

How in the World?*

S. Yablo
University of Michigan, Ann Arbor

...the final proof of God's omnipotence [is] that he need not exist in order to save us.

Peter DeVries, The Mackerel Plaza

Is it just me, or do philosophers have a way of bringing existence in where it is not wanted? All of the most popular analyses, it seems, take notions that are not overtly existence-involving and connect them up with notions that are existence-involving up to their teeth. An inference is valid or invalid according to whether or not there exists a countermodel to it; the Es are equinumerous with the Gs iff there exists a one-to-one function between them; it will rain iff there exists a future time at which it does rain; and, of course, such and such is possible iff there exists a world at which such and such is the case.

The problem with these analyses is not just the unwelcome ontology; it is more the ontology's intuitive irrelevance to the notions being analyzed. Even someone not especially opposed to functions, to take that example, is still liable to feel uneasy about putting facts of equinumerosity at their mercy. For various awkward questions arise, of which let me mention three.

How is it that I can tell that my left shoes are equal in number with my right ones just by pairing them off, while the story of how I am supposed to be able to

* This paper was written at the National Humanities Center with support from a University of Michigan Humanities Fellowship. Versions of the paper were read at Duke University, York University, New York University, UNC Chapel Hill, N. Carolina State, E. Carolina University, Arizona State University, and a conference on the philosophy of Saul Kripke in San Marino. I owe thanks to Joseph Almog, Louise Antony, Paul Boghossian, Deborah Brown, Mark Crimmins, Owen Flanagan, Nicholas Georgalis, James Hardy, Sally Haslanger, John O'Leary Hawthorne, David Kaplan, Jerrold Katz, Joe Levine, David Lewis, Alastair MacIntyre, Friederike Moltmann, Thomas Nagel, Calvin Normore, Gideon Rosen, Nathan Salmon, Geoffrey Sayre-McCord, Niko Scharer, Stephen Schiffer, Sydney Shoemaker, Scott Soames, Roy Sorensen, Martin Stone, and Umit Yalcin.

ascertain the existence of abstract objects like functions remains to be told?¹
Lacking that story, who am I to say that equinumerosity facts even correlate with facts of functional existence -- much less that the correlation rises to the level of an analysis?

If my left shoes' numerical equality with my right turns on the existence of functions, then in asserting this equality I am giving a hostage to existential fortune; I speak truly only if the existence facts break my way.² But that is not how it feels. Am I really to suppose that God can cancel my shoes' equinumerosity (and so make a liar out of me) simply by training his or her death gun on the offending functions, without laying a hand on the shoes themselves?

Assuming that a one-to-one function between my left and right shoes exists at all, there are going to be lots of them. But then, rather than saying that my left and right shoes are equal in number because these various functions exist, wouldn't it be better to say that the functions exist -- are able to exist, anyway -- because my left and right shoes are equal in number? That way we explain the many facts in terms of the one, rather than the one in terms of the many.

All of the analyses mentioned have problems like this. And the reply is the same in each case: The reason these analyses are so popular is that they do crucial theoretical work. If you know of another way of accomplishing this work, terrific; otherwise, though, spare us the handwringing about existence coming in where it is not wanted. This paper explores a strategy, only that, for getting the work done without getting mucked up in irrelevant existence questions.

I

A funny thing happened on the way to the possible-worlds analysis of modality. Or actually, two funny things, of which only the first attracted any notice. The first is David Lewis's well-known "paraphrase" argument for belief in worlds:

I believe...that things could have been different in countless ways...Ordinary language permits the paraphrase: there are many ways things could have been besides the way they actually are. On the face of it, this sentence... says that there exist many entities of a certain description, to wit

¹ Compare Benacerraf, "Mathematical Truth." See also Katz, "What Mathematical Knowledge Could Be."

² Compare Etchemendy, The Concept of Logical Consequence.

'ways things could have been'... I believe permissible paraphrases of what I believe; ...I therefore believe in the existence of entities that might be called 'ways things could have been'. I prefer to call them 'possible worlds.' ³

If someone wants to know what sort of thing these worlds are,

I can only ask him to admit that he knows what sort of thing our actual world is, and then explain that other worlds are more things of that sort, differing not in kind but only in what goes on at them.⁴

So, other worlds (of the same general sort as our actual world) exist because there are other ways things could have been; and other ways things could have been exist because things could have been different from the way they are in actual fact.

Now, everyone knows there is something funny about this argument of Lewis's, because Stalnaker has told them:

If possible worlds are ways things might have been, then the actual world ought to be the way things are rather than I and all my surroundings. The way things are is a property or state of the world, not the world itself. The statement that the world is the way it is is true in a sense, but not when read as an identity statement... One could accept...that there really are many ways that things could have been...while denying that there exists anything else that is like the actual world.⁵

The second funny thing is this explanation of Stalnaker's. If it hasn't struck people that way, that's because Stalnaker has packed two quite different points very closely together.

Stalnaker's negative point is that while the paraphrase argument may establish something, it does not establish the existence of Lewis-worlds -- that is, (i) concrete, I-and-all-my-surroundings, worlds, which unlike this one are (ii) worlds that do not actually exist. All the argument gets you is "ways things could have been," and ways things could have been meet neither condition -- not (i), because ways of being are not to be confused with the things that are those ways, and not (ii), because if we ask, "Are there actually other ways things could have been or is it just that there could have been?" the answer is that there actually are these other ways.⁶

³ Lewis, "Possible Worlds," p. 182.

⁴ Lewis, "Possible Worlds," p. 184.

⁵ Stalnaker, "Possible Worlds," p. 228.

⁶ Otherwise it would seem that blue swans, although they would have been possible had things been different, are not possible as matters stand.

What's so funny about that? Wait, I haven't got to the funny part. That's the part where Stalnaker turns his critique of Lewis's reading of "ways things could have been" into a positive proposal of his own.

Think of Stalnaker as arguing like this: Ways the world could have been are of the same ontological type as the way it is. So we need to determine the ontological type of the way the world is. What better place to start than with the truism that the world is the way it is? Some might read this as saying that the way the world is is one and the same entity as the humongous concrete object known hereabouts as the world. That, however, would be a mistake: "The statement that the world is the way it is is true in a sense, but not when read as an identity statement."⁷ But, if the statement is false read as an identity statement, what is the reading on which it is true? Stalnaker doesn't come right out and tell us, but the usual alternative to an "is" of identity is an "is" of predication. Apparently then Stalnaker is saying that the statement is true when the "is" is taken as predicative.

This is what I find funny, or at least puzzling. Because the phrase following the "is," namely "the way it is," looks less like a predicate than a singular term. And Stalnaker uses it a singular term, when he says that "the way things are is a property or state of the world," and that "the way the world is could exist even if a world that is that way did not."⁸ But, looking at the matter naively, when you've got an "is" between two singular terms, the "is" is not an "is" of predication but one of identity.⁹ Which is just what Stalnaker denies.

⁷ Ibid, p. 228. Identity statements are reversible; if A = B, then B = A as well. To say that the way the world is is the world, however, sounds wrong. (Except maybe to those who believe with Wittgenstein that the world is all that is the case. Even to them though it won't sound truisitic, as the world is the way it is does -- and it should, if it too is an identity statement.)

⁸ Someone might say that the same word or phrase can play both roles depending on grammatical context; "red" functions as an adjective in "the book is red," a noun in "red is a color." I am not sure what to say about this but one possibility is that there are two words here with the same spelling. (Why color-nouns in particular should be so often orthographically indiscernible from their corresponding adjectives is unclear to me; compare "triangle is a shape," or "tiny is a size.") Another example, suggested by Niko Scharer, is this: "the color it is" functions as an adjective in "the book is the color it is", a noun in "the color it is is a dark color." Again it seems possible that we have two distinct phrases here with the same orthography. The second is a definite description, the first a concealed question, like "his age" in "I know his age."

⁹ Or perhaps of composition, as in "that clay you sold me is now a statue of Goliath." But that is not a likely reading here.

Of course, if "the way the world is" stands for a property, then there is a true predication in the vicinity: one ought to be able to say that the world has this property. But "the world has the way it is" sounds quite wrong. Why, if "the way the world is" denotes a property that the world as a matter of fact possesses?

II

What are we to make of this phrase "the way the world is"? According to Stalnaker, it does not stand for me and all my surroundings. But it does not appear to stand for a property of me and my surroundings either. What then?¹⁰

The strategy that suggests itself is this. Take the matrix "the way the world is is X," plug in a term that makes for a true sentence, and ask what the term stands for. That ought to be what "the way the world is" stands for as well. When we try to carry this strategy out, though, we run into an unexpected problem; the matrix doesn't want a term, it wants adjectives:

The way the world is is large, complicated, law-governed, mostly uninhabited, shot through with force fields, bathed in radiation, etc.

And now things get really confusing. There is no way on earth of interpreting the main "is" in this sentence as an "is" of identity. And yet, if we interpret it as an "is" of predication, we are back with Lewis's concrete worlds -- for the thing that is large, complicated, bathed in radiation, law-governed, etc., is not a property of me and my surroundings but, well, me and my surroundings.

Here is our puzzle. "The way the world is," "the way it would have been if so and so had happened," "the ways it could have been" -- these look for all the world like noun phrases. It stands to reason then that they at least purport to denote entities of some sort. What sort? This is a puzzle whether you believe in the purported entities or not. Indeed, you don't know whether to believe in them until you

¹⁰ One idea is that "the way it is" is a proadjective or proadverb along the lines of "thus" or "thusly." This would provide no reading of Stalnaker's statement that "the way the world is is a property of the world." But Stalnaker exegesis aside, the proform idea seems worth pursuing. Eventually a theory of proadjectival or proadverbial quantification would be needed, for we have sentences like "whatever way things had been, they would have been such and so" to deal with. There is in fact a neglected literature on this, some of it inspired by the work of Lesniewski; see for example Prior's Objects of Thought, Kung's "Meaning of the Quantifiers in Lesniewski," and Simons's "Semantics for Ontology." Also relevant is the program laid out in Grover, "Propositional Quantifiers," and Grover, Camp, and Belnap, "A Prosentential Theory of Truth." Both articles are reprinted in Grover, A Prosentential Theory of Truth.

solve the puzzle -- until you figure out what the entities are whose existence is in question.

III

Suppose we start by beating some neighboring bushes. Ways the world could have been are hardly the only ways countenanced by ordinary speech. Just from the song "The Way You Do the Things You Do" you could gather a respectable collection.¹¹ But let's have some more humdrum examples: the ways people feel on various occasions (sleepy, happy, jealous, relieved, like a motherless child), the ways birds have of building their nests, the ways of getting from point A to point B, and so on.

Now, what kind of entity am I talking about in talking about these various ways? Take the way I felt when I got up this morning, viz., sleepy; or the way cockatoos build their nests, from the outside in;¹² or the fastest way of getting from Toronto to Lima, that is, via Tegucigalpa. What are these things?

If you are anything like me, the tempting reply is: What things? It is hard to think of the phrases "sleepy," "from the outside in," "via Tegucigalpa" as standing for entities at all; their function just does not seem to be referential.

Someone might want to write this off to a lack of imagination. "Sleepy" denotes a state of mind, namely, sleepiness; "from the outside in" stands for a property of nest-building events, the property of centripetality; "via Tegucigalpa" stands for a path or set of paths or property of paths through space-time.

But if sleepiness, happiness, relief, and so on are the entities collectively denoted by "ways of feeling," then it is strange, isn't it, that one can't say "ways of feeling, for example,..." and then plug in names of these entities. Why is it "ways of feeling, for example, sleepy, happy, relieved, like a motherless child,..." rather than "ways of feeling, for example, sleepiness, happiness, relief, similarity to a motherless child, ..."? Again, if sleepiness and so on are among the entities that are called "ways of feeling," then it ought to make sense to say "sleepiness is the way I felt this morning" and "nobody knows the way I feel: similarity to a motherless child." And it

¹¹ The way you smile so bright, the way you knock me off my feet, etc. This is to say nothing of "Fifty Ways to Leave Your Lover."

¹² I am told that cockatoos don't build nests; but say they do.

doesn't. What makes sense is "sleepy is the way I felt." And sleepy doesn't seem to be an entity at all, not even an entity of a highly abstract sort.

IV

What is going on? A first clue to the peculiar behavior of "way" is that "the way I feel" sounds rather like "how I feel."¹³ This is no coincidence; "the way" lines up with "how" over a wide range of cases:

- (1) the way you put it just now / how you put it just now
the way things work around here / how things work around here
the way they met / how they met
the way she wants to be remembered / how she wants to be remembered

On the right-hand side of (1) we have what grammarians call indirect questions. I can't give you an exact definition (I'm not sure anyone could) but intuitively, indirect questions are noun-like counterparts to ordinary or direct questions:

- (2) how things work around here / how do things work around here?
what the coach forgot / what did the coach forget?
why he's acting like that / why is he acting like that?
when the swallows return / when do the swallows return?
who invited them / who invited them?
whether it will rain / will it rain ?
where she is headed / where is she headed?
whether it will rain / will it rain ?

The problem we have been wrestling with is, in effect: Are indirect questions referential or is their semantical contribution to be sought elsewhere?¹⁴

¹³ Exercise: Compare and contrast (i) "how S"/"the way that S," (ii) "why S"/"the reason that S," (iii) "whether S"/"the truth value of S," (iv) "which S"/"the S's identity," and (v) "how many Ss"/ "the number of Ss." (Some remarks of Ian Rumfitt's about (iii) were what got me thinking about (i).)

¹⁴ The issue is complicated by the distinction between indirect questions and free relative clauses. The distinction is not always well marked in English but there are some clear cases. "What you think" is a free relative in "I think what you think," an indirect question in "I wonder what you think." Sometimes context does not resolve the ambiguity: "what you know" is a free relative in "I know what you know" interpreted as "whatever you know, I know," an indirect question in the same sentence interpreted as "whatever you know, I know you know."

Now in asking, "Are they referential?" I mean not, "Are there Montague grammarians or other formal semanticists somewhere who have cooked up super-duper semantical values for them, say, functions from worlds to functions from worlds and n-tuples of objects to truth-values?"¹⁵ The answer to that is going to be yes almost no matter what part of speech you're talking about -- connectives, prepositions, and apostrophe-"s" not excluded. I mean: Are they referential in the way that singular terms are, so that someone using an indirect question could reasonably be said to be talking about its referent, or purporting to talk about its purported referent?

Are indirect questions referential in that sense? Truth be told, some of them seem at first to be; because some of them seem linkable by true identity statement with phrases whose referential status is beyond question. Here are some examples:

- (3) what the coach forgot was the keys, the map, and the schedule
March 31 is when the swallows return
who invited them is your friend Becky
Albuquerque is where she's going¹⁶

Taking the "is" in these statements to express identity -- and what other option have we, really, with noun phrases on either side? -- "who invited them" stands for Becky, "where she's going" stands for Albuquerque, and so on.

And yet, there can be very similar-looking statements where the identity interpretation is unavailable. Newt Gingrich recently had to explain to the mainland

¹⁵ I don't mean to disparage this kind of approach; it can be wonderfully illuminating. See Groenendijk & Stokhof 1989.

¹⁶ Or are the initial phrases in (3) free relatives? Here are some reasons to think not. (A) Free relatives are interrogated with the relative pronouns they embed -- "I once had a drink where Elvis was born"/"you once had a drink where?" -- whereas indirect questions are interrogated with "what?" -- "I wonder where Elvis was born"/"you wonder what?." And in response to (e.g.) "March 31 is when the swallows return" we say not "*March 31 is when?" but "March 31 is what?." (B) Interrogative pronouns take strong stress in a way that relative pronouns do not; "I know WHERE Elvis was born -- only not WHEN" but "*I had a drink WHERE Elvis was born -- only not WHEN." And we have no problem with "WHO invited them is Becky, WHEN I have no idea." Third, plural relatives in subject position take the plural form of the verb -- "what Shakespeare regarded as his best plays are nowadays seldom read" -- whereas indirect questions take the singular form -- "what Shakespeare regarded as his best plays is anybody's guess." And we say "what the coach forgot is the keys, the map, etc." not "*what the coach forgot are the keys, the map, etc." Finally, free relatives according to most authors can only be introduced by "what," "when," or "where." But the construction in (3) works for all wh-words other than "whether." (I am indebted to Baker's Indirect Questions in English.)

Chinese that he hadn't meant it about extending recognition to Taiwan, he was "only trying to rattle their cage." Taking him at his word, why Gingrich talks like that is to rattle their cage. Or suppose that pharmacologists studying the effects of tranquilizers on the brain determine that the way valium soothes our ruffled feelings is by blocking the action of a certain neurotransmitter. Well and good. But, does anyone really take statements like

- (4) why he talks like that is to rattle their cage
how valium soothes is by blocking that neurotransmitter
why we hesitated was out of concern for you
how I want to feel is happy

to assert literal identities? I hope not, because on the face of it there's no such thing as to rattle their cage or out of concern for you or happy to be identical to. And this raises doubts about the referential interpretation of the examples in (3) as well. The "is" of "how valium soothes is by blocking that neurotransmitter" seems indistinguishable from the "is" of "who valium soothes is the people who take it." If it expresses identity in the one case, it ought to do so in the other.

Now, of course, the referentialist can simply insist that the two "is"s are different; the one in (3) expresses identity, the one in (4) expresses predication. This would be just as good from her point of view since, predicative "is" functioning to bring the referent of the phrase it follows under the descriptive content of the phrase it precedes, "why he acts like that" etc. would again be cast in a referential light.

But the predicative interpretation is hard to make out. The best way to see this is to allow the referentialist her contention that the phrases on the left hand side of (4) are referential. Say, in other words, that an entity how I want to feel exists. Is this entity characterized as happy by the sentence "how I want to feel is happy"? Clearly not. No one is saying that a full accounting of the happy things would include (in addition to Dale Carnegie and Barney the dinosaur and your typical sea otter) how I want to feel. The claim is rather that if you are asking me how I want to feel, the answer is that I want to feel happy.

With the other examples, matters are even worse. "X is happy" at least has the right form to describe X. But what property or characteristic is attributed to X by "X is to rattle their cage," "X is by blocking that neurotransmitter," or "X is out of concern for you"? Someone might say that "X is to rattle their cage" describes X as being done for the purpose of rattling their cage. But then the problem is the same as before: being done for such and such a purpose is a characteristic not of why people perform actions (!?!) but of the actions they perform.

Actually, to the extent that the identity-predication distinction finds a foothold in (4) at all, it may be doubted whether the advantage lies with the predicative approach. What was it that the pharmacologists told us? Not that blocking that neurotransmitter is an aspect or feature of how valium soothes; according to them, it is how valium soothes. And you can almost hear Gingrich at the press conference: "You people just don't get it, to rattle their cage is why I made those statements, there's no difference between the two." Pressed from the other side by the predicative interpretation, one almost wants to say that there's an identity here. There isn't, of course, but the feeling of identity is a fascinating datum and one that needs to be taken seriously.¹⁷

But the case against referentialism needn't be made to rest on these subtleties about predication versus identity. Take "who invited them," as in "who invited them is your friend Becky." If this referred to Becky, we would expect it to be intersubstitutable *salva veritate* with other phrases referring to Becky -- phrases like "Becky." What we find though is that the two are not even substitutable *salva congruitate*.¹⁸ This is illustrated by

- (5) I wonder where Becky has gone / *I wonder where who invited them has gone
Becky was accepted at Yale / *Who invited them was accepted at Yale

and, the reverse substitution,

- (6) I wonder who invited them / *I wonder Becky.
It doesn't matter who invited them / *It doesn't matter Becky.

These examples point up a final difficulty with the referential approach. Even if "who invited them" did refer to Becky, that would explain only a tiny fraction of its semantical behavior. Karttunen in "Syntax and Semantics of Questions" offers the following overview of indirect-question-embedding contexts:¹⁹

- (7) VERBS OF
acquiring knowledge: ask, wonder, learn, notice, discover

¹⁷ Not that all indirect-question-embedding statements with main verb "is" have the atmosphere of an identity statement. Some feel downright predicative, for instance, "she is how I used to be" and "the world is how it is." A good theory of indirect questions ought to have something to say about this.

¹⁸ Admittedly, the *salva congruitate* test has its limits; "sunny Madrid is a favorite of ours" sounds good, "*sunny the capital of Spain etc." doesn't. Examples can also be given however where it is truth-value that changes.

¹⁹ I have taken some liberties.

retaining knowledge: know, be aware, recall, forget
communication: tell, show, indicate, inform, disclose
decision: decide, determine, specify, agree on, control
conjecture: guess, predict, bet on, estimate
opinion: be certain about, have an idea about
relevance: matter, care, be important, be significant
dependency: depend on, be related to, be a function of

"Who invited them" can occur in almost all of these contexts, yet its semantic contribution is purely referential in none of them.²⁰ Shouldn't we look for an explanation of the other-than-referential work done by indirect questions, before we go ahead and assign them referents? That explanation might turn out to apply across the board.

V

Indirect questions are indirect questions; that is the point we keep on losing sight of. Since they are questions it would not be surprising if their interpretation went via the items that normally go by that name, viz. direct questions. Here is a crude first proposal, using Q for the direct question corresponding to an indirect question IQ:

To say that ---IQ--- is to offer information about Q's answer(s).²¹

This deliberately leaves a lot to the imagination. Among the issues I propose to duck, or settle in whatever way seems most convenient at the time, are these:

What kind of information? Is the information determined by the sentential context (---...---) alone or do other factors contribute? What are the mechanisms by which these factors operate?

Are answers linguistic in nature or do linguistic items function rather as presentations of the real, extralinguistic, answers?

²⁰ As always, I am talking about ordinary commonsensical reference, not reference to higher-type objects as in Montague grammar; "who invited them" refers to the one who invited them if it refers at all.

²¹ "Offering information about Q's answer(s)" is not to be thought of as involving reference to or quantification over answers, or acceptance of answers into one's ontology. I can give information about an answer by simply providing it, e.g., by saying "she's going to Albuquerque." (This fits nicely with Alasdair MacIntyre's suggestion that "where she's going is Albuquerque" is a piece of play-acting in which I set myself a question and then respond.)

Are answers one and all sentence-length, as you would think from the fact that we call them true and false, or not, as you would think from the fact that "5" (or perhaps 5) is the answer to "what is 2 plus 3?"

Does each question have a unique complete and correct answer or do some have multiple answers with these features?

All that we need to assume for now is that to each direct Q corresponds a unique complete and correct answer-set AQ; there is no official line on how many answers AQ contains or what sorts of entities these answers are.²²

Statements embedding indirect questions IQ are in the business of offering information about Q's answer or answers -- about AQ.²³ One move in this direction stands out as particularly natural; we might seek to provide AQ outright. The natural way to proceed if that is our goal is to say simply that IQ is AQ:

- (8) what the coach forgot was the keys, the map, etc.
who invited them is Becky
why Gingrich talks like that is to rattle their cage
how valium soothes is by blocking that neurotransmitter
why we hesitated was out of concern for you.
how I want to feel is happy

Notice again the equational, identity-like, feeling of these statements. A tempting explanation is that in each case we have an identity in the vicinity: "Becky" is (in the identity sense) the answer to "who invited them?," "to rattle their cage" is the answer to "why does he act like that?," and so on.²⁴ As for the identity-feeling's curious insensitivity to the grammatical category of the phrase following the "is" -- that "happy" is an adjective does not make "how I want to feel is happy" feel any less identity-like -- this is only to be expected if the underlying identity is between "happy"

²² Both kinds of flexibility will be important later on, when we get to questions like "how is that possible?" -- the first because this might have any number of correct answers, the second because its answers might be understood either as world-representations or as the worlds themselves.

²³ Wherever convenient the distinction between AQ and its members will be blurred -- so that A"what is 2 plus 3?," although strictly speaking {"5"} or {5}, is in practice "5" or 5.

²⁴ Or perhaps it is the meanings of these phrases that constitute the answers; this is one of the issues we're leaving open. Note that the identity feeling wanes as the material after the "is" goes from providing the answer to merely constraining it to merely commenting on it; thus "who invited them is Becky," "who invited them is someone with a strange sense of humor," "who invited them is no one you want to know," "who invited them is classified information," "who invited them is a mystery to me."

and the answer to "how do I want to feel?" rather than (?!?) happy and how I want to feel.

Another puzzle left over from the last section is this. Why is it that some indirect questions, like "who invited them," seem at first glance referential while others, like "how valium works," do not? The equational flavor of "IQ is AQ" suggests a two-part explanation. First, some AQs ("Becky") are referential; others ("via Tegucigalpa") are not.²⁵ Second, the "is" of "IQ is AQ" acts as a pipeline transmitting felt referential character from the one side to the other. This leads to the prediction that IQ should strike us as *prima facie* referential when

- (i) "IQ is AQ" makes sense;
- (ii) AQ is referential.²⁶

Is the prediction borne out? Indirect who-, where-, and when- questions typically satisfy both conditions, so we would expect them to give the impression of referring.²⁷ And for the most part they do: "who invited them" appears to refer to Becky, "where she's headed" to Albuquerque, and so on.

Indirect how- and why-questions satisfy (i) but not (ii); "how I feel is happy" and "why he talks like that is to rattle their cage" both scan but their right-hand sides do not refer. So the prediction is that they will not feel referential, and this again seems true.

Indirect which-questions are a mixed bag, but what often happens is that they satisfy (ii) but not (i). The answer to "which door do you pick?," for example, might be "door number three," a perfectly good referring phrase. But "which door you pick is door number three" doesn't scan. The prediction then is that "which door you pick"

²⁵ Here again I am slurring the difference between AQs and their members. Also I assume for convenience that answers are linguistic in nature; if not, substitute "AQ's linguistic presentation" for "AQ."

²⁶ Jerrold Katz objected that this is circular since AQ might itself be an indirect question. One reply is just to stipulate that indirect question substituends are not allowed. Another is to say that we should read (ii) as: AQ is obviously, convincingly, invincibly referential. Indirect questions fail this condition, so we can safely ignore them.

²⁷ Some what-questions belong here too, e.g., "what the coach forgot." But what-questions are incredibly various. Just as often they resemble how- and why-questions in satisfying (i) but not (ii), as for example "what works best is to dip the brush in turpentine." Where- and when-questions are tricky too. Prior in Objects of Thought observes in effect that these often call for prepositional answers rather than nominal ones: "in Paris," "to Albuquerque," "on March 31," and so on. That leaves only indirect who-questions as clearly apparently referential.

will not strike us as a referring phrase. (The reason is not inherent ungrammaticality, since "which door you pick is up to you" sounds fine.)

Indirect whether-questions feel highly nonreferential, finally, as a result of satisfying neither (i) nor (ii). Not only are their AQs lacking in reference, they cannot be plugged into sensical "IQ is AQ" statements: witness "whether you are still grounded is yes."

Before getting back to possible worlds, consider one last puzzle from the previous section. If the point and purpose of indirect questions is to refer, then what are we to make of

- (9) I wonder who invited them
it doesn't matter who invited them
who invited them is none of your business
where guests sit is a function of who invited them?

Read these statements as commenting on the answers to their embedded questions,²⁸ and all becomes clear. Something is said not to matter by "it doesn't matter who invited them," but it is not Becky, it is the answer to "who invited them?" "Where guests sit is a function of who invited them" does not assign seating authority to any particular person, it says that the answer to "where shall X sit?" depends on the answer to "who invited X?"²⁹

VI

Assuming that something like this approach to indirect questions is correct, what does it tell us about the possible-worlds account of modality?

Here is the answer you probably expect: It upsets Lewis's paraphrase argument according to which we are committed to worlds in being committed to ways things could have been. The argument doesn't hold up, because each and every way things could have been is a how things could have been. And the phrase "how things could have been" is an indirect question with zero referential import.

I see three connected problems with this answer. The first is hinted at by the awkwardness of what I just said: "each and every way things could have been is a how

²⁸ Strictly, the answers to the direct counterparts of their embedded questions.

²⁹ This section has borrowed freely from the literature on questions, including Karttunen 1977, Engdahl 1986, and Higginbotham 1993 .

things could have been." A how things could have been? What on earth is that? "How things are" is available as the translation of "the way things are," and "how things would have been" is available as the translation of "the way things would have been." But nothing along these lines is available for "some/all of the ways things could have been," because hows are not things the language countenances.³⁰ If the idea was to translate world-talk into way-talk, and way-talk into how-talk, and how-talk into answer-talk, then the idea doesn't work, because quantificational way-talk doesn't translate.

Now for the second problem, which has to do with our emphasis throughout on the irreferentiality of indirect questions. Isn't this missing the point of the paraphrase argument? Lewis's concern is with ontological commitment. And as Quine thought he had made sufficiently clear about half a century ago,³¹ one makes little progress on matters of ontological commitment by staring at controversial chunks of language waiting for them to yield up the secret of whether they are really referential or not.³² (You know what they say about a watched mot.) The true and proper test of ontological commitment is quantification into the position a given chunk of language occupies. That is why Lewis argues from the fact, not that ordinary language refers to ways, but that ordinary language quantifies over ways.

Third, the paraphrase argument was never the important one in the first place. The important argument has always been that possible worlds are too useful to be done without. Lewis is crystal clear about this:

Why believe in a plurality of worlds? -- Because the hypothesis is serviceable, and that is a reason to think that it is true.³³

"Even those who officially scoff," he adds, "often cannot resist the temptation to help themselves abashedly to this useful way of speaking."³⁴ And to repeat, this is a way of speaking that is up to its neck in ontologically committal quantification.

³⁰ Phrases like "whys and wherefores" perhaps reflect some long-ago attempt to go plural while remaining interrogative. Even "hows and whys" is not unheard of. Consider this from Webster's 3rd New International Dictionary: "most of the film is devoted to the grim hows and not the difficult whys of battle."

³¹ Quine, "On What There Is."

³² There is a cartoon about the last worker on the Sara Lee assembly line; she sits by the conveyor belt asking herself of each passing pie, "Would I be proud to serve this to my family?." Replace the pies with noun phrases and you have Quine's picture of the traditional ontologist: "Am I content to think that this refers to a bona fide entity?"

³³ Lewis, "Plurality of Worlds," p. 3.

³⁴ *Ibid*, p. 3.

Wrapping all of this up into a single point: if your one ontologically deflating move concerns indirect questions, and if the real measure of ontological commitment is not these but quantification into the spots they occupy, and if quantification into the spots that they occupy is practically speaking unavoidable, then you really haven't gone very far towards diminishing commitment to possible worlds.³⁵

VII

Hold on, though. Because "the way that such and such" translates into "how such and such," one naturally supposes that "some/all of the ways that such and such" has got to translate into "some/all of the hows such and such" -- which of course it can't, because "hows" makes no sense. But this is to insinuate a problem about plurals into what was supposed to be a problem about quantification.

Imagine someone arguing as follows: "the reason I did it" translates into "why I did it," but no analogous translation is possible for "some/all of the reasons I did it," because whys are not things the language countenances. Similarly, we have "when the swallows return," "where your story breaks down," and "what really gets my goat," but not "some/all of the whens they return," "some/all of the wheres your story breaks down," or "some/all of the whats that get my goat." There is no grammatical alternative, it seems, to objectual quantification over reasons, times, narrative breakdown points, and whatever sort of thingum it is that gets people's goats.

³⁵ This objection might be answerable for a particular S if we had an inventory of all the ways things could have been which afforded S any chance at possibility: say, the way they would have been if A₁, the way they would have been if A₂, ..., and so on. For then we could say that S is possible

iff there's a way things could have been such that S

iff S is how things would have been if A₁, or

S is how things would have been if A₂, or...

iff S figures in the answer to "how would things have been if A₁?" or

S figures in the answer to "how would things have been if A₂?" or...

(Or, we could drop questions altogether and say simply that S is possible iff it would have been that S had it been that A₁, or it would have been that S had it been that A₂, or ...) I take it though that this kind of inventory is not to be had. The best we can do is: S is possible iff there is some way things could have been such that S.

What this argument overlooks is that one doesn't need pluralizations of "why" (etc.) to carry out why-quantification (etc.); that's what words like "whyever," "never," "always," "somewhere," and "whatever" are for. And why shouldn't we say the same about "how"? "Some/all of the hows" may not make sense, but it doesn't have to, for we have "somehow" and "however":³⁶

- (10) if Valium works how you say, then Librium works similarly
variables: if Valium works thusly, then Librium works like so
existential: if Valium works somehow, then Librium too works somehow
universal: however Valium works, so also works Librium.³⁷

Of course, the embrace of colloquial how- (why-, what-, which-,...) quantifiers gains us nothing unless they share in the freedom from ontological commitment we saw with the corresponding indirect questions. But intuitively they do. "He blew the house down by huffing and puffing" is a strictly stronger statement than "he blew it down somehow." But it would not be stronger if the "somehow" carried a commitment to, say, ways, for "by huffing and puffing" is not committal in anybody's book.

VIII

All of that having been said, let me be the first to admit that colloquial how-quantification is a pretty clumsy semantical instrument compared to objectual quantification over ways. Anyone who doubts this is invited to try to render "there is more than one way to skin a cat," or "there are more ways of skinning a cat than of falling off a log," or "not many ways of falling off a log are in addition ways of skinning a cat" in the austere idiom of "somehow," "nohow," and "however." One could try to meet these expressive difficulties head on by concocting ever fancier how-quantifiers ("cats can be skinned doublehow," "skinning a cat is howlier than falling off a log,....").³⁸ But as a practical matter there seems little real alternative to quantifying directly over ways, or some approximation to ways.

Another reason why "somehow" and "however" are no automatic panacea is that all quantifiers, even the most seemingly nonobjectual, are caught up in a powerful objectual undertow that threatens to obliterate the distinction here at issue. Talk

³⁶ See Prior, Objects of Thought, pp. 34ff.

³⁷ For some reason this sounds better in old English: "however valium worketh, so also worketh librium."

³⁸ Compare the modalist project of trying to approximate the expressive power of direct quantification over worlds by means of indexed actuality operators and the like. See Fine, "Postscript," and Forbes, The Metaphysics of Modality, pp. 89ff.

about objects has a surface clarity and tractability that entrances not just ordinary folk trying to convey meanings ("and another thing you've got to learn is how to stick up for yourself") but also philosophers trying to explain them.³⁹ Things have reached the point that someone giving the "semantics" of a construction is expected to tell a story about which entities have to behave in which ways for the sentences that include it to come out true. Nothing less will do, it is felt, if the construction's meaning is to be made fully intelligible.⁴⁰

The third point is that such a story is not out of the question in this case. Quantified uses of "how" have, it appears, a similar semantical function to indirect interrogative uses. Both facilitate commentary on the answers to how-questions, indirect "how" by invoking the answers, quantified "how" by generalizing over them. "Life after death is possible somehow" says more or less that "how is life after death possible?" has a correct answer. "However you want to do it is fine with me" says that if "like so" is a correct answer to "how do you want to do it?," then doing it like so is fine with me. Of course, "somehow" and "however" are not the only nonobjectual quantifiers built around other question-words; there are also whichever, somewhere, whyever, however many, etc. All of these plausibly have a similar function, the function of enabling generalization over answers to questions of the indicated types.

IX

Now you see the predicament. Nonobjectual quantifiers, let them be as seriously intended as you like, are not committal. But neither are they primitive, and our best bet about how to explicate them is in terms of quantifiers that are (when seriously intended) committal.

I see only one way out. If a construction that is not committal-when-serious is to be explained by a construction that is, then the second construction had better be

³⁹ Words like "way" and "reason" testify to this; they are there to permit the introduction of objectual methods. We embrace them eagerly unbothered by the fact that there are no such things as the way the wolf blew the house down (by huffing and puffing) or the reason the chicken crossed the road (to get to the other side.) ("grasshopper, you have much to learn." "unless there are countermodels an argument is called valid")

⁴⁰ This is not to forget the occasional brave soul who offers to give the semantics of, say, tense or adverbs in a tensed or adverbial metalanguage. The brave soul in a way proves my point; because the feeling is bound to be that she is an obscurantist who for some reason refuses to dig down below the level of idiom -- or, if there is no deeper (more objectual) story to be had, that the construction itself is idiomatic in the pejorative sense of being more familiar than clear.

treated for purposes of the explanation as nonserious or feigned.⁴¹ Someone who says that the treasure is buried somewhere is saying that "where is it buried?" has an answer, bracketing any and all worries about the existence of entities suited to serve answers -- stipulating, if you like, in a spirit of make-believe, that questions that "have answers" in the weak sense of not being unanswerable have them in a stronger (more ontologically loaded) sense as well.⁴²

If this seems to leave the shape of the make-believe somewhat open, that is intentional. Its shape will vary depending on our conception of answers: of what they are in general (linguistic items or what linguistic so-called "answers" stand for?) and the (grammatical or ontological) form that they take in connection with specific sorts of questions.⁴³ The main thing that needs to be imagined on the linguistic conception of answers is that enough of them exist; questions do not go unanswered just through someone's failure to put, say, "by huffing and puffing" into words.

But suppose that linguistic so-called "answers" are instead answer-formulations; the real answers are the worldly entities to which they refer, and other entities of the same sort. Then there are two cases, according to whether the linguistic so-called "answers" are of the right grammatical form to refer. If they are, then our main imaginative task is to supply each of them with referents; there will have to be such a thing as the Easter Bunny to serve as the answer to "who does

⁴¹ What exactly the pretense is is another matter. These answers might be seen as linguistic in nature, in which case it will be part of the story that enough of them exist: that every answerable question actually receives an answer. If answers are seen instead as what linguistic "answers" stand for, it will also have to be pretended that phrases like "by huffing and puffing" refer to items in the world. One possible account of ways is that they are the things we pretend to refer to by use of phrases like "by huffing and puffing," when we pretend that these phrases are referential. But I do not mean to commit myself to this and in fact we are getting way ahead of ourselves.

⁴² All right, but what is the nature of the pretense? That will depend in part on whether answers are seen as linguistic items or as what linguistic "answers" stand for.

⁴³ If the first, then it will be part of the story that enough of them exist; that a question never goes unanswered just because no one happens to put, say, "by huffing and puffing" into words. If the second, it may have to be pretended as well that the phrases that qualify as linguistic answers are of the right type to refer, and that they refer in fact. (One tempting account of ways is that they are the things we pretend to refer to by use of phrases like "by huffing and puffing," when we pretend that these phrases are referential.) The simplest sort of make-believe will do no more than just expand the membership of an established category: the category of linguistic expressions. Another however would constitute a new category, say, a category of entities for adverbial modifiers to stand for. (How about this as a theory of ways: they are the things that we pretend to refer to with phrases like "by huffing and puffing," when we pretend that such phrases are referential.)

Isaac expect to see at the mall?" Otherwise it will have to be imagined that they are in the business of referring -- to entities drawn from the ranks of some real or concocted ontological category. (This paper does not advocate any particular account of ways, but one could do worse than the following: ways are the things we imagine ourselves referring to to by use of phrases like "by huffing and puffing," when we imagine that phrases like that can be used to refer.)

X

But we are getting ahead of ourselves. It is time to put make-believe to the side for a while and return to the original objection: "If the idea is to translate world-talk into way-talk, and way-talk into how-talk, and how-talk into answer-talk, then the idea doesn't work, because quantificational way-talk doesn't translate." Our reply is that it does translate, into colloquial how-quantification, and that colloquial how-quantification translates in turn into (feigned, but we are putting that aside for now) objectual quantification over answers to how-questions. That the middleman here has its expressive limits is not a problem, for we can cut the middleman out and read apparent quantification over ways directly into objectual quantification over answers.

Take for instance Lewis's statement that "there are many ways things could have been besides the way they actually are." This says that "how could things have been?" has many incompatible answers that do not correctly answer "how are things as a matter of fact?"

Next try "there is a way things could have been such that blue swans existed." One interpretation is that "how could things have been?" has an answer according to which there are blue swans. But this might give the impression of a two-stage process in which we first collect answers to "how could things have been?" at random, only then considering whether we have hit on anything favorable to the blue swan hypothesis. A better interpretation homes in on the scenarios we are actually interested in: "how could it have been that there were blue swans?" has an answer, full stop.⁴⁴

⁴⁴ Of course, the answer has to be correct. Someone might say that worlds reinsert themselves just here, when we try to explain what correctness comes to. But why does the explanation have to be in terms of what does or does not exist, as opposed to what is or is not possible? Suppose that an answer to "how is S possible?" takes the form "S⁺ is possible," where S⁺ is presented as sufficing for S. Then the main thing correctness requires is that S⁺ is possible and does suffice for S. How the correctness of these claims are to be understood is another question. Some may opt for homophonic correctness-conditions, or Piercean ones; others may insist on something more substantive, up to and including, I suppose, conditions

XI

Anyone who does modal metaphysics at all has got to feel some attraction to the formula: S is possible iff there is a way things could have been such that S. To go by what was just said about quantification over ways, the formula means something like this:

(11) $\Diamond S$ iff $H\Diamond S?$ has a correct answer,

("H $\Diamond S?$ " is short for "how could it have been that S?") (11) invites comparison with the reading enshrined in standard possible worlds semantics: S is possible iff there is at least one S-world, an abstract sort of world in Stalnaker's version of the semantics

(12) $\Diamond S$ iff there is an abstract world according to which S,

a concrete sort in Lewis's version

(13) $\Diamond S$ iff there is a concrete world at which S.

Not surprisingly given their shared intuitive origins, the three approaches agree in linking possibility to the existence of an appropriate witness. (If necessity is the dual of possibility, they agree too in linking S's necessity to the nonexistence of witnesses to the possibility of not-S.) But notice a crucial difference between them. (12) and (13) we believe, or try to believe, because we are so impressed by the theoretical work they do. (11) on the other hand comes close to being a conceptual truth about possibility.

How is that? (11)'s right-to-left direction says that S is possible provided that "how is S possible?" has a correct answer. Assuming that a correct answer to "how is S possible?" will be a truth of the form "S⁺ is possible," where S⁺ has S as a consequence, this amounts to the claim that

(11') $\Diamond S$ if $\Diamond S^+$ -- where S⁺ is sufficient for S.

framed in terms of possible worlds. That these various options continue to be available is in a way the point. The worldly semantics is presented as an offer we cannot refuse; that cannot be right, if the same analytic advantages are available to those choosing another semantics, and indeed to those leaving the semantical choice unmade. (Here and elsewhere I slur the sometimes-important distinction between possible worlds semantics and the possible worlds analysis of modality.)

And on any halfway natural reading of "sufficient," it is true as a conceptual matter that if something sufficient for S is possible, then S is possible as well.⁴⁵

Now consider the direction from left to right: S is possible only if "how is S possible?" has an answer. This forces us to speculate a little on the kind of S⁺ the questioner is looking for. I hear her as issuing a challenge:

You think that S is possible but I suspect that this is only because you have neglected the matter of T. I therefore ask you: is S possible in the T way, or is it possible in the not-T way? According to you, for instance, there can be a town whose barber shaves all and only the town's non-self-shavers. But are we to think of this barber as shaving himself, or as not shaving himself?

Understood like this, the question "how is S possible?" has an answer iff it is possible that S&T, or else possible that S&¬T.⁴⁶ Since there is no way of telling in advance what unresolved issue T might have attracted the questioner's attention, we arrive at the claim that, pick any T you like,

(11'') $\Diamond S$ only if $\Diamond S^{+1}$ or $\Diamond S^{+2}$ -- where $S^{+1} = S \& T$ and $S^{+2} = S \& \neg T$.

This says that possibility is expansive: nothing is possible which cannot be expanded into a more inclusive possibility, inclusiveness being judged along any dimension you

⁴⁵ Sufficing might be a matter of metaphysical necessitation. Then (11') is the modal-logical truth that anything necessitated by a possibility is itself possible. Or it might be a subjunctive affair; if S⁺ were the case, S would be the case as well. Again, from this and the fact that S⁺ is possible, S's possibility logically follows. Of course, (11') continues to be a logical truth on stronger readings of sufficing, e.g., S⁺ necessitates S and understandably so, or it is a priori that S would be the case if S⁺ were the case.

⁴⁶ It might be objected that "possibly, S&T" does not have the right form for an answer to "how is S possible?" The questioner wants to know (not what could have been the case together with S but) what could have been the case to bring it about that S. This assumes that the "how" in "how is S possible?" has got to be one of means rather than manner. "Possibly S&T" answers "how is S possible?" in much the same way as "they fit stacked together like so" answers "how do all those dominoes fit into that little box?" The emphasis on manner is only natural inasmuch as doubts about "S is possible" tend to derive less from the (suspected) absence of a positive basis for S's possibility -- some possibilities are surd after all -- than the (suspected) presence of a positive obstacle to its possibility. This suspicion usually takes the form indicated in the text: seemingly coherent scenarios according to which S have a way of falling apart when one attempts to flesh them out so as to render a verdict about T. Yablo 1993 has more on this theme.

like.⁴⁷ To come at it from the other side, there can be no refuge from impossibility in refusing to take a stand on matters left open; if an impossibility would result however these matters were decided, you've got an impossibility already.⁴⁸ Either way, expansiveness looks like a conceptual truth.

XII

Voila! possible world semantics without possible worlds. Because what we have in (11) is a structural analogue of Lewis's (13) in which worlds do not figure⁴⁹ -- an analogue, moreover, with some claim to be regarded as analytic. But I can imagine various questions and objections, starting with the objection that since (11) is circular -- modal notions appear on its right-hand side -- it fails to provide a reductive analysis of modality.

There is no denying the circularity. "S+ is possible" does not count as a correct answer to "how is S possible?" unless it is true, which means that S+ has got to really be possible.⁵⁰ But why exactly is this an objection? To reply that (11) is up against (13), which being noncircular can function as an analysis, just pushes the question back a step. Why should the potential for functioning as an analysis count so heavily in (13)'s favor?

The answer may seem obvious from something already mentioned, that the argument for (13) is in terms of the theoretical services it offers. Lewis offers an impressive catalogue of these services in his book The Plurality of Worlds; here we will have to limit ourselves to a single example. How, without an analysis like (13), are we to understand why this, that, and the other should be the laws of modality? True enough, it can be proved in pure mathematics that

if modal operators can be correctly analysed in so-and-so way [as quantifiers over worlds], then they obey so-and-so systems of modal logic.⁵¹

⁴⁷ Subject to the usual qualifications about semantical paradox.

⁴⁸ Otherwise one could say: it's perfectly possible to have a barber who shaves all and only the non-self-shavers, what's impossible is that along with a resolution of who if anyone shaves the barber.

⁴⁹ I leave (12) aside for now since Lewis has questioned its claim to be called reductive.

⁵⁰ Further circularities creep in later, when (11) gives way to (17).

⁵¹ Lewis, Plurality of Worlds, 17, italics added.

This conditional gets us nowhere, however, unless we are in a position to discharge the antecedent. And to get ourselves into that position, we need to count an analysis like (13) into our belief system.

But although this is often said, it is hard to see how the application depends on (13)'s constituting an analysis. As long as (13) is true (the left-hand side holds just when the right one does) and known to be, the deduction of modal laws from the laws of quantification would appear to go through just the same. And now we begin to lose our grip on where the insistence on a reductive correlation is coming from. If the choice of a correlation is to be driven by considerations of theoretical utility alone, nothing should matter but that

- (a) the correlation is there,
- (b) it is comprehensive,
- (c) it is not itself unduly mysterious, and
- (d) it can be used to dispel other mysteries.

And, to twist around a famous remark of Lewis's, it is not clear why a nonreductive correlation must have trouble with these conditions -- unless you beg the question by saying that it already is trouble.

Now, for Lewis, a reductive correlation is the only kind worth having -- so, anyway, it is usually assumed, and given that the correlation he defends is the most reductive available, there seems little reason to doubt it. But the fact is that one can read quite a way into Lewis's book without reductiveness coming up as an explicit desideratum.⁵² Most of the time it sounds as though the reason for believing in his "concrete correlation" (13) is that it exemplifies better than any competing correlation the values expressed above, such as comprehensiveness and theoretical power.⁵³ That the correlation is reductive besides appears to be just gravy, except to the extent that it helps with the other desiderata.

Starting about halfway through the book, however, we find Lewis objecting to certain ersatzist alternatives to (13) that they smuggle modal notions in on the right-hand side. Apparently, then, reductiveness is something that Lewis is prepared to insist on. Why? Is it because he takes the same view of modality that Jerry Fodor does of intentionality, viz., that if it is really real, it must really be something else? I

⁵² It does come up in passing, for instance in the passage just quoted.

⁵³ So, Lewis objects to linguistic ersatzism that it misclassifies "alien" possibilities as impossible, and to magical ersatzism that it postulates a mysterious making-true relation. Lewis's own favored correlation has been charged with falsely "predicting" the impossibility of island universes, a charge he takes dead seriously.

doubt it. No one could be less sentimental than he about the tradeoffs philosophers are occasionally forced to make between ideology and ontology. If the price were right, he would be as willing as anyone to buy relief from unwelcome entities by taking on a primitive notion or two.⁵⁴ It's just that in this case, the price is not right; in fact, the tradeoffs play out the other way.⁵⁵ A reductive account of modality is so enormously valuable as to more than compensate us for the humongous ontology of worlds.

All right, but now we need a distinction. Is it that a reductive account of modality is so intrinsically valuable as to compensate us etc.? This is hard to take seriously. Faced with a no-strings-attached decision between the humongous ontology of concrete worlds, on the one hand, and letting possibility be what it is and not another thing, on the other, most of us would know which way to jump.

So the claim has got to be that a reductive analysis of modality is so extrinsically valuable as to compensate us, etc. -- that is, so valuable from the point of view of desiderata other than reductiveness. And now we are back where we started: if the concrete correlation is better, that is not because it is nonreductive per se but because it outperforms the competition in other respects. Whereupon we're entitled to ask why a nonreductive correlation like (11) couldn't do just as well.

Or indeed better. Because if a correlation is going to do theoretical work, it's very important that it be there, that it be comprehensive, and that it not be itself unduly mysterious. And between (11) and Lewis's (13), the verdict is clear. (11) is bordering on analytic, which is about as good as you can do in the truth and comprehensiveness and unmysteriousness departments. Whereas (13), on top of being prima facie as improbable as anything ever was, is baffling even on the supposition of its truth. If an oracle convinced us that ours was one of a large number of spatiotemporally isolated universes, each enacting modal facts about the others

⁵⁴ "I conclude that linguistic ersatzism must indeed take modality as primitive. If its entire point were to afford an analysis of modality, that would be a fatal objection. But there are many theoretical services left for a version of ersatzism to render, even if it cannot analyze modality away. So it is open to an ersatzer to pay the price, accept modality as primitive, and consider the proposal well worth it on balance. Many ersatzers...see the contest between genuine and ersatz modal realism in just that way: there is a choice between unwelcome ontology and unwelcome primitive modality, and they prefer the latter. That seems to me a fair response on their part, but of course not conclusive" (Plurality of Worlds, 156).

⁵⁵ "If our work is directed to ontological questions only, we may help ourselves to any primitives we please, so long as we somehow understand them. But if our work is directed to ontological and analytic questions both, ...then we are trying at once to cut down on questionable ontology and to cut down on primitives; and it is fair to object if one goal is served at too much cost to the other" (ibid, 157).

while they all the while returned the favor, this would be regarded as the most amazing coincidence on record.⁵⁶

XII

Now, the natural and proper reply to this is that Lewis's concrete correlation, its existence momentarily granted, so thoroughly creams the competition at dispelling modal mysteries that we should take it on board however prima facie improbable and however baffling if true. (13) has been undersold, in other words. This is something we'll get to in a moment; let us consider first a way in which (11) has been oversold.

Again and again (11) has been billed as close to a conceptual truth, or bordering on analytic. Why the hedge, if (11') and (11'') are conceptual truth and (11) is their conjunction? The hedge is because (11) is not their conjunction; it is slightly but crucially stronger. This comes out if we compare what (11) tells on the supposition that S is possible with what (11'') tells us on the same supposition. According to (11), "how is S possible?" has a correct answer. But (11'') only as it were exhibits this answer,⁵⁷ without testifying to its existence. ((11'') does perhaps tell us that "how is S possible?" is correctly answerable, in some appropriate sense of that word. But answerability is one thing, having a correct answer another.⁵⁸) The

⁵⁶ Comprehensiveness may be a problem too, since (13) as Lewis understands it rules out the possibility of spatiotemporally unrelated ("island") universes. Far from hushing this problem up, Lewis has done a good deal to publicize it:

The intuitive case that island universes are possible has been much strengthened by a recent argument in John Bigelow and Robert Pargetter, "Beyond the Blank Stare"....First, mightn't there be a world of almost isolated island universes, linked only by a few short-lived wormholes? And mightn't the presence of the wormholes depend on what happens in the islands? And then wouldn't it be true that if the goings-on in the islands had been just a little different, there wouldn't have been any wormholes? Then wouldn't there have been a world of altogether isolated islands?" (Lewis, "Review of Armstrong," p. 223).

His rejection of island universes puts Lewis in the superficially awkward position of maintaining that there is something -- the mereological sum of all the various worlds -- such that a thing like that cannot be. But reject them he must if he wants to hold on to his definition of worlds as maximal spatiotemporally connected objects. A lot is riding on this definition here since all the alternatives that come to mind are explicitly or implicitly modal. Allow island universes and it is not clear whether (13) can still be regarded as a reduction. (See Plurality of Worlds, pp. 69ff.)

⁵⁷ And this only schematically.

⁵⁸ One could attempt to deny the distinction, maintaining that Q is correctly answerable iff it has a correct answer iff there is a fact of the matter as to IQ. There is certainly something to

upshot is that (11) is a conceptual truth only modulo the existence of answers with the requisite contents. And that is a very big modulo. It begins to appear that, although on friendly terms with conceptual truths, (11) is not itself actually even true.⁵⁹

Not good. And we have yet to consider the other reply, namely, that (13) is needed regardless of (11)'s truth value on account of its greater effectiveness against modal mysteries. Take again the "mystery" of the laws of modality, using

(14) if $\Diamond S$ and $\Box T$ then $\Diamond(S\&T)$

as a typical instance. Why is it that counterexamples to this never turn up? (13) has an explanation to offer: If S is possible, then there is an S-world, call it W. W cannot be a not-T world, since there aren't any; so, worlds being complete, it must be a T-world. W is accordingly an S&T-world, which means that possibly S&T. Now try the same thing using (11). Since S is possible, "how is S possible?" has a correct answer A. A is clearly not an answer to "how is not-T possible?," for T is necessary. But this still doesn't give us an answer to "how is S&T possible?," for A may well be silent on the subject of T.

Examples could be multiplied. (13) has a real analytic advantage for the simple reason that worlds are complete while answers to "how is that possible?" questions tend to leave a great deal undecided.

Someone might reply that possible world semantics can just as easily be done in terms of "partial" worlds⁶⁰ conceived as subject to a refinability condition: given any T you like,

be said for this view. "'What would China do if the US recognized Taiwan?' has an answer" does not intuitively make an existence claim; it says that there is a fact of the matter as to what China would do. By the same token, when (11) assures us that "how is S possible?" has an answer, this means only that there is a fact of the matter as to how S is possible. And (11) gives us the same assurance, when it tells us that S is possible either T-ishly, or (failing that) not-T-ishly. Now though we have to decide whether "there is a fact of the matter as to" involves genuine quantification over facts. If it does, we lose; the cause of ontology-free theoretical power is hardly served by trading one ontology for another. If it doesn't, we lose again; give up the quantification and the theoretical power goes too

⁵⁹ Another option is to read "there is an answer" in (11) as "there could have been an answer, such and such conditions holding fixed." (Similarly one could read "there is a world" in (12) and (13) as "there could have been a world" -- a type of quantifier discussed in Fine, "Postscript.") I will be taking a different line but this one strikes me as also worth pursuing.

⁶⁰ Sometimes called "situations" or "possibilities."

(15) any partial world at which S is true has a refinement at which S is true and T is true or else one at which S is true and T is false.⁶¹

And this condition is very much in the spirit of (11)'s portrayal of possibility as expansive: S is possible only if it is possible together with T or possible together with not-T.

The fact is, however, that (15) adds something to expansiveness that is necessary for serious modal mathematics; it says not merely that S is possible only if its conjunction with T, or with not-T, is possible, but that any witness to S's possibility can be refined into a witness to the possibility of one of these conjunctions. If a version of this held for answers -- if we could be assured that

(16) any correct answer to $H\Diamond S?$ has a refinement that correctly answers $H\Diamond(S\&T)?$ or else one that correctly answers $H\Diamond(S\&\neg T)?$

-- then the analytic gap between (11) and (13) would be significantly narrowed.⁶² But unless we have it in mind to shoot ourselves in the foot by indulging at this late date in wishful platonic thinking, (16) is not something we can afford to assume. The only answers we can safely rely on in this context are the ones that have actually cropped up in conversations or on paper. And these, it seems clear, are not closed under refinement; time being short and attention limited, they eventually peter out.

⁶¹ Cf. Humberstone, "From Worlds to Possibilities," and Forbes, Metaphysics of Modality, pp. 18-22 and 43-47. True refinability is a more complicated affair than (15) suggests, but the differences are not important here.

⁶² For example, we could explain (14) by saying that any answer to "how is S possible?" is refinable into an answer to "how is S&T possible?," since given T's necessity "how is S&¬T possible?" is unanswerable.

XIII

People have not in fact gotten around to giving all the answers our approach needs. But having come this far, it seems a shame to retreat before so dreadfully medical a difficulty. It seems to me that we don't have to. The insight that (11) is struggling to express is that S is possible iff it is possible somehow. And we know from section IX that if "somehow" is to be understood in terms of quantification over answers, that quantification will itself have to be understood as feigned or conducted in a spirit of make-believe.

The outlines of a suitable make-believe can be gleaned from the last section. One crucial idea is that whenever "how is S possible?" is answerable (it is possible that S⁺), a correct answer to it actually exists.⁶³ Another is that any correct answer to "how is S possible?" has a refinement that either affirms T or denies it. If we let these two ideas together be called the refinable-answer story, or RAS, then all that remains is to put the quantifier on (11)'s right-hand side under the care of an "according to RAS" operator. The biconditional

(17) $\Diamond S$ iff according to RAS, $H\Diamond S?$ has a correct answer

that results is a conceptual truth that enables free back-and-forth motion between possibility, on the one hand, and existential quantification over a single matrix of as-determinate-as-you-need witnesses on the other. To the extent that (12) and (13) have their analytic power as catalysts in this sort of transition, (17) can offer the same power at a fraction of the ontological cost.⁶⁴

All right, but why stop there? If we are willing to stipulate that incomplete answers are partly refinable, why not go whole hog and make them completely

⁶³ As discussed above, S⁺ should suffice for S. There might be "pragmatic" conditions on S⁺ as well; it should speak to the questioner's doubts. (11") guarantees that "how is S possible?" is correctly answerable in a way that addresses these doubts whatever they may be, provided that S is indeed possible.

⁶⁴ Compare Rosen's "Modal Fictionalism." This paper can be seen as one possible development of Rosen's next to last paragraph:

Throughout I have supposed that fictionalism, like modal realism, aims to be a theory of possibility...But note that this assumption is not strictly necessary given the modest problem we began with. All Ed ever wanted was license to move back and forth between modal claims and claims about worlds...it is one thing to embrace these biconditionals -- even to embrace them as a body of necessary truths -- and another to regard them as providing analyses...This timid fictionalism of course raises as many questions as it answers. Still it must be granted that many of the objections we have mentioned...simply do not arise for this view (233-234).

refinable? The determinate-answer story is just like the refinable-answer story, except that correct answers to "how possible?" questions are always refinable into correct answers leaving nothing unsettled. This gives us a still closer approximation to the standard analysis:⁶⁵

(18) $\diamond S$ iff according to DAS, $H\diamond S?$ has a determinate correct answer.

And now for a final weird twist. "Answer" is a theoretical notion whose proper treatment is to some extent up for grabs. No doubt answers are often best seen as representations. ("Here is your answer" I say: "your cousin Giorgio.") Sometimes though it is the thing represented that seems better suited to the role. ("There is your answer," I say, with a nod at your approaching cousin.) So far we have been taking the first approach; more or less determinate answers to "how is S possible?" have been more or less comprehensive representations according to which S. But once having made the switch to fully determinate answers, and pretended ones at that, the second option becomes suddenly attractive.

You want to know how blue swans are possible, in full and comprehensive detail? There is your answer, I say, gesturing or pretending to gesture, to the best of my expressive abilities, at a concrete I-and-all-my-surroundings world wherein swans really are blue.⁶⁶

Reconceive determinate answers like this and the determinate-answer story becomes the many-worlds story: S is possible only if "how is S possible?" has an answer taking the form of a concrete world at which S is true. And (18) becomes

(19) $\diamond S$ iff according to MWS, there is a concrete world at which S.

You might think that Lewis would welcome (19) with open arms; isn't the many-worlds story his story? It is not.⁶⁷ Both stories tell of an array of concrete worlds. But Lewis's story portrays these worlds as independently constituted, not inherently modal entities which somehow nevertheless contrive to constitute the ground of modal truth. The present story conjures worlds up from within the structure of possibility itself -- from what we called its expansive quality. Worlds are the ideal objects of our efforts to give more and more specific answers to the question "how

⁶⁵ Albeit to the version (12) that quantifies over abstract representations of concrete worlds rather than the worlds themselves

⁶⁶ Sentential/propositional answers to "how is S possible?" still exist on this view, but they interest us mainly as presentations of the fully determinate answers that we call concrete worlds.

⁶⁷ For the same reasons, it is not Gideon Rosen's story in "Modal Fictionalism" either.

could that be?" This is how we can know that (19) is true, that S is possible iff according to the story there is an S-world.⁶⁸

XIV

Twenty or thirty years ago, before the campaign to make modal metaphysics honest had gotten seriously under way, the talk was less of worlds than of something called the world metaphor. Lewis's Quinean scrupulosity about ontological commitment was one reason this sort of talk fell out of favor. (Fish or cut bait, Lewis said, it's up to you, but this hanging around on the dock telling fish stories has got to stop.) Another reason however was that it was never clear what the talk meant. One saw, of course, what worlds qua metaphors were supposed to do: shed metaphysical light "from beyond the grave," simply by making themselves available to theoretical contemplation.⁶⁹ But it was never quite explained what they were that this was within their powers.

All the same, it seems to me that the pre-Lewis approach to these matters was onto something. Talk about worlds is metaphorical, or close enough not to matter. Some of the argument for this is already in place: world-talk as it features in (19) is fictional and so the sort of thing we are to pretend or imagine is true. The next step is to observe that the pretense is in a quite particular spirit, a spirit characteristic of metaphor.

Almost wherever there is disciplined pretense or imagination, there is something that can be considered a game of make-believe.⁷⁰ Some of these games, e.g., those growing up around explicit texts or other art objects, can claim official

⁶⁸ Someone might think that MWS was lacking in substantive content. But a story's content is not exhausted by what is explicitly written down (see the next section). If S is possible, then according to MWS, there is a world in which S. Since blue swans are possible, according to MWS there is a world at which blue swans exist; since they are possible together with a German victory in the First World War, according to MWS there is a world like that as well. How claims like this make their way into the content of Lewis's story (as elaborated by Rosen) is a nontrivial question; see Rosen, pp. 227-8.

⁶⁹ See the epigraph.

⁷⁰ "Almost" because the pretense has to be disciplined in the right way. I'm not sure what the right way is but at least this much is true. There is no make-believe game if imaginings are forbidden but none are prescribed (Albanians under Hoxha were told not to imagine life in the West) or if they are prescribed but on a basis having not enough to do with what they are imaginings of (as in a biofeedback game where contestants try to raise their heart rates just by the exercise of their imaginations).

sanction. But others are brought into being by ad hoc informal arrangements ("mud pies, anyone?") or the understanding of a moment ("I've fallen and I can't get up!!!"). And others yet are based on nothing at all, arising among like-minded pretenders of their own accord. (Finding ourselves in an unexpectedly swanky hotel room, we begin putting on airs and acting the part.) What links all make-believe games together is that they call on their participants to pretend or imagine that certain things are the case. These "to be imagined" items make up the game's content, and to elaborate and pretensively adapt oneself to this content is generally the game's very point.⁷¹

Not always though. An alternative point suggests itself as soon as we realize that all but the most boring make-believe games are played with props, whose game-independent properties help to determine what it is that the players are to imagine or pretend. Nowhere in the rules of mudpies does it say that Sam's pie is too big for the oven; if this is to be imagined, the reason is that Sam's clump of mud doesn't fit into the hollow stump. (Here the props are Sam's clump of mud and the stump.) Nowhere in the rules of the Holmes-game does it say that Holmes lives nearer to Hyde Park than to Central Park; if this is fictionally the case, the facts of 19th century geography deserve part of the credit.⁷² (Here the prop is a sizable chunk of the Earth's surface.)

If a game's content reflects in part the properties of the props, then the game itself can be conceived in two quite different lights. What normally happens is that we take an interest in the props because and to the extent that they influence the game's content; we tramp around London in search of 221B Baker street for the light it may shed on what is true according to the Holmes stories. But in principle it could be the other way around; we could be interested in a game's content because and to the extent that it informed us about the props. This would not stop us from playing the game, necessarily, but it would tend to confer a different significance on our moves. Pretending within the game to assert that BLAH would be a way of giving voice to a fact holding outside the game: the fact that the props are in such a condition as to make BLAH a proper thing to pretend to assert. One can even imagine there being advantages to this style of expression -- up to and including that of being the only way open to us of putting the relevant fact into words.

⁷¹ Better, such and such is part of the game's content if "it is to be imagined should the question arise, it being understood that often the question shouldn't arise" (Walton, Mimesis & Make-Believe, p. 40). Subject to the usual qualifications, the ideas about make-believe and metaphor in this and the next few paragraphs are all due to Walton. See his "Metaphor and Prop Oriented Make-Believe."

⁷² The example is adapted from Lewis, "Truth in Fiction."

Using games to talk about game-independent reality makes a certain in principle sense, then. But is such a thing ever actually done? A case can be made that it is done all the time, not indeed with explicit self-identified games like "mudpies" but impromptu everyday games hardly rising to the level of consciousness. Consider some examples of Ken Walton's:

Where in Italy is the town of Crotone? I ask. You explain that it is on the arch of the Italian boot. 'See that thundercloud over there -- the big, angry face near the horizon,' you say; 'it is headed this way.'...We speak of the saddle of a mountain and the shoulder of a highway....All of these cases are linked to make-believe. We think of Italy and the thundercloud as something like pictures. Italy (or a map of Italy) depicts a boot. The cloud is a prop which makes it fictional that there is an angry face...The saddle of a mountain is, fictionally, a horse's saddle. But our interest, in these instances, is not in the make-believe itself, and it is not for the sake of games of make-believe that we regard these things as props...[The make-believe] is useful for articulating, remembering, and communicating facts about the props -- about the geography of Italy, or the identity of the storm cloud...or mountain topography. It is by thinking of Italy or the thundercloud...as potential if not actual props that I understand where Crotone is, which cloud is the one being talked about.⁷³

Make-believe games, Walton says, can be "useful for articulating, remembering, and communicating facts about [their] props." He might have added that they can make it easier to reason about such facts, to systematize them, to visualize them, to spot connections with other facts, and to evaluate potential lines of research. That similar virtues have been claimed for metaphors is no accident, for here is a tempting account of how metaphor works:

The metaphorical statement (in its context) implies or suggests or introduces or calls to mind a (possible) game of make-believe. The utterance may be an act of verbal participation in the implied game, or it may be merely the utterance of a sentence that could be used in participating in the game. In saying what she does, the speaker describes things that are or would be props in the implied game. [To the extent that paraphrase is possible] the paraphrase will specify features of the props by virtue of which it would be fictional in the implied game that the speaker speaks truly, if her utterance is an act of verbal participation in it.⁷⁴

⁷³73 Walton, "Metaphor and Prop Oriented Make-Believe," pp. 40-1.

⁷⁴74 Walton, "Metaphor and Prop Oriented Make-Believe," p. 46. (I should say that Walton does not propose this as a general theory of metaphor.) I am intrigued by Walton's suggestion that unparaphrasable metaphors "may still amount to descriptions of their (potential) props" (p. 46). If Walton is right, then it becomes possible to see how, even if modal reality has nothing to do with worlds, there could still be modal truths requiring quantification over worlds for their expression. The point generalizes. Ineliminable quantification over BLAHs argues that BLAHs exist only if the quantification is not metaphorical, a notoriously difficult thing to judge. This throws the whole project of Quinean ontology into considerable doubt, and breathes new life into Carnap's position that not all existence-questions have a "right answer."

A metaphor, in brief, is an utterance U portraying its subject as of a kind to make U pretense-worthy in a game that U itself suggests. The game is played (or invoked) not for its own sake but to make clear which game-independent properties are being attributed: they are the ones that do or would confer legitimacy upon the utterance construed as a move in the game.

Utterances about possible worlds appear to fit the bill pretty exactly. "There are worlds in which blue swans exist" suggests a game in which we pretend that all and only the things that could happen in this world do happen in some world or other. The point of the utterance is to say that the modal facts are such as to make "there are blue swan worlds" pretense-worthy in the game -- to say, in other words, that blue swans could have existed. Even if the tradition did not know quite what it meant in calling worlds metaphors, that is what they appear to be.⁷⁵

Bibliography

- Baker, C.L. 1968. Indirect Questions in English. Ph. D. dissertation, University of Illinois.
- Belnap, N. 1982. "Questions and Answers in Montague Grammar." Pp. 165-198 of Processes, Beliefs, and Questions, ed. S. Peters and E. Saarinen. Dordrecht: Reidel
- Belnap, N., T. Steel. 1976. The Logic of Questions and Answers. New Haven: Yale.
- Benacerraf, P. 1973. "Mathematical Truth." Journal of Philosophy 19: 661-679.
- Bigelow, J. & Pargetter, R. 1987. "Beyond the Blank Stare." Theoria 53: 97-114.
- Bromberger, S. 1966. "Questions." Journal of Philosophy 63:597-606.
- Engdahl, E. 1986. Constituent Questions. Dordrecht: Reidel.
- Etchemendy, J. 1990. The Concept of Logical Consequence. Cambridge: Harvard.
- Fine, K. 1977. "Postscript: Prior on the Construction of Possible Worlds and Instants." Pp. 116-161 of Worlds, Times, and Selves, A. Prior & K. Fine. London: Duckworth.
- Forbes, G. 1985. The Metaphysics of Modality. Oxford: OUP.

⁷⁵ Some of the many additional topics that need attention are: iterated modalities, transworld identity, grades of modality, impossible worlds, and (especially) modal epistemology.

- Groenendijk, J. & M. Stokhof. 1989. "Semantics of Interrogatives." Pp. 21-68 of Properties, Types, and Meaning, ed. G. Chierchia et al. Dordrecht: Kluwer.
- Grover, D. 1992. A Prosentential Theory of Truth. Princeton: Princeton.
- Higginbotham, J. 1993. "Interrogatives." Pp. 195-228 of The View from Building 20, ed. K. Hale and S.J. Keyser. Cambridge, MA: MIT.
- Hiz, H. 1978. Questions. Dordrecht: Reidel.
- Humberstone, I. L. 1981. "From Worlds to Possibilities." Journal of Philosophical Logic 10: 313-339.
- Karttunen, L. 1977. "Syntax and Semantics of Questions." Linguistics and Philosophy 1: 3-44. Reprinted in Hiz 1978.
- Katz, J. 1995. "What Mathematical Knowledge Could Be." Mind 104: 491-522.
- Kung, G. 1977. "The Meaning of the Quantifiers in the Logic of Lesniewski." Studia Logica 26: 309-322.
- Lewis, D. 1972. "General Semantics." Pp. 169-218 of Semantics of Natural Language, D. Davidson and G. Harman. Dordrecht: Reidel.
- _____. 1978. "Truth in Fiction." American Philosophical Quarterly 15: 37-46. Reprinted in Lewis 1983.
- _____. 1979. "Possible Worlds." Pp. 182-189 of The Possible and the Actual, ed. M. Loux. Ithaca: Cornell University Press.
- _____. 1983. Philosophical Papers I. New York: OUP.
- _____. 1986. The Plurality of Worlds. New York: Blackwell.
- _____. 1992. "Review of Armstrong, A Combinatorial Theory of Possibility." Australasian Journal of Philosophy 70: 211-224.
- Melia, J. 1995. "On what there's not." Analysis 55: 223-229.
- Prior, A. N. 1971. Objects of Thought. Oxford: OUP.
- Quine, W.V.O. 1948. "On What There Is." Review of Metaphysics 2: 21-38.
- Rosen, G. 1990. "Modal Fictionalism." Mind 99:327-354.

- Salmon, N. 1989. "The Logic of What Might Have Been." Philosophical Review 98:3-34.
- Simons, P. 1985. "A Semantics for Ontology." Dialectica 39: 193-216.
- _____. 1993. "Nominalism in Poland." Pp. 207-232 of Polish Scientific Philosophy, ed. F. Coniglione et al. Amsterdam: Rodopi.
- Stalnaker, R. 1979. "Possible Worlds." Pp. 225-234 of The Possible and the Actual , ed. M. Loux. Ithaca: Cornell University Press.
- Vision, G. 1993. "Fiction and Fictionalist Reductions." Pacific Philosophical Quarterly 74:150-174.
- Walton, K. 1990. Mimesis as Make-Believe. Cambridge: Harvard.
- _____. 1993. "Metaphor and Prop Oriented Make-Believe." European Journal of Philosophy 1: 39-57.
- Woodger, J.H. 1952. "Science Without Properties." British Journal for the Philosophy of Science 2: 193-217.
- Yablo, S. 1993. "Is Conceivability a Guide to Possibility?" Philosophy and Phenomenological Research 53: 1-42