Expression, Truth, Predication, and Context: Two Perspectives

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Semantic theory as commonly practiced recognizes two central notions, namely that of the expression of a proposition by a linguistic form (or its utterance), and that of truth. Because truth applies both to forms or utterances, on the one hand, and to propositions expressed on the other, the data to be accounted for in a theory of truth split in two; but the theory of expression of a proposition may reunite them, reducing the account of the truth of linguistic forms to that of the propositions that they express. Let L be an actual or potential human first language, perhaps our own. Setting aside for the moment all contextual matters, and taking the canonical structural descriptions of the sentences of L for granted, the project is to clarify the status of unexceptionable examples from the usual semantic trio, as in (I)-(III):

(I) s expresses in L (the proposition) that p

(II) s is true in $L \leftrightarrow p$

(III) (The proposition) that p is true $\leftrightarrow p$

How do these elements fit together?

By a *redundancy theory* of expression as in (I), or of truth with respect to either (II) or (III), I shall mean any account according to which the standard examples need only to be clarified to be seen as in one way or another trivial, or anyway not demanding of a separate, presumably theoretical, explanation. Of course, my basis for calling something a redundancy theory is vague; but then there is a variety of redundancy theories. Redundancy theories of (III) have been advanced on the ground that it is the

unexceptionable instances of (III) in our own speech that sum up the point of the predicate 'true' in the first place. But complex theories of truth, for which certain instances of (II) are consequences, may also be advanced as redundancy theories, particularly for the case where the metalanguage is merely an extension of L containing the metalanguage predicate 'true in L', and enough apparatus to formulate at least an inductive definition of this predicate along Tarskian lines. Again, suppose that (I) is solved for expression of a proposition by a sentence in L. As we are assuming that a sentence is true just in case it expresses a true proposition, any instance of (II) is a consequence of the corresponding instances of (I) and (III), there is no need for a separate account of it. Likewise, the instances of (III) could be viewed as consequences of (I) and (II).

There are also redundancy theories, as I intend this notion, of (I). One of these may be illustrated through Richard Montague's language IL of Intensional Logic (or, more strictly speaking, by a language L for which IL constitutes the logical apparatus, L being further enriched with ordinary names, predicates, and so forth). In that setting, the semantic values of all expressions are relativized to the parameter i of possible worlds, and we may propose a substantial account of the notion (II') corresponding to (II) above:

(II') s is true in L at $i \leftrightarrow p(i)$

However, once (II') is taken care of, the notion of expression follows right along, as we shall have, for every s and i, (I'):

(I') s expresses in L at i (the proposition) $^\wedge p$

where Montague's hat '^' represents λ-abstraction over the possible worlds. (Alternatively, one could start with the expression relation (for all categories) and derive the instances of (II').)

Another redundancy theory of (I) is that of *sententialism*, as I and others have used this term, following Schiffer (1987). On the sententialist view, clauses 'that *p*' refer to themselves, understood as if uttered. With suitable auxiliary premisses, the instances of (I) and (III) will follow (I give these premisses in Higginbotham (2006)). In this case, the account of expression presupposes the account of truth. Similar remarks will apply on an extension to all occurrences of complement clauses of Donald Davidson's "paratactic" theory of indirect discourse (Davidson (1968), though I think this theory incorrect, for reasons I will not go into here).

There are, then, redundancy theories of (I), and of (II), each of which advances substantive theories of the other. Is there a prospect of taking all of (I)-(III) as redundancy theories? Not if we are serious. If in Oxford I glance at a newspaper in Romanian, I can certainly wonder what the headlines say, and whether whatever it is they say is true. My (extremely partial) knowledge of Romanian gives me some information, but likely not enough. What do the Romanians know that I don't know? Whatever it is, it is sufficient for them to determine what is said, and the conditions under which it is true, even if I don't know what they are. In short, the concepts of truth and of expression of something, or of what is said, by a sentence or potential utterance, apply beyond the borders of our individual competences.

Assuming, then, that redundancy theories of truth or of expression may be offered, I will turn first to some very general issues for redundancy theories of truth based upon

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accounts of expression in terms of structured propositions as in King (2007), adverting

for this purpose to critical discussion of some proposals early and late by Donald

Davidson. I will conclude that Davidson's considerations (or similar points made by

Cartwright (2005) and Schiffer (2003)) are effective only against particular versions of

that account; at the same time, these considerations cannot be waved aside through

casual, or even sophisticated, talk of properties and relations

  I shall assume for present purposes that a structured proposition of the sort expressed by

an elementary subject-predicate sentence is composed in some way out of the

interpretations of the subject and the predicate, and perhaps other things, as expounded

and defended recently in King (2007). The problem is to explain how those things,

together with the mode of composition, are to be seen as composing something with a

truth value. It is straightforward to *say*, or anyway to construct a theory that implies, that

these objects have truth values, and even to say how these values are to be determined;

the problem lies in doing so without importing other information.

  In his posthumous book *Truth and Predication* (Davidson 2005), Donald Davidson

rehearsed much of the long history of a notorious question: how should we understand

the different roles of subject and predicate (or, in more contemporary terms, of argument

expressions and predicate) and their contributions to the sentence? There is a cluster of

questions here. What makes for the different roles of argument expression and predicate?

Why does each require completion (by the other, putting quantification aside) in order to

form an expression that can have a truth value, and give the content of a speech act? Is

there a principled distinction between the kinds of things argument expressions and

predicates are to be associated with in an overall account of the workings of language,

and if there is does that distinction explain the difference in their roles? And if we suppose as usual that the role of an argument expression is to refer to an object, do predicates also refer, and if so to what?

Davidson's views on the above questions comprise three theses, which I believe may be arranged in order of increasing strength. The first is that the reference of predicates must be of a fundamentally different kind from the reference of singular terms; or, to put it metaphysically, the reference of predicates is not to objects. The second is that, on the assumption that revealing the full workings of a language involves giving an inductive definition of truth for that language (and, perhaps we should add, to the extent that it involves only that), we need only say that predicates are distinguished as those expressions that figure in the inductive definition as being *true of* objects, or sequences of objects, under such-and-such conditions, as spelled out predicate by predicate, by stipulation for the primitives, and by recursion for complex predicates. The different roles of argument expressions and predicates are then explained through the difference between *refers to an object*, and *is true of an object*. The third thesis is that even if, as in Frege, the reference of predicates is not to objects in the universe of discourse, but to other things of some special kind altogether, the nature of such reference cannot explain predication. (To explain predication does not mean: to explain it to someone who did not know what it was; for I would have to *use* predication in order to do that. Rather, it would mean to explain why argument expressions and predicates "fit together," and why neither argument expressions nor predicates fit together with each other.) I consider these in turn.

Davidson's argument for the first thesis is well-worn, but I am going to rehearse it anyway in a particular form, using one- and two-place predicates, and supposing for simplicity that they refer to classes. The thesis to be disputed then would be: a one-place predicate refers to a class of things, and a two-place predicate refers to a class of ordered pairs. On the view in question we would have, e.g.:

(1) 'Theaetetus sits' is true $\leftrightarrow$ Theaetetus $\in$ the class of sitters

(2) 'John loves Mary' is true $\leftrightarrow$ <John,Mary> $\in$ the class of lovers and beloveds, in that order.

Now, the argument goes, we will, having the relation expressed by '$\in$' to hand, give the role of '$\in$' on the right hand side of (1) by (3), and similarly (4) for the right hand side of (2):

(3) 'Theaetetus $\in$ the class of sitters' is true $\leftrightarrow$ <Theatetus,the class of sitters> $\in$ the class of ordered pairs of things of which the first is a member of the second.

(4) '<John,Mary> $\in$ the class of lovers and beloveds, taken in that order' is true $\leftrightarrow$ <<John,Mary>,the class of lovers and beloveds, taken in that order> $\in$ the class of ordered pairs of which the first is a member of the second.

In short, the explanation of predication as relating things, or sequences of them, to classes cannot apply to '$\in$' itself, which must be used as a relational predicate in giving the explanation. I take it that such is the "infinite regress" that Davidson remarked as early as "Truth and Meaning" (Davidson (1967)).

I have illustrated the issues through the use of membership '$\in$', and classes. But they arise equally for any other purported relation R in place of that expressed by '$\in$', and for purported objects other than classes. The conclusion then is: the semantic role of

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predicates can't be to refer to special objects in the universe of discourse, on pain of being

unable to unravel the role of *R*.

The result may be unsatisfying; but that doesn't make it a regress, at least not yet.

Before offering a summary of what the argument does show, I will consider an attempt to

defang it.

The defender of structured propositions, relating individuals or pairs of them to classes,

or to properties and relations, may respond, as in King (2007), that the relation of

membership, or analogous relation, that is exploited in securing a truth value for (1) is not

given by any piece of vocabulary hidden somehow in that sentence, but rather by the

syntax of the sentence. Thus King (2007: 34) writes:

> ...we can think of this bit of syntax [concatenation, or the
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> breakdown of S into NP+VP] as giving the instruction to
>
> to map an object *o* (the semantic value of an expression
>
> at its left terminal node) and a property *P* (the semantic
>
> value of an expression at its right terminal node) to true
>
> (at a world) iff *o* instantiates *P* (at that world).

And in defense of the view that the syntax "provides instructions," he adds on the same

page:

> Semantic approaches differ only on what they claim *is*
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> the instruction that a given piece of syntax provides. They
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> are all stuck with the idea of syntax providing instructions.

and gives as an example IL as invoking function application.[1]

If we take up this last statement as a thesis about linguistic competence, it seems to be false, and false not only for the toy examples of instantiation and membership, but also for accounts such as IL. Taking King's example first, what do you need to know to know that 'Theaetetus sits' (or more precisely the string 'Theaetetus sits' together with its syntactic structure) is true (at the world i) just in case Theaetetus instantiates at i the property of sitting? According to the account envisaged, you need to know (i)-(iii):

(i) The NP 'Theaetetus' refers in English at i to Theaetetus (for every i).

(ii) The VP 'sits' refers in English to the property of sitting.

(iii) A sentence S=NP+VP is true at i iff the reference of NP at i instantiates at i the property referred to by the VP.

None of these statements "gives instructions" to anybody: they are just statements of fact, known to speakers of English. In IL the statement corresponding to (iii) would be (iii'):

(iii') A sentence S=NP+VP is true at i iff the reference of VP at i(the reference of NP at i).

The statement (iii') of course *uses* functional application, but it seems a far fetch to say that the syntax "provides instructions" to use it. To grant the legitimacy of (iii') is effectively to concede Davidson's point, as I will argue more fully below.

I agree with King that appeal to (iii), or to the corresponding (iii') of IL, do not of themselves involve any sort of regress or incoherence. True, (iii) uses the relational predicate 'instantiates', which does not itself appear in the sentence S; and (iii') applies function to argument without having displayed any expression in S that expresses that notion. In each case, there is something that, according to the theory in question, we

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must grasp in order to understand it that is not represented by any vocabulary in the sentence; and in sentences where that is explicitly represented, as in 'Theaetetus instantiates the property of sitting', we still must grasp it in the background, as yielding truth just in case Theaetetus and the property of sitting, in that order, instantiate the relation of instantiation. But that isn't yet a regress: that's just the theory.

But now, for King's account, or for the toy version above in terms of classes, there is another issue. How do expressions such as 'the class of sitters', 'the property of sitting', 'the property of loving', or 'the class of all lovers and beloveds, taken in that order', get their reference? These expressions are the nominalizations of predicates: the class of sitters is $\{x: x \text{ sits}\}$, and the class of all lovers and beloveds, taken in that order, is $\{<x,y>: x \text{ loves } y\}$. Likewise, the property of sitting is the property of being an x such that x sits, and the relation of loving is the relation of x to y in which x loves y. Moreover, the account of predication illustrated by (1) and (2), or King's examples, must apply to all 1-place and 2-place predicates in the language, with each of which must be associated a canonical singular term referring to a class, property, or relation. But then, in characterizing the things to which a predicate corresponds we will necessarily be using, inside the abstracts, the very predicates that we were supposed to be explaining.

In *Truth and Predication* (pp. 145-146), Davidson cites Frank Ramsey's partial dismissal of the question of predication in Ramsey's statement that 'Socrates is wise' and 'Wisdom is characteristic of Socrates' invert subject and predicate but "say the same thing." For Davidson, this thesis is an instance of falling into his, Davidson's, regress, through the use in this case of the predicate 'is characteristic of' (an inverted epsilon, as it were), expressing the relation converse to instantiation. But it should also be noted that

there is no systematic way of forming, for an arbitrary Adjective Phrase **A**, a subject

comparable to 'wisdom', except by recognizing nominalizations such as 'to be/being **A**',

which are manifestly predicative in nature. The first objection to Ramsey, then, should

be that in transforming subject and predicate we must recognize the predicative character

of the new subject 'wisdom', which refers to the property of being an x such that: x is

wise. Moreover, just to get off the ground, Ramsey's consideration must appeal to some

form of comprehension principle. What makes the class of things x such that x is wise

the class that it is, or the property of being a thing x such that x is wise the property that it

is? These expressions, 'wisdom', 'the class of wise things', 'the property of being wise',

must themselves have a compositional semantics that justifies the assertion that 'Wisdom

is characteristic of Socrates' does in fact have the same truth value as 'Socrates is wise'.

 I have been skeptical of the thesis that there is a regress in a semantics that uses (i)-(iii)

in giving the truth conditions of 'Theaetetus sits'. Whether there is or not, however, we

can advance the view that the whole route was redundant, brought nothing at all to the

semantic project, and, if applied even mildly to membership or instantiation itself, either

paradoxical or mysterious. It was redundant, because to understand (1), taken up now as

(5), we must already understand 'x sits', and we could just write (6):

(5) 'Theaetetus sits' is true $\leftrightarrow$ Theaetetus $\in$ $\{x: x \text{ sits}\}$

(6) 'Theaetetus sits' is true $\leftrightarrow$ Theaetetus sits

It is no advance, because predication inside the class abstract is not eliminable. And if

the schema is applied to '$\in$' itself then, because the truth of such as (6) has to be

acknowledged in any case, and the analogues of (5) and (6) together will imply all

instances of the comprehension axiom, and Russell's paradox will be swiftly derivable

(alternatively, one might take the right hand side of (6) as an abbreviation for the right hand side of (5), thus leaving it utterly mysterious what classes are referred to by the abstracts, and how come).

Russell's paradox looms anyway, to be sure, as the naive comprehension principle (7) (cited by Rudolf Carnap in Carnap (1956: xyz)) cannot be accepted:

(7) x has the property of being an $F \leftrightarrow F(x)$

(I supply some details in Higginbotham (1989)). But that it should arise at this level is problematic. (IL, incorporating as it does the simple theory of types, evades the paradox, by syntactic fiat.

In the respect we have been discussing, the difficulty with King's and similar accounts of predication and properties is not shared by IL, for in that setting predicate and argument fit together naturally, as we might say: the clause (iii'), repeated here, employs functional application, but invokes nothing *expressing* that operation:

(iii') A sentence S=NP+VP is true at i iff the reference of VP at i(the reference of NP at i).

Moreover, (III) above, repeated here, falls out trivially.

(III) The proposition that p is true if and only if p.

It is possible that Davidson's neglect of IL led him to overlook a simple response to his chief argument against deflationism about truth in Davidson (1996), that it was simply incoherent to advance (III) as saying, of something denoted by the subject 'the proposition that p' that it was true if and only if p. That argument I understand as follows: 'that p' (or 'the proposition that p') must be a singular term, and what replaces 'p' must be the same sentence, with the same semantic features in both occurrences; but how

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is this to be done? The answer, *chez* IL, is that both sides of the biconditional contain a

tacit reference to the actual world @; '*p*' in both occurrences expresses a proposition (a

function from possible worlds to truth values); and 'that' is a nominalizer, referring (for

each possible world *i*) to the proposition that '*p*' expresses. IL provides an explicit

account of propositional nominalizations 'that *p*', producing their interpretations in terms

of the interpretations of their parts, 'that' and '*p*'; any semantical account that did the same

could be used to respond to the difficulty that Davidson raises.

  There is a worry about the justification of models for IL in the usual set-theoretic terms,

inasmuch as within set theory functions are just other objects. And there is a further

related worry about stating the theory itself: if the reference of 'sits' (in *i*) has to be given

as something like 'the function that maps *x* into Truth if *x* sits (in *i*), and Falsehood

otherwise', it appears that this reference is to an object. If *t* is a singular term, then we

can put the words 'the reference of *t*' *salva grammaticate* for *t* anywhere. Should not the

same be true for any predicate *P* and whatever corresponds to its reference? Here we are

up against questions very close if not identical to those that Frege faced in "On Concept

and Object" (Frege (1892)). I will consider some of these more closely below.

  Davidson cites Plato as having observed that you cannot make a sentence out of two

names, or two predicates. But there is a way within a fragment of English taken up

within IL to make 'Theaetetus Theaetetus' a sentence: just let the latter occurrence of the

name express $^\wedge \lambda x(x=$Theaetetus$)$. This is "type-lifting," much beloved of Montague

grammarians. The fact that 'Theaetetus Theaetetus' isn't a sentence, and couldn't be,

would be an adventitious lexical or morphosyntactic matter. However, I think that we

should reject, not Plato's observation, but type lifting, and likely the theory of types

altogether, at least in application to the semantics of human first languages. There is an issue in the other direction as well; that is, in the free admission of NP-VP sentences, inasmuch as the free combination of many predicates with expressions of different types will, according to the theory, force those predicates to be arbitrarily ambiguous (for many details, see Chierchia (1984)).

We have been considering Davidson's first thesis, that the reference of predicates cannot be to objects. It is possible to invert this thesis; that is, to hold that no (apparent) reference to objects can give the reference of a predicate. I take this to be the view of Cartwright (2005). There, considering what he perceives to be the inadequacy of expressions like 'the property of being so-and-so' to reveal what is going on in predication, he mentions Frege's view that the inadequacy merely reveals what Frege called an "awkwardness of language." He then writes:

I have nothing better to say.

Cartwright (2005:918). I assume that this confession is not merely an autobiographical statement, but rather an expression of despair at not finding Frege's gesture satisfactory.

The definite article, said Frege, "points to an object." That statement is not quite true for English anyway, as we have statements like (8):

(8) John is the very thing we expected him to become: a philosopher (or: honest to a fault, etc.)

where what follows the copula is pretty clearly a second-order definite description (more than a hint of the "awkwardness" is provided by the observation that we had to use the dummy noun 'thing' in the description). But such examples are rather puny, and they yield a far less than robust interpretation of quantification into predicate positions.

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Others have been highly skeptical of property talk, or anything similar, as explaining predication. Thus Schiffer (2003) (discussed in King (2007: 103 ff.) argues that accounts of structured propositions along King's or similar lines must make what is expressed by 'Fido barks' a proposition made up of two singular terms, so that the predicate position in the nominalization 'that Fido barks' should be a quantifiable place, and sentences such as 'John believes that Fido barks' should allow the implication 'For some x, John believes that Fido x', which is, in Schiffer's words, "incoherent" (Schiffer (2003: 30)). Here Schiffer is proposing, or perhaps assuming, that in virtue of the use of such words as 'the property of barking' as giving the reference of 'barks' we have, in Frege's terms, "pointed to an object." But this view need not be accepted (King disputes it, at least in the sense that he denies that his view is committed to holding that predicates are ever what he calls "referring expressions").

In any case, I review quickly, and without presenting the textual evidence from Frege's writings here, one way of defending Frege's views.[2] In a language such as *Begriffschrift*, with function symbols as primitive, and similarly in second-order logic, there is no difficulty in writing definite descriptions for functions, or definite descriptions that would give the reference of predicates. The function "add one" is just (9), and the reference of the predicate 'sits' is given as in (10) (in an extensional setting):

(9) (the f)($\forall x$) $f(x)=x+1$

(10) (the F)($\forall x$) ($F(x)\leftrightarrow x$ sits)

Moreover, (9) is a function expression, just like 'f' itself, and (10), like 'sits', is a predicate. Hence we may write (11) and (12):

(11) [(the f)($\forall x$) $f(x)=x+1$](2)=3

(12) Theaetetus (the F)($\forall x$) ($F(x) \leftrightarrow x$ sits)

In High School Mathematese we pronounce (9) as something like, "the function f such that for all x f-of-x is $x+1$." But then we had to use a Noun, namely 'function'. And how do we say (10)? We can try something like, "What (or: that which) a thing is if and only if it sits," roughly as suggested in Dummett (1973: 213-218 [check]). We should then declare that 'Theaetetus is what a thing is if and only if it sits' shall be a sentence meaning that Theaetetus sits. By no means, however, can we always use the definite or indefinite articles of English---they would give the wrong idea, as producing singular terms, or indefinite descriptions of objects. If, moreover, as is overwhelmingly the case in natural languages, the arguments of predicates are in Frege's sense saturated, then neither (9) nor (10) can itself appear as a subject of predication.

Now, nothing that I can see prevents endorsing Frege's view, absorbing it into possible-worlds semantics, and thereby recruiting it into one's conception of structured propositions. For 'Theaetetus sits' we would have a tree or phrase marker as in (13), where α is the person Theaetetus, and β is the intension of 'sits':

(13) $[[\alpha] [\beta]]$

The parent node, marked by the exterior square brackets, is that sentential intension that is Truth in a world i just in case $[\beta(i)](\alpha(i))$, and Falsehood otherwise.

The point of the structured-propositions account would thereby at least in part be realized, in that it would prevent the collapse of the proposition expressed by a sentence into its intension. Should scruples about what is and what is not sayable given the design of natural languages be a barrier to adopting Frege's thesis, that what we face is just an "awkwardness of [natural] language," or a precaution against launching ourselves as it

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were into the unsaturated sea? That is a question beyond my scope here. In any case, it is not to be decided in virtue of the properties of language that figure in those parts of semantics we have been considering.

We have been examining Davidson's first thesis, that the reference of predicates cannot be to objects. The second thesis I mentioned above is that if we adopt the view that the interpretation of a predicate is given by saying what it is for that expression to be true or false of objects, then nothing further that is peculiar to predication need be stated. The question of the reference of predicates then appears to become otiose. Thus in his useful review of *Truth and Predication*, Jeff Speaks (2006) observes that we might read the book back to front, as it were, taking the solution that Davidson offers to constitute an objection to assigning universals, or concepts in the sense of Frege (i.e., functions from objects (with or without possible worlds) to truth values), or properties, or anything of the sort to predicate expressions. In a similar vein, Orenstein (2006) remarks that if we can use the notion of truth to characterize predication (in the sense of saying that predicates are those expressions that are satisfied or not (in a possible world) by objects), then the question what predicates stand for, refer to, or mean falls away.

This conclusion is too swift for philosophy, however, as it presupposes that the expressive limitations of natural languages must carry over into the philosophical exposition of science and mathematics. The questions here are beyond the scope of this paper; anyway, they aren't to be decided offhand within the semantics of simple sentences of natural language. I conclude that Davidson's second thesis, although it may be correct, depends upon matters outside the immediate task of theories of truth and propositional expression.

Davidson's third and strongest thesis, remarked above, is that even if predicates have a reference, their reference cannot explain predication. This thesis, I believe, does not survive. If higher-order logic is admitted, then predicate reference, and with it the clauses of a theory of truth that characterize predicates in terms of their reference, come naturally. For, say, 'sits' we shall have (14):

(14) 'sits' refers to an F such that $(\forall x)$ $(F(x) \leftrightarrow x \text{ sits})$

(depending upon other matters, there may or may not be a unique such F). Or, if we aren't too squeamish, just 'the Verb 'sits' refers to sits', because 'refers to', as we are *now* using it, has already crossed the barrier, having been recruited as a predicate of arguments of the second level; compound predicates will have their own recursive clauses; and so on.

If I understand him correctly, Burge (2005: 18 ff.) argues, contrary to Davidson, that predicate reference can profitably be grounded in the notion of functional reference, and he therefore finds what I have called Davidson's strongest thesis simply mistaken.[3] The grounding of which he speaks, however, must amount to more than just an appeal to talk of functions as entrenched in mathematics, unless indeed it could be shown that, say, the functions spoken of in real analysis are not objects. The proposed reduction of predication to functional application is indeed, as one might say, a reduction to the previous problem. But in this case the previous problem is the same problem.[4]

To some extent, functional reference can be grounded in the notion of the reference or denotation of a function symbol, something undertaken on behalf of predicate reference in Furth (1968). For a function symbol to denote (relative, perhaps, to a restricted universe of discourse) would be for it to figure syntactically in an expression referring to

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a single object whenever a singular term that refers to a single object is put in its open place: thus '_^{2}', over the natural numbers, denotes, since if t refers uniquely to some number n, then 't^2' will do so likewise; more generally, in settings where not all objects have or could have singular terms referring uniquely to them, the function symbol φ, when completed by an object assigned to its empty place, will, on that assignment, denote an object. The attempt would be to redeem talk of functional denotation in grammatical, rather than metaphysical, terms, relieving it of the metaphorical baggage of Fregean "unsaturatedness" and the like.

However, the construction is evidently too weak to allow quantification over *all* functions, say from natural numbers to natural numbers, something that is wanted classically. As Parsons (1971) notes, it would not allow impredicative definition, which nevertheless may be wanted, and Frege himself did require, for Cantor's conception of cardinal number.[5] In IL, or full second-order logic, which accepts the two-sorted universe of objects and functions, the predicative barrier is breached; but then we have gone metaphysical again. The same point applies within the refinement of IL that brings in structured propositions.

I have tacitly taken for granted (as King and many others do) that IL, despite its elegance, is an unsatisfactory theory of propositional identity, insofar as propositions are objects of speech, thought, desire, and knowledge. The approach in terms of structured propositions, specifically as in King, but extending to other proposals, is an attempt to have a share of the elegance, without suffering the collapse of necessary equivalents. That account, however, presupposes an account of predicate reference, for which there is scant evidence, at least within the most basic parts of our language. Davidson's

discussion is valuable here, even if his repudiation of predicate reference amounts in the end to a rejection, not a refutation.

With the above to hand I turn now to the proposal that a substantive theory of truth might be combined with a redundancy theory of the expression of a proposition by (an utterance of) a sentence, by allowing the sententialist proposal, that what is expressed is simply the sentence itself, not as quoted, but understood as if uttered.

On sententialism, the objects of thought reported through closed English sentences without indexicals are just those English sentences, understood as if uttered. Where we understand free variables or indexical reference, we allow syntactic structures where things other than expressions may be found at points where terms of the appropriate sort could go. Quantification into objects of thought, however, is by no means linguistically restricted. There are no doubt many objects of our thought that we do not express in English, and perhaps could not express, as they may involve non-linguistic representations of objects, for example. Again, suppose I am in Bucharest, and I see a man say something to another man, only to be slapped in return. I conclude, correctly we may suppose, that the first man said something insulting to the second man. I know nothing much of Romanian, and so do not know what was said, or whether it has an English equivalent; but nothing in sententialism requires that I do.

On the view under consideration, the relation of the sentences we use to the objects of our thought is something like the relation of the numerals to the real numbers. We can refer to numbers in all sorts of ways; but we really get hold of them through numerals, and expressions constructed with the aid of numerals (to the extent that these expressions are surveyable; and on the linguistic side to the extent that the sentences in question can

be taken in). There intimate relation between the numbers and the numerals, fractions, exponents, and other features of our notation through which we canonically refer to them. But that relation need not be viewed as limiting our capacity to talk of real numbers in general. Similarly, the intimate relation between the sentence and the thought doesn't rule out thoughts for which we don't have the sentences.

Elsewhere (Higginbotham (2006)) I have tried to show how at least certain kinds of context-dependency, such as the use of demonstratives, or gestures toward confinement of quantificational domains, are consistent with sententialism. There are other types than these, however, and the remainder of my discussion will explore some issues in that domain. The specific view I will examine will take a strong stand on some matters under current discussion, and (in the case of the contextual feature of Tense) about which considerably more has now been examined cross-linguistically than was the case some time back.

In many expositions, the fundamental object of study is the *interpretation of a sentence in a context*. The notion *context* here is to be understood in a technical sense, as comprising a bundle of features that interact in specific ways with formatives of the language; thus in the development in Kaplan (1977) and elsewhere, including the speaker, the time and place, the possible world, and so on, cashing out demonstratives and other indexical expressions, and redeeming talk of possibility and necessity. An important element of Kaplan's account is the thesis that *demonstrative and indexical reference are settled by the context, independently of depth of embedding*. The general theory permits expressions to behave otherwise, and it is therefore an empirical

discovery, about English, or about some or all human first languages in general if indeed that thesis holds.

But it may appear not to hold. For instance, Schlenker (2003), relying upon the descriptive literature, reports that in Amharic the word that in root clauses amounts to the first-person pronoun can take on reference to the higher subject in a subordinate clause. Representing this word by Ï, we would have (15) as spoken by Mary, meaning that she herself is happy, but (16), as spoken by Mary, would assert that John said that he, John, was happy:

(15) Ï am happy.

(16) John said that Ï am happy.

There has been considerable further discussion of the above and similar phenomena.[6] The contrast with English is stark: obviously, Mary's English statement 'John said that I am happy' only means that John said of Mary that she was happy.   It appears, then, that we must allow that the context "shifts" as between superordinate and subordinate clause in the Amharic (16), as only then can we have reference to "the speaker," of the subordinate clause, John, rather than the speaker of the superordinate clause, Mary.

But there is no need to accept this point of view. It is, I shall argue, an artifact of the decision to treat *sentence in a context* as the object of inquiry, rather than *potential utterance*. I elaborate briefly, drawing upon views I have expressed elsewhere (Higginbotham (2002a)).

First of all, we extend the theory of truth for natural languages so as to allow *conditional* truth conditions, whose antecedents involve the referential intentions of speakers, and whose consequents are like the familiar biconditionals of theories of truth, with the

peculiarity that they contain variables that, although bound in the larger conditional, are free in the consequent. A canonical example is an utterance of (17):

(17) This is red.

The semantics of English, we suppose, stipulates some satisfaction condition for the predicate 'red'. For the subject, the semantics gives a *rule of use*, approximately as follows:

(18) 'this' as a full NP is to be used to refer to a single proximate, salient object.

For the sentence (17) as a whole we will have (19):

(19) $(\forall s)(\forall u)(\forall x)$ If the speaker s uses 'this' in accordance with its rule of use (16), and thus refers to a single object x, then s's utterance u of (15) is true $\leftrightarrow x$ is red.

In any particular case in which the antecedent of (19) comes off, we shall have (20):

(20) s's utterance u of (15) is true $\leftrightarrow x$ is red.

for some definite trio of values for s, u, and x.

Now, the account of (17) applies also when that sentence is embedded, as in (21):

(21) Mary said that this is red.

That is to say, in reporting what Mary said it is the *speaker* who uses the word 'this' to refer to a thing: however Mary may have referred to it is not revealed. What is to be understood as if uttered is just (17).

We have seen that the complement clause in (17) is to be understood as if the speaker (not the person whose speech is being reported) had said it. Moreover, if the general account of (17) and (21) fully generalizes, it cannot be otherwise; that is to say, you could not introduce a "shifted" demonstrative into the language, because the speaker's

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referential intentions always govern her speech as a whole. On this view, Kaplan's thesis, which was originally applied to English, would be universal.

But now what of Schlenker's and similar examples? To answer this point, I shall first advert to Tense; but the moral will be general.

Tense is an indexical feature of English and other languages. According to the simple sententialist interpretation of complement clauses, Tense should be understood in a complement just as it is understood in a root clause. But now, are there not examples where the subject's perspective on time, not the speaker's, is at stake? Indeed there are, and a simple case is provided by the rules governing Sequence of Tense in English. Consider (22):

(22) Mary said that she was once happy.

Let u be the speaker's true utterance of (22), and let its actual time be $\tau(u)$. Let e be an utterance by Mary that makes (22) true, as reported by the speaker. The use of 'once' in the complement makes the only reasonable interpretation of that clause one in which what Mary said at some time t prior to $\tau(e)$ (not $\tau(u)$) was to the effect that she was happy at t. Therefore, the speaker's utterance of 'She (Mary) was once happy' is not interpreted as if uttered by the speaker of u; for any such utterance requires for its truth only that Mary was happy at some point prior to $\tau(u)$. Rather, it is interpreted as if uttered by the speaker of u at $\tau(e)$, the time of Mary's speech. The phenomenon I have just described extends, with further consequences, downward clause by clause; I won't give further examples here. The question is what the phenomenon may show about the interpretation of complements and other embeddings on the sententialist hypothesis.

The answer is that it shows very much indeed if the formula "as if uttered" must be adjusted with respect to time or other features. But it is easily taken on board, consistently with the view that indexical and demonstrative reference is fixed once for all in the antecedent of conditional truth conditions, if it consists in anaphoric relations between lower and higher clauses. For an obvious example of anaphora in English, consider (23):

(23) Mary thought that pictures of herself would please Susan.

Examples such as (23) are generally ambiguous, in that the antecedent of 'herself' can be either the higher subject, or the lower object of the psychological Verb, either 'Mary' or 'Susan' in this case. But the lower clause, 'pictures of herself would please Susan' is of course unambiguous. By hypothesis, the complement clause in (23) refers to the syntactic structure Σ for 'pictures of __ would please Susan', with Mary herself (the person, not the expression) in the position marked by the underscore. On this formulation, there is no shift of context as between the higher and lower clauses. Indeed, insofar as the complement expresses just a *de re* thought about Mary, it is as if the speaker had said (24):

(22) Mary thought that picture of HER [indicating Mary] would please Susan.

We may propose, therefore, that it is anaphoric relations between the Tenses in (22) that are responsible for the shift from $\tau(u)$ to $\tau(e)$ in determining the reference of 'Mary was once happy' in that sentence. No shifting of context is involved.[7]

But now Schlenker's examples, and others, may be understood along the same lines. My *ersatz* Amharic Ï is grounded by default in the speaker, just as the Tenses are grounded by default in the actual time of speech. But it is *also* anaphoric, like the Tense,

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and for that matter the third-person pronouns of English; so it is anaphoric when embedded, though indexical in root clauses.

Some examples from Korean may illustrate the point further.[8] Korean has a word, usually transliterated as 'cikum', which in a root clause is properly translated by English 'now'. So (the Korean equivalent of) 'I cikum stand+Present' means that I am standing now.[9] Korean (unlike English) allows cross-reference in Tense between an embedded Present and a superordinate Past, so that the Korean sentence whose structure and vocabulary are indicated as in (25) does not mean that John said that Mary is in Seattle at a time that continues up to the present, but only that John said that Mary was in Seattle at the time he, John, spoke:

(25) John [that Mary in Seattle be+Present] say+Past

But now, if we retain the past-time reference in the higher clause, and add 'cikum' to the lower clause, as in the make-believe Korean (26), the meaning is just that of English (27), not English (28):

(26) John last week [that Mary in Seattle cikum be+Present] say+Past

(27) John said last week [that Mary was *then* in Seattle]

(28) John said last week that Mary is now in Seattle.

Korean 'cikum', unlike English 'now', is therefore sensitive to embedding. (Similar remarks, I have learned, hold for the Korean 'ecey', which means *yesterday* in root clauses, but may mean *the day before* when embedded in complement clauses.)

But here again we may have just an anaphoric phenomenon, or one that is sensitive to the results of anaphora. I assume as in other work (e.g., Higginbotham (2002b), and as proposed in various places cited there, that Tenses are not sentential operators of any sort,

but rather express temporal relations between events or situations as arguments These arguments can further be bound by adverbial quantifiers, or by existential closure in the syntax. Thus the English present in an utterance of 'Mary is in Seattle' expresses the temporal relation ~ of (the actual time of) one situation e surrounding (the actual time of) another, which latter will in a root clause be the time $\tau(u)$ of that utterance itself; similarly, the Past Tense of 'Mary was in Seattle' expresses the relation $\tau(e)<\tau(u)$. Somewhat abusing standard terminology, I shall call the first coordinate of the relation *event time*, and the second coordinate *reference time*. What we have seen, in the case (22) and the like, is that *the reference time of an embedded clause may be anaphoric to the event time of the superordinate clause*.

  The rule of use for English 'now' is as in (29):

(29) 'now' is to be used to refer to a period of time surrounding the time of speech.

But given that Present Tense in Korean is simply anaphoric when embedded, as in Korean (25), the rule for Korean 'cikum' might be stated as (30):

(30) 'cikum' refers to a period of time surrounding the reference time of the Tense
        with which it is associated.

The reference time of a root clause will be the time $\tau(u)$ of utterance; but for an embedded clause it will be the time $\tau(e)$ of the speech or thought being reported. Again, the context never shifts.

  The thesis that I tentatively advance is that all apparent "context-shifting" phenomena are anaphoric. This thesis is a very strong one; for it is to the effect, quite generally for human languages, that the reference of all indexical elements is either given "from outside;" i.e., as a result of the overall intentions of the speaker with respect to the whole

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utterance, or else through syntactically controlled anaphoric relations. In terms of David Kaplan's (1977) discussion, it amounts to banning what he called "monsters" from human language in general.

Even if this thesis were not true, I expect that some form of sententialism could survive; but it would be attenuated, in my view, because we would have to adjust the formula, "Understand as if uttered," to explicit values of free variables in the complement. In defending the thesis, we are not of course at liberty to posit anaphoric relations *ad hoc*. However, in the examples with Tense that I have given there is a considerable literature supporting the comparative morphosyntax and semantics I have sketched here.

I began this article by considering the trio (I)-(III), repeated here:

(I) s expresses in L the proposition that p

(II) s is true in $L \leftrightarrow p$

(III) The proposition that p is true $\leftrightarrow p$

and asking which elements were basic or substantial, and which derived or redundant. The view that I take to be supported by the above discussion may be summed up as follows:

IL may advance a substantive theory of expression and truth, thus deriving (III) (on the assumption that the truth of a sentence amounts to the truth of the proposition that it expresses). But there remains the notorious problem of propositional collapse in IL. Accounts of expression in terms of structured propositions, along King's lines or others, avoid propositional collapse, but because they explicitly declare that predicates refer to properties, and that propositions are complexes made up of things and properties, they want at the very least some account of predicate reference, an account that is not at all

provided by offhand advertence to properties or universals, but rather posits such reference so as to systematically relate predicates to the descriptions of properties that are formed using those predicates.

Davidson argued that predicate reference was not to objects, something that IL accepts, and accounts involving structured propositions could accept as well. If his general point of view, that we need only speak of predicates as true or false of objects, is correct, then the extra apparatus of IL is not required; but this thesis is unproven, and in any case there is no infinite regress in assigning predicates a reference to properties. The most that can be said so far is that we may, as Frege suggested, have to break the bounds of given natural languages in order to articulate predicate reference.

Sentientialism contrasts with basic IL, and with the extension to structured propositions, in that, in identifying the reference of 'the proposition that p' as the sentence (or better: the syntactic structure underlying the sentence) replacing 'p', it constitutes a redundancy theory of expression (I), and of propositional truth (III) (because (III) will follow trivially from (I) and (II)); but it demands a substantive theory of (II). On the other hand, sentientialism must apply to statements containing demonstrative or indexical elements, and is therefore charged with not allowing indexical shift. It has been suggested that there are apparent between any such general theory of indexicals and the rules of use governing personal pronouns and tenses that are attested in some of the world's languages. The examples of such conflict that have been given thus far in the literature do allow explanation in terms of independently motivated anaphoric relations; but there are no guarantees.

Notes

1. King (2007: Chapter 1) finds structured propositions as *n*-tuples (or, I assume, labelled trees) inadequate, for at least two reasons. The first is that there are several ways of constructing these objects, and the second, if I have it right, is that one must independently *say* what endows them with truth values; whereas he wants it to be evident in some way that they do have truth values. The first worry seems to me insignificant, reflecting only the ontological relativity that is characteristic of mathematics generally. The second worry does not arise for IL (where propositions are just sets of possible worlds, and so lack internal structure); but I don't see that it cannot be answered, so far as an answer is wanted, by a construction that would yield trees analogous to compositional intensions, as in Lewis (1970) (where the label of the root of a syntactic structure is the intension got by combining as function and argument the intensions of its daughters). To put it another way: there is no possibility of doing away with statements such as (iii) governing the syntactic structure **T** for 'Theaetetus sits', or of replacing them with additional structural elements added on to **T**; for the combinatorial rule that applies to a structure cannot itself be determined by the structure to which it applies.

2. The ensuing discussion of Frege is in part what is called in Los Angeles a "remake" of Higginbotham (1990).

3. Burge appeals here to Church's calculi of λ-conversion. Burge's own view of the relation between '$\lambda x\, F(x)$' and '$F(x)$' may differ from that of Church (Burge (2005: 21, fn. 13)). IL itself is a λ-calculus; but it is typed, thereby granting a sense to the metaphysical distinction between concept and object.

4. Davidson, both early and late, thought of expressions like 'the father of ___' as function expressions (which is of course wrong: they are definite descriptions with relational head Nouns), and concerning their interpretation contented himself with the remark that they can be given a semantics without saying that the words 'the father of' refer to anything. Presumably he would have said the same for expressions like '__ squared'. So far as I know, he nowhere considered quantification over functions.

5. See Parsons (1983: 68, fn. 11).

6. See especially the survey and conjectures in Anand (2006). Of course, it is much less than theoretically satisfactory to declare that Amharic 'Ï' is just a homonymic form, as that would lose the generalization that it looks back to the (main or attributed) speaker. (Thanks to Barry Schein for remarks on this point.)

7. For elaboration, see Higginbotham (2002b) and references cited there.

8. I am indebted here to the judgements, scholarship, and written work of Ms Hyuna Byun Kim; see Kim (2008).

9. Korean is Verb-final, so I give examples in *ersatz* Korean.

10. See Schein (1993) and references cited there for arguments that may implicate higher order logic in the interpretation of plurals. The motivation for higher order logic in these cases is of course quite different from that of IL.

11. The first draft of this article was written for the conference "Context-Dependence, Perspective, and Relativity in Language and Thought," held at the Ecole Normale Superieure, Paris, November 2007. The present revision, for several points in which I am indebted to an anonymous reviewer for the IJPS, was being completed around the time I received Tyler Burge's (2007) review article (which, despite the date, did not appear until

March 2008), on Davidson's *Truth and Predication*. Here I have considered only

Burge's remarks on predication and reference to functions in the preface to Burge (2005),

and then only very briefly. I hope to take up in later work some issues raised by his

further discussion.

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