Replies to Ludlow and Partee

Graeme Forbes

MUST begin by thanking Professors Ludlow and Partee for the time and effort they have put into wrestling with *Attitude Problems* (AP). But as you might anticipate, I am deeply disappointed with the results in Ludlow's case, so I shall begin by trying again to convince him of the errors of propositionalism.

Ludlow tells us that propositionalism was mooted as early as the fifteenth century, by philosophers who proposed to explain the notional reading of the likes of

(1) I owe you a horse

by positing concealed material that expands (1) into something like

(2) I owe that [I will give you a horse].

Lack of both specificity and existential import is guaranteed because the meaning of 'a horse' is a constituent of the proposition determined by the 'that'-clause, rather than an element that quantifies in from above.

Though (2) may sound better in Latin, this is not, I submit, a promising start for the theory. In English, there is a use of 'owe' as a clausal verb, in which it means 'admit' (OK, maybe only in Yorkshire), but in the standard use of 'owe' as a transaction verb, (2) is not even grammatical. If verbalizations of concealed clauses should be grammatical, this is a problem. There also seem to be some degrees of freedom in the choice of concealed

clause. Is 'that you will receive a horse from me' any less preferable than 'that I will give you a horse'? I take it there must be a fact which it is, but what sort of evidence would help us choose between the alternatives?

The appealing feature of propositionalism is nevertheless on display in this example. Transaction verbs are one group of transitive verb that allows notional readings of complement quantified NP's, just as clausal verbs do. If these transitive verbs all take a concealed clause as true complement, then the familiar explanation of notional readings for clausal verbs in terms of narrow-scope occurrence of the relevant QNP can be carried over to transitive verbs in a completely straightforward way. The problem is that there is reason to think that this will only work in a few cases.

Evidence for a concealed clause accompanying verbs of requirement and desire is strong, as Ludlow argues (and as I agreed in AP; see also den Dikken *et al.*, 1996). There are attachment ambiguities with clausal uses of such verbs, as in

(3) You'll want to get an iPhone by noon tomorrow

which could mean that you will come to have the following desire: *that you get an iPhone by noon tomorrow*; or it could mean that the following desire, *that you get an iPhone*, will arise in you by noon tomorrow. And

(4) You'll want an iPhone by noon tomorrow

has exactly the same ambiguity, strongly suggesting that 'to get' is present, just unpronounced and unwritten.

Ludlow and his co-workers have also stressed the possibility of propositional anaphor (Larson *et al.*, 1997). Given

(5) I'd want an iPhone but my wife wouldn't allow it

one could, but hardly would, take away that my wife wouldn't allow me to *want* one. Rather, what wouldn't be allowed is that I *get* one (so I'm suppressing the futile desire). Hence a proposition with 'get' must be available to interpret 'it'.

In AP, I added to these considerations the phenomenon of ambiguity in ellipsisresolution. For example,

(6) I wanted to get an iPhone before anyone else in my family

can be spelled out in at least two different ways. The first reading attributes to me the desire that I have an iPhone before anyone else in my family has an iPhone – that I be the first in my family to *get* one. The second reading is that I wanted to have an iPhone before anyone else in my family wanted to get an iPhone – that I was the first in my family to *want* one. The point in favor of propositionalism, of course, is that exactly the same ambiguity is present in

(7) I wanted an iPhone before anyone else in my family

strongly suggesting the presence of an implicit 'to get', which is recovered in the interpretation of (7) that attributes the desire to be the first to get one.

However, it is a large strike against propositionalism that there are groups of intensional transitives or prepositionals where one would expect a concealed clause to generate traces of its presence comparable to the ambiguities in (4) and (7), but in fact no such traces are found. Exhibit A in this regard is the group of search verbs, 'seek', 'hunt', 'rummage about', 'sweep', 'scan', and so on. So, for example, we have

(8) You'll be looking to find an iPhone by noon tomorrow

^{1.} A possible third reading is that I wanted to *have* an iPhone before anyone else in my family *wanted* to have an iPhone, but the switch in focus from 'have' in the explicit material to 'want' in the recovered material may rule this out.

in which there is an ambiguity between a reading that states the deadline by which your looking will begin, viz., noon tomorrow, and a reading that states the deadline by which the finding is to occur. But when we consider

(9) You'll be looking for an iPhone by noon tomorrow

the reading which says that your looking will begin before noon tomorrow is very prominent, and a reading which says that noon tomorrow is the deadline on finding one would probably only occur to someone explicitly considering parallels between (8) and (9) and pre-empirically inclined to the view that the parallels should be exact.²

Nevertheless, in AP (p. 59) I did allow that there are examples with search verbs where a hypothetical concealed clause has a certain plausibility, for example, in

(10) Walter seeks an answer immediately.

This seems to have a reading which says that Walter's purpose in seeking is to get an answer *right now*. Ludlow has combed the Web and produced a number of search-verb examples that betray ambiguities which, he holds, also support the hypothesis of a concealed clause. In some of his cases, that seems to me not to be so.³ But many of them *are* like (10), and these all threaten the view that search verbs are a counterexample to propositionalism. However, in API suggested that these are special uses of search verbs,

^{2.} The lack of ambiguity in the likes of (9) was noted in (Partee 1974).

^{3.} Thus, to adapt a case in point, in "I'll look for flights next year (because this year's are all sold out)", the ambiguity seems to me to arise from whether 'next year' modifies 'look for' or whether it modifies 'flights' ('flights which take place next year'). Similarly, the ambiguity in 'The Toyota-United team is looking for sponsors next year' arises from the dropping of 'for'; I'm not sure it's acceptable English to drop 'for', but even if it is, at least on the Internet, there's still no support for a concealed clause; it's a concealed 'for' that does the work, perhaps in conjunction with the impossibility of the 'is (now) looking next year' construal, outside science-fiction contexts. Moreover, positing a hidden 'find'-clause does not explain the ambiguity in these cases. 'The TU team is looking to find sponsors next year' has a science fiction reading in which 'next year' modifies 'find', a reading which I think 'The TU team is looking for sponsors next year' lacks. The preferred reading of both sentences is 'The TU team is looking {for/to find} next-year-sponsors'.

in which the concealed clauses's verb is more naturally taken to be 'get' as opposed to 'find'. Ludlow proposes that (this is because?) they are 'non-perceptual' uses. If that's right, it gives us a principled distinction between regular uses of search verbs, for which propositionalism fails, and "irregular" uses, for which, I agree, it seems correct. So here I am happy to thank Ludlow for the distinction.

Propositionalism also has problems with ellipsis resolution. 'I wanted an iPhone before anyone else in my family' is ambiguous, as we noted, but

- (11) I shopped for an iPhone before anyone else in my family only has one of the two analogous readings, namely, that I was the first member of my family to *shop* for one. That is, there is no reading of (11) on which it means
 - (12) I shopped to find an iPhone before anyone else in my family found one.

Ludlow objects to this sort of putative counterexample that it 'mistakes the gloss for the analysis' and that the propositionalist analysis 'doesn't predict that the finding culminates'. I'm not sure I see why the propositionalist shouldn't require culmination, for if the concealed clause is a purpose clause, and if being in the process of finding doesn't imply finding, it surely understates my purpose to say that I shop (merely) to be in the process of finding an iPhone. But the main difficulty for Ludlow is that even as amended, the analysis does not get round the missing-reading problem, since

(13) I shopped to be in the process of finding an iPhone before anyone else in my family

can still be understood in two different ways, one of which, that I shopped to be in that

process before anyone else in my family was in it, isn't available as a reading of (11).⁴

A second problem group of intensional transitives for propositionalism is what in API called verbs of evaluation, in which I included verbs of emotion, such as 'fear'. Here the main issue is not that some superficially plausible clausal analysis ends up having more readings than the *analysandum*, but that there is no even *superficially* plausible analysis in the first place: the candidates that spring to mind are clearly insufficient. Thus, to say that Holmes fears Moriarty is not to say that Holmes fears that he will encounter Moriarty, since Holmes may fear that he will encounter Moriarty merely because he's afraid he'll get the flu from him. Nor is it to say that Holmes fears that Moriarty will do him some injury, for Holmes may have *that* fear merely because he believes that Moriarty is highly accident-prone and those in his vicinity often suffer collateral damage (imagine being offered a ride by someone you know to be an appalling driver). And the sorts of qualifications needed to get round this, involving, e.g., intentional production of an effect *via* a non-deviant causal chain, are too philosophically sophisticated to be realistic as semantic analysis.

Ludlow is unconvinced by this sort of response. How, he wonders, could Holmes fear Moriarty if he doesn't fear encountering him, doesn't fear he'll do him some injury, doesn't fear that he exists, and so on? I take it Ludlow wants to say there must be *some* propositional attitudes in the offing here that get us sufficient conditions (*contra* Kaplan

^{4.} I still retain a fondness for the first, Fodorish, objection to the den Dikken *et al.* account of search verbs that I gave in AP (p. 55), that, as with Quine, the proposed clauses are materially inadequate. To look for an *F* is, allegedly, to look to find an *F*. But suppose you've gone whale-watching and you know that a flock of gulls circling above a spot in the sea is a reliable sign of the presence of a whale there. So you look in the sky above the sea for a flock of gulls, in order to find a whale. From this, I think it follows by the lights of den Dikken *et al.* that you are looking in the sky for a whale, which seems unlikely.

^{5.} In AP (p. 65) I rejected an example of den Dikken *et al.* of supposed attachment ambiguity, 'John will fear a storm tomorrow', on the grounds that here 'fear' is used as a verb of anticipation. Ludlow offers some other examples, for instance, 'I fear drunken sailors at midnight' (his (67)). It seems right that this is ambiguous, but I don't think the more likely reading involves a hidden clause, e.g., 'that I encounter...'. To my ear, 'drunken sailors at midnight' is synonymous with 'sailors drunk at midnight', in which 'drunk at midnight' is semantically an adjectival modifier. Would Ludlow say that syntactically, it is a small clause?

1986). I see three possibilities for working this up into a propositionalist analysis, but none of them, I think, will succeed.

The Disjunction Account. The idea is that the analysis of 'Holmes fears Moriarty' is a very long disjunction of the various propositional attitudes that might suffice. But I take it that no-one knows what that disjunction is. So no-one knows what 'Holmes fears Moriarty' means. This strikes me as incredible.

The Contextualist Account. Here the idea is that on different occasions of ascribing fear of an object, the context determines which particular propositional attitude is ascribed. So the semantic analysis of 'x fears Moriarty' would contain one or more placeholders for items from Ludlow's list, in much the same way that the semantics of the possessive might require a placeholder for the particular possession relation the speaker intends (in recommending John's book I might be recommending the one he wrote, or chose, or bought, or brought with him; see Partee 1997). But there is a striking disanalogy with the case of possessives. If Watson informs you that Holmes fears Moriarty, it seems to me that you can understand this completely even if you have no idea which propositional attitude has replaced the supposed placeholder in Watson's ascription in this context; whereas, if you don't know whether I'm recommending the book John wrote or the book he bought, your understanding is incomplete. Indeed, if you think I mean 'bought' when I actually meant 'wrote', I would say you *mis*understand me ("Why would you recommend that? Don't you know that John buys all sorts of books on the merest whim?" - "No no, I meant the book he wrote."). So, by the same token, if you think Watson is telling you Holmes fears that he will encounter Moriarty, while what Watson has in mind is that Holmes fears that Moriarty will do him some injury, then you have misunderstood Watson. The fact that such misunderstandings don't arise over 'Holmes fears Moriarty' suggests that there is no placeholder in the semantics whose oc-

cupant you have to grasp for successful communication to occur on a specific occasion.

The Existential Quantification Account. Here the idea is that the semantics of 'Holmes fears Moriarty' involves existential quantification over propositions (and perhaps even propositional attitude relations). But it can't be just any old proposition about Moriarty, e.g., the proposition that Moriarty is, what ho, a jolly good cricketer. The semantics will have to include some kind of characterization of the propositions that may figure, and so it looks as if the problems with finding a specific proposition will arise over again, at a higher level. For instance, we might propose that the propositions must describe some kind of harm that Moriarty will do to Holmes. But then, to avoid the objections already mentioned, the proposition-characterization, or the proposition, may have to have complex and sophisticated content, making it, respectively, implausible as an analysis or beyond the ken of most of those capable of fearing Moriarty.

There is also the worry which I mentioned in AP (p. 64) in connection with depiction verbs, that the quantifier introduces extra structure, something that some propositionalists try to avoid so far as possible (Parsons 1997), and for good reason. On the existential quantification account, the standard reading of

(14) Three people in London don't fear Moriarty

is, as a first approximation,

(15) (three(in London(people))) λx .not((some) λp . ϕ (p) and fear(p)(x))

but it is also possible to hear (14) as saying that there aren't as many as three people in London who fear Moriarty (Moriarty is a rather unintimidating character), for which an analysis is

(16) (not(three(in London(people)))) λx .((some) $\lambda p.\varphi(p)$ and fear(p)(x))

However, there appears to be no reading of (14) which has the analysis

(17) $(not(some))\lambda p.\phi(p)$ and $(three(in London(people)))\lambda x.fear(p)(x)$

which can be false even when (16) is true, and this strikes me as a fact in need of an explanation. Ludlow remarks that some conceivable readings will be blocked by negation being a 'notorious scope-island', but (17) does not involve raising anything in (15) above (15)'s **not**.⁶

My conclusion regarding propositionalism, then, is that as a research program, it is rich in challenging problems. But it isn't the only option: there are also broadly Montagovian approaches, one of which is developed in some detail in AP. My last disagreement with Ludlow concerns the prospects of that approach accounting for some phenomena that arise with depiction verbs.

On the AP account of depiction verbs (p. 139), to say that someone x painted an object y is to say that x made a painting of y, or, in full Davidsonian, that x was agent of an event of making whose theme was a painting of y:

(18) (some) λ e.making(e) and agent(e)(x) and a(painting) λ z.theme(e)(z) and of(y)(z).

Ludlow's challenge to this account is to accommodate certain types of modification, illustrated in, for example, 'Hockney painted Venice in the seventeenth century' or 'Hockney painted the Grand Canal from the Accademia bridge', where in the former we mean 'Venice as it was in the seventeenth century' and in the latter, 'the Grand Canal as it looks from the Accademia bridge': Hockney is not being said to have visited the seventeenth

^{6.} It's also unclear to me that negation *is* a scope-island. Suppose I visit an exhibition of early modernism, and report that it didn't have several blue-period Picassos. This remark could fairly be taken by my audience not as a complaint about the number of blue-period Picassos in the show – I was told it had several, but it only had a few – but as an expression of disappointment about the absence of several blue-period Picassos I'd hoped to see: there were several blue-period Picassos that the show didn't have.

century to paint Venice, or to have been on the Accademia bridge when he was painting the Grand Canal. In these cases, then, we are saying that the object is presented under a certain aspect (its seventeenth century aspect), or from a certain perspective (the Accademia bridge perspective). To meet Ludlow's challenge, my move would be to put the concept of being presented under an aspect or from a perspective into the semantics. As a first shot in broadly the desired compass direction, this would lead to

(19) a(painting) λ z.theme(e)(z) and of(the grand canal)(z) and in(z)(perspective(the accademia bridge)).

In this sort of case, the perspectival or aspectual modification is the justification for the final conjunct. If propositionalists are to avoid having Hockney paint propositions, their own proposed semantics will presumably also introduce extra elements, perhaps a thematic role **content** for relating the painting and its associated proposition.

I turn now, and more briefly, to Professor Partee's comments. We seem to have many areas of agreement, and I thank her for kind remarks about the book. Her main dissents are over my criticisms of Montague's approach. Montague lets transitive verbs be functions that take quantifier meanings as input and produce verb-phrase meanings as output, and generates notional readings – so it's said – from the case where the actual QNP that is the syntactic object of the verb is the input to the verb. I am inclined to think that we don't really understand what such a term as **seek(^a(gorgon))** means, and taking it to be the semantics of the notional reading of 'seeks a gorgon' seems to me to be more like a policy decision than anything else. The same thing – that you get a notional reading – would have to be said about **capture(^a(gorgon))**. More carefully: for this case, Montague's idea was to impose a meaning postulate (or restriction on *admissible* models) on extensional verbs, so that **capture(^a(gorgon))** could only be true of items that stand in

a certain intimately related relation we write 'capturing*' to some specific gorgon. My argument was that the meaning postulate comes in too late if (i) notional readings are 'no particular one' readings, and (ii) the notional reading is demanded when a transitive verb takes a QNP-meaning directly as input. For then **capture(^a(gorgon))** gets a notional reading, and maps, say, Perseus, to \top , iff (unintelligibly) Perseus captured a gorgon, but no particular one. The proposed meaning postulate for 'capture' then requires a condition inconsistent with the applicability of **capture(^a(gorgon))**.

Partee takes issue with premise (i), that notional readings are 'no particular one' readings. In AP I argued for the possibility of *non-committal* readings, ones which leave it open whether or not a specific object, or specific objects, are in the picture. For instance, on seeing Perseus make preparations for a gorgon-hunt, you might say 'he's going to look for a gorgon' without any idea whether or not there is a specific gorgon he'll be looking for; you'd be entitled to assert this, but you're not entitled to assert what your grounds for fall well short of justifying, so you're not asserting either that there is a gorgon he's going to look for, or that he's going to look for a gorgon, but no particular one. So if we take the assertion to be non-committal, perhaps the problem of the previous paragraph goes away. In AP I argued that there would still be an inconsistency between an extensionalizing meaning postulate and a non-committal reading of 'capture a gorgon', and Partee may be right that this isn't correct. Nevertheless, it seems strange to me to allow extensional verbs to involve themselves in structures which express non-committal readings, when it's obvious that the 'no particular' reading is unintelligible.⁷

However, this only tells against Montague's 'generalization to the worst case' strat-

^{7.} Partee suggests that the *general form* of a simple sentence with a transitive verb is what is non-committal, we get a 'no particular' reading when the form is instantiated with an intensional transitive, and a 'specific one' reading when an extensional transitive is used instead. This isn't how I think of non-committal readings, as the example of 'look for a gorgon' in the text shows: the form is instantiated with an intensional transitive, but the reading is still non-committal. For Partee, these are (merely) puzzle cases, but for me they are the main motivation for thinking that there is such a thing as the non-committal reading.

egy, which, it's fair to say, has not caught on. It doesn't show that there's anything wrong with his account of the worst case itself, *intensional* transitives. My objection to this in AP was that it's unclear how the very same verb-meaning, say the meaning of 'seeks', can accept both individuals and quantifiers as input. The problem is not resolved, but merely obscured, or even worsened, by raising singular terms to quantifier type. Generally, a type of the form $t_1(t_2b)$ is the type of relations between items of type t_1 and items of type t_2 . Where t_1 has the type of first-order relations, i.e., $t_1(t_1b)$, we have a conception of the truth-maker of simple relational assertions of the form $t_1(t_1b)$ and $t_1(t_1b)$ assertion of the conception of truth-maker seems to involve no more than replacing an item of type $t_1(t_1b)$ and $t_1(t_1b)$ case, the object is a thematic participant, so in the $t_1(t_1b)$ case the quantifier must also be the bearer of that thematic participant role. So seekers of some gorgon or other seek properties of properties; and that seems absurd.

These remarks usher my own explicitly Davidsonian account onstage: in the proposed semantics for non-relational readings, the quantifier is not a thematic participant in the event, but rather, classifies or *characterizes* the event (here I borrow from Goodman's (1976) discussion of depiction verbs). So we have a contrast between **a(gorgon) \lambda x.(for(e))(x)**, a search for a specific gorgon, and **(char(e))(a(gorgon))**, a search for a gorgon, but (maybe?) no particular one. In all readings we have a conjunct **seeking(e)** which is perfectly univocal; what changes from reading to reading is what we say about the seeking. One non-relational interpretation of 'Perseus seeks a gorgon' is

(20) some $[\lambda e.seeking(e)]$ and agent(e)(perseus) and (char(e))(a(gorgon))].

(20) says that for some seeking, Perseus is its agent and it is characterized by the property of being a property of a gorgon. About this semantics, Partee asks "how can...[it]...

deliver a non-committal reading if the semantic type of a notionally interpreted object NP is so different from the entity type involved in a relational reading?" One response would be to proclaim (20) to be non-committal, and require for notional and relational readings the presence of an extra conjunct: for the notional reading, the conjunct would be no(gorgon)\lambdax.for(e)(x) and for the relational, some(gorgon)\lambdax.for(e)(x). This has the advantage that it treats 'but no particular one' as an optional extra conjunct, which, after all, is what it appears to be. But it will be difficult to explain what the **char** subformula is doing in the *relational* reading. That is, if the relational reading is

some[λ e.seeking(e) and agent(e)(perseus) and (char(e))(a(gorgon)) and a(gorgon) λ x.for(e)(x)]

then **(char(e))(a(gorgon))** looks, not redundant, but wrong. (21) is supposed to be the reading that follows logically from 'Perseus seeks Medusa' and 'Medusa is a gorgon', so there is little reason why the quantifier should characterize the search: the concept of being a gorgon need not figure in any of Perseus's relevant intentions or subgoals, and it also seems unlikely that the kind of outcome-postulate approach I pursued in AP can correctly require that successful conclusion of the search involves finding Medusa *as* a gorgon.⁸ So the relational reading should just be

- (22) some[λ e.seeking(e) and agent(e)(perseus) and a(gorgon) λ x.for(e)(x)] and the anti-relational, 'no particular one', reading would then be
 - some[λ e.seeking(e) and agent(e)(perseus) and (char(e))(a(gorgon)) and no(gorgon) λ x.for(e)(x)].

^{8.} I am assuming that the very same search could have taken place and culminated successfully even if Perseus, Polydectes and all the others had been *misinformed* about Medusa being a gorgon.

This gives us (20), (22) and (23) as non-committal, relational, and anti-relational respectively (I have tried to use 'notional' consistently for one or two of these, several times). It is not an organization Partee will like, since (23) is obtained from (20) by adding a conjunct, while (22) is obtained from (20) by substituting a conjunct.

Nevertheless, the taxonomy seems to me to be defensible. Assuming that neo-Davidsonian analyses are possible outputs of compositional semantics at all, relational attitude ascriptions do not present special difficulties. The relational reading of 'Perseus seeks a gorgon' would be delivered by a lexical entry for 'seeks' comparable to one for 'capture':

(24) $seek \Rightarrow \lambda y.\lambda x.\lambda e.seeking(e)$ and agent(e)(x) and for(e)(y)

and it seems to me that, absent recursive operations in the lexicon, there is little choice but to provide intensional verbs with *multiple* lexical entries (see Forbes 2008). The one we want for non-relational readings is

(25) $seek \Rightarrow \lambda Q.\lambda x.\lambda e.seeking(e)$ and agent(e)(x) and char(e)(Q)

which will give rise to (20) even more directly than (24) gives rise to (22). This leaves (23) unaccounted for, but (23) is strictly only the semantics of 'Perseus seeks a gorgon, but no particular gorgon'. If we offer it for 'Perseus seeks a gorgon', there would have to be some way of indicating that the words 'but no particular gorgon' are being *understood*. Those words are in some sense really present, so the conjunct **no(gorgon)λx.for(e)(x)** may be derived in the normal way.

Department of Philosophy University of Colorado Boulder, CO 80303 graeme.forbes@colorado.edu

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