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Attitudes, Supervaluations and Vagueness in The World

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I consider two possible sources of vagueness. The first is indeterminacy about which intension is expressed by a word. The second is indeterminacy about which referent (extension) is determined by an intension. Focusing on a Fregean account of intensions, I argue that whichever account is right will matter to whether vagueness turns out to be a representational phenomenon (as opposed to being “in the world”). In addition, it will also matter to whether supervaluationism is a viable semantic framework. Based on these considerations, I end by developing an argument against supervaluational semantics that depends, instead, on anti-Fregean (Millian) assumptions.

1. Introduction

It is often said that extensions cannot exhaust the meaning of linguistic expressions. Thus, ‘creature with heart’ and ‘creature with a kidney’ may have the same extension, but differ in meaning. Intensions are thought to be the elements of meaning which account for this difference. Intensions may be construed in different ways. For example, they may be treated as mental particulars (ideas), mathematical objects (sets of

possible worlds), or *sui generis* platonic modes of presentations (Fregean senses). Intensions are also thought to determine extensions. But should we also say they *represent* their extensions? If they do, then since words also represent their extensions, we may wonder about which type of representation fact is more fundamental. Is the fact that the name 'Venus' represents Venus more fundamental than the fact that the intension of 'Venus' represents Venus? Or is it the other way around? A third possibility is that the representational facts are independent of each other.

A related issue arises when we start thinking about intensions and vagueness. A common view in philosophy is that vagueness has its source in the representational facts.¹ If intensions represent extensions, we may now wonder whether it is words or intensions that are responsible for vagueness. For example, when philosophers talk about 'bald' being vague, is this vagueness located in the word itself or in its intension? I find this question to be philosophically interesting for at least two reasons. First, following Frege, it might be thought that words but not intensions are mind-dependent entities. If so, then the answer to our question will be relevant to the metaphysics of vagueness. In fact, I will argue that if we treat intensions as "imprecise" Fregean senses, we can no longer say that vagueness is a representational phenomenon. Second, intensions and extensions play distinct roles in the semantics of natural languages. So we would expect semantic theories that are sensitive to vagueness to make different predictions depending whether vagueness is located in words or in their intensions. In particular, I will argue that if we treat intensions as "precise" Fregean

¹ Russell, Bertrand (1923). 'Vagueness'. *Australasian Journal of Psychology and Philosophy* 1 (2):84-92.

senses, supervenient approaches will fail. I end by constructing an argument against supervenient approaches which depends on anti-Fregean assumptions.

2. Imprecise and Precise Fregean Senses

According to a Fregean theory of linguistic representation, each meaningful word expresses a sense, which in turn uniquely picks out (refers to) an object in the world (if it picks out anything at all)². Words refer, but reference is semantically mediated by senses. There are at least three different ways that vagueness may arise on this picture.³ First, it may be that a word fails to determinately express sense S^1 , fails to determinately express sense S^2 and so on for all the senses, but it indeterminately expresses sense S^1 , it indeterminately expresses sense S^2 , and so on for some cluster of senses that are distinct but closely related to each other. Second, it may be that a sense fails to determinately refer to object O^1 , fails to determinately refer to object O^2 and so on, for all objects. But the sense may indeterminately refer to object O^1 , and indeterminately refer to object O^2 and so on for a cluster of objects that are distinct but closely related. Third, a sense may pick out an object in the world (either determinately or indeterminately) that is itself vague.

Here is some terminology. I will call the first view, 'vagueness in the word-sense relation'. I will call the second view, 'vagueness in the sense-object relation'. The third

² I use 'object' liberally to apply to the referent of our words including properties, relations and their extensions.

³ I want to put aside Frege's own views on the question of vagueness. Frege (1892) "Über Sinn und Bedeutung" in *Zeitschrift für Philosophie und philosophische Kritik* 100: 25–50. Translation: "On Sense and Reference" in Geach and Black (1980) seems to think that concepts without determinate extensions don't have Bedeutung. Commentators have pointed out that since the Bedeutung of a sentence is a truth-value, all sentences containing vague terms would lack a truth-value, on Frege's view. This is a costly conclusion. See Puryear (2013) and the references therein for further discussion. Stephen Puryear, "Frege on Vagueness and Ordinary Language", *The Philosophical Quarterly* Volume 63, Issue 250 pages 120–140, January 2013

view, is the 'vague object' view. When there is vagueness of the second kind, we will call the senses at issue 'imprecise'.⁴ When there is no vagueness of the second kind, the sense in question will be called 'precise'.

Of course, the three types of vagueness are not mutually exclusive. In a case of rampant vagueness, all three could be in play. For instance, a word may indeterminately express a certain sense and that sense may indeterminately refer to an object which is itself vague. In this paper, we will mostly put aside the vague object view though we will return to it at the very end.

There are a number of issues that arise about how words, senses and objects interact to give rise to vagueness. Many of these I won't discuss here. For example, suppose I have a fuzzy recollection of uncle Joe from my childhood. I call him 'my crazy uncle' (let us suppose this expression works like a name not a description). It is indeterminate whether my recollection of him involves him driving a blue pick up truck, and it is indeterminate whether it involves him driving an orange pick up truck. On the precise sense view, there may be precise senses indeterminately expressed by 'my crazy uncle', corresponding to the sharpenings of the recollection (where a resolution is made about the color of the pick up truck). Suppose uncle Joe's truck was actually blue. One of the senses refers to Uncle Joe and the other refers to no one. But what should we say about the reference of the linguistic expression 'my crazy uncle'? Should we say that 'my crazy uncle' indeterminately refers to Uncle Joe? Or maybe it does

⁴ Jc Beall (2010).discusses 'vague intensions' but treats them as having empty extensions (like Frege did). This is a costly move. Beall, Jc. 2010. 'Vague Intensions' in *Cuts and Clouds Vagueness, its Nature and its Logic*, Edited by Richard Dietz and Sebastiano Moruzzi. Oxford University Press.

determinately refer to him after all. What is the semantic mechanism which ensures this?

Consider a different case. Suppose instead that my recollection is confused and has as its source two different uncles: uncle Joe and uncle Pepe. The recollection is an amalgamation of two different experiences: uncle Joe drives a blue truck, but uncle Pepe drives an orange truck. Should we say that 'my crazy uncle' determinately expresses an imprecise sense which in turn indeterminately refers to uncle Joe and indeterminately refers to uncle Pepe? Or should we say 'my crazy uncle' indeterminately expresses a precise sense involving a blue truck and it indeterminately expresses a precise sense involving an orange truck but these senses determinately pick out different men? Or perhaps we should go for some third option.

In what follows we will not discuss these sorts of fuzzy recollections. Instead, we will focus on the sort of vagueness associated with what is known as 'the problem of the many'. Following David Lewis, I will assume 'Venus' does not refer to a vague planet. There are no vague planets. Instead, there are precise overlapping objects. 'Venus' indeterminately refers to X, and Venus indeterminately refers to Y etc. where X, Y,.... are each distinct, precise (down to the last molecule) and overlapping Venus-like planet-like objects.⁵ Let Adam be some atom such that, as we would say more or less pre-theoretically, it is indeterminate whether it is part of Venus. Let us call a precise Venus-like object which contains Adam as a part, 'Venus-Adam-Yes'. And let us call the object which is just like Venus-Adam-Yes except without Adam as a part, 'Venus-Adam-No'.

⁵ See Lewis, David (1993) "Many, but Almost One" in *Ontology, Causality and Mind: Essays in Honour of D M Armstrong*, Bacon, John (ed.) New York: Cambridge University Press. Lewis holds that each precise object is a planet (which predicts there are countless planets in the vicinity of Venus). An alternative view says that each precise object is indeterminately a planet. I will assume the latter view.

'Venus' is vague because it indeterminately refers to Venus-Adam-Yes and it indeterminately refers to Venus-Adam-No.

For the Fregean, the facts just mentioned about 'Venus' do not tell us yet how vagueness arises. We could be faced with vagueness in the word-sense relation or vagueness in the sense-object relation. In the first case, the word 'Venus' may indeterminately express one sense and it may indeterminately express a distinct sense. Yet, the senses determinately refer to precise objects, like Venus-Adam-Yes and Venus-Adam-No. In the second case, where in addition the first view is denied, 'Venus' will determinately express a unique sense. However, this sense will indeterminately refer to Venus-Adam-Yes, and it will indeterminately refer to Venus-Adam-No. Finally, we could also have a case where both types of vagueness are at play.

To simplify things, we will not consider situations where both types of vagueness are at play. Now, since we are currently also ignoring vague objects, we will only be talking about vagueness as it arises from either precise or imprecise senses. The basic data that 'Venus' indeterminately refers can be explained in at least two distinct ways by invoking either precise or imprecise senses. Which way should the Fregean go? The answer will impact the viability of the thesis that vagueness inheres in representations. And later, we will show that it will impact the viability of supervenience. Before we get to that, we do some necessary stage setting.

3. Vagueness in the World

Consider the following worry about the various claims about where vagueness is located. If it is vague whether term t picks out o , why should we locate the vagueness in t and not o . Aren't they both equally culpable? Representational vagueness needs at

least two things: the thing doing the representing and the objects being (vaguely) represented. So why do some philosophers want to blame the thing representing and not the thing being represented? How can we make sense of the thesis that vagueness is located in representational reality or is a representational phenomenon?

A possible answer is that vagueness in the world is incoherent.⁶ So by process of elimination, vagueness is located in our representations of the world and not in the world itself. However, a number of philosophers have made a good case that vagueness in the world is not an incoherent notion.⁷ Let us try something else.

We begin by focusing on natural language. Assume for now that vagueness is a linguistic phenomenon. One reason to think that vagueness is in language is that linguistic forms represent reality. And it is, to a certain extent, within our power to develop more precise languages for this purpose (in the simplest case, by inventing new words). As we create more precise languages, vagueness disappears. This suggests that language is the source of vagueness or that vagueness depends on language.

To see this, imagine a world where there is just one meaningful word left in the universe, 'bald' (with the same meaning it has in our world). The following may seem plausible, at least for those who think vagueness is a linguistic phenomenon.

(*) If there were no meaningful word 'bald', there would be no vagueness.

⁶ See, for example, the Evans-Salmon argument against de re vague identity. Evans, Gareth. 1978. "Can There be Vague Objects?" *Analysis* 38:208, and Salmon, Nathan, 1982. *Reference and Essence*, Oxford: Basil Blackwell. See also Pinillos (2003) 'Counting and Indeterminate Identity' *Mind* 112(145).

⁷ Akiba (2004), Barnes, E. (2009) 'Indeterminacy, Identity, and Counterparts', *Synthese* 168:1, Barnes and Williams (2010). 'A Theory of Metaphysical Indeterminacy'. *Oxford Studies in Metaphysics* 6

That is, assuming vagueness is linguistic, if we got rid of the last word we would get rid of vagueness. So (*) seems plausible on this view. But now consider the analogous claim about non-linguistic reality and vagueness (make the same assumption that 'bald' is the last meaningful word).

(**) If there were no bald people (the referent of 'bald'), there would be no vagueness.

(**) is false. Clearly, 'bald' does not cease to be vague if the bald people die off or if a potent hair tonic is made widely available. The putative asymmetry in truth values with (*) and (**) then would help us understand why vagueness is a linguistic phenomenon (or why vagueness is in 'bald', not bald people). The asymmetry, if true, gives us a reason to locate vagueness in language. A related point is this: constructing pairs of sentences such as (*) and (**) gives us a test for determining the source of vagueness.

Some might worry that the proper referent for 'bald' is not the set of bald people but rather the property of being bald. So (**) should be replaced by (***):

(***) if there were no property of being bald, there would be no vagueness.

Does this derail our test for determining the source of vagueness? I do not think so.

Suppose the property of being bald is pleonastic and on the cheap--simply arising from meaningful uses of 'bald'. In that case, (***) would be true if vagueness was linguistic.

Since if there were no property of being bald there would be no meaningful word 'bald'-- and so there would be no vagueness left in the universe (recall that we are assuming 'bald' is the last word in the universe). But all this shows is that (***) cannot be used as sentence to test whether vagueness comes from the non-linguistic realm. The defender of the view that baldness is a pleonastic property should revert back to (**) for the test which yields the desired result.

On the other hand, suppose that the property of being bald is not linguistic. In that case, it is natural to use (***) in the test. And if indeed (***) is true, then the test would not predict that vagueness is linguistic (since the truth-values for the sentences would be the same). But this is as it should be. In fact, talk of the 'property of being bald' understood as being a non-linguistic should be eschewed by the defender of vagueness as a linguistic phenomenon. Presumably, the existence of such a property would refute the vagueness-in-language thesis.

Not all human-made representations are linguistic in nature. Some of them, like pictorial representations, may admit of vagueness. Bertrand Russell, for example, held that vagueness is essentially representational and not in the (non-representational) world: 'All vagueness in language and thought is essentially analogous to this vagueness which may exist in a photograph'.⁸ On this view, (*) is false if the world also contains typical pictorial representations. To get around this, we can stipulate in our thought experiment that 'bald' is not only the last meaningful word but also the last agent-constructed representation (which includes natural languages, pictures, photographs etc.).

⁸ Russell (1923)

Another concern is that mental states are vague. Our beliefs, desires and fears may very well be vague. This should not be surprising since the contents of mental states are described using natural, yet vague language. For example, the sentence 'I hope that I will become bald' describes a mental state whose content is specified using vague language ('bald'). Now, contentful mental states have concepts as constituents.⁹ Concepts represent. If mental states are vague, then so are concepts.

We began by considering the thesis that vagueness is a linguistic phenomenon. The considerations just raised reveal that it is more plausible to say that vagueness is a mind-dependent representation (language, pictures, concepts, mental states etc.) phenomenon. We can then modify our proposed test and accompanying thought experiment to cover these mind-dependent representations: Suppose that X is the last mind-dependent representation in the universe, then the following should be acceptable to the defender of the view that vagueness is a phenomenon of mind-dependent representations:

(*)' If X didn't exist, there would be no vagueness.

So long as we pick an X that has an extension/referent whose members have contingent existence, then the following is false:

(**)' If the members of the extension/referent of X didn't exist, there would be no vagueness.

⁹ I am using 'concept' here the way psychologists use it, to denote a mental entity not an abstract object or universal.

The reason it is false, again, is that vague predicates can have empty extensions. The example of 'bald' above verifies this. Now, the truth of (*)' and the falsehood of (**)' help explain how we can say that vagueness is a phenomenon of mind-dependent representations and not the mind-independent world.

The reader might find the approach taken so far to be strange. Why not consider the following pair of counter-factuals evaluated in a normal circumstance and forget about evaluating sentences in a situation where there is but one mind-dependent representation left.

(T*) If there were no mind-dependent representations, there would be no vagueness.

(T**) if the members of the extensions of all mind dependent representations didn't exist, then there would be no vagueness.

It might be thought that (T*) being true and (T**) being false are sufficient to help explain the thesis that vagueness is located in our representations. Though (T*) seems plausible, (T**) may not be false. The number 2 is in the extension of '2', but 2 exists necessarily. So there is no world in which the referent of '2' doesn't exist. (T**) is therefore true (though vacuously true). In addition, since 'exist' is a mind-dependent representation (since it is a natural language word), (T**) asks us to consider all things whatsoever not existing. Presumably this would also include representations. So the

pair (T*) and (T**) would not give us a good criterion for detecting the dependency of vagueness on language (and representations).

In this section, we have developed a criterion for locating vagueness. If we are wondering whether vagueness is located in a type of representation, imagine there is one token representation left (X). Now consider the counterfactuals 'if X did not exist, vagueness wouldn't exist' and also 'if the extension of 'X' did not exist, vagueness wouldn't exist'. If the first counter-factual is true and the second false, then we have some good reason to think that vagueness is a representational phenomenon.

4. Imprecise Senses and Vagueness in the World

According to Frege, senses have the following two features. First, they are representations. Second, they are mind-independent and eternal entities.¹⁰ Let us look at these features in detail.

First, Fregean senses are modes of presentation of objects in the world. For example, Venus may present itself a certain way to me, as the evening planet which appears in such and such location. And it may appear to me in a different way, as the morning planet which appears in such and such a location. These modes of presentation are two distinct senses of Venus. Sense determines reference. So the referent of a sense is the object which is uniquely "described" by the sense, or mode of presentation. Fregean senses are therefore representational entities.

Second, senses are not psychological entities. They are mind-independent objects. This requirement is natural if we follow Frege in accepting that (a) senses

¹⁰ Frege, Gottlob 1956. "The Thought: A Logical Inquiry" *Mind* 65 (259):289-311

constitute propositions, (b) propositions are the primary bearers of truth, and (c) there are mind-independent truths. If there are mind independent truths, then at least some propositions (and hence some senses--their constituents) will be mind-independent. If we assume that senses are metaphysically uniform, then the consideration generalizes to all propositions and senses.¹¹ A further claim is that senses are eternal (necessary objects). This might be thought to follow from the idea that there are necessary truths since each sense is a constituent of some necessary proposition.¹² If a proposition is true in all possible worlds, then it exists in all possible worlds.¹³

Now recall the distinction we made between vagueness in the word-sense relation and vagueness in the sense-object relation (where the simplifying assumption is made that these categories are mutually exclusive). On the first view, a word like 'Venus' will indeterminately express a "precise" sense (more than one, normally). This sense, since it is precise, will determinately refer to a unique object if it refers to anything at all. On the second view, a word will determinately express a unique "imprecise" sense. This sense, will indeterminately refer to things (out there in the world).¹⁴

If we accept the imprecise sense view, we lose the ability to explain why vagueness is a representational phenomenon. Recall that the original puzzle was that

¹¹ See Bealer, G. (1998), "Propositions," *Mind* 107: 1–32; and Schiffer, S. (2003), *The Things We Mean*, Oxford: Oxford University Press for arguments in support of the mind-independence of propositions.

¹² Take any sense, it will be a constituent of some proposition P. But now this proposition will be a constituent of some necessary proposition which is the disjunction of P and some truth of mathematics.

¹³ There is a lot of literature challenging this last assertion. See King, J (2007) *The Nature and Structure of Content*, Oxford: Oxford University Press for a discussion challenging this last line of reasoning

¹⁴ Recall that we are making the simplifying assumption that the options are mutually exclusive and that there are no vague objects.

since claims like ‘it is vague whether t picks out o ’ involves a representation and a thing represented, it is hard to say why vagueness should have its source in representations. As a possible solution to this puzzle, I proposed that the truth of (*)’ and the falsehood of (**)’ can help explain this (purported) fact. However, this idea is not available for the defender of imprecise senses. Since senses exist necessarily, there is no possible world where there is just one sense in existence or where they cease to exist. Hence the analogues of (*)’ would not be true (or if true, merely vacuously true):

(S*) If X (where X is the last sense in existence) were to no longer exist, vagueness would cease to exist.

(ST*) If senses ceased to exist, vagueness would no longer exist.

On some semantic approaches, counterfactuals with impossible antecedents like these are true (vacuously). This does not help us with the problem, however, since on this semantic approach, the following sentence would also be (vacuously) true: ‘If senses (and all other representations) ceased to exist, vagueness would still exist’. The defender of vagueness as a representational phenomenon cannot help himself to the (vacuous) truth of (S*) to bolster her position any more than a defender of vagueness in non-representational reality can use the truth of the sentence we just mentioned to defend her view.

I do not think that those who accept imprecise senses have the resources to explain why vagueness should be located in representations and not the (non-

representational) world. On the Fregean picture, there are worldly objects and there are senses. Senses imprecisely describe the world. But I do not see any grounds to say that senses as opposed to the “world” are the source of vagueness. We can say senses fail to determinately pick out objects, but we can just as easily say that objects fail to be determinately represented by the senses. Of course, the same point can be made in the other direction. We also lose the ability to say that vagueness is a non-representational phenomenon. The point is not merely epistemic. It looks like there is nothing in reality which can locate vagueness in Fregean senses as opposed to the objects they imprecisely denote.

5. Imprecise Senses and The Attitudes

Suppose there are imprecise senses, then there will be imprecise propositions constituted by imprecise senses. One such proposition will be the one expressed by ‘Venus is a planet’. Consider the following de dicto attribution assumed to be (determinately) true:

(B) Venus is a planet and Jones believes it.

According to orthodoxy, (B) is true just in case (i) Venus is a planet and (ii) Jones has a belief with the content which is the proposition expressed by ‘Venus is a planet’.¹⁵ We just saw that this proposition, however, is an imprecise proposition. But how can it be true? If one of its propositional constituents is an imprecise sense, the sentence does

¹⁵ As a simplifying assumption, I ignore tense.

not have determinate truth conditions (recall that we are ignoring vague properties and objects for now). So what is the semantic mechanism which accounts for its truth?

The method of supervaluations can help here.¹⁶ According to a standard construal, a sentence is true if it is true on all admissible sharpenings of its terms. We suppose that a sentence that contains a vague term can be made sharper or more precise in various ways. For example, 'Venus is a planet' can be made sharper by construing the predicate 'is a planet' to be a predicate which determinately has Venus-Adam-Yes but determinately does not have Venus-Adam-No in its extension. We say the sharpenings have to be admissible because not any sharpening counts as a proper candidate to be the extension of 'planet'. For instance, an admissible sharpening of 'star' should not overlap with an admissible sharpening of 'planet'. Sharpenings must also be coordinated. Although some admissible sharpening of 'Venus' will include Venus-Adam-Yes and some admissible sharpening of 'planet' will fail to include Venus-Adam-Yes as a member, no admissible sharpenings of the entire sentence 'Venus is a planet' will assign 'Venus' a referent which is not also a member of the extension assigned to 'Planet'. This ensures that the sentence is true in every admissible sharpening, thus yielding the intuitively correct result.¹⁷ A chief advantage of the supervaluational approach is that it allows us to preserve classical logic. For example,

¹⁶ Fine, Kit, 1975, "Vagueness, truth and logic", *Synthese*, 54: 235–59.

¹⁷ The coordination may extend outside the boundaries of a sentence to an entire discourse or even between a mental state and a report. This is an important component of Brian Weatherson's (2003) 'Many, Many Problems'. *The Philosophical Quarterly* Volume 53 Issue 213 pages 481–501. This paper is a response to Schiffer's criticism of Supervaluations Schiffer, Stephen, S. (1998). "Two Issues of Vagueness." *Monist* 81:193–214. For a related defense, see also Keefe, R (2010) "Supervaluationism, Indirect Speech Reports, And Demonstratives" *Cuts and Clouds: Vagueness, its Nature, and its logic*. Eds. Richard Dietz and Sebastiano Moruzzi Oxford Scholarship Online.

the logical truth 'Venus-Adam-Yes is a planet or Venus-Adam-Yes is not a planet' will be true on every sharpening even if the disjuncts are indeterminate. This will happen because on any sharpening of 'Planet', Venus-Adam-Yes will either be in its corresponding extension or it won't, thus yielding the desired result.

Notice that this approach does not require sharpenings to precise senses (we made no appeal to precise senses). So there is a case to be made, on grounds of parsimony, that if you accept imprecise senses and the method of supervaluations, you ought to reject vagueness in the word-sense relation. Apparently, such an account would do no work on a semantic framework. Vagueness is located wholly in the sense-object relation, or so one might argue.

There is another reason for the Fregean to reject vagueness in the word-sense relation. I sketch this idea here. According to Frege, propositions (made up of senses) are thoughts that can be communicated from person to person. It is an important feature of language that it can make this possible. It is beneficial to me, for example, that if I have a belief that there is a lion by those weeds, I can communicate this very thought to my kin by using the words 'there is a lion by those weeds'. A language that achieves this result would serve an important purpose. This suggests that there is a tight connection between language and thought. This in turn suggests that natural language sentences (in contexts) determinately express thoughts. In contrast, it is less important that there be a tight connection between thought and reality. It is less important that our thoughts capture reality precisely. Since we are limited beings that need to categorize and represent with speed, imprecision in our representation of reality would not at all be surprising. Returning to our example, it is not very important that by 'those weeds' I

mean to describe an area of vegetation with quantum precision. If this line of reasoning is on the right track, we wouldn't expect vagueness to be located in the language-thought(sense) nexus. Rather, we would expect it to be located in the thought(sense)-object nexus. So we would expect our words to determinately express imprecise senses.

A third reason to accept imprecise senses is that it simply does not seem like we indeterminately express precise senses. Venus presents itself to me in a certain way. On the Fregean account, this presentation is a sense for Venus. However, if senses were precise, there would be a cluster of senses (each of which determinately refers to a precise planet-like object in the vicinity of Venus) each of which I indeterminately grasp. But when I introspect my thoughts of Venus, I fail to detect the indeterminate grasping of precise senses. Although it is somewhat intuitive to think that 'Venus' indeterminately picks out precise planet-like objects, the idea that 'Venus' indeterminately expresses a cluster of precise modes of presentations is much more obscure.

So far, we have explored the imprecise sense view (vagueness in the sense-object relation) and made the points that (i) on this view, vagueness cannot be said to be a representational phenomenon (as opposed to the non-representational world); and (ii) the position, together with a supervaluation semantics provides no obvious difficulties for the semantics of attitude ascriptions.

The imprecise-sense view we have been defending so far gives way to imprecise propositions (since senses constitute propositions). Stephen Schiffer (1998) has argued

against imprecise propositions by focusing on de re ascriptions.¹⁸ Schiffer considers a use of ‘Al said Ben was there’ (where ‘there’ denotes a location Al referred to), and argues that the proposition expressed by the complement clause cannot be imprecise. He argued that if it were imprecise, ‘there’ would have to refer to some vague or imprecise location. But Schiffer does not see what a vague or imprecise location would be. Hence, Schiffer concludes that the proposition cannot be imprecise.¹⁹ In order for his argument to go through, Stephen Schiffer must be assuming that the ordinary referent of the demonstrative ‘there’ is what is contributed to the proposition expressed by the complement clause. Though this is an assumption that is widespread in the philosophy of language and has a lot to recommend it, it is an extremely anti-Fregean assumption. For Frege, senses and not ordinary objects constitute propositions. Since our present focus is to see how vagueness fits in with a Fregean theory of senses and language, we can put aside Schiffer’s worries for now.²⁰

6. Precise Senses and Supervaluations

We move away from imprecise senses and consider their precise construal. Using supervaluation semantics, the precise-senses approach can also account for the truth of (B). Interestingly, the approach does not make the same commitments as the imprecise-sense approach discussed earlier. According to that first account, ‘it’ in (B) refers to the

¹⁸ Schiffer, Stephen (1998) “Two Issues of Vagueness.” *Monist* 81:193–214

¹⁹ Schiffer calls these propositions ‘vague’ not ‘imprecise’.

²⁰ Garcia-Carpintero (2000) ‘Vagueness and Indirect Discourse’ *Philosophical Issues* 10 and (2010) ‘Supervaluationism and The Report of Vague Content’ in *Cuts and Clouds*: Oxford. addresses Schiffer’s argument by invoking neo-Fregean machinery. According to his view, ‘there’ and other expression taking on a de re interpretation in attitude contexts do not contribute their ordinary referents to the proposition expressed by the that clause. Instead, other representational entities may appear in the proposition expressed.

unique (imprecise) proposition determinately expressed by 'Venus is a planet'. This is not so for the precise-senses approach. 'it' has many admissible sharpenings, each being a precise proposition indeterminately expressed by 'Venus is a planet'.

Stephen Schiffer (1998, 2000a, 2000b) developed an interesting argument that tells against this proposal.²¹ The supervalue approach predicts that if 'Jones believes that Venus is a planet' is true, it is true in all precisifications. According to Schiffer, this entails that the sentence will be true only if Jones believes each precisification of 'that Venus is a planet'. So if the sentence is true, Jones will believe a number of precise propositions. But according to Schiffer's way of thinking, it is false that Jones believes those precise propositions (in the normal case when the ordinary attribution is true). Hence, the supervalue approach which precisifies that-clauses in mental state ascriptions is mistaken.

Rosanna Keefe and Brian Weatherson have responded to Schiffer.²² They deny that Jones believes all the sharpenings of 'that Venus is a planet'. The key here is that coordination of a sharpening will hold not only between word tokens within a discourse but also between word tokens and elements in the mental realm.

To illustrate this, consider a simple model connecting belief attributions and mental states. Suppose that an agent believes some proposition P just in case her "belief box" contains a language of thought sentence S which expresses P. And an attribution 'A believes N' is true just in case A believes the proposition expressed by

²¹ Schiffer, Stephen (2000a) "Replies." *Philosophical Issues* 10:320–43. Schiffer, Stephen (2000b) "Vagueness and Partial Belief." *Philosophical Issues* 10:220–57. Schiffer's argument focuses on the 'says' relation and I focus on 'belief'. What follows is an adaptation of Schiffer's argument to suit our purposes. One difference is that Schiffer does not focus on Fregean propositions but his argument carries over.

²² Weatherson (2003) and Keefe (2010).

'N'.²³ Let us assume that 'Jones believes that Venus is a planet' is true. Now, according to the Supervaluational framework, 'Jones believes that Venus is a planet' is true just in case it is true in all admissible sharpenings. Suppose that admissible sharpening S1 assigns precise proposition P1 to 'that Venus is a planet'. But, and here is the key, S1 also assigns language of thought sentences in Jones' belief box precise propositions. Assuming that Jones' belief box contains a language of thought sentence VENUS IS A PLANET, S1 also assigns it P1. According to our simple model then 'Jones believes that Venus is a planet' will be true with respect to admissible sharpening S1 since S1 will assign P1 to both 'that Venus is a planet' and the corresponding language of thought sentence in Jones' belief box. Similar reasoning gets us that the belief attribution is true with respect to other admissible sharpenings. Hence, we get the desired result that the sentence is true with respect to all admissible sharpenings.

Now let us see how this construal can handle Schiffer's objection. It is not true that Jones believes all admissible sharpening of 'that Venus is a planet' or even one of them. Adding symbols to the object language corresponding to the sharpenings, it fails to be true that 'Jones believes P1' is true with respect to all sharpenings. The sentence is true with respect to S1, but not true with respect to the other admissible sharpenings. Consider a sharpening S2 distinct from S1. According to S2, the language of thought sentence in Jones' belief box will have P2 as a content (distinct from P1). Since P2 is distinct from P1, then according to our simple model, the attribution 'Jones believes P1' won't be true with respect to sharpening S2. And since it won't be true with respect to all

²³ For simplicity, I ignore tense and context sensitivity.

sharpenings, it won't be true simpliciter. Hence, Schiffer's prediction that the agent will believe many distinct sharp propositions is not true.

A feature of this response that was not explicitly endorsed by Weatherson and Keefe is that the sharpenings will involve non-trivial sharpenings of the verb 'belief'. I think it is natural to think there will be such sharpenings. To see this, note that sentences evaluated with respect to any sharpening will be bivalent. According to sharpening S_1 , 'Jones believes that P_1 ' is true. But according to some other sharpening that sentences will be false. If it were true with respect to all sharpenings then the sentence 'Jones believes that P_1 ' would be true simpliciter which concedes Schiffer his point (since the reasoning generalizes to belief attributions concerning other precise propositions). So there is some sharpening S_n in which 'Jones believes P_1 ' is not true. This means it is false since we are assuming bivalence for sharpenings. We can now see that the extension of 'believes' has to vary with the sharpenings. According to S_1 'believes' will have $\langle \text{Jones}, P_1 \rangle$ in its extension. But according to S_n , 'believes' will not have $\langle \text{Jones}, P_1 \rangle$ in its extension. This just means that the sharpenings of attitude ascriptions involving vague language in the complement clause will also invoke sharpenings of the attitude verb.

Appealing to this insight, we can give a straight forward response to Schiffer. The Supervaluation defender can respond by claiming that in 'Jones believes that Venus is a planet', 'believes' is also vague. Although it may not be true that Jones believes every sharpening of the that-clause, it will be true that for each sharpening there is a sharpening of 'believes' such that Jones stands in that relation to a precise proposition.

The ordinary attribution can be true without requiring that there is a sharp proposition such that Jones believes it.

Let us recap. We were interested investigating the precise senses view in light of a supervenient approach applied to ordinary mental state attributions. We noted a possible problem with such an approach (raised by Stephen Schiffer). We looked at Keefe's and Weatherson's response to Schaffer. I argued that the best way of making sense of this response is by positing vagueness in 'believes'.

I will assume from now on that if we adopt the precise-sense approach with supervenient, 'belief' and other attitude verbs will be vague. On a simplified semantics for attitude ascriptions, each admissible sharpening of the mental state verb will be a set of triples containing a sharpening of the subject, a sharp proposition indeterminately expressed by the that clause, and a time.²⁴ What is interesting about this conception is that the expression 'Jones' belief that Venus is a planet' will indeterminately refer to several closely related mental states. This should not be too surprising, however, since beliefs are individuated by their contents. But note that the imprecise sense approach does not have this feature: the content of a belief will normally just be an imprecise proposition. There won't be a need to say that 'believes' and other mental state words are vague (at least to same degree as we would need to on the precise proposition view).

In what follows, I want to develop a new problem for Supervenient and mental state ascriptions on the assumption that that-clauses get sharpened to precise propositions (complex senses). Consider this case:

²⁴ See also Hawthorne, J. (2005) 'Vagueness and The Mind of God' *Philosophical Studies*, 122 (1):1 - 25.

Let 'Venus₁', 'Venus₂',...be non-vague names for precise overlapping planet-like objects in the vicinity of Venus (as indicated earlier). Suppose that Jones acquires these names and sincerely assents to 'Venus₁ is not a planet' and 'Venus₂ is not a planet'....Jones, for instance, might believe that Venus is a vague object and that sharp objects like Venus₁ and Venus₂ are not planets. He may be wrong, but it is not impossible that he has those beliefs. We can also assume that the senses of 'Venus₁', 'Venus₂' and so on, correspond to the natural sharpenings of 'Venus' on the precise sense with supervaluations.

Now the following are true on their de dicto readings:

(B1) Jones believes Venus₁ is not a planet

(B2) Jones believes Venus₂ is not a planet

...

(Bn) Jones believes Venus_n is not a planet.

The evidence for this is that Jones would assert the sentences embedded in the that-clauses. Note also that Jones is a competent user of the words in these sentences. He may have the wrong philosophical view about vagueness, but this does not mean that he is not competent with the names for these objects. Now consider the true sentence:

(B*) Jones believes that Venus is a planet

According to the precise-senses approach with supervaluations, (B*) is true just in case it is true in all admissible sharpenings. These sentences capture the admissible sharpenings and so are predicted to all be true on their de dicto readings (We are ignoring here the sharpening of 'Jones' and just focusing on 'believes', 'Venus' and 'planet'):

(SB1) Jones believes₁ that Venus₁ is a planet₁

(SB2) Jones believes₂ that Venus₂ is a planet₂

...

(SBn) Jones believes_n that Venus_n is a planet_n

Recall that sharpenings have to be coordinated and the distributions of indices here reflects this. For example, the sharpening of 'planet' dubbed 'planet₁' has Venus₁ in its extension but not Venus₂.

For any i , the truth of (SB i) is not compatible with the truth of (B i). Consider (B1) which we are assuming to be true. (B1) is true on all admissible sharpenings which will include (B1a):

(B1a) Jones believes₁ that Venus₁ is not a planet₁

This sentence, I submit, is incompatible with (SB1). On a Fregean view, a rational and reflective person cannot have the beliefs attributed to Jones by (B1a) and (SB1). This follows from the Fregean constraint on senses. Frege developed his theory to explain

how a rational person may have incompatible thoughts about the same object and not recognize them as conflicting. For instance, a rational person might think the evening planet does not appear in the morning but also believe that the morning planet does appear in the morning. Since the evening planet is just the morning planet, how can a rational person have these beliefs? Frege's solution is that the agent is thinking of the evening planet/morning planet through two distinct senses (modes of presentation). One sense corresponds to the description 'the evening planet' and the other to the description 'the morning planet'. In fact, the beliefs are constituted by these distinct senses.

In addition, Fregean senses are "transparent". That is, if a rational agent grasps the same sense twice, she is in a position to recognize that the senses are about the same object. Frege needed this to account for the a prioricity and triviality of tautologies of the form 'a=a'. The same sense appears twice in the same proposition and it is this fact, together with the meaning of '=', which explains a prioricity and triviality. We may articulate transparency schematically as follows (beliefs are understood de dicto):

(Trans) If a rational and reflective agent believes a is F and believes b is not F, then it is not a priori for him that a=b.

An instance of (Trans) applied to our case would be:

(TransJones) If Jones believes that Venus₁ is a planet and believes Venus₁ is not a planet, then it is not a priori for him that Venus₁=Venus₁

Now, this principle contains vague terms, including 'believes' and 'planet', so the principle should be true in all admissible sharpenings, including the following:

(TransJones1) If Jones believes₁ that Venus₁ is a planet₁ and believes₁ that Venus₁ is not a planet₁, then it is not a priori for him that Venus₁=Venus₁

Now given that (SB1) and (B1a) are true, the antecedent of this conditional is true. From which it follows that 'it is not a priori for Jones that Venus₁=Venus₁'. But clearly this sentence is not true since the occurrences of 'Venus₁' express the same senses. Something has gone wrong.

What this reasoning shows is that either the precise-senses view or the method of supervaluations are on the wrong track. For the Fregean, this should be an interesting result. Supervaluationism is the leading semantic approach to vagueness. On the other hand, we saw that giving up on the precise-senses view and adopting the imprecise-senses view leads to a problem about articulating why vagueness is to be located in representational reality.

The argument we just gave can be generalized and can be recast without appealing to Fregean senses. It goes through under the much weaker and simpler assumption that (Trans) holds, which may be thought to have some independent plausibility. Hence, the argument may be rehashed as one which shows that (Trans) is inconsistent with Supervaluations' precise propositions.

7. Millianism, Supervaluations and Knowledge

The argument I just gave can be avoided by giving up on Fregean senses. Suppose you accept Millianism, which holds that the meaning of a proper name is exhausted by its referent. On that view and under some natural assumptions, the truths of (SB1) and (B1a) are compatible. In effect, 'Venus₁' in those sentences must be read *de re* (or what they semantically express must be a *de re* claim) and so there is no problem with (SB1) and (B1). On their *de re* readings, they become 'Venus₁ is such that Jones believes of it that it is a planet₁' and 'Venus₁ is such that Jones believes of it that it is not a planet₁'. These sentences are not incompatible. So it looks like the Millian can avoid the problem raised for those who accept supervaluations and precise senses.

I now want to develop a puzzle for supervaluations that does not assume Fregeanism. I assume the content of a name in an attitude ascription is just its customary referent (a thesis usually attributed to Millianism).²⁵ As before, we let 'Venus₁', 'Venus₂', and so on correspond to sharpenings of 'Venus'. Coordinated with these sharpenings are sharpenings of 'planet': 'planet₁', 'planet₂' and so on. Now, assume Jones is a rational and reflective person and that (K) is true:

(K) Jones knows that Venus is a planet.

Since (K) is true and it has vague terms, it is true in all sharpenings:

(K1) Jones knows₁ that Venus₁ is a planet₁

²⁵ Roy Sorensen 2000. "Direct Reference and Vague Identity." *Philosophical Topics* 28:175–94 develops a different sort of puzzle for Direct Reference and Supervaluations.

(K2) Jones knows₂ that Venus₂ is a planet₂

....

(K_n) Jones knows_n that Venus_n is a planet_n

I will argue that each of (K1)...(K_n) is false. We begin by noting that the following is false:

(K1*) Jones knows that Venus₁ is a planet

I will give two arguments for why (K1*) is false. This is enough to create a problem for the supervaluation approach. This is because if (K1*) is false, then so is each admissible sharpening, including (K1), contrary to what the supervaluational approach recommends.

So here are the two arguments for why (K1*) is false. First, recall from our case that Jones will reject the sentence 'Venus₁ is a planet'. And we even saw earlier that he believed instead that Venus₁ was not a planet (Jones might reasonably believe that sharp objects aren't planets). In fact, I see no positive reason to think that Jones does have that knowledge except that supervaluationism is committed to such a claim. I conclude that he does not know that Venus₁ is a planet.

The second argument against (K1*) relies on the intuitive idea that borderline cases can't be known--it is false that they are known.²⁶ For example, let Harry be a

²⁶ See Williamson T. 1994 *Vagueness* Routledge. especially ch. 8.

borderline case of 'bald'. No one can know that Harry is bald. 'Venus₁ is a planet' is also a borderline case.²⁷ So it is false that it is known. Hence (K1*) is false.

Arguably, knowledge requires a margin of safety. For example, if you know somebody who has n hairs is bald, then somebody with $n+1$ hairs will be bald.²⁸ Our powers of discrimination aren't powerful enough to give us knowledge at the boundaries. Similar remarks about 'Venus' apply here. Let Venus₂ be just like Venus₁ except for the addition of a single atom. This suggests the following margin of error principle:

(KJ) If Jones knows that Venus₁ is a planet, then Venus₂ is a planet.

Now, since this is true, then it is true in all sharpenings. So consider the following sharpening which is true by hypothesis:

(KJ1) If Jones knows₁ that Venus₁ is a planet₁, then Venus₂ is a planet₁

But the consequent of (KJ1) is false by the stipulations of 'Venus₂' and 'planet₁'. By *modus tollens*, the antecedent is false. But the antecedent is just (K1) which is supposed to be true under supervaluational lights given that (K) is true. Since (K) is obviously true, I blame the supervaluation machinery. So Millianism, or more specifically

²⁷ Discussions of margins of error in vagueness almost always concern sorites series. The case of Venus does not obviously admit of a sorites series but I see no reason why the same ideas cannot apply here.

²⁸ See Williamson, 2007. Knowledge within the margin of error. *Mind* (July 2007) 116 (463): 723-726. However, the claim is derived from a more basic one.

the view that names have their customary referents in attitude contexts, is incompatible with the method of supervvaluations.

8. Last Thoughts

Let us take stock. I have argued that if you are a Fregean who thinks there are imprecise senses (vagueness in the sense-object relation), you can't say how vagueness is a representational phenomenon. A Fregean who is a foe of vagueness in the non-representational world may wish to adopt precise senses (vagueness in the word-sense relation only). But we saw that this approach cannot be combined with a supervvaluation framework. In addition, we saw that there was a problem with supervvaluations and attitudes even if we drop Fregeanism and adopt a Millian perspective.

Now consider the possibility that there are vague objects. There is just one vague object, Venus. If you are Fregean, you may hold that 'Venus' determinately express a unique sense. And the sense of 'Venus' determinately picks out that one vague object Venus. On this approach, some of the worries I mentioned in the paper need not come up. There is no need to make a decision about whether there is vagueness in the word-sense relation or vagueness in the sense-world relation. The vague-object defender may hold that this is a false dichotomy and so the problems that arose for the precise-senses view won't arise. There won't be any obvious need to invoke sharpenings of 'Venus' to account for the knowledge ascriptions. Typically, sharpenings and supervvaluations are invoked when there is vagueness in language or representations. So the problems we saw with knowledge ascriptions won't obviously appear for the vague object view. Unfortunately, the worries about the attitudes will resurface for the

vague object defender if they adopt a supervaluation approach. Vagueness in the world defenders, Akiba, Barnes and Williams have done so.²⁹ These theorists will face the difficulties I have raised here. It is better for Vagueness in the world defenders to reject a supervaluational semantics.

²⁹ Akiba (2004) Akiba, Ken (2004). 'Vagueness in The World' *Noûs* 38 (3):407–429. and Barnes and Williams (2010).