass noun to water, both on Earth and Twin Earth. The fact that water on Earth is one thing and on Twin Earth another is a matter beyond what the

thinking intenders mean when they think or say ‘Water’. On such a conception, referential meaning is narrow, which is all in the head.²²

8 Thought Experiment Utility Independent of Author Intentions

What, then, if anything, have we learned about thought experiments generally from a critical discussion of Putnam’s Twin Earth scenario? Suppose it is true that the assumptions for Putnam’s Twin Earth thought experiment are incoherent. Does the Twin Earth thought experiment thereby lack all philosophical interest and value?

The answer depends essentially on the purpose that a thought experiment is understood to have. If the point of a thought experiment is to serve, as Daniel C. Dennett has frequently remarked, in the essays collected as *Brainstorms*, *The Intentional Stance*, *Consciousness Explained*, and elsewhere, as an *intuition pump*, to get us thinking about a cluster of philosophical issues that may otherwise lack focus and motivation, or to think about them in a new, potentially fruitful way, then it appears only accurate to judge Putnam’s Twin Earth thought experiment as a tremendous success.²³ If, however, we conceive of Putnam’s thought experiment as more ambitiously proving or definitively deciding anything in philosophy of mind or philosophy of language, anything definite concerning the concepts of thought, language, thought content, intended objects of referential uses of language or the like, as Putnam seems to propose, then the conclusion for all the reasons given above is that the Twin Earth thought experiment mired in inconsistent assumption conditions proves nothing that could not with the same dubious logical probity be classically validly deduced from any choice of logically inconsistent propositions.

Here we must recall, and, I think, do Putnam the courtesy of taking him literally at his word, in the opening remarks in which the Twin Earth thought

²² Narrow intending in Putnam’s colorful phrase is in the head as the source of the intending relation by which particular objects are intended. Earth thinkers if they have never heard of Twin Earth let alone heard that there is something called water there will not intend Twin Earth water or waterTE, and similarly for Twin Earth thinkers in mirror parallelism semantically to their Earth Doppelgängers and what is hoped more objectively to be designated as Earth waterE.

²³ Dennett deploys the concept of an intuition pump already in his earliest writings. He has recently thematized the category and method in Dennett 2013. A previous source typifying his usage is Dennett 1992, 280, 395–398.

experiment is presented. There he writes, in a passage previously quoted: ‘That psychological state does not determine extension will now be *shown* with the aid of a little science fiction’.²⁴ A thought experiment like Putnam’s Twin Earth can succeed remarkably as it does, despite what I have argued is its failure from the standpoint of the Putnam’s philosophical purposes. Suppose Putnam really thinks that the Twin Earth scenario *shows*, as he says, or *proves* that meanings are not in the head, and that semantic sense or intension does not determine semantic reference or extension. He may even be right, in the sense of advocating a true contention. Now further suppose that the Twin Earth thought experiment as Putnam explains its assumptions does *not* logically support Putnam’s interpretation as *proving* the above conclusions. In this sense, the thought experiment fails, as I have suggested it does. What remains indelibly valuable in Putnam’s thought experiment is that it requires us to think differently about something we might otherwise complacently take for granted in our philosophical reasoning.

Even, and perhaps especially, if we do not agree with Putnam’s conclusions about the meaning of thought and language on Earth and Twin Earth, we cannot fail as a result of engaging critically with his thought experiment to consider these important concepts in new and potentially insightful ways. To wonder how language works under different imaginable local referential circumstances when all other biological and psychological conditions are duplicated is already to be engaged in untangling the components of referential and descriptive components of meaning, of the reference of proper names and the semantic functioning of true or false predications. If the purpose of philosophical inquiry is the exploration of conceptual space, then a thought experiment like Putnam’s Twin Earth pumping intuitions as Dennett would have it, as the example forcefully does, is successful enough on these terms to serve as a paradigm for thoughtful experimentation generally in philosophy, and especially in the complex overlapping intersection of philosophy of mind and philosophy of language.²⁵

²⁴ Putnam 1975, 139 (emphasis added).

²⁵ A predecessor version of this essay was presented at the University of Zürich, Philosophisches Seminar, Lecture Series, ‘*Gedanken-Experimente. Kann man aus dem Lehnstuhl die Welt erforschen?*’, Zürich, Switzerland, 19 March 2014. I am grateful to participants for valuable questions and energetic discussion.

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