# Non-Catastrophic Presupposition Failure

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## 1. Background

I will be talking today about the problem of presupposition failure. The claim will be (exaggerating some for effect) that there is no such problem – more like an opportunity of which natural language takes extensive advantage.

The previous two sentences are a case in point. The first was, "I am going to talk about the F," the second was, "there is no F." If the second sentence is true -- there is no F -- then the first sentence, which presupposes that there is an F, suffers from presupposition failure. So it should strike us as somehow compromised or undermined. Yet it doesn't. So here is one example at least where presupposition failure is not a problem.

The title is meant to be understood compositionally. Presuppositions are propositions assumed to be true when a sentence is uttered, against the background of which the sentence is to be understood. Presupposition failure occurs when the proposition assumed to be true is instead false. Failure is catastrophic if it puts a thing out of commission, renders it unable to perform its primary task. Non-catastrophic presupposition failure occurs when a sentence's false presuppositions do not prevent it from performing its primary task.

Now I take it that the primary task of an indicative mood sentence is to make a claim -- a claim that (let this be part of the definition) is true or false according to whether matters are as described. Non-catastrophic presupposition failure then becomes the phenomenon of a sentence still making an evaluable claim despite presupposing a falsehood.

I said that presuppositions were propositions taken for granted when a sentence is uttered, against the background of which the sentence is to be understood.[1] It would be good to

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[11] Are we to think of presupposition as a relation sentences bear to propositions (like Strawson), or as a relation speakers bear to propositions (like Stalnaker)? There may be less of a difference here than meets the eye. Strawson in fact takes π to be presupposed by utterances or tokens of S, from which it is a short step to speakers presupposing π in uttering S. And Stalnaker appreciates that there can be sentences S that are appropriately uttered only when π is (or will be as a result of the utterance) pragmatically presupposed. It does little violence to either's position to treat "S presupposes π" as short for "all (or most, or contextually salient) utterances of S presuppose π," and that in turn as short for "speakers in making those utterances always (often, etc.) presuppose that π." (Von Fintel ms, Simons 2003 are illuminating discussions.) Semantic presupposition would be the special case of this where S presupposes π as a matter of meaning, that is, S-users presuppose π not for conversational reasons but because linguistic rules require it.

have some tests for this. Here are three, loosely adapted from the paper that started me thinking about these issues (von Fintel 2004).[2]

One is the "hey, wait a minute" test.[3] If π is presupposed by S, then it makes sense for an audience previously unaware of π to respond to an utterance of S by saying "hey, wait a minute, I didn't know that π." If π is asserted, that response would be silly; of course you didn't know, the point of uttering S was to tell you. Suppose you say, "I'm picking my guru up at the airport." I can reply, "hey, I didn't know you had a guru," but not, "hey, I didn't know you were going to the airport." This suggests that your having a guru was presupposed while your going to the airport was asserted. A likelier response to what is asserted is, "is that so, thanks for telling me."[4]

Second is the attitude attributed when we say that someone denies that S, or hopes or regrets that S; the presupposition π is exempted from the content of that attitude. Hoping you will pick up your guru at the airport may be in part hoping your guru will be picked up, but it is not hoping that you have a guru in the first place. Denying that you are going to pick up your guru at the airport is not denying the conjunction of <u>you have a guru</u> with <u>you are going to pick your guru up at the airport</u>.[5] So a second mark of presuppositions is that π does not figure in what you hope or deny or regret in hoping or denying or regretting that S (Stalnaker 1999, 39).

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[2] A word about von Fintel's paper. Strawson noticed that while some King-of-France sentences strike us as unevaluable ("The KoF is bald"), others seem false ("The KoF is behind that door"). Von Fintel criticizes earlier accounts of this contrast (by Strawson and Peter Lasersohn) and proposes an interesting new account. He does not address himself to a third possibility noted by Strawson, that a sentence with false presuppositions might strike us as true. And he offers no account of the claim made in these cases (not an accidental omission, I suspect). I more or less agree with his basic idea: some KoF-sentences "are rejected as false…because they misdescribe the world in two ways: their presupposition is false, but in addition there is another untruth, which is <u>independent</u> of the failure of their presupposition."

[3] Taken apparenty from Shanon 1976.

[4] This test applies mainly to semantic presuppositions (see note 1), so gives at best a sufficient condition. Looking ahead a bit, "The man with the martini is a philosopher" does not invite the reply, "Hey, I didn't know the martini-drinker was that guy." One can however say, "Hey, I didn't know that was a martini." So perhaps a version or variant of the test still applies.

[5] This observation goes essentially back to Frege. Frege considers the sentence "whoever discovered the elliptic form of the planetary orbits died in misery." He notes that its negation is "whoever etc. did not die in misery" rather than "Either whoever discovered the elliptic form of the planetary orbits did not die in misery or there was nobody who discovered the elliptic form of the planetary orbits" (1872, 162-3). If we assume (as he did) that denial is assertion of the negation, this amounts to the claim that "somebody discovered the elliptic form of the planetary orbits" is no part of what is denied when we deny that "whoever etc. died in misery."

A third test is that presuppositions within limits project, that is, π continues to be presupposed by more complex sentences with S as a part. If you say, "I don't have to pick up my guru after all," or, "it could be I will have to pick my guru up," these statements still intuitively presume you have a guru. The earlier two tests confirm this intuition. One can still reply, "hold on a minute, you have a guru?" And to hope that you do not have to pick your guru up is not ipso facto to hope that you have (or don't have) a guru.[6]

One test sometimes used to identify presuppositions is missing from this list: π is presupposed iff unless π holds, S says nothing true or false. That test is useless in the present context because it makes non-catastrophic PF impossible; π isn't a presupposition unless its failure would be catastrophic.

A sentence suffers from catastrophic presupposition failure only if, as Strawson puts it, "the whole assertive enterprise is wrecked by the failure of [S's] presupposition" (1964, 84). There is also the phenomenon of (what I'll call) disruptive presupposition failure. π's failure is disruptive if the assertive enterprise is shown to be ill-advised or regrettable. It could be for example that π was an important part of the speaker's evidence for S. It could be that π was part of what made S relevant to the rest of the conversation. It could even be that S entails π so that π's falsity guarantees that S is false too.[7]

Disruption is bad but it is not (in our sense) a catastrophe. On the contrary, a remark is implausible or irrelevant or false because of what it says, and that something was said suggests the assertive enterprise has not been wrecked after all. I mention this because Stalnaker, who has written the most about these topics, is addressing himself more often to the disruptive/non-disruptive distinction than the catastrophic/non-catastrophic distinction.[8] This paper is meant to be entirely about the latter.

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[6] Related to this, presuppositions fail to project in certain contexts, e.g., conditionals with π as antecedent. "I don't remember if I have a guru, but if I do, it could be I am supposed to pick my guru up at the airport." (It may be that some non-presuppositions, e.g., "intrusive implicatures," show similar projection behavior. If so then this test provides at best a necessary condition.)

[7] Stalnaker suggests that knowledge attributions both entail and presuppose their sentential complement.

[8] For instance here:

> Where [presuppositions] turn out to be false, sometimes the whole point of the inquiry, deliberation, lecture, debate, command, or promise is destroyed, but at other times it does not matter much at all…
>
> Suppose…we are discussing whether we ought to vote for Daniels or O'Leary for President, presupposing that they are the Democratic and Republican candidates respectively. If our real interest is in coming to a decision about who to vote for…, then the debate will seem a waste of time when we discover that in reality, the candidates are Nixon and Muskie. However if our real concern is with the

## 2. Relevance to philosophy

Why should we care about non-catastrophic presupposition failure? There are reasons from the philosophy of language, from epistemology, and from metaphysics.

The philosophy of language reason is simple. All of the best-known theories of presupposition (among philosophers, anyway) suggest that failures are or ought to be catastrophic. This is clearest for Frege's and Strawson's theories -- for those theories more or less define a sentence's presuppositions as preconditions of its making an evaluable claim. Assuming as before that a sentence's primary task is to offer a true or false account of how things are, presuppositions on Frege's and Strawson's theories are automatically propositions whose failure has catastrophic results.

Next consider Stalnaker's theory of presupposition. Stalnaker-presupposition is in the first instance a relation between speakers and propositions; one presupposes $\pi$ in uttering S if one think that $\pi$ is (or will be, as a result of the utterance) common ground between relevant parties. A sentence presupposes $\pi$ only to the extent that S is not appropriately uttered unless the speaker presupposes that $\pi$.

Why on this account should presupposition failure be problematic? Well, the point of uttering S is to draw a line through the set of worlds still in play at a particular point in the conversation -- one is saying that our world is on the S-true side of the line rather than the side where S is false. Since the worlds still in play are the ones satisfying all operative presuppositions, the speaker by presupposing $\pi$ is arranging things so that her remark draws a line through the $\pi$-worlds only.

But then what happens when $\pi$ is false?[9] Because the actual world is outside the the region through which the line is drawn, it is hard to see how in drawing this line the speaker is saying anything about actuality. It's as though I tried to locate Sicily for you by saying that as between North and South Dakota, it's in the North. Similarly it is not clear how I can locate actuality for you by saying that as between the $\pi$-worlds where S is true and the ones where it is false, it's in the first group, although truth be told it's not a $\pi$-world at all.[10]

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> relative merits of the character and executive ability of Daniels and O'Leary, then our false presupposition makes little difference (1999, 39).

[9] Stalnaker would say that the speaker is presupposing a falsehood.

[10] See Beaver 2001 for theories of presupposition favored by linguists, most of them "dynamic" theories in the manner of update semantics. These seem equally unaccommodating of NCPF, for a reason noted by Simons 2003: "Dynamic theories of presupposition claim that presupposition failure results in undefinedness of the context update function – the dynamic correlate of truth valuelessness" (273).

So much for the philosophy of language reason for caring about NCPF; the standard theories seem to rule it out (even as the theorists are somewhat aware of it – see below). A much briefer word now on the epistemological and metaphysical reasons.

The epistemological reason has to do with testimony, or learning from others. Someone who utters a sentence S with truth-conditions C (S is true if and only if C obtains) might seem to be telling us that C does obtain. But if we bear in mind that π is one of the conditions of S's truth, we see that that cannot be right. For it makes two false predictions about the phenomenon of NCPF. The first is that all presupposition failure is non-catastrophic; if π is false, then the speaker is telling us something false, hence the assertive enterprise has not been wrecked. The second is that what the speaker is telling us can never be true. The fact is that some PF is catastrophic and some isn't; and where it isn't the claim made is true and cases where it is false. To suppose that speakers are saying inter alia that π in uttering sentence S collapses the first two categories into the third.

So here is the epistemological relevance of NCPF. It reminds us that speakers are not in general vouching for everything required for the truth of their sentence; they vouch for the asserted part but not (in general) for the presupposed part.

This leads to the metaphysical reason for caring about NCPF. Quine famously argues like so: "scientists tell us that the number of planets is 9; that can't be true unless there are numbers; so scientists tell us inter alia that there are numbers; so unless we think we consider ourselves smarter than scientists we should be Platonists and accept the existence of numbers." This assumes that speakers are vouching equally for all the truth-conditions of the sentences coming out of their mouths. And they aren't. There being a thing that numbers the planets is no part of what scientists are telling us – no part of what they are giving us their professional opinion about -- when they speak the words, "the number of planets is 9." A different metaphysical upshot will be mentioned briefly at the end.

## 3. Earlier sightings of NCPF: Frege

I said the best-known theories suggest PF ought to be catastrophic, even though in practice they seem often not to be catastrophic at all. I am not saying the best-known theorists are unaware of this fact. Well, Frege might have been unaware of it. Even he, though, gives an example that might be taken to illustrate it. He says in "The Thought" that

> Somebody using the sentence "Alfred has still not come" actually says "Alfred has not come", and at the same time hints - but only hints - that Alfred's arrival is expected. Nobody can say: "since Alfred's arrival is not expected, the sense of the sentence is false" (1918, 331)

Frege says the expectedness was hinted, which suggests an implicature. But "still" is by the usual tests a presupposition trigger. ("Hey, I didn't know Alfred was going to be here!" "I regret that Alfred has still not come.") So let's assume that the expectedness is presupposed. Frege says that the sentence is not automatically false if Alfred was unexpected. By this he presumably means that whether the sentence is true or false depends not on how expected Alfred was but on whether he has indeed come. Even if the presupposition fails – he was not expected – a claim is still made that can be evaluated as correct or incorrect. Frege has given us (albeit inadvertently) a good example of non-catastrophic presupposition failure.

Frege doesn't himself see it as an example of presupposition failure, because the presuppositions that he (and later Strawson) has mainly in mind are existential presuppositions, to the effect that alluded-to items are really there.

> If anything is asserted there is always an obvious presupposition that the simple or compound proper names used have reference (1872, 162)

The sentence

> Whoever discovered the elliptic from of the planetary orbits died in misery

is said to lack truth-value unless someone did indeed make the indicated discovery (1872, 162). Strawson in similar fashion says that if someone produced the words

> The King of France is bald,

we would be apt to say that "the question of whether his statement was true or false simply did not arise, because there was no such person and the King of France" (1950, 12).

## 4. Earlier sightings: Strawson

But, and this is where Strawson goes beyond Frege, Strawson notices that failure even of existential presuppositions does not automatically render a sentence unevaluable.

> Suppose, for example, that I am trying to sell something and say to a prospective purchaser The lodger next door has offered me twice that sum, when there is no lodger next door and I know this. It would seem perfectly correct for the prospective purchaser to reply That's false, an to give as his reason that there was no lodger next door. And it would indeed be a lame defense for me to say, Well, it's not actually false, because, you see, since there's no such person, he question of truth and falsity doesn't arise (1954, 225).

This is an example of what Strawson calls "radical failure of the existence presupposition" (1964, 81) – radical in that "there just is no such particular item at all" as

the speaker purports to be talking about. The example shows that for the existence presupposition to fail radically is not necessarily for it to fail catastrophically.

Now, if the existence presupposition can fail radically – there is no such item as the speaker purports to be talking about -- one might expect that the uniqueness presuppositon can fail radically too – there are several items of the type the speaker purports to be talking about. Strawson gives something close to this:

> if, in Oxford, I declared, "The Waynflete Professor of Logic is older than I am" it would be natural to describe the situation by saying that I had confused the titles of two Oxford professors [Waynflete Professor of Metaphysics and Wykeham Professor of Logic], but whichever one I meant, what I said about him was true (1954, 227)

This becomes radical failure of the uniqueness presupposition if we suppose that Strawson in confusing the titles had confused the individuals too, so that his remark was no more directed at the one than the other. Does the failure thus reconstrued remain non-catastrophic? I think it does. Strawson's remark seems factually incorrect if the Waynflete and Wykeham Professors are both younger than Strawson, and correct (or anyway correct-er) if both are older.[11]

What about non-radical failures of the existential and uniqueness presuppositions? By a non-radical failure I mean that although the description used is not uniquely satisfied, the subject does have a particular item in mind. One often says, for example, "The square root of N is odd," meaning to refer to the positive square root, forgetting or ignoring that N has a negative root too. This again is non-catastrophic failure inasmuch as the remark seems essentially right when both roots are odd and essentially wrong when both roots are even.

That was my example, not Strawson's; he doesn't mention non-radical failure of the uniqueness presupposition. He does however give an example where it's the existential presupposition that (non-radically) fails:

> perhaps, if I say, "The United States Chamber of Deputies contains representatives of two major parties," I shall be allowed to have said something

[11] Or suppose Strawson had said, "The Philosophy Professor at St Andrews is older than me," not realizing that St Andrews had two Professors – this again seems correct if both are older and incorrect if neither is, indeed if either isn't. Stalnaker in conversation suggests treating this as a case of pragmatic ambiguity; the utterance seems true when it is true on both disambiguations, false when it is false on either. I don't see how to extend this treatment to superficially similar cases. "Both of my cars are fast" seems false when I have three cars none of which are fast. It is hard to hear my remark as ambiguous between three attributions of speediness each to all my cars but one.

true even if I have used the wrong title, a title, in fact, which applies to nothing (1954, 227)[12]

So although Strawson doesn't put it this way, his discussion suggests a four-fold classification along the following lines:[13]

| | uniqueness presupposition | existential presupposition |
|---|---|---|
| radical failure of the | Waynflete Prof of Logic | lodger next door |
| non-radical failure of the | square root of N | Chamber of Deputies |

## 5. Earlier sightings: Stalnaker

I want to emphasize the last of these cases because it is very like the examples that Keith Donnellan later uses to motivate the referential/attributive distinction -- e.g., "the man drinking a martini is a philosopher," when it's clear who is meant but he's drinking mineral water. Donnellan's examples were then picked up by Stalnaker to serve as his main and favorite illustration of NCPF. So we have in non-radical failure of the existential presupposition a bridge from Strawson to Stalnaker via Donnellan.

However Stalnaker changes the description of these cases in an important way. Strawson paints a mixed picture which has the speaker presupposing that the description is uniquely satisfied, and intending to refer with it to a certain object X. Stalnaker unifies the picture by making the intention into a second presupposition: the speaker presupposes first that the description is uniquely satisfied, second that it is uniquely satisfied by X. In the Chamber of Deputies example, this amounts to presupposing of a certain legislative body X (the lower house of the US Congress) that it is the Chamber of Deputies.[14]

Turning Strawson's referential intention into a referential presupposition may seem if anything to add to our problems. Before we had one failed presuppositions to work around, now we have two!

But Stalnaker's point about the referential presupposition is that, far from being an obstacle to evaluation, it is what enables evaluation, by pointing the way to an evaluable hypothesis, viz. that X (the lower house of the US Congress) has members from two

[12] This example is important in the debate with Russell. Some empty-description sentences strike us as false, as Russell's semantics predicts. But others are such that "if forced to choose between calling what was said true or false, we shall be more inclined to call it true" (Strawson 1954, 227). Russell cannot claim too much of an advantage for plugging truth-value gaps, if he sometimes plugs in the wrong value. (I ignore the wide-scope negation strategy as irrelevant to the examples Strawson is thinking of.)

[13] This classification is not meant to be exhaustive; perhaps, e.g., the description applies to exactly one thing, but it's not the intended referent.

[14] Or better, maybe, the HR is a Chamber of Deputies etc. (so that the presupposition does not itself suffer from presupposition failure).

major parties. I hope you'll forgive me if I explain how this works by an analogy with the Biblical figure Moses. The analogy is too good to resist, as the referential presupposition (call it as usual π) resembles Moses in four ways.

There is first a similarity of initial predicament. The Israelites start out lost and confused – where do we go from here? Interpreters of "the US Chamber of Deputies has members etc." start out lost and confused too – how on earth are we to attach an evaluable content to this?

Second there is the guidance provided. Moses leads the Israelites to the promised land; π (which says, remember, that, X = The US Chamber of Deputies) leads interpreters to an evaluable content, viz. X has members from two parties.

Third is the element of early retirement. Just as Moses having led his flock to Israel does not follow them into it, π does not enter into the evaluable content. If you look at the proposition that X (the lower house of the US Congress) has members from two parties, it bears no trace of the presupposition that got us there viz. X is the US Chamber of Deputies.

Finally there is the element of sacrifice. Moses by staying out gives the settlers a shot at success; they will not be dragged down by his sins.[15] π by staying out gives the evaluable content a shot at success; the evaluable content can still be true even if π is false.

Stalnaker's example is this. Imagine I say, "The man in the purple turtleneck is bald," in a context where it is presupposed that the man in question is that man (Daniels). My statement still strikes us as true if Daniels is bald, never mind that no one is wearing a purple turtleneck. It is enough, according to Stalnaker, that Daniels is presupposed to be the one person around wearing a purple turtleneck:

> it makes no difference whether that presupposition is true or false. The presupposition helps to determine he proposition expressed, but once that proposition is determined, it can stand alone. The fact that Daniels is bald in no way depends on the color of his shirt (1999, 43).

There is much truth in this marvelous passage. I have only one complaint about it, which is that Stalnaker never says how the presupposition is supposed to accomplish this task within the constraints imposed by his larger semantics. That the (false) referential presupposition staves off catastrophe seems more a datum to be explained than the explanation. This is why I say that not even Stalnaker makes clear how non-catastrophic presupposition failure is possible.[16]

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[15] The waters of Meribah incident.

[16] Stalnaker might reply that there's no problem here. NCPF is possible for basically Kaplanian reasons. S has associated with it a "character" function mapping contexts (understood as sets of worlds) to propositions, and there is nothing to stop a set of worlds from being mapped to a proposition defined on worlds outside of the set. This is fine as

So, to review. A sentence's presuppositions are (generally) no part of what what it says. Presuppositions can however function as determinants of what is said. The suggestion is that they can influence what is said equally well even if false.

Of course, it is one thing to make the suggestion, another to show how it can possibly be correct. Showing this will be difficult without an account of the mechanism by which presuppositions exert their influence. Because the issue really concerns that mechanism: does it ever in the course of its π-induced cogitations find itself wondering whether π is true?

So we need a story about how asserted content is arrived at. There are hints in the literature of three strategies for stripping away presuppositional content. The first tries to get at what S says by ignoring the possibility that π fails. The second tries to get at what S says by restoring π when it does fail. The third tries to get at what S says by asking what more than π needs to be true for S to be true. I will be arguing against the first two strategies and in favor of the third.

### 6. IGNORE (1st strategy)

The idea here is that asserted content addresses itself only to π-worlds. It just ignores worlds where π fails. S's asserted content is a partial function mapping π&S-worlds to truth, π&~S-worlds to falsity, and non-π worlds to nothing at all. There might seem to be support for this in Stalnaker:

> in a context where we both know that my neighbor is an adult male, I say, "My neighbor is a bachelor," which, let us suppose, entails he is adult and a male. I might just as well have said "my neighbor is unmarried." The same information would have been conveyed (1999, 49).

Let's suppose that "the information conveyed" corresponds to what is said or asserted.[17] Then we are told in this passage that "My neighbor is a bachelor" and "My neighbor is

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far as it goes, but one would like to know what these characters are and what are the graspable semantic rules that determine them. The worry is that NCPF is ubiquitous, and character as Kaplan understands it is not. Two-dimensionalists have been charged (not least by Stalnaker) with an undue optimism about the project of extending Kaplan-style semantics to the larger language. Stalnaker would be open to a similar criticism if he thought all NCPF could be explained on this basis. (He doesn't -- see the next note.)

[17] Stalnaker also uses "what is said" for a proposition defined not only on π-worlds: "To make an assertion is to reduce the context set in a particular way…all of the possible situations incompatible with what is said are eliminated" (1999, 86). It is not clear to me how closely his "what is said" (he sometimes calls it "the proposition expressed") lines up with my assertive content, but I think the correspondence is not exact. Stalnaker's "what is said" is meant to be a kind of Kaplanian content, arrived at by evaluating S's

unmarried" say the same thing in a context where it's presupposed that my neighbor is an adult male, Well, what is the easiest way to arrange for that result? It's to make what is said undefined on worlds where unmarriedness comes apart from bachelorhood – that is, worlds where my neighbor fails to be what he is presupposed to be, an adult male. So we arrive at the following analysis:

> [1] S's asserted content **S** is the proposition that is true (false) in a π-world w iff S is true (false) in w, and is otherwise undefined.[18]

But this is clearly a non-starter. It may have its uses in separating out asserted content when presuppositions hold.[19] But it isn't going to be much help when they fail, for the obvious reason that a proposition defined only on π-worlds says nothing about our world, if in our world π is false. That is, "The King of France is in my back pocket" sounds to most people just false. Intuitively this is a case of non-catastrophic failure; I have still made an evaluable claim even though France lacks a King. But there is nothing in the IGNORE proposition to support this judgment, for the IGNORE proposition is undefined on our world.

## 7. Methodological Interlude

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character in the context of utterance. There is of course a function mapping contexts of utterance to assertive contents as defined below. But (as Stalnaker has himself stressed) not any old mapping from context to content counts as a Kaplanian character – only those mappings defined by semantic rules that speakers grasp as part of their basic semantic competence. So, I might think (*) "all five of Ben's sisters speak French" has as its assertive content (**) all of Ben's sisters speak French -- this is why the sentence counts as false if Ben only has four sisters and some don't speak French. I doubt (**) would count for Stalnaker as the proposition expressed, the value of (*)'s fixed Kaplanian character in a context where the speaker is misinformed about how many sisters Ben has. He would I suspect offer a different explanation of why (*) strikes us as false: if we substitute for (*) the sentence the speaker would have chosen instead had she not been laboring under a misconception, the proposition expressed by that sentence is false. This departs further from systematic semantics than I was proposing to go, and further than I think we need to go. Assertive content as conceived here is more outré than Stalnaker's liberalized Kaplanian content, but less outré than "the proposition expressed by the sentence one would have said instead, had the facts been known." That having been said, I try in the main text to ignore any possible differences between my assertive content and his proposition expressed.

[18] Note that this assumes nothing about S's truth-value in worlds where π fails. Let S be "The KoF is so and so." Russellians will call S false in worlds where France lacks a King. Strawsonians will say it is undefined. They agree, however, on S's truth-value in worlds where France has a unique King, and those are the only worlds that [1] cares about.

[19] I have my doubts, but never mind.

I said that "The KoF is sitting in this chair" sounds to most people just false. Why not go further and declare that it really is false? Strawson for his part is reluctant to take this further step. He does not want to call statements like this false "in the primary sense." He prefers to say that

> sometimes …the word "false" may acquire a secondary use, which collides with the primary one (1954, 230)

I am going to follow Strawson in calling sentences like "The KoF is behind that door" false only on a secondary use of that term, and sentences like "The US Chamber of Deputies has representatives of two parties" true only on a secondary use of "true." This is to some extent a question of theoretical bookkeeping, but that's OK: some bookkeeping methods are better than others. Let me sketch briefly and somewhat dogmatically the approach I will be taking, and leave to a footnote the reasons for taking it.

Suppose S is uttered against the backdrop of certain presuppositions, some of which are false. S's semantic content is what it means in that context; its asserted content is what it says. S means to be addressing itself only to worlds where those presuppositions are satisfied. So those are the worlds on which S's semantic content is defined. Our world is not among them, so S's semantic content is undefined on our world.

But it doesn't follow from a sentence's meaning to address itself only to $\pi$-worlds that it doesn't wind up addressing itself to other worlds too. Imagine that S is a conjunction A&B, where A presupposes $\pi$ but B does not. The usual theories say that a conjunction inherits the presuppositions of its first conjunct, so S presupposes $\pi$ as well. Suppose we now add that B, which recall does not presuppose $\pi$, is false. Then we are inclined to reason as follows:

> B is part of what S says, so
> if B is false in our world @ then part of what S says is false in @
> if part of what S says is false in @, then (all of) what S says is false in @, so
> what S says is false in @.

This shows how what a sentence says – its assertive content – can be of wider application than what it means – its semantic content. S's assertive content is defined on our world (it is false) even though its semantic content is not defined (due to the falsity of S's presupposition $\pi$).

So much concerns the truth/falsity of contents, not sentences. At this point I just want to stipulate that it is a sentence's semantic content determines its truth-value, that is, S is true/false in w iff its semantic content is true/false there.[20] Thus a sentence like "The

[20] Three reasons for taking this line.

KoF sits in this chair" is not in the strict semantic sense false, because its semantic content is undefined in worlds France lacks a King.[21]

The question then becomes, why do sentences like this strike us as false? The answer is that truth-value intuitions are driven not by what a sentence means but what it says. And "The KoF sits in this chair" says something false, viz. that someone is in this chair. Both of our remaining strategies are aimed at carving out a notion of assertive content that extends semantic content in such a way as to predict our truth-value intuitions.

### 8. RESTORE (2nd strategy)

For an example of a sentence whose aasertive content outruns its semantic content, consider "The KoF is bald & the QoE is bald." Even if we agree with the theories that classify it as gappy, there is still the feeling that it escapes on a technicality. The fact that the QoE has hair ought to falsify it, but is prevented from doing so by the intuitively irrelevant circumstance that France has no King. We have a similar feeling I think about

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(1) Truth and falsity are supposed to be notions of basic semantic theory. But what strikes us as true or false can vary in ways that basic semantic theory should not be asked to explain. Consider three uttered sentences.

> The F is G (straight assertion).
> The F is G (in response to a question).
> One of the Gs is the F.

The basic semantics of these three sentences ought to be the same, or at any rate not so different as to make for a difference in truth-value. But their perceived truth-values can differ. Strawson notes, for example, that although "The KoF is bald" normally seems unevaluable, as an answer to "what bald notables are there?" it strikes us as false. And "One of the world's bald people is the King of France" always strikes us as false. This strongly suggests that counting as true/false is a different matter from being assigned those values by the relevant theory. (I am indebted here to von Fintel 2004.)

(2) Allowing S truth-value only in π-worlds brings all presuppositions under the same formula: S presupposes π iff π is a precondition of its truth or falsity. The alternative is to have on the one hand Strawson-type presuppositions that do satisfy the formula and on the other hand Stalnaker-type presuppositions that don't. This is theoretically awkward and to be avoided if possible.

(3) One doesn't have to assume that, say, "The KoF is behind that door" really is false because we can explain our truth-value judgment another way. How a sentence strikes us truth-value-wise is driven not by what in context it means -- its semantic content -- but by what in context it says – by its asserted content. A sentence counts for us as false iff it says something false, and counts for us as true iff it says something true.

[21] See von Fintel 2004 and Beaver and Krahmer (ms).

"The KoF is sitting in this chair." The fact that there are no Kings in this chair is all set to falsify it, if only France's lack of a King would get out of the way.

One response to this obstructionism is to say, fine, if that's the problem, let's give France a King; then the deserved truth-value will shine through. This is the idea behind RESTORE. Instead of ignoring worlds where π fails, let's try to rehabilitate them, in the sense of bringing them back into line with π:

> [2] **S** is true (false) in w iff S is true (false) in w-corrected-for-π.

Now of course we can't literally correct w for π; changing w so that "it" verifies π is really substituting for w a different world. But what we can do, and presumably this is the intent, is consider a world otherwise like w in which π holds.

> [3] **S** is true (false) in w iff S is true (false) in the world closest to w where π holds.

This simplifies matters, because for S to be true (false) in the world closest to w where π holds is, on standard theories of conditionals, precisely what it takes for a conditional π → S to be true (false) in w. So we can let the idea be this:

> [4] **S** is true (false) in w iff π → S is true (false) in w.[22]

Why does "The KoF is sitting in this chair" strike us as false? Well, even if France is supplied with a unique King, still he is not to be found in this chair. Why does "The KoF is bald" not strike us as false? Well, if France is supplied with a unique King, who knows how much hair that person will have?[23] So the RESTORE strategy has prima facie a lot going for it.

Still I am not optimistic. I don't doubt that for some similarity relation and some associated similarity-based conditional, it gives the right results. (The strategy I suggest below can be viewed in this light.) But if we confine ourselves to the conditionals we know of and have intuitions about -- the indicative and the subjunctive -- the strategy fails.

Russell was asked, if you are wrong and God exists, what will you say to him in the afterlife? He responded (not an exact quote), "I would ask Him why he did not give more evidence of His existence." I surmise from this that Russell believes a certain indicative conditional: if God exists, he is doing a good job of hiding it. This conditional is of the form π → S, so our account predicts that even if (as Russell imagines) God does not exist, still the sentence "God is doing a good job of hiding his existence" ought to strike him as true, because what it says really is true. And something tells me that it doesn't.

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[22] I assume that π→S is false iff π→~S is true.

[23] See Lasersohn 1993 and von Fintel 2004.

Now to the extent that God would have revealed himself had he existed, the subjunctive version avoids this problem. But, switching back to the King of France, there are plenty of KoF-sentences that would have been true if the KoF had existed, but strike us as false given that he does not exist. Take again "The KoF is sitting in this chair." Initially this strikes us as false, but suppose for the sake of argument that this is the long lost French throne, so the KoF would be sitting in it if he existed. Then the subjunctive analysis predicts that our feeling about this sentence should change; we should now agree with it. And clearly we don't. It doesn't make it any more plausible to suppose that the KoF is sitting in this chair to be told that he would be sitting in it if he existed.

### 8. SAY-MORE (final strategy)

Go back to the passage where Stalnaker has us choosing between "my neighbor is a bachelor" and "my neighbor is unmarried," in a context where my neighbor's adult maleness is presupposed. He first says that the information conveyed would be the same. But in a part of the passage we didn't get to, he sticks in the word "increment" before "information":

> the increment of information, or of content, conveyed by the first statement is the same as that conveyed by the second (1999, 49).

The word increment suggests that we are to ask what more it takes for S to be true, supposing that the requirement of π's truth is waived or assumed to be already met. This suggests the SAY-MORE strategy, so-called because it identifies what S says with what more S asks of a world beyond that it should verify π.[24]

Determining these additional requirements may sound like a tricky business, but it is not so different from something we do every day, namely, look for the missing premises in an enthymematic argument. The question what further conditions (beyond π) a world has meet to verify S is basically the question of what premises have to be added to π to make the following argument valid:

π
???

[24] Suppose we use prop(π) for the properties a world needs for π to be true in it, prop(S) for the properties a world needs for S to be true in it, and prop(S\π) for the additional properties π-worlds must have to be worlds where S is true. It is not in general the case that prop(S\π) = prop(S)\prop(π). An analogy might be this. A rich man can get into heaven only by giving lots of money away; so prop(heaven-goers\rich) includes giving lots of money away. But giving money away is not in prop(heaven-goers)\prop(rich), because lots of people who don't give money away still get into heaven, namely those who aren't rich. Conversely properties in prop(heaven-goers)\prop(rich) need not belong to prop(heaven-goers\rich).

S

So we can put the SAY-MORE strategy like this:

[6] **S** is whatever it takes to bridge the logical gap between π and S.

An example to show how it works. Someone utters the sentence, "the man with the martini is a philosopher," where it's presupposed that the man in question is that man. What has to be added to the assumption that that man is the one drinking a martini to get the result that the man drinking a martini is a philosopher? This is like asking how we can plug the gap in the following argument:

That man is the one drinking a martini (π)
??????????????????????????????????
The man drinking a martini is a philosopher (S).

Clearly the premise you need is that that man is a philosopher. That is enough to reach the conclusion S and a stronger premise would take you beyond S. It is this missing premise more or less that is to serve the assertive content of S.

A second example brings out some of the complexities. Imagine that Hilda assumes Principia Mathematica had a single author, and believes that that author was born in France. She gives voice to this belief by saying, "The author of PM was born in France." This statement strikes us as false, and we want to explain the feeling by showing that what is said -- the asserted content -- is false. To find the asserted content, we ask, what does it take to fill the gap in the following argument?

PM had a single author (π)
??????????????????
The author of PM was born in France (S)

This time there is more than one way of doing it. One gap-bridger would be "Some PM author was born in France." Another, on the face of it equally good, is "All PM authors were born in France." It doesn't matter in this case whether we take the assertive content to be the some-claim, the all-claim, or (as I prefer) their conjunction, "some and all PM authors were born in France," since each of the three claims is false.[25] The suggestion is that this is not an accident, that "The author of PM was born in France" strikes us as false precisely because even if we waive the sole-author requirement, the further requirements it imposes on top of sole-authorship aren't met either.

[25] An example to show why the conjunction works best: Hilda thinks the sole author was Whitehead. Knowing that Whitehead lived for a while on Bates St in Cambridge, she says, "The author of PM lived on Bates St." To explain the feeling that this is false, we need "All PM authors lived on Bates St." to be part of its assertive content. To explain the feeling that Hilda's statement is still false if PM has no author, we need "Some PM authors lived on Bates St." to be part of the assertive content.

I don't say it is always easy to work out which premises R fit into the logical gap between π and S. On the one hand R shouldn't repeat information already found in π. Put this by saying that R should "pick up where π leaves off." On the other hand the desired conclusion is S, not anything stronger. Put this by saying that R shouldn't be a "bridge too far." I will leave to an appendix my attempt to make these conditions precise. But the rough idea is this.

First the "bridge too far" requirement. R is a bridge too far iff R&π is stronger than S. So R is <u>not</u> a bridge to far iff S is at least as strong as R&π. And that is just to say that S implies R&π. S implies π automatically since S is true only if S is defined only if π is true. So the requirement is really just that S implies R, presumably in the sense that every S-world is an R-world.[26]

The "pick up where π leaves off" requirement is trickier. The idea I take it is that R should have no trace of π in it. Here's how I would analyze that, again leaving the technicalities to the appendix:

[7] R is <u>π-free</u> iff either
(i) R is false, and could be false for the very same reason even if π were true, or
(ii) R is true, and could be true for the very same reason even if π were false.

Rewriting [6] with these clarifications in mind, we get

[8] **S** is the sum total of S's π-free implications.

This way of putting it further clarifies how a sentence that is undefined due to presupposition failure can nevertheless count as false. S counts as false because it has <u>consequences</u> whose weaker presuppositions make them more amenable to evaluation, and some of those consequences really <u>are</u> false.

Take "The KoF is sitting in this chair." It implies "someone is in sitting in this chair;" "someone is sitting in this chair" doesn't suffer from presupposition failure, so we can evaluate it; it is false. No big surprise if a sentence that implies falsehoods strikes us as incorrect!

[26] Implication should preserve definedness as well. Otherwise "The KoF is bald" π-free implies the false "Among the bald people is a French King." To say implication preserves definedness is basically to say that S does not imply R if R presupposes anything that S doesn't. This fits with the idea that S counts as false because it might imply an R whose <u>weaker</u> presups give it a better chance of being evaluable, an R that turns out to be false.

Actually though implying falsehoods is not enough. S is undefined on worlds where π fails; so it is true only where π is true; so it implies π. But then sentences whose presuppositions fail automatically imply falsehoods, namely the presuppositions themselves.

Take "The KoF is bald." It implies "France has a King"; "France has a King" doesn't suffer from presupposition failure, so we can evaluate it; it is false. "The KoF is bald" also implies falsehoods that are not π exactly but contain in them traces of π, e.g., "France has a bald King."

What we should have said then, and what [8] instructs us to say, is this: no big surprise if sentences with false π-free implications strike us as false. Now though we need to check that "France has a bald King" is indeed not a π-free implication of "The KoF is bald." Ask yourself, could "France has a bald King" have been false for the same reason even if France had a King? Well, the reason "France has a bald King" is false is that France has no King. Clearly it could not have been false for that reason in a world where France has a King.

### 9. When does S make a claim?

One can distinguish several big questions about presupposition failure. First, how can it fail to be catastrophic? Second, why is PF sometimes catastrophic – the whole assertive enterprise is wrecked – and sometimes not, e.g., "The KoF is in my back pocket"? Third, limiting ourselves to the non-catastrophic cases, why do some of these strike us as true and others as false? We're now in a position to address all of these.

How is NCPF so much as possible? Stalnaker gave the outlines of an answer: π helps to determine the proposition expressed (what is said); π's truth-value is not directly relevant to its role as proposition-determiner; and the proposition determined is not limited to worlds where π is true. How do we know, though, that false πs can play the same determinative role as true ones? Don't we need to look at the mechanism by which π exerts its influence?

Now that we have some idea of the mechanism, we can see that truth-value doesn't really come into it. π could have either truth-value and still serve as one end of the logical gap between π and S. And it is by serving as one end of that gap that it contributes to what is said. Similarly, whether R is a π-free implication of S is a function more of π's content than whether that content obtains.

So that's our explanation of how NCPF is possible. It may seem that we have succeeded too well. If π's falsity is irrelevant to its role in determining assertive content, why is PF ever catastrophic?

This would be a good question if catastrophic PF had been defined as PF depriving S of assertive content. But that is not how we defined it. PF is catastrophic if it has the result

that S makes no claim. And there is reason to doubt that every S with an assertive content counts as making a claim.

The reason is this. Part of what is involved in S's making a claim is that for matters to stand as S says is for them NOT to stand as ~S says. And there might be some sentences S that are so tainted by their association with π that they and their negations cease to disagree when π fails. These are the sentences that I would describe as making no claim.

[9] S makes a claim iff: if **S** is true, then **~S** is false.

Catastrophic failure occurs when

[10] S makes no claim: **S** is true and **~S** is also true.

Consider "The KoF is bald." To find its assertive content we ask, what beyond France's having a unique King is required for the KoF to be bald? The candidates are, let's say, (i) France has a bald King, and (ii) any French Kings are bald. We have already seen that (i) is not π-free, because it is false for a reason incompatible with π, namely France's lack of a King. What about (ii)? Its truth-maker (again, France's lack of a King) is consistent with π being false, so (ii) is π-free. It appears that there is nothing for "The KoF is bald" to say but any French Kings are bald, and nothing for its negation to say but Any French Kings are non-bald, that is, France has no bald Kings.. Both propositions are true; so according to [9], "The KoF is bald" makes no claim, and according to [10], "The KoF is bald" suffers from catastrophic presupposition failure.

## 10. When is the claim S makes true/false?

This leaves the question of what distinguishes the presuppositionally challenged sentences that count as true from the ones that count as false. First a stipulation: the claim S makes -- when it makes a claim – is its assertive content. Given this stipulation, truth-value judgments are explained like this:

[11] S counts as true (false) iff it makes a true (false) claim.

Take "The KoF is sitting in this chair." What π-free implications does it have? One obvious implication is this chair contains a French King. Is the reason this is false compatible with π being true? It is false because no one is sitting in the chair, or no King is etc., or no French King is etc.[27] All of these are compatible compatible with France's

[27] Note that that France lacks a King does not make "This chair contains a French King" false, since it does not imply the latter's presupposition that there is such a thing as this chair. What about France lacks a King and there is such a thing as this chair? This is formally eligible but a better -- more proportional -- candidate for the role is This chair is empty (see Yablo 2003 and note 36). It is true we are walking a fine line here, for "The King of France weighs more than this chair" does not strike us as false. If "The KoF sits

having a unique King. It looks then like "The KoF is sitting in this chair" claims in part that this chair contains a French King. That doesn't appear to be so, so the claim counts as false.

A couple of examples finally of counting as true despite PF. The first will use a concrete term, the second, to move us back to the ontological relevance of NCPF, will use a term that's abstract.

A long time ago you'll recall there were two popes, one in Rome, the other in Avignon. Imagine that you check into a monastery, and scrawled on the bedpost you read, "The pope slept here." Suppose that both popes slept in the bed in question. Then it seems the inscription strikes us as intuitively true (how could a double success be a failure?). To check this against the theory, we must hunt around for π-free implications of "The pope slept here." One such implication is that some pope slept here; another is that all popes slept here. So far then it looks like the assertive content is that some and all popes slept here. It is because this is true in the imagined circumstance that "The pope slept here" counts for us as true.

Now an example from John Burgess and Gideon Rosen. Imagine I look into my back yard today and see one cat, look into the yard tomorrow and see two cats, etc. I form the hypothesis that this pattern will continue forever. How do I express this in English?

> "for all n, n = the number of cats in the yard on the nth day."

I presuppose in saying this that no matter what day it is, there is a unique thing that numbers the cats in my yard on that day. Now consider the statements on this list:

> on the first day there is one cat in my yard
> on the second day there are two cats in my yard
> on the third day there are three cats etc.
> …….

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in this chair" π-free implies the false "A French King sits in this chair," why doesn't "The KoF is heavier than this chair" π-free imply the false "A French King is heavier than this chair." The answer is that "A French King is heavier than this chair" is not π-free, because there is no better candidate for falsity-maker in this case than France lacks a King and there is such a thing as this chair. No simple fact about the chair itself falsifies "A French King is heavier than this chair" as the chair's emptiness falsifies "A French King sits in this chair." Note more generally that "The KoF bears R to X" does not usually count as false when R is an "internal relation" like taller-than or heavier-than -- a relation that obtains in virtue of intrinsic properties of the relata. The proposed explanation is that facts purely about X do not suffice for the falsity of "A French King bears R to X"; France's lack of a King has to be brought in, which makes the implication no longer π-free. (See also the discussions in Donnellan 1981 and von Fintel 2004.)

All of them are implied by my hypothesis, and it is easy to see that each is a π-free implication. A typical falsity-maker is the fact that on the third day there are no cats in my yard. That there are no cats in my yard can happen just as easily in platonistic worlds (where π holds) as in nominalistic worlds. A typical truth-maker is the fact that on the third day the cats in my yard are Zora, Teasel, and Yossele. For the cats in my yard to be Zora, Teasel, and Yossele can happen just as easily in nominalistic worlds (where π fails) as in platonistic worlds.

Now I haven't argued that these are all the π-free implications. But if they are, then what my hypothesis says is that on the first day there is one cat, on the second there are two, and so on. It follows that whether the hypothesis counts for us as true is completely a matter of how many cats there are in my yard on which days; the existence of numbers plays no role whatsoever.

## 11. Sketchy parting thoughts about abstract ontology

Quine says somewhere that I am ontologically committed to whatever my theory "presupposes." If my theory presupposes numbers, as it certainly seems to do, then I am committed to numbers.

Part of the message of this paper is that the first premise here is exactly wrong. I may be committed to what my statements say. But I am not committed to what they presuppose, because the presuppositions are not being put forward as true.

A different argument for abstracta goes like this. Terms that make a systematic enough contribution to the apparent truth-value of their containing sentences are ipso facto terms that refer. Numerical terms do this. So numerical terms refer.

Once again the basic premise is wrong. "The King of France" makes a systematic contribution to "truth"-value too, in that some but not all KoF-sentences count as false. But nobody thinks that "the King of France" refers.

This might be found unconvincing. For although plenty of KoF-sentences count as false, no (simple) KoF-sentences count as true.[28] This suggests a third argument for the existence of abstract objects. Say that a term t makes a positive semantic contribution iff in addition to t-sentences counting as false, lots of them also count as true. Terms that make a positive semantic contribution, it might be thought, are ipso facto terms that

[28] "Simple" meaning with no negation in them, or other "negative" connectives like the conditional. Best to think of simple sentences as connective-free. Let the restriction to simple sentences be henceforth understood.

refer.[29] Numerical terms do this: "the number of Fs = n" often counts as true. So numerical terms refer.[30]

I agree that the failure of a concrete term to refer prevents it from exercising positive semantic influence. But there is a reason for this. Consider again "the King of France." Its semantic contribution goes way beyond our notions of what a French King would have to be like. He is (or would be, if he existed) an original source of information of the type that makes KoF sentences count as true. Numbers by contrast are not (would not be) an original source of information on any topic of interest. Their contribution is exhausted by what they are supposed to be like.

Suppose I am right that these platonist arguments do not succeed. Can the reasons for their failure be turned into an argument for the opposite view: nominalism? I doubt it.

The mechanisms driving (ordinary, intuitive) semantic evaluation try their best to discount existential presuppositions, focussing rather on the informational difference between π and S. Concrete terms won't usually submit to this treatment; whether France has a King makes a huge difference to which KoF-sentences count as true (false). But terms could evolve that play into it, engendering the same "truths" ("falsehoods") regardless.[31] I suggest that numerical terms are like this, and perhaps abstract terms more generally.

Now, if a term's referential properties are irrelevant to its semantic[32] contribution, then that semantic contribution provides no evidence either way about whether the term refers. This in my view goes some way towards explaining why questions of abstract ontology are so frustrating -- for the question whether numbers exist is hardly to be distinguished from the question of whether numerals refer, and it is hard to think what other evidence we have on that than the kind just rejected as useless.

Admittedly this shows at most that we can never know whether numbers exist. There could still be a fact of the matter one way or the other.[33] But one might attempt to strengthen the argument, by strengthening one of the premises. The premise we have says that abstract terms' sentence-level effects -- its contribution to "truth" and "falsity" – provide our only evidence on the question of whether those terms refer. But perhaps more is true. Perhaps abstract terms' sentence-level effects are the only thing that bears on the reference question at all, the only constraint on its proper answer. Here is the argument I would like to make, even if I can't make it today:

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[29] Terms suffering from non-radical failure of the existential presupposition are for these purposes terms that refer. Otherwise "The man drinking a martini is a philosopher" is a counterexample – it counts as true even when the description does not apply.
[30] I am ignoring statements of pure mathematics. I have no real excuse for this, it's just that I am not sure how to work them into the picture.
[31] I am using "true" for counting as true and "false" for counting as false.
[32] "Semantic" in the "true" vs. "false" sense, not true vs. false.
[33] Tim Williamson made this point in response to an earlier paper.

1. It is determinate whether numerals refer only if something determines it.

2. That something can only be the effects numerals have on the "truth" of their containing sentences.

3. Numerals as a matter of meaning have those effects entirely in virtue of non-referential properties.

4. So there is nothing in numerals' sentence-level effects to determine whether it refers.

5. So it is indeterminate whether numerals refer.

6. So it is indeterminate whether numbers exist.

## Appendix

Situations are parts of worlds; worlds are maximal situations; truth-in-a-world is a case of truth-in-a-situation. A situation verifies (falsifies) S only if it contains everything potentially relevant to S's evaluation in the containing world. For instance, a situation doesn't verify "all swans are white" just because all the swans in the situation are white – just because of omitting the black swans. The formal upshot is a condition called persistence: if S is true (false) in situation $v$, and $v$ is part of $v^+$, then S is true (false) in $v^+$.[34]

There are two notions of implication to consider, one a cross-world notion and one that is strictly intra-world:

> (1) S implies R (everywhere) iff for all possible worlds $w$, S is true in $w$ only if R is true there.[35]

[34] See Kratzer for an enlightening discussion of persistence.

[35] Implication should preserve definedness as well as truth. The reason is this. "The KoF is bald" should not count as false, so it should not $\pi$-free imply (the false) "Among the bald people is a French King." The latter is false because there are no French Kings among the bald people, which is compatible with France's having a unique King. So this would be a case of $\pi$-free implication, if it were a case of implication. It is not a case of implication because although truth is preserved, definedness is not: consider a world lacking in bald people where France has a unique King. On an intuitive level, requiring

(2) S implies R in w iff for all w-situations v, S is true in v only if R is true in v.

Both of these figure in the definition of truth-maker. A truth-maker for R in w is a T that implies R across all possible worlds, and that holds in every w-situation where T holds:

(3) T makes R true in w iff
(i) T is true in w,
(ii) T implies R everywhere,
(iii) R implies T in w[36]

F makes R false in w iff it makes ~R true. Now the definition of π-freedom:

(4) R is π-free in w iff
- R is true in w and its truth-maker holds also in worlds where π is false, or
- R is false in w and its falsity-maker holds also in worlds where π is true.

(5) S's asserted content in w ($\mathbf{S}_w$) is the conjunction of its π-free implications in w.

(6) S makes no claim in w iff both its asserted content and its negation's asserted content are true in w. Otherwise the claim S makes is $\mathbf{S}_w$.

(7) S counts as true (false) in w iff
(i) S makes a claim in w
(ii) that claim is true (false) in w.

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R to be defined wherever S is defined is requiring that R's presuppositions be no stronger than S's. This fits with the idea that S counts as false because it implies something R whose weaker presups allow it to be false where S is undefined.

[36] Heim raised a puzzle about Kratzer's defn of lumping that applies also here. What if R's truth in w is overdetermined by $T_1$ and $T_2$? R won't imply $T_1$ in w there are w-situations where R holds thanks instead to $T_2$. Still, there ought to be a $v_1 \leq w$ such that R implies $T_1$ in $v_1$ and a $v_2 \leq w$ such that R implies $T_2$ in $v_2$. So a better definition is this:

(3') T makes R true in w iff for some $v \leq w$
(i) T is true in v,
(ii) T implies R
(iii) R implies T in v,

that is, T holds in every subsituation of v where R holds. I'll ignore this complication in the main text. Also T should be proportional to R, perhaps in the sense of not being "egregiously strong" or "egregiously weak" (see Yablo 2003). I'll ignore this complication too.

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