# On Fineness of Grain[1]

## 1. Introduction

Among the various jobs that propositions perform in philosophy, one central job is to serve as the objects of the propositional attitudes. Propositions are the things we believe, doubt, deduce and suppose. On one prominent view of propositions they are sets of metaphysically possible worlds. Though this view continues to have adherents, especially among linguists and formal epistemologists, many philosophers have concluded that sets of possible worlds are not sufficiently fine grained to be the objects of the attitudes. Specifically, it has seemed to many that one can believe or doubt or suppose or deduce a proposition P without doing the same to some proposition Q necessarily equivalent to P. Examples apparently supporting this view in the literature have ranged from necessarily true P and Q, to impossible P and Q, to contingent but necessarily equivalent P and Q.

Friends of propositions who have found such examples convincing have attempted to give accounts of propositions on which they are individuated more finely than sets of possible worlds. That is, they have attempted to give accounts of propositions on which distinct propositions may nonetheless be true in all the same metaphysically possible worlds. On one such approach, often called the Russellian or Neo-Russellian account of structured propositions, propositions are taken to be structured entities with individuals, properties and relations as constituents.[2] On such a view, e.g. the proposition that Usain runs is some sort of structured complex with Usain and the property of running as constituents. It is easy to see that such an

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[1] Thanks to Karen Lewis and Kent Bach for helpful comments and suggestions. Thanks also to Ofra Magidor for helpful discussion. A version of this paper was delivered at the Pacific Division Meetings of the American Philosophical Association in San Francisco on March 31, 2010. My thanks to the audience for helpful discussion.
[2] Obviously, one could take propositions to be structured entities with other kinds of things (Fregean senses, possible world intensions, etc.) as constituents.

account is in principle capable of delivering propositions that are more fine grained than sets of possible worlds. Two propositions might be true in all the same possible worlds, while nonetheless being distinct because of having different constituents, the same constituents arranged differently, or even different constituents arranged differently.

I confess to being a philosopher who advocates such a view; and in a recent book (as well as earlier and later papers) I defended a specific version of this view.[3] I won't go into the details of the view I defended here. However, I do want to discuss one consequence of that view and a class of objections that have been made to the view as a result of its having this consequence. On my account of propositions, two sentences of the same or different languages express the same proposition[4] iff (i) they have the same syntactic structure at the level of syntax over which the semantics for the language(s) are defined (presumably, LF); (ii) they have expressions with the same semantic values occurring at the same terminal nodes in the syntactic tree alluded to in (i); and (iii) the syntactic concatenation at each point in the tree of each sentence has the same semantic significance in the languages of the sentences. Let's call this the **I**ndividuating **B**iconditional (IB)

We are going to be interested in cases in which sentences of the same or different languages fail to satisfy the right side of IB and so express different propositions on my view. Though we shall for the most part ignore the third condition on the right side of IB here, a word about what it means is in order before we set it aside. Consider the sentence 'Usain runs'. One reason that this sentence is true in English iff Usain possesses the property of running is that the

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[3] King [1994], [1995], [1996], [2007] and [2009]. Though I have tended to assume that individuals, properties and relations are constituents of propositions, I have also been clear that my main concern is with what holds the constituents of propositions together, how/why propositions have truth conditions, etc.. Thus, I am open to the idea that propositions have other sorts of entities as constituents (e.g. see King [2007] pp.6-7).

[4] For ease of exposition, I ignore contextually sensitive sentences here. It should be clear how to reformulate this biconditional to take contextual sensitivity into account.

syntactic concatenation in this sentence is interpreted by English speakers as ascribing the property of running to Usain.[5] When competent English speakers encounter the sentence, they spontaneously and without thinking compose the semantic values of the lexical items in the sentence in such a way that the sentence is true iff the semantic value of 'Usain' possesses the semantic value of 'runs'. But we can imagine another language, say Nenglish, much like English that contains the sentence 'Usain runs' and in which the sentence has the same syntactic structure (at LF) as the English sentence, while the words 'Usain' and 'runs' have the same semantic values as they do In English. So far the English and Nenglish sentences satisfy conditions (i) and (ii) in IB. But suppose that speakers of Nenglish took the sentence 'Usain runs' to be true iff Usain *fails* to possess the property of running. This would mean that Nenglish speakers interpret the syntactic concatenation in the sentence 'Usain runs' differently from the way English speakers interpret it. In such a case, I'll say that the syntactic concatenation in this sentence has different semantic significance in English and Nenglish. This would mean that the English and Nenglish sentences fail to satisfy condition (iii) in IB, so that the two sentences express different propositions in the respective languages. Obviously, this is a good outcome, since the two sentences have different truth conditions and one is true and the other false. Having said this, as I suggested above, we will for the most part ignore condition (iii) on the right side of IB. Indeed, we shall focus here on cases in which sentences of the same or different languages express different propositions in virtue of failing to satisfy condition (i).

Now it should be clear that as a result of entailing IB, my account of propositions individuates them very finely. In particular, sentences with different syntactic structures at the relevant level of syntax express different propositions. As a result, some have objected that my account individuates propositions *too* finely. I'll call such objections objections from fineness of

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[5] See King [2009] for more on the idea of speakers *interpreting* syntactic concatenation in certain ways.

grain. Among those who have raised this sort of objection, I have detected a number of different attitudes toward it. On the one hand, there are those who regard it as a worry about my account—perhaps even a cost—but not as an insurmountable difficulty.[6] On the other hand, there are those who regard it as a very serious—perhaps even devastating—objection to my account.[7] My purpose in the present paper is to show that both attitudes are misguided. On the one hand, I'll show that objections from fineness of grain are all flawed in some way. However, even once this is seen, some will be left with the lingering impression that an account of structured propositions that individuates them *less* finely than my account in an attempt to identify propositions that the advocate of objections from fineness of grain thinks should be identified would be a better account of propositions than mine. I'll show that this isn't the case, since such an account will itself face serious difficulties. Finally, I'll close by raising some considerations not generally raised in debates about fineness of grain that are due to Karen Lewis [2011a] and that suggest that propositions *should* be individuated very finely, as they are on my account. If the objections from fineness of grain are flawed, no less fine grained account is any better off and there are reasons for thinking propositions should be individuated as finely as my theory individuates them, considerations of fineness of grain cannot be any sort of problem for my account.

Since "the" objection from fineness of grain has been formulated in a number of different ways, I'll give several formulations of the objection and respond to each. My responses should make clear how I would respond to yet other formulations of the objection. Finally, let me make

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[6] Ofra Magidor, who as a commentator on my presentation raised a version of the objection from fineness of grain against my account of propositions at the Philosophical Logic Conference at Princeton University May 2009, took this attitude (pc).

[7] John Collins [2007] seems to take this attitude. Similarly, for John Burgess and Sarah-Jane Leslie, judging from the strenuousness of their presentations of the worry (in personal communication and the question session for the presentation mentioned in the previous note, respectively).

clear that I will be addressing these objections assuming that *some* version of the neo-Russellian account of structured propositions is correct. For those making the objection have not in general thought that the objection applies to neo-Russellian accounts of propositions generally. They have presented the objection as an objection to *my* version of such an account. As I've indicated, one of the things I want to argue here is that it is not easy to see that there is a plausible, principled neo-Russellian account that individuates propositions significantly less finely than mine and is better off than it is. Some critics, if I succeeded in convincing them on this point, might attempt to turn the objection into an objection against neo-Russellian accounts generally. I will not be addressing this sort of critic here.

2. Three Objections

John Collins [2007] considers various sentence pairs that he claims result from "surface 'transformations' that preserve something we might wish to call synonymy...":[8]

Passives: Bill kicked the ball – The ball was kicked by Bill

Expletives: A fly is in my soup – There is a fly in my soup

Clefts: Bill wants a car – What Bill wants is a car – It is a car that Bill wants

Raising: Bill appears to be tired – It appears that Bill is tired

Because of the apparent difference in syntactic structures of the paired sentences, let's assume that on my view they will express different propositions because of failing to satisfy condition (i) on the right side of IB. Collins then puts the objection to my view as follows:

> *Prima facie*, discourse effects apart, such 'transformations' do not affect meaning. On reflection, it is easy to see that there are indefinite ways of 'saying the same thing' with distinct syntactic structures. Intuitively, an account of propositions should furnish what is shared across the structures. If, however, propositions are cut as finely as the syntax, we lose anything that could be shared. It bears emphasis that this is an empirical problem. The data are that competent English speakers understand

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[8] P. 820

the pairs above as 'saying the same thing', and it is this intuition (inter
alia) that the notion of a proposition is meant to capture.[9]

Fleshing out Collins' remarks here, his version of the objection from fineness of grain runs as

follows.  English speakers have the intuition that the sentence pairs above say the same thing.  If

English speakers have the intuition that sentences say the same thing, those sentences must

express the same proposition (this is how the "notion of a proposition" captures the same-saying

intuition).  Hence, these sentences express the same proposition.  King's theory claims they do

not, and so his theory is wrong.

I suspect that it is apparent what I am going to object to in Collins' argument.  The

premise that if English speakers have the intuition that sentences say the same thing, those

sentences must express the same proposition is clearly false.  Intuitions about sentences, perhaps

relative to contexts, "saying the same thing" demonstrably do not track sameness of proposition

expressed.  The essential point is an old one and goes back at least to David Lewis [1980].[10]

Suppose I say to you on Monday 'Today is going to be a great day' and I say to you on Tuesday

'Today is going to be a great day.'  If you reply: 'What an optimist: you said the same thing

yesterday.', competent English speakers will take your assertion that I said the same thing on

both days to be straightforwardly true.  Thus, they have the intuition that these sentences (taken

relative to their respective contexts) "say the same thing".  After all, competent English speakers

wouldn't take the utterers to say the same thing if they had the intuition that the sentences uttered

(relative to their respective contexts) *didn't* say the same thing.  But surely the standard view is

that these sentences express different propositions (relative to their contexts).  After all, it seems

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[9] Collins [2007] p. 820

[10] Lewis makes the point about "what is said", but the context of the following quotation shows that he clearly has in mind various cases in which speakers judge that "what is said" by two sentences (relative to a context) is the same: "Unless we give it some special technical meaning, the locution 'what is said' is very far from univocal.  It can mean the propositional content, in Stalnaker's sense (horizontal or diagonal).  It can mean the exact words.  I suspect it can mean almost anything in between." P. 41

the sentences could express propositions in the different contexts that diverge in truth value. Examples could be multiplied ad infinitum.[11]  Given that it is absolutely clear that speakers' intuitions about when sentences "say the same thing" do *not* reliably track when the sentences express the same proposition, simply noting that English speakers understand Collins' pairs as "saying the same thing" cannot show that they express the same proposition.  Some reason must be given for thinking that *in this case*, intuitions about "saying the same thing" *are* tracking sameness of proposition expressed.  But no such reasons have been offered.

This brings up what I think is an important methodological point.  It is very likely true that our thinking about propositions *begins* with some pretheoretical notion of people or sentences (relative to contexts) "saying the same thing".  But once we appreciate that our pretheoretcial intuitions about people and sentences (relative to contexts) saying the same thing don't always track sameness of proposition expressed, and indeed don't track *any* one thing, it is clear that no plausible theory of propositions could or should individuate propositions in such a way as to capture our intuitions about people or sentences (relative to contexts) saying the same thing.  This brings out the extent to which the notion of a proposition is a *theoretical* notion. There just is no *pre*theoretical notion of a proposition to which our theories of propositions must do justice.  There are only things like our pretheoretical judgments or intuitions about saying, believing, doubting etc. the same thing.  But once we see that these cannot tell us how finely to individuate propositions for the reasons I've discussed, we should recognize that the question of how fine grained propositions are is in large part a theoretical question to be answered by the best theory of propositions available.  I'll return to this below.

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[11] You say 'I am hungry.' and I say 'I am hungry'; Annie notes to me that you said the same thing.  Jason says 'I think aliens are controlling my mind' and Alan utters the same sentence.  I say to Alan that Jason said the same thing, etc, etc.  Nor is the point limited to sentences containing indexicals: if Joanna says 'John is acting oddly' and Fall says 'There is something wrong with John', it would seem very natural to follow Fall's response with 'Joanna said the same thing.'  This is simply how we talk!

Ofra Magidor formulates her fineness of grain objections a bit differently.[12]  She assumes that the Hebrew sentence 'Jane hahama' has a syntactic structure different from that of the English sentence 'Jane is smart', so that on my view these sentences express different propositions.  She imagines Danny uttering 'Jane hahama' (and nothing else).  Finally, she imagines Jill, who is a bilingual and overheard Danny's utterance, saying later 'Danny said that Jane is smart.'  The report intuitively seems true.  However, on my view Danny did not utter a sentence that expresses the proposition expressed by 'Jane is smart'.  But then if my view is correct, Jill's utterance of 'Danny said that Jane is smart' should not seem true.

 The way I've formulated the objection, it is neutral on the question of whether if my view is correct, Jill's utterance is literally false in the circumstance described.[13]  The objection assumes only that for 'Danny said that Jane is smart' to *seem* true, Danny must have uttered a sentence that expresses the same proposition as 'Jane is smart' (and of course those to whom the report seems true must be aware of this—I'll suppress this henceforth).  Put more generally, the assumption is that for 'Danny said that P' to seem true in a context c, Danny must have uttered a sentence that in his context of utterance c* expresses the proposition that 'P' expressed in c.  Unfortunately for this objection, this assumption is plainly false.

Suppose Glenn says to me in context c 'Every sibling of mine is an architect.' (and nothing else).  That night I meet one of his siblings, Chris, for the first time and say to her in context c* 'Glenn said you are an architect'.  Normal speakers judge my utterance true in this situation.  But Glenn did not utter a sentence that in c expressed the proposition expressed by 'you are an architect' in my context of utterance c*.  Or again, suppose Jason utters the following (in context c): 'Joanna has a sibling.  He is in college.'  Having overheard Jason, I later say to

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[13] I adopt a similar neutrality in responding to John Burgess below.  See notes 14 and 15.

Sarah (in context c*): 'Jason said that Joanna has a brother in college'. Again, my utterance seems true to normal speakers when the situation is described to them. But again Jason did not utter a sentence that in c expressed the proposition expressed by 'Joanna has a brother in college' in my context c*.

I am not going to try to explain why these 'said' ascriptions seem true in the cases I've described. In the first case, Glenn expresses a proposition (That every sibling of Glenn's is an architect) that together with the true claim that Chris is Glenn's sibling transparently entails the proposition ascribed to him in the 'said' ascription (that Chris is an architect). In the second case, it is arguable that the propositions Jason expresses together with the claim that Joanna's sibling is male (which is conveyed by Jason's use of 'he') transparently entail the proposition ascribed to him in the 'said' ascription. We simply tolerate this kind of looseness in 'said' ascriptions. It is worth noting here that in the case Magidor raises (if my view is correct) the proposition Danny expresses is if anything more intimately connected to the proposition ascribed to him in the 'said' ascription than in the cases I've just discussed: the proposition expressed by Danny's utterance of 'Jane hahama' is necessarily equivalent to, and even has some of the same constituents as, the proposition expressed by 'Jane is smart'. Thus, if we assume that my view of propositions is correct, it is quite plausible that whatever explains the 'said' ascriptions seeming true in my examples will explain it seeming true in Magidor's. In any case, the important point is that because the fineness of grain objection currently under consideration rests on an assumption that is clearly false, it fails.

Finally, let's turn to a version of the fineness of grain objection formulated by John Burgess (p.c.). Like Magidor, Burgess considers a number of sentence pairs in which the two sentences are from different languages. The following pair can serve as an illustrative example:

(1E) The alarm clock is ringing.

(1G) Es klingelt der Wecker.
["It rings the alarm clock"]

Here, as in the case of Magidor's example, we can suppose that at the relevant level of syntax,

these sentences are different syntactically so that they fail condition (i) on the right side of IB

and hence express different propositions on my view.  Burgess then says (p.c.):

> Syntactically the English sentence …and the other sentence …are substantially
> different in structure.  But no bilingual would doubt that anyone who says the one
> says (…sagt) the other, or that anyone who believes or knows or whatever the one
> does the same to the other. What use are "propositions" if they are so tied to
> syntax that even in these cases the English sentence and its (absolutely standard)
> translation don't express the same proposition?

Two things seem to be going on here.  On the one hand, Burgess claims that (according to any

bilingual) anyone who says or knows or believes "the one" does the same to "the other".  But he

is apparently referring to the *sentences* in question ('one' appears to be anaphoric on 'sentence').

I assume that what Burgess must mean here is that according to any bilingual, anyone of whom it

seems true to say the first of the following two sentences is such that it seems true to say the

second of her, and vice versa:[14]

(2E) She believes/says/knows that the alarm clock is ringing.

(2G) Sie glaubt/sagt/weisst dass es klingelt der Wecker.

Burgess then apparently takes this as showing that anyone who says, knows, believes or

whatever the proposition expressed by the German sentence embedded in (2G) does the same for

the proposition expressed by the English sentence embedded in (2E), and vice versa.  And

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[14] To *seem truly to say* one of these sentences *of* someone is to utter the sentence referring to her with 'She' and to seem to speak truly.  I suspect Burgess thinks that, according to any bilingual, anyone of whom it *is* true to say (2E) is such that it *is* true to say (2G) of her and vice versa.  But I shall stick to the claim about it *seeming true to say*, because only it is warranted by the raw data.  All the bilingual can tell us is whether these sentences *seem* true in this or that situation. Hence I remain neutral here on the question of whether one really is speaking truly in such cases.

Burgess apparently takes this in turn to show that the propositions expressed by (1E) and (1G) are the same.[15]

The second thing that Burgess seems to be claiming is that a sentence in one language and its "absolutely standard" translation in another must express the same proposition (see the final sentence of the above quotation). I'll take each of Burgess' points in turn.

As to Burgess' first point, the appeal to distinct languages is really irrelevant. The question is whether there are sentences P and Q that arguably express *distinct* propositions such that anyone of whom it seems true to say the first of the following two sentences is such that it seems true to say the second of her, and vice versa:

(3E) She believes/says/knows that P.

(3'E) She believes/says/knows that Q.

If this is true in any one language, the analogous claim about sentences like (1E) and (1G) could be true across languages as well. Hence, if this were so, the fact that anyone of whom it seems true to say (2E) is such that it seems true to say (2G) of her, and vice versa, while it *might* show that anyone who says, knows, believes or whatever the proposition expressed by the German sentence embedded in (2G) does the same for the proposition expressed by the English sentence

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[15]Richard [1990] argues that from the fact that necessarily, for any x: x believes that P iff x believes that Q it does not follow that the proposition that P *is* the proposition that Q. And of course Richard is right. For it could be that P is distinct from Q but one can't be believed without believing the other. Does this provide a response to Burgess? No. I construe Burgess as claiming that given the uses to which we put propositions, we should say that any propositions P and Q such that anyone believes P iff they believe Q are such that P=Q (note Burgess' rhetorical question about what use propositions are if we individuate them more finely). Hence Burgess is making a *recommendation* as to how propositions should be individuated, given the uses to which we put them, not claiming that from the fact that anyone believes P iff they believe Q it *follows* that P=Q. To respond to Burgess one must give reasons that we shouldn't accept his recommendation as to how propositions are individuated. Richard's argument doesn't do that. I do below.

embedded in (2E), *could not* show that the embedded sentences express the same proposition, contrary to what Burgess claims.[16]

I should say at the outset that it is hard to definitively *show* that there are sentences P and Q expressing distinct propositions such that anyone of whom it seems true to say (3E) is such that it seems true to say (3'E) of her, and vice versa. The reason is that we need to come up with sentences that all sides agree express distinct propositions. The committed opponent can always dig in her heels and deny that the sentences do express distinct propositions. Hence, I'll simply try to make plausible the claim that there are such sentences and hope to convince, if not the entrenched opponent, at least the neutral observer.

This brings up a point I raised earlier. As I said, the notion of a proposition is not a pretheoretical notion. At best we have pretheoretical judgments about same-saying, same-believing, the truth of attitude ascriptions in certain situations and so on. So I can't just give examples of sentences and hope for the reader to intuit that they express distinct propositions. I do hope the reader has some intuition that the sentences in *some sense* differ in meaning. But I'll have to try to *argue* that they express distinct propositions. Further, for the reasons just given, any single example may fail to convince. So I'll give two different examples here. I return to some of the issues raised here below.

First example:

4a. Patrick is a bachelor.

4b. She believes/says/knows that Patrick is a bachelor.

4'a. Patrick is an unmarried adult male.[17]

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[16] Whether it does show that anyone who says, knows, believes or whatever the proposition expressed by the German sentence embedded in (2G) does the same for the proposition expressed by the English sentence embedded in (2E) depends in part on whether it *is* true to say (2E) of someone iff it *is* true to say (2G) of her or whether it merely seems true to say (2E) of her iff it seems true to say (2g) of her. See note 14.

4'b. She believes/says/knows that Patrick is an unmarried adult male.

It seems to me pretty clear that anyone of whom one can seem to truly say 4b, one can seem to truly say 4'b and vice versa. Indeed, I'm not sure what to say to someone who denies this. But now why think 4a and 4'a express different propositions? Well, it is pretty hard to resist the idea that if they express the same proposition, 'bachelor' and 'unmarried adult male' make the same contribution to the propositions expressed by 4a and 4'a. In that case, it seems that the following two sentences must express the same proposition:

5a. A bachelor is a bachelor.

5b. A bachelor is an unmarried adult male.

But now we find ourselves squarely confronting (a version of) the paradox of analysis. For on the one hand, we want to say that 5b is an analysis and 5a isn't. But if they express the same proposition, it is hard to see how this is so. My own view is that the proper resolution of the paradox of analysis is precisely to deny that 'bachelor' and 'unmarried male' make the same contributions to the propositions expressed by 4a and 4'a and 5a and 5b.[18] On such a view, the sentences in the pairs 4a and 4'a (and 5a and 5b) express different propositions. Thus, here is our first case in which it is plausible that sentences express different propositions even though the results of embedding those sentences under 'She believes/says/knows' are such that anyone of whom you can seem to truly say the one, you can seem to truly say the other and vice versa, contra Burgess.

   Second example:

6a. Joanna is Tom's sibling.

6b. She thinks Joanna is Tom's sibling.

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[17] Add 'ineligible' if you feel the need to rule out the Pope.
[18] See King [1998] and King [2007] chapter 7 for a defense of this resolution of the paradox of analysis.

6'a. Tom is Joanna's sibling.

6'b. She thinks Tom is Joanna's sibling.

Again, it seems quite clear that anyone of whom one can seem to truly say 6b, one can seem to truly say 6'b and vice versa. Again, I'm not sure what to say to someone who denies this. But what reason is there for thinking that 6a and 6'a express different propositions? Well, consider the following:

7a. Joanna is Tom's sister.

7b. Tom is Joanna's sister.

8a. Joanna is Tom's boss.

8b. Tom is Joanna's boss.

It could easily be that 7a and 8a are true and 7b and 8b are false. Suppose this is so. Then clearly 7a and 7b must express distinct propositions; and similarly for 8a and 8b. But now how/why do e.g. 7a and 7b manage to express distinct propositions? It is very plausible to think they have the same constituents (roughly, Joanna, Tom and the *sister* relation). But then the difference must be in how those constituents are arranged in the two propositions. Now comparing 6a and 7a, it is again quite plausible to think that the propositions they express are exactly the same except for what relation is a constituent (the *sibling* relation in 6a and the *sister* relation in 7a). These sentences have exactly the same syntactic structure and differ only in the semantic values of 'sibling' and 'sister'. It is no more plausible that these sentences express propositions with different structures than it is plausible that 'Joanna is a sister' and 'Joanna is a sibling' do. Exactly similar remarks apply to 6'a and 7b. Thus, we have very good reason to think that 6a and 6'a express propositions with the same constituents structured differently, just as 7a and 7b do. But then we have very good reason to think that 6a and 6'a express different

propositions.  So here again, we have a case in which it is plausible that sentences express

different propositions even though the results of embedding those sentences under 'She

believes/says/knows' are such that anyone of whom you can seem to truly say the one, you can

seem to truly say the other and vice versa, contra Burgess.  Again, I think there are lots of other

such examples, but I'll be content with these now and come back to the issue subsequently.

Let's now turn to the second issue Burgess raises.  (1E) and (1G), repeated below, are

"standard translations" of each other, so they must express the same proposition according to

Burgess.  Yet on my view, given that the sentences are likely quite different syntactically at the

relevant level, they don't express the same proposition.  Though I have some doubts about

whether (1G) *is* the standard translation into German of (1E), I won't pursue the point because I

think that with the choice of a better example this could well be so.

(1E) The alarm clock is ringing.

(1G) Es klingelt der Wecker.
["It rings the alarm clock"]

 Does the fact that a sentence of one language is "standardly translated" into a sentence of

another language and vice versa just *show* that they express the same proposition?  It seems to

me quite clear that it does not.   Imagine that there were creatures, Logins, who spoke first order

logic.  Imagine that English speakers had interacted with them over some suitably long period of

time.  It is easily imagined that it becomes standard practice to translate a Login utterance or

inscription of '∃x(man x & rich x)' into English as 'Some man is rich' and translate 'Some man

is rich' into Loginese as '∃x(man x & rich x)'.  (We can also easily imagine that when a Login

utters this sentence, we felicitously say of him that he said that some man is rich.)[19]  Would that

mean that the sentence of first order logic and the English sentence must express the same

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[19] I say 'felicitously say' rather than 'truly say' to dodge the question of whether what we say *is* literally true.  The
idea is that it is taken to be true in such a case, helps us coordinate activities with the Logins and etc.

proposition? Certainly it does not. And particularly within the framework of structured

propositions, there is considerable reason to doubt that they do. One would think that the

constituents of the proposition expressed by the sentence of first order logic would reflect the

fact that the sentence is the existential generalization of a conjunction. Not so for the proposition

expressed by the English sentence. Further imagine that there is a small elite among the Logins

who use only the universal quantifier. So instead of the above Login sentence, they would

produce '~(x)~(man x & rich x)'. Again, it is easily imagined that this and the English sentence

'Some man is rich.' come to be standard translations of each other. Again, it seems to me clear

that this doesn't mean that the English sentence and the sentence of first order logic *must* express

the same proposition. And again, there is considerable reason to doubt that they do: shouldn't

the proposition expressed by the Login sentence reflect the fact that the sentence expressing it is

the negation of another sentence? After all, it surely would in the case of the Login sentence

'~Fa'!

More generally, it seems obvious that there could be extraterrestrials who speak a

language some of whose sentences express propositions not expressed by any English sentence.[20]

Consider such a sentence of this alien language. Does the fact that no English sentence

expresses the proposition it does mean that we *could not* have an absolutely standard translation

for it into English? It seems to me clear that the answer here is no. Hence, contrary to what

Burgess claims, the fact that two sentences are standard translations of each other does not

require them to express the same proposition.

3. A Less Fine Grained View?

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[20] I mean that it is metaphysically possible that there are such aliens. If someone denies *this* I am really not sure
what to say to them.

I've now responded to three versions of the fineness of grain objection. I hope to have convinced the reader that all three objections fail and to have given her some idea of how I would respond to other versions of the objection. However, I suspect that many readers who agree that strictly the objections fail for the reasons I've given will nonetheless feel as though a theory of propositions that individuates them in something like the way the critics who offer fineness of grain objections think they should be individuated would be a superior theory to mine. I now want to argue that this is incorrect, since such a theory will itself face severe difficulties.

I think the core idea behind all versions of the fineness of grain objections is this: there are certain sentence pairs that pretheoretically "say the same thing" and they therefore must express the same proposition. I have already expressed my doubts, and the reasons for them, about this core idea. But surely anyone who embraces something like this core idea should hold that the following sentence pairs express the same propositions:

9a. Grass is green and snow is white.

9b. Snow is white and grass is green.

10a. 1=2

10b. 2=1

11a. Joanna is John's sibling.

11b. John is Joanna's sibling.

12a. Joanna dropped ten marbles and she found all but one of them.[21]

12b. Joanna dropped ten marbles and she found nine of them.

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[21] I assume that in both sentences, 'she' is anaphoric on 'Joanna' and 'them' is anaphoric on 'ten marbles' or 'marbles' in both sentences.

The pretheoretical intuition that the sentences in these pairs "say the same thing" is as strong as it is for any of the examples advocates of fineness of grain objections have brought forward. However, identifying the propositions expressed by these sentence pairs, in conjunction with principles that seem very compelling, gets one into trouble fast. In the case of 9a/9b (and perhaps 10a/10b as well), there is a consideration that by itself suggests that they express different propositions.[22] Imagine that Joanna is doing exercises in her logic class. She is given certain propositions and asked to deduce others from them. It seems that the first of the following sentences could be true and the second false:

13a. Joanna was given that snow is white and grass is green and deduced that grass is green and snow is white.

13b. Joanna was given that grass is green and snow is white and deduced that snow is white and grass is green.

But if that is so, then it would seem that 9a and 9b (as well as 10a and 10b) cannot express the same proposition.[23]

Even if we leave this consideration aside, identifying the propositions expressed by the sentences in the pairs 9-11 has other problems. This really goes back to a point I made in response to Burgess' version of the objection from fineness of grain, but I'll be a bit more explicit here. Here is a rough formulation of a quite plausible principle regarding the structured propositions expressed by sentences with the same syntactic structure:[24]

(**S**ame **S**yntax, **S**ame **S**tructure) Sentences of a given language with the same syntactic structure and that differ only in having lexical items with different semantic values occurring at the same places in their syntactic trees express propositions with the same structure that differ at most in

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[22]The essence of this point was made in Cresswell [1985] pp. 77-85. As Cresswell notes, the fact that Joanna could have been working with French sentences should be enough to discourage those tempted to think that 13a and b are making assertions about the *sentences* embedded under 'given' and 'deduced'.

[23] I don't want to put too much weight on this argument, because a similar argument would seem to show that 'Mark Twain is Samuel Clemens' and 'Samuel Clemens is Mark Twain' express different propositions. So many structured proposition theorists will not be happy with this argument.

[24] I ignore contextual sensitivity here since none of the sentences I am going to be considering are contextually sensitive (except perhaps for tense, which I will ignore).

having different constituents, corresponding to the lexical items with different semantic values, occurring in the same places in those propositions.[25]

This principle, <u>SSSS</u>, doesn't require sentence structure to in any way resemble the structure of the proposition expressed. It just requires sentences with the *same* syntactic structure (but with lexical items that differ in their semantic values occurring in the same place in the syntactic tree) to express propositions with the *same* structure (but that differ at most by having different constituents occurring in the same places in the propositions corresponding to the lexical items with distinct semantic values occurring in the same places in the sentences). It is important to see that virtually all accounts of structured propositions assume SSSS. Consider, for example, the following clauses from Soames [1987]:[26]

> (28a) The proposition expressed by an atomic formula '$Pt_1,\ldots,t_n$' relative to a context C and assignment f is $<<o_1,\ldots,o_n>, P^*>$, where $P^*$ is the property expressed by P, and $o_i$ is the content of $t_i$ relative to C and f.

> (28c) The propositions expressed by '-S' and 'S&R' relative to C and f are $<NEG, Prop\ S>$ and $<CONJ, <Prop\ S, Prop\ R>>$ respectively, where Prop S and Prop R are the propositions expressed by S and R relative to C and f, and Neg and CONJ are the truth functions for negation and conjunction.

Clearly, clauses like this presuppose that sentences that are syntactically atomic and whose predicates have the same adicity express propositions that have the same structure: the atomic clause tells us this.[27] Further, sentences that are syntactically atomic and whose predicates have the same adicity but have lexical items with different semantic values occurring in the same places express propositions that differ only in having different constituents (corresponding to the

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[25] I say 'differ at most in having different constituents…' because I want SSSS to allow that even sentences with lexical items having different semantic values might express the same proposition (e.g. perhaps the lexical items are parts of phrases that make the same contribution to propositions even though the phrases contain lexical items with different semantic values). Of course on my view this can't happen, since it violates condition (ii) on the right side of IB.

[26] P. 224

[27] I am assuming that for atomic sentences to have the same syntactic structure, they must have predicates of the same adicity. Surely this is true of English: in the sense in which I am using the term, 'Usain runs' and 'Joanna loves Phil' do not have the same syntactic structure.

lexical items with different semantic values) occurring in the same places in those propositions.

So, for example, two atomic sentences containing an n-place predicate and lexical items with

different semantic values both express propositions of the form $<<o_1,\ldots,o_n>, P^*>$. But the

propositions will differ on what object $o_i$ is or what property $P^*$ is or etc., depending on which

lexical items in the two sentences differ in semantic value ('$t_i$' or 'P'). Similarly for sentences

that are syntactically negations or conjunctions.[28]

Next consider the following very plausible principle regarding structured propositions

with the same structure and constituents:

(**D**istinct **C**ombination, **D**istinct **P**ropositions)  Two propositions P and Q with the same structure
and same constituents are distinct iff those constituents are combined differently (i.e. they
occupy different "places") in P and Q.

Again, this principle, <u>DCDP</u>, is very compelling and as far as I can tell is assumed by all

structured proposition theorists. Structured proposition theorists need there to be distinct

propositions with the same constituents. For example the propositions that Joanna loves Carl

and that Carl loves Joanna are distinct. In effect DCDP, *explains* how that can happen: the

constituents can be combined differently. In defense of the left to right direction, suppose you

have two propositions with the same structure and same constituents but they are distinct. But

now suppose the same constituents occur in exactly the same positions in both propositions.

Then surely the propositions aren't distinct. For illustration, suppose you have atomic

propositions with a two-place relation and two objects as constituents, $<a, <R,b>>$ and $<c, <Q,$

$d>>$, with the same structure and the same constituents. Then if a=c, R=Q and b=d, surely these

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[28] Of course if sentences S and R *themselves* differ in syntactic structure, then so will '~S' and '~R'. But the point is
that if S and R don't differ in syntactic structure but only have lexical items with different semantic values occurring
at the same places in their syntactic trees, then '~S' and '~R' will express propositions with the same structure. And
the propositions the latter express will differ only in having different constituents (corresponding to any lexical
items with different semantical values) occurring in the same places in those propositions. Similarly for conjunctive
sentences.

are the same proposition. Now if the constituents are the same, then R=Q since each proposition contains only one two-place relation. But then if the propositions are distinct, it must be that a=d≠c and b=c≠d. But this is to say that the propositions are: <a,<R,b>> and <b,<R,a>>. And that is just to say that they have the same structure and the same constituents, but that the constituents occupy different "places" in the propositions. In defense of the right to left direction, suppose the structured proposition theorist allows that P and Q are propositions with the same structures, the same constituents, the constituents combined differently but P and Q are nonetheless identical. Now she has no explanation of how propositions with the same structures and constituents can be distinct. The explanation was supposed to be that constituents can be combined differently, yielding different propositions. Once this is given up, the structured proposition theorist has no principled account of how propositions with the same structures and constituents can be distinct. Since she wants such a principled explanation, she'll want to hold that having the same structure and constituents with those constituents combined differently is sufficient for propositions being distinct.

Armed with SSSS and DCDP, let's return to the pairs 9-11. Recall that the claim is that our opponent who raises the fineness of grain objection will want to identify the propositions expressed by the two sentences in each pair. This, we claim, will get her into trouble. The same argument works in each case, so for simplicity let's choose 10 repeated here:

10a. 1=2

10b. 2=1

Assume for reductio that these express the same proposition, as the advocate of a fineness of grain objection should say. Now consider another pair, which, we assume, have the same syntactic structure as 10a/b:

14a. 1<2

14b. 2<1

Since 14a is true and 14b is false, they must express different propositions.  However, by SSSS 10a and 14a express propositions that have the same structure and differ at most in having different constituents corresponding to the lexical items '=' and '<' occurring in the same places in those propositions.  And these propositions must be distinct, since the proposition expressed by 10a is false and that expressed by 14a is true.  So we can suppose the propositions look as follows:

10ap. <1, <ID, 2>>

14ap. <1, <LT, 2>>

(where ID is the relation of identity and LT is the relation of being less than).  According to SSSS, the *only* difference between these propositions is that ID occurs in one exactly where LT occurs in the other.  In particular then, 1 and 2 must occur at the same places in both propositions.   Similar remarks apply to the propositions expressed by 10b and 14b, which can be represented as:

10bp. <2, <ID, 1>>

14bp. <2, <LT, 1>>

 By hypothesis, 14ap and 14bp are two propositions with the same structure and constituents (1, 2 and LT).  So by DCDP, they must differ in the "places" in which those constituents occur in the propositions.  Since LT=LT, this must mean that 1 and 2 occur in different places in these propositions, as 14ap/14bp suggest.  But, as we've said, 1 and 2 occur in the *same* places in 10ap as they do in 14ap; similarly for 10bp and 14bp.  But then 1 and 2 occur in different places (i.e.

are combined differently) in 10ap and 10bp.  Hence by DCDP, 10ap≠10bp.  But we began by

assuming that 10a and 10b express the same proposition.  Contradiction.

This argument shows that anyone who holds DCDP and SSSS is going to have to

distinguish the propositions expressed by the pair 10a/10b.  A similar argument shows the same

for 9a/9b and 11a/11b.  In those arguments, in place of 14a and 14b, we'll invoke the following

sentence pairs corresponding to 9a/9b and 11a/11b, respectively:

15a. Grass is green because snow is white.

15b. Snow is white because grass is green.[29]

16a. Joanna is John's sister.

16b. John is Joanna's sister.

The argument that holding that 12a and 12b express the same proposition leads to

trouble is similar and so I won't go over it in the same detail.  But the idea is this.  If 12a and 12b

express the same structured proposition, surely the right conjuncts must make the same

contribution to the proposition expressed by each.  After all, these conjuncts are sentences.  And

on standard theories of structured propositions, for 'A and B' and 'A and C' to express the same

propositions, 'B' and 'C' must contribute the same proposition to the propositions expressed by

each conjunction.  But now consider the following sentences:

17a. Joanna dropped 20 marbles and she found all but one of them.

17b. Joanna dropped 20 marbles and she found nine of them.

Obviously, these sentences express different propositions.  That has to be because the second

conjuncts make different contributions to the propositions expressed by each.  But how could the

second conjuncts make *different* contributions to the propositions expressed by 17a and 17b,

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[29] I assume 15a and 15b express different propositions even though both are false.  I also assume that these sentences
have the same syntactic structure as 9a/9b.  The argument will go through as long as there is *any* coordinating
conjunction *, such that A*B and B*A express different propositions and have the same syntactic structure as 9a/9b.

while making the *same* contribution to the propositions expressed by 12a and 12b? Note that the problem isn't how the second conjuncts make different contributions to the propositions expressed by 12a/12b on the one hand and 17a/17b on the other. That is easy enough to see since the antecedent of the pronoun 'them' is different in the two cases. The question is: given that the antecedents are the same in 12a/12b on the one hand and 17a/17b on the other, how could the second conjunct make the *same* contribution in 12a and 12b, while making *different* contributions in 17a and 17b? Here again there are going to be principles adopted by standard theories of structured propositions, corresponding to SSSS and DCDP, that will make this impossible.

What this argument shows, I think, is that in the end, the advocate of the fineness of grain objection faces a dilemma. Either she will have to distinguish propositions that by her own principles she should identify (because sentences expressing them "say the same thing") or she will have to reject at least one very plausible and well motivated principles that structured propositions theorists have virtually always held, if only implicitly. Taking the first horn requires giving up the core idea behind the fineness of grain objection and so utterly undermines the objection. So I think the advocate of the fineness of grain objection must take the second horn. Since I don't know of any theory of structured propositions that denies principles like SSSS and DCDP, I am not sure how a theory of structured propositions without them would look. But surely the fact that a theory of structured propositions of the sort the advocate of the fineness of grain objection embraces is forced to deny plausible and well motivated principles *that virtually all structured proposition theorists hold* like SSSS and DCDP is a serious strike against it. Further, it is hard to see how such a theory of propositions could avoid being *ad hoc* and unprincipled. For the theory will hold that sometimes differences in syntax result in

sentences expressing different propositions (14a, 14b) although in other cases *these very same syntactic differences* do not have this effect (10a, 10b). It is hard to see how there could be a principled explanation of that. These considerations show that such a theory of propositions is not at all better off than mine, contrary to what the advocate of fineness of grain objections suggests.

4. One More Consideration

Finally, I'd like to turn to reasons not having to do directly with propositional attitudes for thinking that structured propositions ought to be very fine grained. The ideas I am about to discuss are due to Karen Lewis [2011a].

Though the question of how to distinguish dynamic semantic theories from static theories is more difficult than might be supposed, one rough and ready way to make the distinction goes like this. Suppose we have some notion of <u>conversational context</u>. Let's not worry about exactly how to think of contexts at this point. But imagine that all are agreed that making assertions in a context changes (or can change) the context. The dynamic theorist takes the semantic value of a sentence (in a context) to be a function from contexts to contexts: sentence meaning is a context updating instruction. By contrast, the static semanticist assigns to sentences relative to contexts propositions as their semantic values in those contexts. These propositions are then used to update the context in some manner or other. This further update is *pragmatic*: it is something conversational participants *do* with the semantic content of a sentence in a context. For the dynamic theorist the update is *semantic*: the semantic value of a sentence in a context *just is* a rule for updating.[30]

Now against this background, here is a kind of argument dynamic semanticists make against static semanticists. Consider the follow two discourses:

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[30]See Lewis [2011b] for a good, detailed discussion of these issues.

18a. Joanna dropped ten marbles and she found all but one of them.

18b. It is probably under the couch.

19a. Joanna dropped ten marbles and she found nine of them.

19b. *It is probably under the couch.

18b is perfectly fine, but 19b is unacceptable. Now, the dynamic semanticist says, 18a and 19a have the same truth value in all possible worlds. So, on the view that propositions are sets of worlds, they express the same proposition. But then updating the context with the one will be the same as updating that same context with the other: given a context c, the result of updating with the proposition expressed by 18a has to be the same as the result of updating with the proposition expressed by 19a. But then it is utterly mysterious why 18b is fine and 19b is not. Surely, this difference should be explained by how the semantic values of 18a and 19a update the context differently. But then a static semantic theory that has sets of worlds for the semantic values of sentences in contexts is inadequate.

Now there are a variety of ways a static semanticist might respond to the objection raised by his dynamic opponent.[31] But one quite straightforward response is to say that 18a and 19a do not express the same proposition. If we further suppose that the difference in proposition expressed results in a difference in how the context gets updated, we have room in principle for

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[31] One way, adopted by Stalnaker [1998], is to deny that when a sentence is uttered, the update to the context in which it is uttered is only due to the proposition expressed by the sentence in the context. In addition, the contexts get updated with the fact that the relevant sentences were uttered. Hence, in this way, the utterance of 18a and 19a in identical contexts result in different updates. However, Stalnaker never explains why/how this difference in the resulting contexts (in one, it is common ground that 18a was uttered; in the other that 19a was uttered) make the pronoun fine in one case and not in the other. Nor do I, in the body of the paper, explain how the difference in update on my view explains why the pronoun is fine in one case and not the other. So whether my explanation is superior to Stalnaker's is a matter for further research. My point is just that my explanation looks *prima facie* attractive.

explaining the contrast between 18b and 19b.[32]  More generally, again as pointed out by Karen

Lewis, if we want to explain differences in "discourse effects" of different sentences being

uttered in different contexts by means of their having different semantic contents in those

contexts—their expressing different propositions in those contexts—that update the contexts

differently, what is wanted is *very* fine grained individuation of propositions.  For arguably,

clefts and their noncleft counterparts can update contexts differently due to differences in

presuppositions:

20a. Bill wants a car.

20b. What Bill wants is a car

20c. It is a car that Bill wants

Similarly, actives and their passive counterparts seem capable of updating contexts differently by

making different things topical or supporting anaphora differently:

21a. Someone murdered Sue.

21b. He used a knife.

22a. Sue was murdered.

22b. *He used a knife.

These considerations, though somewhat speculative, are quite intriguing and suggest a very

straightforward response to one kind of argument against static semantic approaches.  But, to

repeat, such a response requires a *very* fine grained account of propositions.  Further, it requires

propositions to be fine grained in just the way they are on my account.  For the discourse effects

in question are closely related to linguistic structure; hence to be explained in terms of

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[32] I don't mean to claim that difference in proposition expressed *must* result in difference in how the context gets
updated.  But to explain the marble example in the way I am suggesting, we need to suppose that in this case,
difference of proposition expressed results in difference in update.

proposition expressed, the structure of propositions must be intimately connected to and reflect the linguistic structure of sentences expressing them. Thus, here we find the makings for a positive argument for very fine grained propositions of just the sort my account delivers.

5. Summing Up

I conclusion, I've argued, first, that objections from fineness of grain fail. Each way of formulating the objection that I have considered has a fatal flaw. Second, I've argued that contrary to what the advocate of such objection suggests, if only implicitly, a theory of structured propositions that individuates them in the way she suggests itself faces severe difficulties. Finally, I've given some positive reasons, due to Karen Lewis [2011a,b], for thinking propositions should be individuated very finely, as is done on my theory. At the very least, these considerations should give pause to those inclined to make facile appeals to objections from fineness of grain.

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