The object of a belief is not a proposition; it is a property: in believing, one self-ascribes a property. So argued David Lewis in “Attitudes de Dicto and de Se” (1979). I unwittingly see myself in a mirror, imagine, and I think to myself “That man has a mark on his forehead.” On realizing who it is I’m seeing, I come to think, “I have a mark on my forehead.” The two beliefs I express are beliefs in the same proposition, that Allan Gibbard has a mark on his forehead. A theory of belief, though, must distinguish the two thoughts I have, since the second comes as a surprise when I already accept the first. In particular, the theory of subjective probability and updating beliefs with new information needs objects of belief that aren’t propositions. Before I realize I’m seeing myself, after all, my two thoughts have quite different subjective probabilities, close to certainty for the one and low for the other. Perhaps, then, Lewis is right: with the second thought I self-ascribe the property of having a mark on my forehead, whereas with the first I self-attribute a more complex property—seeing a man with a mark on his forehead, or something of the sort.

Such an account, though, makes communication and memory puzzling. Talk leads the hearer to update his beliefs, but the updating doesn’t consist in his self-ascribing the same property as the speaker did. Speaker Jill says “I am elated,” suppose, ascribing to herself at the time the property of being elated. Hearer Jack believes her, but he doesn’t thereby ascribe elation to himself. Propositions still seem to have a place, then, in the theory of belief: what is communicated, it seems, is the proposition that Jill is elated. It’s the proposition, not the self-ascription, that passes somehow from speaker to hearer.

Here, though, comes the puzzle. Which proposition travels from head to head, it turns out, has little or nothing to do with the information a hearer gleans from an assertion. The proposition “learned” may be one the hearer already knows, or could reason to a priori, without the help of testimony. I’ll be showing this and more—and then ask, in consequence, whether propositions could matter for communication in the slightest.

Many aspects of the puzzle are well known. The same proposition may be informative or empty of import, depending on how it is couched: that Hesperus is Phosphorus can be
news, whereas that Phosphorus is Phosphorus can’t—though the propositions in question are one and the same. This, it turns out, is just the beginning. To impart any given piece of information, I’ll show, one can voice any of a very wide range of true propositions. Take any true proposition, and one can couch it to convey any of a wide range of pieces of information. Communication gives us new beliefs, but if beliefs were straightforwardly beliefs in propositions, then telling people how things are would be superfluous. For as it turns out, the hearer could reason *a priori*, or near enough, to belief in almost any true proposition—he needn’t be told.

Many theorists now think that although there is such a thing as believing a proposition, the belief is somehow mediated. One believes a proposition via a mode of presentation, a character, a guise, or the like. Still, it is widely thought that propositions have *something* important to do with belief. If a proposition matters—say, the proposition that one’s house is on fire—then it matters whether there is some guise under which one believes it. If, however, the claims I have been advertizing are true, then it can scarcely matter whether there exists some such guise. There was already a guise under which I could come to believe this proposition in a way that is almost empty.

Perhaps it’s just that there are two separate questions: First, what belief state one is in, and second, what proposition, in a given context, one thereby believes. There’s the state of believing that one has a spot on one’s forehead, and the proposition that Gibbard believes if he is in that state at the millenium Eastern Standard Time: that Gibbard, at the millenium E.S.T., has a spot on his forehead. If you tell me, though, at that time, that I have a spot on my forehead, I’m bound already be in a belief state that, in the context, constitutes believing this very same proposition. Or at least, I could reason my way to such a belief state with no help from your assertion. How, then, can the proposition have anything to do with informing me?

Hence the puzzle: A proposition, it seems, is what is preserved in communication. Yet which proposition it is can’t much matter—as I will show. If the proposition is true, then any of a wide range of true propositions could have been used, under some guise or other, to impart the same information. Under a different guise, moreover, the very same proposition could be used to impart vastly different information. And various fixes we might try won’t help. We might, for instance, somehow require *de re* acquaintance with the elements of the proposition, but this, I’ll argue, misses what’s crucial. Have propositions, then, disappeared from the story of communication? If so, what does an assertion communicate? The ambition of this paper is to resolve the puzzle—but I must of course first establish the puzzle.

‘Proposition’ is a term of ordinary language, but I’ll be considering it as a philosophers’ technical term. It has no one standard technical sense, but I’ll consider two kinds of
accounts of what a “proposition” is. One is unstructured propositions, as with Lewis and Stalnaker, propositions as sets of possible worlds. The other is structured “Russelian” propositions: propositions as structures of individuals, relations, and quantifications. The two sentences ‘All people are mortal’ and ‘No people are immortal’ express the same unstructured proposition but different structured propositions.

Propositions, unstructured and structured, have in common that they concern how things are from no particular standpoint. “I have a mark on my forehead,” in contrast, is thought truly or falsely depending on who one is when. Suppose that at noon in London on D-day, Jack has a mark on his forehead and Jill doesn’t; then Jack, at that time, can think these words truly and Jill can’t. The proposition is what Jack’s thought “I have a mark on my forehead” has in common with Jill’s later thought, directed at Jack at noon on D-day, “He had a mark on his forehead.” I myself would find the term ‘state of affairs’ more natural for the kind of abstract entity that current literature calls a “proposition”, but I defer to prevalent technical usage.

Stalnaker speaks of “diagonal propositions”, and these, or something close, are indeed tied to belief—but they are not propositions. Rather, they are properties in Lewis’s sense. Pretheoretically, in non-technical English, they may well have as good a claim to be “propositions” as anything I am using the term to cover, but that hasn’t been the way most current semanticists have regimented the term. In any case, called “propositions” or not, they can’t be what passes from one head to another in communication, and so the puzzle remains.

As for belief, we must distinguish two aspects. The first we might call the a priori component, the difference, say, in believing there are nine planets and believing that the number of planets is the square root of 81. The other I’ll call the a posteriori component of belief. I could idly say to myself, “I am here now,” and I’d believe what I say, on the most straightforward reading. But that belief is empty; it carries no information: that I am now here can come as no more news to me than does that I exist or that I am self-identical or I am somewhere. The two thoughts I’d express as “I am here now” and “I am somewhere” are thus a priori equivalent. Thoughts that are a priori equivalent have the same value as information, at least for someone who can manage enough pure and effortless a priori reasoning. The theory of gaining information, of updating my beliefs through observation and testimony, concerns not any differences thoughts may have when these thoughts are equivalent a priori; it concerns the a posteriori component. Just in case two beliefs are a priori equivalent, they have the same a posteriori component. It’s this a posteriori component of belief that changes as we update with new experience and reports from others. My worry concerns this component: propositions may have little to do with it.

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Objects of belief, to count as such, must figure in explanations of rationally innocent thinking. In particular, they must be what we come to believe as we gain new information, updating the *a posteriori* component of our beliefs. They must fit in with subjective probability theory and classical decision theory (or some improvement on them) as the items we believe or find plausible to one degree or other. Even if you hate these theories, you’ll perhaps still accept some of their consequences as truistic: Believing that the meeting starts now sends me rushing out the door, whereas if it’s now noon but I’ve lost track of the time, believing that the meeting starts at noon can leave me seated. Objects of belief in an account of what belief consists in must sustain truisms like these. If such objects can’t be had and no substitute for them can be found, our chances of understanding the logic of belief and decision may be bleak. Decision theory offers a test for theories of belief.

1. Two Dimensions and Cheap Knowledge

Begin with propositions as unstructured. Propositions, in this sense, are sets of possible worlds—or at least, they correspond one-to-one with sets of possible worlds. Equivalently, we can regard them as assignments of truth values to possible worlds. When Zeus says “I live always on a mountain,” that proposition is the set of possible worlds in which Zeus lives always on a mountain; it assigns value $T$ to exactly those worlds. I’ll accept possible worlds here without defending them; I understand a possible world in Stalnaker’s way, as a maximally specific way things might have been; I defer to Stalnaker for the defense. Ways things might have been must be sharply distinguished from ways things may be for all we know or believe. I might not have been here right now, but on its plainest reading it’s absurd for me to think “I may not be here now.” Two different dimensions of possibility seem involved here, the latter epistemic, the former—well, I don’t know a good standard name for it, but we might misleadingly call it the *subjunctive* dimension. The contrast is the one Adams makes with his examples “If Oswald didn’t shoot Kennedy, someone else did” and “If Oswald hadn’t shot Kennedy someone else would have.” The first invokes the epistemic dimension of “ways things may turn out to be”; the second, the subjunctive dimension of “ways things might have been”.

A useful way to systematize these matters is “two-dimensionalism”. This treatment is controversial, but here I don’t enter into the controversies; I assume the framework and explore its consequences. To illustrate the approach, I’ll start with a very simple universe of possibilities, with two individuals and two possible worlds. The individuals are Adam Lingens (brother of Rudolf) and Bengt Lauben, whom we’ll label $a$ and $b$. In both worlds there’s a fire in the Stanford Library; in the actual world $w_a$ Adam is at Stanford and Bengt at Harvard, whereas the other way things might have been, $w_b$, has Bengt at Stanford and Adam at Harvard. That makes for four standpoints for thinking:
s_{aa}: The actual standpoint of Adam (at Stanford)
s_{ab}: The actual standpoint of Bengt (at Harvard)
s_{ba}: The standpoint in world w_{b} of Adam (at Harvard)
s_{bb}: The standpoint in world w_{b} of Bengt (at Stanford)

From a standpoint, one can think of alternative ways things might have been: Bengt, from his actual standpoint s_{ab} at Harvard, can ask himself, “If I weren’t here, would I be at Stanford?” He thereby thinks about the non-actual way w_{b} that things might have been.

We can chart the character of the thought “I’m at Stanford.” From each standpoint for each world thought about (or target world), it assigns a truth value—as shown in the Table1. (I use ‘T’ for true and ‘∼’ for false. Entries on the diagonal are marked with sharp brackets, and those whose standpoints are actual are double-bracketed.)

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<td>s_{aa} ≪ T ≫</td>
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<td>s_{ab}</td>
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<tr>
<td>w_{b}:</td>
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<td>s_{bb}</td>
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Table 1. Character of ‘I am at Stanford.’

From Bengt’s actual standpoint s_{ab}, this thought determines a proposition false in actual world w_{a} and true in world w_{b}. On the view of propositions as unstructured, the proposition just consists in this assignment ∼T of truth values to worlds, displayed in the second row of the table.

Finally, if we ask about the import of the thought, how one’s informational state would change in believing it, its import concerns the standpoint one occupies. The import of ‘I am at Stanford’ is that the place of one’s standpoint is Stanford. This is given on the diagonal of the matrix, which consists of those cells for which the target world is the world of the standpoint. The import of a thought assigns a truth value to each standpoint; the import T∼T of ‘I am at Stanford,’ read off the diagonal in Table 1, is as given in Table 2.

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<tr>
<td>w_{a}:</td>
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<td>s_{ab}</td>
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<td>w_{b}:</td>
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<td>s_{bb}</td>
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Table 2. Import of ‘I am at Stanford’
Take a more complex standpoint, like that of Ike at noon GMT on D-day. Such a standpoint involves a possible world (that is, a maximally specific way things might have been), and it involves not only being a particular thinker, but being at a particular time. I'll call the person and time a location within a world. Lewis's gods know which world they are in—they know everything that is location-independent. Lewis's insomniac might know everything location-independent and know who he is, but in not knowing the time, he doesn't know the time of the standpoint he occupies. He doesn't know the temporal component of his location within the world.¹

Another example: I think, “If only whoever shot Kennedy hadn’t done so,” where in the world of my standpoint, Oswald did shoot Kennedy. The unstructured proposition this thought signifies is the same as the one that “Oswald didn’t shoot Kennedy” signifies. It is false in worlds in which Oswald shot Kennedy (such as the world of my standpoint), and true in worlds in which Oswald didn’t shoot Kennedy.

It now seems that I easily can know certain propositions, unstructured or structured. To believe the proposition that Oswald shot Kennedy, I can think “Oswald shot Kennedy.” Given sufficient evidence, I might thereby have knowledge. But this knowledge comes far cheaper too: Suppose all I know is that Kennedy was shot by a single person, I have no idea who. I then muse about “Whoever it was that shot Kennedy” and think, “That person shot Kennedy.” That’s the thought I negate when I sigh, “If only that person, whoever it was, hadn’t shot Kennedy!” I’m longing for a state of affairs that would have obtained just in case Oswald hadn’t shot Kennedy. In a technical vein, we can say that I’ve used the phrase ‘that person’ to designate and pick out rigidly whoever shot Kennedy in the world of my standpoint. I accept this thought knowledgeably, and so have come to know, in one guise, the proposition that Oswald shot Kennedy. Knowledge comes cheap—and this cheap trick works with structured as well as unstructured propositions.

There are, as I say, many question to ask about this two-dimensional framework, and various grounds for doubt that it does what we proponents claim for it. But my purpose here is not to defend the framework, but to explore its consequences.²

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¹ Lewis, “Attitudes” (1979), 139.

² In particular, Robert Stalnaker, a chief inventor of this kind of framework, might well have serious objections to the way I’m using it. See “Indexical Belief” (1981), “On Considering” (2001), and “Conceptual Truth and Metaphysical Necessity” in Ways (2003). Most of the issues he raises are beyond the scope of this paper. One might read this paper, then, in a hypothetical frame of mind: if the—by now fairly standard—kinds of moves I’m making are legitimate, what, then, do propositions have to do with belief and communication?

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2. Unstructured Propositions: With a Will to Believe, there’s a Way

If knowledge is of unstructured propositions, you can easily know anything true—as I’ll now explain. To begin with, consider an a priori contingent claim, such as ‘I am now here’ on its most straightforward reading. This is true as thought from any standpoint about the world of that standpoint, and so it is true everywhere on the diagonal of the character matrix. We can know it a priori, since we know that the thought is true as thought from every standpoint. One specially interesting thought in this class is “This is how things are” or “Things are exactly this way,” where with the word ‘this’ we gesture at the entire way things are. Call this thought $T^*$. Thought $T^*$ is true everywhere on the diagonal and thus knowable a priori; it isn’t news that things are exactly this way. Thought $T^*$ is also false everywhere off the diagonal: if things had been different in any way, they wouldn’t have been exactly this way. From any standpoint for any world other than the world of that standpoint, $T^*$ is false. Thought $T^*$, then, is true everywhere on the diagonal and so known a priori, but false everywhere off the diagonal.

Now for cheap trick number one. Take any true thought you might think we have no way of knowing; imagine, say, there are at this moment exactly $7,083,679,318$ eggs in China. Call this thought $Q$. You might think that even if $Q$ is true, I could have no way of knowing it. But if what’s known is an unstructured proposition, and knowing it under any guise whatsoever counts as knowing it, then this proposition is easy to know. This true proposition comes in a guise I can reason my way a priori. After all, I know $T^*$ a priori, and so a priori I can know $T^* \lor Q$. But the proposition I believe in believing $T^* \lor Q$ is just the one I believe in believing $Q$. The two unstructured propositions assign the same truth value to every possible world. From my actual standpoint for the actual world, $Q$ is true (ex hypothesi) and so is $T^*$; thus $T^* \lor Q$ and $Q$ have the same truth value, namely true. From my actual standpoint for any non-actual world, $T^*$ is false, and so $T^* \lor Q$ has whatever truth value $Q$ has. In short, for any world actual or non-actual, the two have the same truth value—and so the unstructured propositions are the same.

We can’t, of course, know something false. But at times one can reasonably believe a false claim, when the evidence is misleading: a highly reliable prediction of snow for tomorrow might turn out to be false. Here, then, is cheap trick number two. Suppose there is even one false thought it is reasonable for you to accept; call it $F^*$. Then you can reason your way a priori from $F^*$ to a reasonable, mediated belief in any false proposition $P$ whatsoever—say, that pigs fly. To show this, we construct the thought $(F^* \& T^*) \lor (P \& \neg T^*)$. This, we’ll show, I can reason to a priori from $F^*$. (Indeed it is a priori equivalent to $F^*$, but we need show this in only one direction.) And it is a guise of the proposition $P$: to believe it is to believe, in one guise, the proposition that pigs fly. Here is the proof: Since thought $T^*$ is a priori true, thought $F^*$ is a priori equivalent to
thought \(F^*\&T^*\). (From ‘It will snow tomorrow,’ you can reason to ‘It will snow tomorrow and things are exactly this way.’) The disjunction \((F^*\&T^*) \lor (P\&\neg T^*)\) follows logically. That shows we can reason in a priori valid steps from \(F^*\) to \((F^*\&T^*) \lor (P\&\neg T^*)\). And to accept this disjunction is to accept, in one guise, the proposition \(P\), that pigs fly. For the actual world both are false, as thought from my actual standpoint. For any other world, \(T^*\) is false; thus \(F^*\&T^*\) is false and \(\neg T^*\) is true for that world. Therefore \((F^*\&T^*) \lor (P\&\neg T^*)\) is true for that world just in case \(P\) is. Each, then, has the same truth value as the other for each world, and so the unstructured propositions are the same. From the innocently mistaken belief that it will snow tomorrow, one has reasoned to the silly proposition that pigs fly.

When you accept a thought with a certain character matrix, the matrix does, for your standpoint, indicate an unstructured proposition; the proposition is given by the horizontal row that contains the standpoint. But in no interesting sense is that proposition a thing you believe. For you can believe the proposition far too easily: by fully a priori reasoning if it is true, and by a priori reasoning from any false belief, no matter how innocent and reasonable, if it is false. What you believe is the diagonal, not the row—or at least, that’s the a posteriori component of what you believe. And the diagonal doesn’t give a proposition; it assigns truth values to standpoints, not possible worlds. Each world with multiple thinkers or multiple times has many standpoints, one for each location within it.

3. Structured Propositions

In the sentence ‘I am here now,’ thought by Ike at noon on D-day, ‘I’ picks out Ike, ‘here’ picks out where he was, ‘now’ and the present tense component of ‘am’ pick out D-day at noon, and ‘am’ picks out the relation \(\ldots be at place \ldots at time.\ldots\). The structured proposition consists of those individuals—person, place, and time—standing in that relation. The structured proposition determines a Stalnaker-like unstructured proposition, which assigns a value true to every world in which Ike, that place, and that time stand in that relation, and a value false to every other world. Call this the trace of the structured proposition. Distinct structured propositions often share a common trace; the structured proposition “Ike was there then and was self-identical” has the same trace as does “Ike was there then.” They are distinct structured propositions, however, since one is a conjunction and the other atomic. (I’ll call structured propositions ‘S-propositions’ for short.)

Do S-propositions make for satisfactory objects of belief? Perhaps yes: You believe a proposition, we might try saying, if there’s some guise, character, or mode of presentation via which you believe it, and you know the proposition if there’s some such way via which you know it. Even if propositions are structured, though, it’s too easy to believe them.
under some guise or other, as we already saw. Imagine I don’t know where Ike was on D-day at noon, but that in fact he was at Blenheim Palace. We’d expect it would take some empirical investigation for me to discover where he was, to come to believe and know the proposition that Ike was at Blenheim Palace at noon on D-day. But it’s easy for me to learn this proposition, by means of tricks. I just let the word ‘there’ indicate, rigidly, where Ike was at noon on D-day, and think to myself, “At noon on D-day Ike was there.” From different standpoints for thinking, this thought captures different propositions: thought in a world in which Ike was on Utah Beach at noon English time on D-day, it picks out the proposition that Ike was on Utah Beach at noon on D-day. Thought in the actual world, though, the thought picks out the same true proposition as does ‘At noon on D-day Ike was at Blenheim Palace.’ It’s the same proposition but clothed in a guise in which learning it is easy.

It’s uninteresting, then, that there’s some guise or other under which I believe this proposition. We haven’t proved what I proved for Stalnaker-like, unstructured propositions: that any truth whatsoever is knowable \textit{a priori}. Clearly, though, coming to know propositions in this sense too is far too easy. I know who did the ripper murders if any one person did; it was Jack the Ripper, defined as whoever did them. Indeed we can manage with a weaker kind of supposition. I know that at least one person shot Kennedy, and so I can know who did it, and know it as an \textit{a priori} consequence. Suppose Jack Ruby shot Kennedy, alone or among others—although I myself would be astounded to be told credibly, “Jack Ruby shot Kennedy.” To achieve belief in this proposition, I let Jack$_1$ be the first born among the shooters, Jack$_2$ be the second born among them, up to Jack$_N$ where $N$ is the number of shooters of Kennedy. For $n > N$, I let Jack$_n$ = Jack$_N$. Then I know, just from knowing that Kennedy was shot, each proposition ‘Jack$_1$ shot Kennedy,’ ‘Jack$_2$ shot Kennedy,’ and so forth. Now where Ruby is the $n$th born shooter, the thought ‘Jack$_n$ shot Kennedy’ captures the same proposition as does ‘Jack Ruby shot Kennedy.’ And so no matter how surprised and skeptical I’d be at the claim “Jack Ruby shot Kennedy,” I can reason to the same proposition in a different guise.

I don’t know this \textit{a priori}; to know it I must know that someone shot Kennedy. Or at least I must know that at some time, past, present, or future, someone shoots someone; I can then index pairs of shooter and victim and play the same kind of cheap trick. Still, we don’t have, in this argument a template for an argument that I can know such things fully \textit{a priori}. All thoughts that Ruby shot Kennedy must be of the form “a shot b,” we may think, and so are false as thought in worlds in which no one ever shoots anyone. Perhaps we could do further sneaky things and get a relational thought that captures shooting when thought in worlds in which someone at some time shoots someone and a trivial relation like each being self-identical—a relation that holds between every pair of
individuals—when thought in other worlds. But it doesn’t much matter whether we can get quite as strong a result for S-propositions as for unstructured ones. By this standard, propositions are far too easy to learn in any case to make interesting objects of knowledge and belief.

If we want to think along these lines, then, we’ll have to restrict what guises genuinely make for belief in a proposition. We can require, perhaps, that the terms in one’s thought be tied to their objects by de re acquaintance. I’ll explore that possibility later, but first, I pursue an alternative account of communication.

4. Communication with Re-centering

Why the strong intuition that beliefs are in propositions? Perhaps it’s the wish for thoughts to be like sentences, which are structured. This demand, though, would be met by structured thoughts. The sentence ‘I am now happy,’ for instance, expresses a structured thought with two individual concepts, the first-person concept and the present time concept, joined by the “being happy at” relational concept. Perhaps we feel that beliefs are in propositions because it’s propositions that matter for counterfactual supposition: “If I weren’t here now” poses an intelligible counterfactual supposition, and operates in the dimension that pertains to propositions—the horizontal in the character matrix. So it does, I agree, but still, the dimension that pertains to counterfactual supposition may not be the one that pertains to belief. Perhaps the basis of the intuition is the use of the term ‘truth condition’: the truth condition for the sentence ‘Snow is white’ is that snow be white—and that, we may think, is a proposition. But what does the term ‘truth condition’ mean? The thought “Snow is white” is true iff snow is white, but if the ‘iff’ is truth conditional, this doesn’t tell us much. We can give a modal interpretation: No matter how things were in a situation, our thought “Snow is white” would be true, as thought by us about that situation, iff snow were white in that situation. In that sense, the thought “I am in this city,” from a standpoint in Ann Arbor, has the same truth conditions as the thought “Gibbard is in Ann Arbor,” even though the two thoughts are far from a priori equivalent. This sense of “truth conditions” pertains nicely to unstructured propositions, I agree, but still as we have seen, it has little to do with belief and its objects. In another sense, ‘I am in this city’ might be thought to have the same truth conditions as ‘I am in a city,’ since the two are a priori equivalent: no matter how things turn out to be, the one is true just in case the other one is. This sense of truth conditions does pertain to belief but not to propositions, structured or unstructured.

That leaves a more serious reason for tying propositions to belief, one that I mentioned before but which I postponed. When I write you “I’m happy,” I do self-ascribe a property, let’s suppose, the property of being happy (where the “self” is a person-time pair, me at

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the time of writing). That, in some sense, is the object of my belief, as Lewis asserts. But clearly it’s not what I communicate to you: you don’t, on receipt of the letter, come to attribute the property of being happy to you-then; you may believe the letter and still not think, as you read it, that you yourself are happy. So isn’t what’s communicated a proposition, conveyed by the letter from one head to another? As I write at time $t_0$, I accept, in a first-person present guise, the proposition that Gibbard is happy at $t_0$. You, when you believe me, come to accept the same proposition in a different guise: “Allan was happy then.”

Now any view that beliefs are in propositions appears, so far in the argument, to encounter terrible difficulties—even if the belief is mediated by some guise or other. We haven’t exhausted all ways out, but it may be worthwhile seeing if we can account for communication some other way. You find an old letter in a second-hand book, suppose, and believe it as you read; the letter begins, “I’m happy now.” We may be hard put to say, intuitively, what propositions you come to believe. You don’t know who the writer is or the year of the letter. You’ll think that the letter was written by someone who was happy at the time of the writing, whoever and whenever that was. That isn’t an S-proposition of the form ‘$a$ be happy at $t$.’ You can say to yourself, ‘That person was happy then,’ letting ‘that person’ stand for the writer, whoever it was, and ‘then’ stand for the time of writing, whenever that was, thus encoding a proposition of the form $aHt$. This has some naturalness, but it has some of the flavor too of the contortions I went into showing belief in propositions to be absurd.

Assume in everything I say that Jill the speaker knows whereof she speaks, that she speaks sincerely and with linguistic correctness, and that Jack the hearer believes what the speaker says. Assume that a common language is in play, and that both can reason correctly and as well as need be. For situations where these conditions don’t hold, much of what I say would have to be qualified or modified, but the questions I’m exploring arise whether or not these ideal conditions obtain.

Jill speaks and Jack hears her. What’s systematic in their communication is this: In accordance with conventions of a language they share, speaker Jill expresses something of how things are from her own standpoint. Jack the hearer, knowing how things are from Jill’s standpoint, uses whatever he knows about her standpoint to conclude something of how things are from his own standpoint. He may know much about her standpoint, or he may know only that it is the standpoint from which the sentence he hears was spoken. Sometimes differences in standpoint between speaker and hearer don’t matter, in that things are the same, in the respect in question, from either standpoint—but that is a special case. With the English sentence, ‘I am happy,’ anyone attributes being happy to his own standpoint. The hearer concludes that the speaker was happy at the time of the
assertion, and updates his own information accordingly. This is the scheme I’ll work out with the apparatus I have been using.

[should the following be in terms of Jack and Jill or other names like Jane and Ken? xxx.]

The import of a thought we have defined as the diagonal of its character matrix; it is a function from standpoints to truth values, with a value true for a standpoint \( s \) just in case the thought is true as thought from standpoint \( s \) about the world of standpoint \( s \). Thoughts with the same import are \textit{a priori} equivalent; they have the same \textit{a posteriori} component. We do well to ask, then, what happens on the diagonal when you believe what someone writes. Your entire state of information we can represent by the standpoints you may occupy for all you believe; call this set of standpoints \( K \). How, when you believe an assertion, do you further narrow down this set of standpoints \( K \)? In the letter, written whenever it was, someone attributed being happy to himself-then or herself-then. Starting to read the letter, you believe that at some time some person wrote it. Reading the words ‘I’m happy’ and believing them, you expand this to believing of the letter that, at some time, someone wrote it and was happy.

The writer, we can say, views the world from a standpoint or “center”, a person-time pair in the actual world, self-attributing properties and so restricting her set \( K \). She accepts a thought just in case its import holds true from every standpoint in her region \( K \). (As always, I assume here “logical omniscience’, which is the condition for any such analyses to work neatly.) You the reader come to self-attribute quite a different property: reading a letter whose writer was happy at the time of writing. You re-center. Suppose first you know that the letter was written exactly 80 years ago by your maternal grandfather. That’s a way of thinking of someone that is centered on you at a time; you can think of a person and a time in this way even if you are amnesiac about who you are and have lost track of which year it now is. You then self-attribute, to you-now, the property of having a unique maternal grandfather who was happy 80 years ago. Some people-times have this property and others lack it; you now restrict the states you allow you may be in, for all you know, to ones that include this property. You displace the center 80 years and two generations away from you now. Suppose on the other hand you have almost no beliefs about who wrote the letter when. You disjoin the possibilities, in effect, re-centering for each. You do this with existential quantification.

Initially, as you start to read the letter, you accept the thought that someone wrote it sometime—the thought,

\[
\exists x \exists t \text{ Person } x \text{ wrote this letter at time } t.
\]
When you read the words ‘I am happy,’ you add to what’s in the scope of the quantification, coming to accept the thought that at some time, someone wrote it and was happy:

$$\exists x \exists t [\text{Person } x \text{ wrote this letter at time } t \& x \text{ was happy at } t].$$

In this way, the writer self-ascribes a property and expresses it, and you the reader come to self-ascribe that property transformed. The writer self-ascribes the property indicated by the following open sentence with free variable $i$, where $t(i)$ is the time and $p(i)$ is the person of center $i$:

$$p(i) \text{ is happy at } t(i).$$

(1)

On starting to read the letter, before the first word, you self-ascribe the property of reading a letter written sometime by someone:

$$\exists x \left[ x \text{ is a letter } \& p(i) \text{ reads } x \text{ at } t(i) \& \exists z(p(z) \text{ writes } x \text{ at } t(z)) \right].$$

(2)

On going on to read ‘I am happy,’ you attribute the property given by (1)—the property the writer self-attributed—to a center $z$ displaced from you-now. You do this by expanding what’s inside the scope of the quantification ‘$\exists z$’ in (2), yielding

$$\exists x \left[ x \text{ is a letter } \& p(i) \text{ reads } x \text{ at } t(i) \& \exists z(p(z) \text{ writes } x \text{ at } t(z) \& p(z) \text{ is happy at } t(z)) \right].$$

(3)

The center $i$ in (1) is replaced, in (3), by the existentially governed variable $z$.

### 5. Eternal Sentences

Re-centering, as I have described it, is daunting, and we might want to find a way to do without it. Transferring a proposition from speaker’s head to hearer’s isn’t an option, we have seen. The hearer, after all, needs the proposition under an appropriate character, with an appropriate import, and given the import, it doesn’t matter what the proposition is; all thoughts with the same import are a priori equivalent. Propositions are represented here by rows of the character matrix, whereas belief—its a posteriori component, at least—pertains to the diagonal, the import of the thought. I’ll call the import of a thought a doxon; distinct thoughts with distinct characters can share the same doxon and so carry the same information. Now with a sincere assertion that is believed, a doxon in the speaker’s head gets re-centered, transformed into a doxon in the hearer’s which may be different. Proposition and doxon intersect at exactly one point, where the standpoint of thinking crosses the world of that standpoint. (That is, in the character matrix, a row and the diagonal intersect at one entry.) That makes for one constraint: truths must go to

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truths and falsehoods to falsehoods; the hearer’s doxon must have the same truth value at
the hearer’s standpoint as the speaker’s doxon has at the speaker’s standpoint. But this is
far from enough: for speech to communicate, the hearer of a true assertion needs to form
a belief that somehow reflects the belief the speaker expressed, though from a different
standpoint.

One way to do this would be to communicate via an “eternal sentence”, as Quine
called it. An eternal sentence is one whose truth value doesn’t depend on the standpoint
of utterance, only on the world talked about. All rows of its character matrix are identical,
and each column is either all true or all false. In that case, hearer’s and speaker’s doxon will
be the same, with no re-centering needed. Hence we achieve communication as conveying
a doxon from speaker to hearer.

We can loosen this requirement on the matrix, since for belief, only the diagonal
matters. Just require that on the diagonal, truth value depends only on the world, not on
location within the world. So where a yard is defined, rigidly, as the distance from Henry
VIII’s nose to his fingertips, the sentence ‘George Washington was, in his prime, over
two yards tall’ produces the same hearer doxon as was expressed by the speaker. From
standpoints in different worlds, the sentence encodes different propositions, depending on
the span of Henry VIII in that world. But hearer and speaker occupy different standpoints
within the same world, and so this variation doesn’t require re-centering. A standpoint,
we said, consists of a world and a location within it, where a location in a world is a
thinker in that world along with a time at which that thinker, in that world, exists and
can think. A thought of the kind just indicated we can call a priori location-invariant: as
thought in each world, it has the same truth value at every location within that world.

Such communication, though, has its limitations. The gunman tells you, “Your
money or your life.” You say, “I don’t understand; give me an a priori location-invariant
sentence.” With mounting impatience, he says, “I mean, either you will give me all the
money in your pockets without delay, or I will kill you without further delay.” You say,
“That’s no a priori location-invariant sentence. I want you to specify, in an a priori
location-invariant way, (i) who you are, (ii) who I am, and (iii) the time of your threat. If
you don’t have a watch or don’t know the date or don’t know who I am, you are out of
luck. I want something like, ‘At solar noon in Rome on the Ides of March 44 B.C., Julius
Caesar gives Brutus all the money in Brutus’s pockets within a minute or Brutus kills
Caesar within two minutes.’ ”. Conceivably this might foil the robbery—but not because
it’s a demand for effective communication.

Indeed even the kind of sentence the victim demands fails really to meet the
requirement of full a priori location-independence. Some worlds have twin earths, some
have multiple calendar systems (whether a Julian or Gregorian system is in play varies by
time and place). And so it’s not in every world that anyone at all knows how to produce \textit{a priori} location-invariant sentences. At best, we get sentences that are location-invariant within the standpoints for thinking that speaker and hearer occupy for all they know. The gunman can say, “I’ll call you ‘Jane’ and me ‘Tarzan’, and call the time when I click my tongue ‘S-second’.” He now has the language to say, “Either Jane gives Tarzan all the money on her person within a minute of S-second, or Tarzan kills Jane within two minutes of S-second.” Even if such a holdup recurs between them every month or so and they can’t keep track of any location-invariant distinguishing features, Jane has no need to re-center; she can add the diagonal trace of the thought he expresses to her own stock of beliefs. But although such contortions are within the conversants’ competence, they are superfluous. Many hold-ups proceed as the gunman plans and with victim emerging poorer but alive, without any need to find modes of expression that are location-invariant even locally. Re-centering works in the general case, and “eternal sentences” are at best a rare degenerate case.

6. Structured Thoughts

Now to give propositions more of their due: After all, despite everything I have been saying, the fact remains that in straightforward linguistic communication, utterer and audience encode the same structured proposition. Jill wrote, “I am happy now,” and Jack concludes “That person was happy then.” Both sentences encode the same proposition $aHt$, where $a$ is Jill, $t$ is the time of writing, and $H$ is the relation \textit{be happy at}. How does this work? It’s not, I argued, that the proposition is somehow conveyed from one head to the next. Rather, I’ll now argue, encoding the same proposition is a side effect. It’s a side effect of an efficient scheme for recentering, a scheme that employs structured thoughts. Jack, reading the letter, in effect recenters in the way I described. That is what happens to the \textit{a posteriori} component of the thought that Jill expressed; the import of Jill’s words for Jack is derived from the import those words had for Jill, but it is transformed. The way he recenters, though, is to use not the unstructured import that Jill’s words had for her, but characteristics with structure.

To see this, begin with two further kinds of structured abstracta: structured character and structured import. Return to Adam and Bengt in the Stanford and Harvard libraries. Before, we discussed the unstructured character of the thought ‘I am at Stanford,’ which is given by the Table 1 above. The thought also, we can say, has a \textit{structured character} built up from the characters of its constituents. The individual character of ‘I’ assigns to each standpoint-world pair $\langle s, w \rangle$ the standpoint’s occupant $i(s)$, as in Table 3. The character of the predicate ‘is at Stanford’ we could think of as a function which takes each individual character to a thought character: the character of ‘I’, for instance, to the

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character of ‘I am at Stanford.’ We can represent it by giving its extension for each cell of the matrix, as in Table 4. (The extension is the set of individuals for which it gives a value ‘T’ for that cell.)

\[
\begin{array}{|c|c|c|}
\hline
 & w_a & w_b \\
\hline
 w_a: s_{aa} & \ll a \gg & a \\
 s_{ab} & \ll b \gg & b \\
\hline
 w_b: s_{ba} & a & < a > \\
 s_{bb} & b & < b > \\
\hline
\end{array}
\]

Table 3. Character of ‘I’

\[
\begin{array}{|c|c|c|}
\hline
 & w_a & w_b \\
\hline
 w_a: s_{aa} & \ll \{a\} \gg & \{b\} \\
 s_{ab} & \ll \{a\} \gg & \{b\} \\
\hline
 w_b: s_{ba} & \{a\} & < \{b\} > \\
 s_{bb} & \{a\} & < \{b\} > \\
\hline
\end{array}
\]

Table 4. Character of ‘am at Stanford’

The structured character of the thought “I am at Stanford” is then a structure with two constituents: the character of the predicate ‘am at Stanford’, and the character of ‘I’. (I’ll call a structured character an S-character.) The S-characters of complex sentences are built up with the usual logical apparatus. Take the sentence,

\[\text{(4) Either I am Adam and Adam is at Stanford, or I am Bengt and Bengt is at Stanford.}\]

In our universe of possibilities, this has the same unstructured character as does ‘I am at Stanford’; the two sentences are equivalent by a priori necessity. But the two have different S-characters.

Either I am Adam and Adam is at Stanford, or I am Bengt and Bengt is at Stanford. (4)

In our universe of possibilities, this has the same unstructured character as does ‘I am at Stanford’; the two sentences are equivalent by a priori necessity. But the two have different S-characters.

The diagonal of an unstructured character matrix, recall, yields a doxon, the import of the thought, which is its informational content. Two thoughts with the same import are a priori equivalent; they carry the same information. Likewise, we can say, an S-character determines what we can call a structured doxon (or S-doxon). Each term has an import, given by the diagonal of its character matrix. The individual import of ‘I’, for instance, assigns each standpoint \(s\) its occupant \(i(s)\). In the example, it assigns \(abab\) to the respective four standpoints \(s_{aa}, s_{ab}, s_{ba}, s_{bb}\); we read this off the diagonal of Table 3. The import of a one-place predicate like ‘is at Stanford’ is a function which takes
any individual import to an unstructured doxon. Like any import, it is given by the diagonal of the character matrix. In the example, it assigns extensions \{a\}, \{a\}, \{b\}, \{b\} to the respective standpoints, as shown in Table 4. The S-doxon for ‘I am at Stanford’ is composed, then, of the import of ‘am at Stanford’ and the import of ‘I’. Sentence (4) is a priori equivalent to ‘I am at Stanford,’ and so the two sentences share an unstructured doxon $T \sim T$, but they have distinct S-doxa.

Now for structured propositions. For each standpoint, recall, the character matrix determines an unstructured proposition, the row of the matrix for that standpoint. Correspondingly, with structure now in play, we can say this: from any standpoint, an S-character yields an S-proposition. The individual character of ‘I’ from the standpoint $s_{ab}$ (world $w_a$ and Bengt’s location within it) picks out the individual Bengt. The intension of the one-place predicate ‘is at Stanford’ is a function giving an unstructured proposition for each individual. (Thus two predicates have the same intension just in case they are necessarily equivalent: for every possible world, the two have the same extension.) An S-proposition is a structure composed of predicate intensions and individuals.

Note next that an S-doxon determines an S-character—and hence, from each standpoint, an S-proposition. The character of an individual term like ‘I’ or ‘Bengt’ is rigid: from each standpoint, it assigns the same individual to every target world. Each row of the matrix is uniform, and so the diagonal determines the entire matrix (see Table 3). Elementary predicates are standpoint-independent, we can require: the predicate has the same intension from every standpoint; each row of the matrix is the same. (The predicate ‘is at Stanford’ would not be standpoint-independent in a larger universe of possibilities that included different times and held out the possibilities of a “twin Stanford”. But in that case we would let the predicate be ‘is at’.) Thus from the import of an elementary predicate, the entire character matrix can be read off. Each element of an S-doxon thus determines a character, and these characters join to compose an S-character. The S-character, from any one standpoint, determines an S-proposition.

### 7. Communication

With structured characters and doxa in place, we can now explain what propositions have to do with communication. (As always, I idealize, treating only what is a posteriori in the thought communicated, and assuming a speaker and hearer who are sincere, make no mistakes, and have unlimited powers of reasoning and command of a common language.) The transfer of information works, in its end result, just as I explained for unstructured doxa. The speaker $a$ has a stock of beliefs which place her in a region $K_a$ of the diagonal. She expresses some portion her beliefs, a superset of $S_a$, in a sentence. Hearer $b$ uses his
knowledge of the speaker to recenter and construct a hearer doxon $S_b$, revising his stock of beliefs $K_b$ to become $K_b \cap S_b$.

All this is accomplished, though, by encoding and recentering a structured character—and the way this is done ensures, among other things, that hearer and speaker encode the same proposition with their respective S-characters. The speaker could have clothed the doxon she expresses with any of a multitude of S-characters, each of which determines a proposition from her standpoint. The hearer would end up the same doxon no matter which of these S-characters the speaker had chosen—and so, almost, no matter which true proposition were in play. But the speaker chooses a particular S-character, which the hearer recenters element by element. The recentering proceeds under the constraint that for each element, reference be preserved. This preserves the proposition: the hearer’s recentered S-character determines, from his standpoint, that same proposition the speaker’s S-character determines from his standpoint.

Return to the simple universe of Adam and Bengt. Adam, suppose, learns that he himself is at Stanford, though he still doesn’t know that he is Adam. His state of knowledge is now the one given by the doxon in Table 2. He expresses this knowledge by asserting “I am at Stanford.” His sentence has an S-character composed of the characters of the predicate ‘am at Stanford’ (Table 4) and the pronoun ‘I’ (Table 3).

Bengt, the hearer, knows only that the speaker is the other person in the world, and he uses the pronoun ‘he’, let us suppose, to refer to the speaker. Bengt, then, converts the speaker’s pronoun ‘I’ to ‘he’ in his own thoughts, and drawing on his knowledge, gives it the character of ‘the other person in the world’, as shown in Table 5. The hearer’s S-character that Bengt constructs, then, is composed of the character of ‘am at Stanford’ (Table 4) and the character of ‘he’ (Table 5). This S-character determines the character of ‘He is at Stanford,’ as given in Table 6; the import of this thought is the diagonal $\sim TT \sim$ of Table 6.

<table>
<thead>
<tr>
<th>$w_a$</th>
<th>$w_b$</th>
</tr>
</thead>
<tbody>
<tr>
<td>$w_a$: $s_{aa}$</td>
<td>$\ll b \gg$</td>
</tr>
<tr>
<td>$s_{ab}$</td>
<td>$\ll a \gg$</td>
</tr>
<tr>
<td>$w_b$: $s_{ba}$</td>
<td>$b$</td>
</tr>
<tr>
<td>$s_{bb}$</td>
<td>$a$</td>
</tr>
</tbody>
</table>

Table 5. Character of Bengt’s ‘he’
Table 6. Character of Bengt’s ‘He is at Stanford’

<table>
<thead>
<tr>
<th></th>
<th>$w_a$</th>
<th>$w_b$</th>
</tr>
</thead>
<tbody>
<tr>
<td>$w_a$: $s_{aa}$</td>
<td>$\ll \sim \gg$</td>
<td>T</td>
</tr>
<tr>
<td>$s_{ab}$</td>
<td>$\ll T \gg$</td>
<td>$\sim$</td>
</tr>
<tr>
<td>$w_b$: $s_{ba}$</td>
<td>$\sim$</td>
<td>$&lt; T &gt;$</td>
</tr>
<tr>
<td>$s_{bb}$</td>
<td>T</td>
<td>$&lt; \sim &gt;$</td>
</tr>
</tbody>
</table>

Speaker and hearer thus do have an S-proposition in common, the S-proposition “Adam is at Stanford”, composed of the property being at Stanford (any row of Table 4) and the individual Adam. This S-proposition is determined by speaker Adam’s S-character together with Adam’s standpoint, and also by hearer Bengt’s S-character with Bengt’s standpoint. In this sense, an S-proposition is communicated from speaker to hearer. And this S-proposition determines an unstructured proposition as well: the one in row 1 of Table 1 and in row 2 of Table 6, namely $T \sim$, true in actual world $w_a$ and false in world $w_b$. In this sense, an unstructured proposition too is communicated from speaker to hearer. But “communicating” propositions, in this sense, is more or less a by-product of scheme, a constraint built into the scheme. The upshot of the constraint is that the hearer, knowing much or little about the speaker’s standpoint and learning something new about how things are from the speaker’s standpoint, can use his knowledge to update his view of how things are from his own standpoint.

Here is it more generally, in painful detail: Speaker Anne has a stock of beliefs, given by a region $K_a$ on the diagonal. Region $K_a$ is thus the her total information by her own lights. A sincere utterance expresses a doxon $D_a$ which is a superset of $K_a$. (The writer of the old letter, for instance, when she writes “I am happy,” expresses the doxon that assigns true to every standpoint whose occupant is happy at the time of the standpoint.) She encodes this with a particular S-character $C^*_a$. This S-character, from the speaker Anne’s standpoint, determines an S-proposition $P^*_a$. She now asserts a sentence that, by conventions of a language that speaker and hearer share, expresses this S-character $C^*_a$. Hearer Bengt uses beliefs about the speaker’s standpoint to re-center each element of the S-character $C^*_a$, yielding a hearer character $C^*_b$, and hence an unstructured doxon $D_h$. (In his thought “That person was happy then,” his phrase ‘that person’ expresses the rigid character of ‘the writer of this letter’, and his adverb ‘then’ expresses the rigid character of ‘when this letter was written’. The character is rigid in that each row is constant, so that each column is the same.3) Bengt’s S-character $C^*_b$ determines, from Bengt’s standpoint, the same S-proposition $P^*_a$ as did Anne’s S-character $C^*_a$ from Anne’s standpoint.

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3 I ignore worlds in which the referent doesn’t exist; further discussion would be required to treat this.
Appendix A shows how Adam can impart the same information with a different S-proposition, and quite different information with the same S-proposition.

The same story could be put in terms of structured doxa. Not only does any S-thought determine an S-doxon (given by its diagonal), but any S-doxon determines an S-thought. For the character of any singular term extends rigidly from the diagonal; the row takes the same value for every world in which that value exists. As for predicates, [xxx I need to figure out whether all this is right.] The hearer’s S-doxon determines an S-character, with each element extended rigidly to worlds off the diagonal. And so from the hearer’s standpoint, it determines an S-proposition. A constraint on the re-centering is preservation of reference: for each coordinated pair of terms like ‘I’-‘that person’ or ‘now’-‘then’, the hearer’s import from the hearer’s standpoint must pick out the same entity as the speaker’s import from the speaker’s standpoint. (The import of the writer’s term ‘I’ assigns the writer to the writer’s standpoint, and so the import of the reader’s term ‘that person’ must assign the writer to the reader’s standpoint.)

Hence, the hearer’s S-doxon $D_h^*$ determines, from the hearer’s standpoint $s_h$, the same S-proposition $P^*$ as the speaker’s S-doxon $D_u^*$ determines from the speaker’s standpoint $s_u$. Does that mean that the S-proposition $P^*$ gets conveyed from speaker to hearer? In a way yes and in a way no. Speaker encodes a piece of information $D_u$ with an S-doxon $D_u^*$. Other S-doxa would also encode the same information $D_u$. Other S-doxa would also encode the same information $D_u$, and the speaker chooses one such S-doxon that is convenient. S-doxon from speaker’s standpoint determines a proposition. Hearer re-centers, using whatever information he has about the speaker’s standpoint, in a way that preserves the S-proposition encoded. He re-centers term by term, using his information about the speaker’s standpoint to build as much relevant import as he can into each term, and so making the resulting doxon relevantly rich, gleaning as much information as he can. So the proposition encoded is preserved; that much is built into the scheme. But what matters is a different feature of the hearer’s encoding: its information value. Its information value consists in the unstructured doxon it determines. One can’t read information off an S-proposition, and one can’t read an S-proposition off the doxon that comprises a piece of information.

In short, when a hearer believes an assertion, the information he acquires—what he comes to believe, down to a priori equivalence—is a function of two things: the unstructured doxon on the part of the speaker that the sentence uttered expresses, and the hearer’s beliefs about the standpoint of the speaker. A means to express a doxon is to express it as a particular S-thought. The hearer re-centers this S-thought in a way that, among other things, preserves what proposition is encoded. What information the speaker encodes, though, and what information the hearer gets are both pretty much independent of which proposition this is.

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Indeed if the most extreme of the cheap tricks I broached earlier work for structured thoughts, we could construct a language to convey the same information as ‘I am happy’ does by preserving the S-proposition that snow is white. With suitably coined terms, the speaker can assert the S-proposition that snow is white with a sentence that is a priori equivalent to ‘I am happy,’ so long as the two have the same truth value. The hearer re-centers, preserving the proposition that snow is white, and gleans the information that the speaker was happy at the time of speaking. Or if the speaker is happy, she can convey this news by asserting the S-proposition that 1 = 1. Define the term ‘schmun’, after all, as follows: in the mouth of anyone happy at the time, it rigidly designates the number 1, whereas in the mouth of anyone not happy at the time, it rigidly designates the number 0. Then the sentence ‘schmun = 1,’ in the mouth of a happy speaker, conveys the import that she is happy and expresses the proposition that 1 = 1. An S-proposition is preserved in the communication; that’s crucial to the scheme of communicating by sentences. But we can coin terms that make it almost any S-proposition we please, so long as it has the right truth value.

What, then, are the objects of our beliefs? For many purposes, we can say they are unstructured doxa—as Lewis does. But we can also say, if we like, that they are S-doxa. Distinct S-doxa can be equivalent a priori, and so determine the same doxon—as with those for ‘I am here’ and ‘2+2=4’. That two thoughts are a priori equivalent can be difficult to discover, or even beyond our powers to deduce, and so for purposes of accounting for a priori reasoning, it may work best to treat S-doxa as the objects of belief, so that a thinker with limited powers of reasoning can believe a thing and still not believe all that is a priori equivalent. On that way of speaking, object of belief plus standpoint do determine an S-proposition, and so determine a proposition. These are preserved in communication and memory. They are not, however, the direct objects of belief, the bearers of subjective probability—those are the S-doxa.

Like remarks go for the structured character of a thought, or for the thought itself, if a thought determines a structured character without being identical to it. Each of these

4 Try this: Let the term ‘schmite’, in the mouth of anyone who is, at the time, happy iff snow is white, designate rigidly the property of being white. In the mouth of anyone who is, at the time, happy iff snow is not white, let the term designate rigidly the property of being non-white. Then in the mouth of someone who is happy at the time and is in a world in which snow is white, the sentence ‘Snow is schmite’ expresses the proposition that snow is white. It is true in the mouth of anyone who is happy: if snow is white it encodes the proposition that snow is white, and if snow isn’t white it encodes the proposition that snow is non-white. It is false in the mouth of anyone who is not happy: in that case if snow is white, it encodes the proposition that snow is non-white, and if snow is not white, it encodes the proposition that snow is white. There remains a worry: we may need to take care of contexts where the thought “Snow is white” lacks a truth value, because, say, the term ‘snow’ fails to designate anything in that context. The next example avoids this problem.
could harmlessly be regarded as the object of belief, for each determines an unstructured doxon. If our aim is to account for the \textit{a posteriori} component of belief, then anything that determines an unstructured doxon can be regarded as an object of belief. What we can't reasonably treat as a direct object of belief is a proposition, structured or not. The object of belief, in a context, may well determine an S-proposition, but this S-proposition has little to do with the import of the thought expressed by the speaker or imparted to the hearer.

8. \textit{De Re} Acquaintance and Useful Import

Accounts of structured propositions normally contain a requirement that I have passed over. We must now see if the further requirement accomplishes what needs to be accomplished. For a proposition to count as known, believed, or thought, the requirement is, one must think of its constituents \textit{de re}; one must think in terms that capture one’s acquaintance with the constituents. One doesn’t believe the proposition one expresses with the words ‘That is the voice of Miss Anscombe’ unless one has \textit{de re} acquaintance both with that voice and with Miss Anscombe. One doesn’t believe the proposition ‘That person was happy then’ of whoever wrote the letter unless one is thinking \textit{de re} of the writer with the term ‘that person’, and thinking \textit{de re} of the time with the term ‘then’ and the past tense marker.

Acquaintance isn’t what it used to be, back when Russell thought that one is truly acquainted only with one’s own sense data. Liberal standards for acquaintance ensure that still, even with acquaintance required for real belief, propositions can’t be unmediated objects of belief, suitable for the theory of subjective probability and the like. Someone well acquainted with Venus in the morning and in the evening can have a low degree of belief in the thought “Hesperus is Phosphorus” and a high degree of belief in the thought “Hesperus is Hesperus”—even though only one S-proposition is in play, even though with both names, she thinks of Venus \textit{de re} as she stares into the sky or remembers doing so. Still, even mediated belief in a proposition is harder than it would be without this further requirement: to believe a proposition, one must, as we might put the matter, believe it via an S-character that \textit{qualifies}: the elements of one’s thought must latch onto the elements of the proposition \textit{de re}. It’s still very easy to know, with a thought that qualifies, such propositions as that Hesperus is Phosphorus: from the law of self-identity, you merely deduce “Hesperus is Hesperus.” The more extreme tricks I played earlier, though, are now ruled out, and there are many propositions a person can’t know: the ones with elements he’s not in any way acquainted with \textit{de re}.

As for what counts as latching on to something \textit{de re}, writers differ. Are you \textit{en rapport de re} with the writer of the old letter and the time of writing, just in virtue of

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reading the letter? Or do you need to know that it’s your father’s mother, and know the year and date on the Gregorian calendar? I’ll presume there are answers to questions like these; perhaps it is a matter of the right kind of chain passing a term, a time reference, or the like down to the believer.

Is this a relation, though, that plays an important role in the theory of knowledge, belief, communication, and updating one’s information by believing assertions? We’re not in the right kind of rapport with the oldest shooter of Kennedy just by knowing that Kennedy was shot. But suppose Jack Ruby alone shot Kennedy, and someone who didn’t know him glimpsed him fleeing and dubbed him ‘Ishmael’. He tells us, “Ishmael shot Kennedy,” and now we know, under a qualifying guise, the proposition that Jack Ruby shot Kennedy—though we’d be quite incredulous to be told “Jack Ruby shot Kennedy.” Is our “knowing” this proposition of any import?

It would be good, no doubt, to know for sure who shot Kennedy, especially if someone other than Oswald did. It would be good to know who wrote the old letter and when. But it’s doubtful that “knowing who” has a systematic role to play in the theory of communication. What counts as “knowing who” is loose and contextual, as is “knowing when”. To know who Salazar was, it suffices to know that he was dictator of Portugal in the mid-20th century, whereas to know who was dictator of Portugal then, it suffices to know that it was Salazar. To know when the guests are due to arrive might be to know that it’s five minutes from now, or it might be to know that it’s 8 p.m. One can know either without the other.

In the old letter, you read the sentence ‘Jack came to dinner last night,’ followed by a few things about what he said, how he was dressed, and how he liked the food. Do you then know who Jack is? If you and a friend both read the letter and the friend asks if you know who Jack is, you’ll say no—or that’s my sense of it. But we can pick up the name and discuss such things as his probable motives and social background. If someone overhears a snatch of your friend’s talk of “Jack” and asks you if you know who Jack is, you might say, “Yes, he’s the guy the writer of that old letter I told you about had to dinner. I don’t know anything about him, though, beyond what I can infer from the letter.” And if the letter came with a copy of Jack’s birth certificate enclosed, that wouldn’t add much weight to any claim on our parts to know who Jack is—whereas without the birth certificate, if we knew Jack’s age, profession, town of residence, and relation to the writer, then we might well think we pretty much knew who he is. If later, though, we learn that “Jack” was the young John F. Kennedy, then we won’t think we came to know who “Jack” is until we learned this.

While you still know only what you can glean from the letter itself, you can say to your fellow reader such things as this: “Clearly the way Jack dressed that evening offended
the writer.” The two of you have picked up a name you can use to communicate beliefs. Are propositions now playing any important role this communication? Matters remain as before: You express a structured thought, and the thought, in the context, determines an S-proposition. Neither of you know much about the constituents of that proposition, but still, you have formed beliefs that might be slightly useful. You have done better than if you had said, without reading the letter, “Dub as “Jack_{37}” the 37th oldest man ever to have offended the writer by the way he dressed (or the youngest if there haven’t been 37), and as “E-evening” the first evening on which he did it. The sentence ‘Jack_{37} offended the writer on E-evening by the way he dressed’ doesn’t, now that acquaintance is required, count as conveying that proposition. So the strengthened theory of what it takes to know a proposition has an accomplishment to its credit: applied to something that strikes us as a bogus instance of communication, it identifies something as wrong. Missing, it says, is \textit{de re} acquaintance with the constituents of the proposition. But this restriction takes care of some cases and not others, and even when it does take out an offender, it misidentifies the nature of the offense.

What has really gone wrong, in this case, is that we haven’t learned much from you. At most, we have learned that the writer was at least once offended in the evening by the way someone dressed—that’s what’s wrong. It’s the relevance and quality of the information value that matters, of what the hearer can now add to his stock of beliefs by \textit{a priori} reasoning. And what’s believed, down to \textit{a priori} equivalence, is not an S-proposition but an unstructured doxon.

9. The Upshot?

Propositions, we have seen, have much to do with the vehicles and modalities of communication, and little else to do with what is expressed or imparted. On a traditional picture of successful communication, a sentence carries a proposition from one head to another. This is correct in a way, but misleading. A sentence encodes a thought which is structured and centered: a true thought gives some aspect of how the world is from the thinker’s standpoint. Thought and standpoint determine a proposition. The hearer, learns something of how things are from the speaker’s standpoint, and knowing much or little about that standpoint, recenters to update his knowledge of how things are from his own standpoint. He recenters element by element, preserving the reference of each element. This, among other things, preserves the proposition: the hearer’s thought, in the hearer’s context, determines the same proposition as did the speaker’s thought in the speaker’s context.

Speaker and hearer thus do end up thinking the same structured proposition from their respective standpoints. That’s a requirement if communication is to be successful; it
is a consequence of constraints on recentering. Just thinking the same proposition as the speaker encoded, though, wouldn’t by itself be to “get” what the speaker had said. That same proposition is determined, after all, from the hearer’s context, by thoughts that are empty of import or nearly so. The hearer needs to glean what information is to be had from the sentence and its context—and which structured proposition was in play has little to do with that.

In memory too, propositions play this important but limited role. Memory we can think of as a special case of communication, like writing a note to oneself that one reads at a later time. On the occasion one recalls, a thought determined a structured proposition—though, again, which proposition that was had little to do with the import of the thought. On remembering, one recenters the thought to one’s current time.\(^5\) Among other things, this preserves the reference of each element, and thus preserves a structured proposition. Again, though, just knowing that proposition from one’s new temporal standpoint wouldn’t by itself be to remember. Preserving a structured proposition is one consequence of a complex process. But the import of the memory has little to do with which proposition is preserved.

Indeed both with communication and with memory, the tie of proposition to import is just the one displayed in the unstructured character matrices we began with. What preserving a structured proposition accomplishes is just to preserve the import’s truth value. The unstructured import, recall, is the \textit{a posteriori} component of the thought, and it is given by the diagonal of the unstructured character matrix. That very same unstructured import could be imparted in some way that preserved any of a wide range of structured propositions—so long as proposition and import share a truth value. To appreciate what’s imparted, then, don’t look to propositions, structured or not.

\section*{Appendix A: The Example Continued}

In the example with Adam at Stanford and Bengt at Harvard, an S-proposition is encoded, composed of the property of being at Stanford and the individual Adam. This S-proposition is shared by speaker and hearer: each picks out the property (with any row of Table 4), and each in a different way picks out Adam (row 1 of Table 3 and row 2 of Table 5). The S-proposition determines an unstructured proposition, true in \(w_a\) and false in \(w_b\).

\footnote{Sometimes no recentering is needed, and one can simply think the same thought at a later time. But this is a special case. The birth of a child you may remember as a couple of months ago. Later, unless you see the child often, you may have to memorize a birth date to keep track of how old the child is. At first you recenter your thought at the time, “He was just born,” to “He was born a couple of months ago.” Later you hold the thought “He was born in March of 1977,” and calculate the age accordingly. Any correct memory of when he was born picks out the same time, but different ways of designating this time will be informative in different ways.}

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So does this proposition, structured or unstructured, have anything much to do with the information the speaker divulged and the information the hearer gleaned? The two are tied in neither direction: (i) The same proposition could figure in an assertion that was quite different in the information it imparted, and (ii) a different proposition could figure in imparting the same information. First (i): Adam could encode the same S-proposition with the sentence ‘Adam is at Stanford.’ This encodes information he doesn’t have, since although he now knows himself to be at Stanford, he doesn’t know he is Adam. Suppose he says it anyway, though, and Bengt believes him. Bengt has no need to re-center, and the import of what he thinks he has learned is different from the import of ‘He is at Stanford,’ since for all Bengt knows, he himself is Adam.

\[
\begin{array}{c|cc}
  & w_a & w_b \\
\hline
  w_a: s_{aa} & \ll T \gg & \sim \\
  s_{ab} & \ll T \gg & \sim \\
\hline
  w_b: s_{ba} & T & < \sim > \\
  s_{bb} & T & < \sim > \\
\end{array}
\]

Table 7. Character of ‘Adam is at Stanford.’

The character of ‘Adam is at Stanford’ is given in Table 7. The diagonal gives the import $TT \sim \sim$ of this thought, which is different from the import $\sim TT \sim$ of ‘He is at Stanford’ as shown on the diagonal of Table 6 above.

Next, to establish (ii): Adam can impart the same information to Bengt by encoding a different S-proposition which determines a different proposition. Coin the name ‘Stan’ to designate, rigidly, whoever is at Stanford, and teach this term to Adam and Bengt. Adam now says, ‘I’m Stan.’ This, from Adam’s standpoint $s_{aa}$, encodes the S-proposition composed of the identity relation, Adam, and Adam; it encodes the same proposition as does ‘Adam is Adam.’ It’s character matrix is as in Table 8.

\[
\begin{array}{c|cc}
  & w_a & w_b \\
\hline
  w_a: s_{aa} & \ll T \gg & T \\
  s_{ab} & \ll \sim \gg & \sim \\
\hline
  w_b: s_{ba} & \sim & < \sim > \\
  s_{bb} & T & < T > \\
\end{array}
\]

Table 8. Character of ‘I am Stan.’
Hearer Bengt re-centers to get the structured thought, “He is Stan,” whose character is given in Table 9.

<table>
<thead>
<tr>
<th></th>
<th>$w_a$</th>
<th>$w_b$</th>
</tr>
</thead>
<tbody>
<tr>
<td>$w_a$: $s_{aa}$</td>
<td>$\ll \sim \gg$</td>
<td>$\sim$</td>
</tr>
<tr>
<td>$s_{ab}$</td>
<td>$\ll T \gg$</td>
<td>$T$</td>
</tr>
<tr>
<td>$w_b$: $s_{ba}$</td>
<td>$T$</td>
<td>$&lt; T &gt;$</td>
</tr>
<tr>
<td>$s_{bb}$</td>
<td>$\sim$</td>
<td>$&lt; \sim &gt;$</td>
</tr>
</tbody>
</table>

Table 9. Character of ‘He is Stan.’

Again, the proposition encoded is preserved from speaker to hearer; it is the proposition “Stan is Stan” or “Adam is Adam.” The information divulged by the speaker, though, is the same as with ‘I am at Stanford;’ the import of both is $T\sim\sim T$ (diagonals of Table 8 and Table 1). The information imparted to the speaker—what the speaker learns—is likewise the same in both cases: Bengt’s ‘He is at Stanford’ and ‘He is Stan’ have the same information value, namely $\sim TT\sim$ (diagonals of Table 6 and Table 9 above).

Which S-proposition is preserved, then, has pretty much nothing to do with either the doxon the speaker expresses of the doxon the hearer takes in. Hearer doxon is determined by speaker doxon and hearer’s information about the speaker’s standpoint. An S-proposition is preserved, but which one it is has little to do with speaker’s and hearer’s information.

### Appendix B: Stalnaker and Diagonal Propositions

Robert Stalnaker invented much of the apparatus I’m using, the diagonal in particular, and he has been a staunch believer in unstructured propositions as objects of belief. (In this Appendix, ‘proposition’ will mean unstructured proposition.) He has many things to say about the interpretation of such matrices and the philosophical morals to be drawn, and the things he says bear heavily on the claims I am making in this paper. Most of what he says I leave for other occasions. This Appendix concerns his treatment of the “diagonal proposition”.

In “Assertion” (1978), the matrices he used had only one standpoint per possible world.\(^6\) Because of this, his diagonal assigns a single truth value to each world, and so

---

\(^6\) He discusses the kinds of cases that seem to me to require more than one standpoint per world in “Indexical Belief” (1981). (Classic cases are presented by Castañoseda; Lewis, “Attitudes” (1979); and Perry, “The Problem” (1979).)
picks out a proposition. Stalnaker argued that sometimes one intends the proposition given by the row one's standpoint occupies and sometimes the diagonal proposition. When one examines his examples of cases where one intends the row, however, many turn out to be cases in which every row (proposition) of the matrix is the same. The diagonal proposition, in all such cases, is the same as the row proposition. In all such examples, it follows, the diagonal proposition is believed, whether or not the row proposition is believed. In other words, the row proposition is believed just in the special case where it is the same as the diagonal proposition. Belief thus pertains to the diagonal, as my slogan proclaims, in all such examples. We need to ask whether there are cases where, with character matrices used as I have been using them in this paper, belief plausibly pertains to the row and not the diagonal.

If belief pertains to the diagonal, and if, as I claim, the diagonal doesn’t in general give a proposition, then belief isn’t in propositions. The diagonal won’t give a proposition if some world contains more than one standpoint for thinking. In “Conceptual Truth and Metaphysical Necessity” (Ways, 2003), Stalnaker adopts Chalmers’ framework, the framework I use in this paper, with “centered worlds”. He still speaks, though, of the “diagonal proposition”. We must ask whether this makes sense, once worlds can contain more than one standpoint for thinking.

In special cases, to be sure, a proposition can be read off the diagonal, even when a world contains more than one location. One case is the one where all rows of the matrix are the same, so that the thought, from each possible standpoint, gives the same proposition. That’s the case that Stalnaker illustrates with his examples of belief in the row proposition, the case where the proposition that the thought gives is independent of the standpoint of thinking. Then for each world, the diagonal has a single truth value from each standpoint, and we can assign that truth value to the world. The proposition we get is then the one given by each row. More broadly, though, the diagonal represents a proposition whenever the proposition a thought gives depends solely on the world of the standpoint of thinking, and not at all on the location of the standpoint within the world. As before, let a yard, as thought from any context, be the distance from Henry VIII’s nose to his fingertips (when he was biggest). Then “Henry VIII’s nose was a yard from his fingertips” is true everywhere on the diagonal where Henry VIII exists; if it counts as false when Henry VIII never exists, the diagonal proposition, by this procedure, is that Henry VIII existed.

What, though, of a thought like ‘I’m now in pain,’ which is true as thought from some standpoints and not from others within the same world. Can we make any sense of a diagonal proposition in cases like this? Here is a way—though it doesn’t much help us; it doesn’t give us a good candidate for the object of belief. It yields a “diagonal proposition” not for a thought independent of standpoint, but for the thought from some particular
standpoint \( s_0 \). A standpoint, recall, is composed of a world, a person, and a time, where the person-time pair we are calling the “location” from which something can be thought; a standpoint of thinking, we thus say, consists of a world and a location within it. The diagonal proposition we could then define as assigning to each world \( w \) the truth value of the thought as thought, about \( w \), from the very same location in \( w \). I have thought \( T \) from standpoint \( s_{00} = \langle w_0, k_0, t_0 \rangle \); here \( w_0 \) is the actual world, \( k_0 \) is me, and \( t_0 \) is the time of the thought. For each world \( w_i \), let \( s_{i0} = \langle w_i, k_0, t_0 \rangle \), and define the diagonal proposition \( D_{T00} \) as assigning truth values to words as follows:

\[
D_{T00}(w_i) = T(w_i, s_{i0}).
\]

Fix the indices of person and time at standpoint \( s_0 \). Then for each world \( w_i \), take the standpoint \( s_{i0} \) in that world of the same person at the same time. Assign to that world \( w_i \) the truth-value assigned to standpoint \( s_{i0} \) on the diagonal. To ‘I’m in pain’ as thought by me at noon on D-day, this diagonal proposition is just the proposition that Gibbard is in pain at noon on D-day: it assigns a value true to every world in which I’m in pain at noon on D-day. For ‘That’s the voice of Elizabeth Anscombe’ as thought by me at noon on D-day, the diagonal proposition assigns true to all worlds in which, at noon on D-day, Gibbard indicates with ‘this’ the voice of Anscombe. This may be what Stalnaker had in mind.

The “diagonal”, as I’ve been using the term, is an unstructured property, not a proposition; it is thus quite different from the diagonal proposition as I just tried defining the term. Is the diagonal proposition, in this sense, is an item of much interest? It doesn’t much bear on belief: if I don’t know who I am or what time it is, that Gibbard hears at noon the voice of Anscombe has little bearing on my belief “That’s the voice of Anscombe.” This diagonal proposition does perhaps figure in counterfactual suppositions: ‘If that weren’t the voice of Anscombe . . . ’ might express an intelligible supposition amounting to “If I weren’t hearing the voice of Anscombe but were still hearing something that sounded exactly as this does . . . .” I won’t explore this possibility further here. Suffice it to say that no proposition—as opposed to a property or “centered proposition”—will do the job, in the general case, that Stalnaker wanted the “diagonal proposition” to do.

Stalnaker depicts inquiry as narrowing down possibilities. I find this very congenial. On Stalnaker’s picture, though, these are ways the world might be. On the alternative I am advocating (along with David Lewis), the possibilities are ways one might oneself be. Belief in propositions fits Stalnaker’s picture, whereas belief in properties a thinker might have fits Lewis’s and mine. When belief pertains to the diagonal of a matrix, Stalnaker’s picture seems to require that the matrix be square. Otherwise, the diagonal does not

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determine a proposition—or in the one sense I can find in which it does, that proposition isn’t a plausible object of belief.

References

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