

HIDDEN INDEXICALS AND PRONOUNS

Adam Sennet

Preliminaries

Cappellen and Lepore (2002, hereafter, C&L) offer the following test for putative hidden structure:

Positing hidden linguistic expressions incurs certain obligations...on the syntactic side, a posited indexical should enter into anaphoric relationships... Overt indexicals can participate in anaphoric relationships...Since hidden indexicals are just the same indexicals, they too should be capable of entering into anaphoric relationships. (p. 273)

C&L claim that it is a constraint on any posited hidden indexical that it license anaphoric relations¹. Hidden variables that account for domain restriction, like the sort proposed by Stanley and Szabo (1999)² propose (hereafter, S&S variables) don't respect this constraint and so should be rejected. The argument is as follows:

- (1) If an LF contains a hidden variable then the variable must be capable of licensing anaphora.
- (2) *S&S variables don't license anaphora.*
- (3) No LF contain S&S variables.

C&L claim that their argument provides fairly substantial syntactic evidence against S&S. In support of (1), C&L point out that Davidsonian event variables are both hidden and license anaphoric reference.

In this squib I will suggest that C&L's argument should not trouble S&S or theorists of their ilk. First, the argument is far too strong. Many uncontroversial cases of hidden syntactic structure fail to license anaphora. Fans of hidden structure in various domains should deny (1). Second, Davidsonian

1 C&L (2002) also argue against hidden indexical theorists by providing a *reductio* of the binding argument and an argument based on *a priori*. I'll restrict my focus to the argument from anaphora.

2 Stanley and Szabo aren't the only hidden indexical theorists. Two other notables are Pelletier (1995) and von Stechow (1995).

event variables do not really lend much support for (1), if any. While Davidsonian event variables seem to license anaphora, their ability to do so is partly due to the presence of a verb at surface structure. Since S&S variables have no comparable surface structure, the analogy between them and Davidsonian events is untenable.

I. Anaphoric Relations: C&L's Argument Against Hidden Constituents

C&L offer the following sorts of sentences for consideration:

- a) John kissed Mary. He did it at midnight.
- b) Jessica drove a car to Mardi Gras. It took 20 hours.
- c) *Many students failed, and it is a big domain.
- d) *Tigers are mammals, and it is a big domain.

(a) and (b) are fine but (c) and (d) are infelicitous. The difference? According to C&L, the former contain hidden structure that provides 'it' with a semantic value while the latter do not. Otherwise, the pronouns in (c) and (d) would be interpretable. Furthermore, (c) and (d) are fine if we make explicit reference to a domain:

- c') Many students in this domain failed and it is a big domain.
- d') Many tigers in the domain under consideration are mammals and it is a big domain.³

3 Forgive a brief technical digression. (c') and (d') sound fine, but for different reasons than C&L think. Taking S&S's view as representative, the restriction on the domain comes from intersecting the characteristic function of the nominal with the output of a second order functional variable that takes a first level variable (whose value is given by context) and returns a set. The resulting semantic value is a set (type $\langle e, t \rangle$). 'it' in the second sentence is of type $\langle e \rangle$, (or possibly $\langle e, t, t \rangle$ if it is an E-type). Anaphors require antecedents of a similar type. This partly explains why the domain restricting variables S&S suggest don't automatically license anaphoric connections: they are of the wrong type. C&L's (c') and (d') use a prepositional phrase that contains 'this domain', which *is* of type $\langle e \rangle$. However, this is good evidence that (c') and (d') are syntactically distinct from (c) and (d). If this is right, then (c') and (d') show nothing about what anaphoric opportunities we should expect from (c) and (d). I don't know what the English syntactic equivalent of S&S's proposed LF would look like.

C&L conclude that we have evidence against positing the proposed hidden variables: if they were there, they would license the pronouns in (c) and (d).

II C&L's Argument is Too Strong

For our purposes, the interesting premise in C&L's argument is (1). However, (1) is far too strong to be plausible. If taken as a general constraint on hidden structure, lots of far less controversial hidden structure goes by the wayside. For example, relational adjectives are generally taken to have an argument spot for a comparison class or scale. A similar story is often told about relational nouns like 'friend'. Consider:

- e) *John is good [at chess]. It's a great game.
- f) *Moltar is a friend [of Zorak_i]. He_i is nearby.

This probably won't bother C&L since they are against treating relational adjectives and nouns like 'good' and 'friend' as relational when there is no explicit direct object. However, this is a mistake. The direct object is an argument, rather than an adjunct. A quick test will help to establish this. Typically, adjuncts in English cannot be interpolated between a noun phrase and its arguments⁴. Notice that (g) is unacceptable while (g') is fine:

- g) ?Hillary is a friend from Moscow of Hanna's.
- g') Hillary is a friend of Hanna's from Moscow.

The test ratifies the complement 'of Hanna' as occupying an argument spot of 'friend'. Assuming that 'friend' isn't ambiguous, the example shows that the mere presence of an implicit argument spot of 'friend' doesn't (on its own) license pronominal reference. If anything licenses the pronoun, it is contextual salience.

4 An uncontroversial application of the test can be demonstrated with the di-transitive verb 'give'.

- ?I gave on Tuesday a book to Adrian.
- I gave a book to Adrian on Tuesday.

'On Tuesday' is an adjunct of 'give' and it can't be interpolated without infelicity.

Similar considerations attend to (e⁵). Where the topic of conversation is chess, it seems fine to utter (e). However, though ‘at chess’ is an argument of ‘good’, it isn’t the mere presence of an argument spot that licenses the pronoun. After all, if the topic of conversation is chess, one can felicitously utter the second sentence on its own:

- h) It’s a great game.

This tells heavily against thinking that the hidden argument spot has *anything to do* with licensing anaphora.

A more sophisticated version of C&L’s argument might run as follows: the argument spot in ‘friend’ and ‘good’ (and in a variety of verbs like ‘won’) all require context to supply a value but some phrases, such as ‘ate’ seem to be interpretable existentially when their object argument is dropped. For instance:

- i) I ate [a steak]. It was delicious.

(i) is felicitous even if context provides no help in fixing the referent of the direct object. This would not help C&L’s argument very much however, since there is no reason to foist an existential interpretation on S&S variables. This provides a direct disanalogy with the case of events, where the event variable is bound (and hence interpreted existentially) in Davidsonian event semantics.

III Event Anaphora and Context

The discussion in (III) leaves a question open: why do event variables license anaphora while S&S variables don’t? The quick answer: it is the VP that raises an event to salience and that is what licenses the pronoun. If this is right, then even the best case for C&L’s proposed constraint looks dubious.

Let’s take another look at C&L’s first case:

- 5 Here is the relevant evidence:

- ?Jim is good while on drugs at chess.
- Jim is good at chess while on drugs.

‘While on drugs’ is an adjunct of ‘good’, and there is a reading according to which it is an adjunct of ‘at chess’. In any case, it is not an argument of ‘good’ while ‘at chess’ is.

- a) John kissed Mary. He did it at midnight.

‘It’ in (a) refers to a kissing event⁶. C&L explain this as an application of (1). However, there is another plausible, rival explanation. There is *visible* structure that is apt to provide a discourse referent, namely the VP ‘kissed Mary’. The verb ‘kissed’ raises the event to salience, which allows for pronominal reference in the next sentence. This holds true of the other cases mentioned above. If we are talking about Clinton, it is fine to say:

- j) The unions are friends. He appreciates them.

It’s clear, however, that it is the context that is providing a referent for ‘he’ and allowing the complement of ‘enemies’ to go without surface representation. After all, if we just consider the second conjunct of (j) where we are talking about Clinton, we know that ‘he’ will naturally be interpreted as referring to Clinton or not. Thus, the hidden structure in the first sentence doesn’t seem to do any work in licensing the pronoun.

Domain restricting variables, by contrast, enjoy no explicit structure at all. Nor do they manage to raise a class of objects to salience on their own. Thus, we can reject the special case presented by events. Covert quantification over events doesn’t lend support to a constraint on hidden variables. They rely on visible syntactic structure to license the anaphors.

That surface structure can raise things to salience and license non-VP anaphora is not very surprising. Consider a classic ‘bridging’ case:

- k) John bled so much it soaked through his bandage and stained his shirt.
(Anderson, 1971)

‘it’ picks up on the blood John bled. However, it is clearly ‘bled’ that makes ‘blood’ available by raising blood to salience. It is equally unsurprising that ‘bled’ can raise a bleeding event to salience. In both cases, it is context that allows pronominal reference.

In fact, there is more we can say. When the context is centred on a domain, we can get reference that will look anaphoric. If the subject of conversation is undergraduate students at Rutgers and I am talking about my logic class, I can say:

6 Alternatively, ‘it’ in all the case can be given an e-type treatment. See below for considerations of a case where a pronoun is definitely an E-type and still of no use to C&L’s argument.

Every French speaker did well on the exam. It's a large group and they are only a small part of it.⁷

The value of 'it' is intuitively the students who took the exam.

However, C&L could have picked a better case, where the anaphoric relationship is clearer. The best case for them involves e-type pronouns. E-type pronouns are unbound pronouns that are anaphoric and not merely co-referential. A famous example, due to Geach, is:

- l) Every farmer that owns a donkey beats it.

The value of 'it' in (m) depends on the value of 'every farmer that owns a donkey'. It is not bound, however, and clearly does not refer to salient donkeys. Here we have real dependence of a pronoun on antecedent material.

Treatments of E-types abound. None of them lend support to thinking that 'it' in (m) gets its value solely in virtue of a hidden event variable. On a Cooper style account, the semantic value of an E-type is given by positing a definite description at LF. The value of the description depends on exploiting the phrase 'every farmer that owns a donkey' and give the pronoun 'it' the value 'the $[R_i \text{ pro}]_j$ where ' R_i ' stands for a relation between farmers and their donkeys and pro_j varies with value assigned to 'every'. Intuitively, the English paraphrase will be 'the donkey that he owns'. Notice, however, that the definite description is taken from context, which is set by the antecedent phrase.

A Cooper style account explains the data nicely: 'it' stands proxy for a definite description.⁸ Fortunately, it also helps explain why Davidsonian event quantification provides semantic values for subsequent pronoun. Consider a case where the pronoun is definitely an E-type:

- 7 In the present context I *can* felicitously (though probably neither truly nor with much comic effect) utter:

- Every reader agrees with me. Unfortunately, it's a very restricted domain of quantification!

I take it that the 'it' here fairly clearly denotes the set of readers of this paper. This only works amongst people who are thinking about domains restriction, of course. Why? Because in that contexts, restrictions on the domain of quantification are salient.

- 8 See Heim and Kratzer (1998), Heim (1990) and Neale (1990) for fuller considerations of the role of E-types in donkey sentences, Bach-Peters sentences and the like. See Kamp (1981) and Heim (1982) for a development of Discourse Representation Theory, a rival to the Cooper-Neale-Heim view of E-types. The DRT account lends no more support to C&L's constraint than the Cooper account. See also Bittner (2001) for an LF-less account of pronouns and binding.

- (a') Every man that kissed Meg hated it.

'It' is not plausibly a referential pronoun since there is no salient kissing event. 'It' is anaphoric, however, on the value assigned to 'man' since each one is the agent of a different kissing event, (if there were any).

Fortunately, though the example is of the type C&L would need, it doesn't really give any motivation for accepting (1). Just like in (a), there *is* visible syntactic material: the VP 'kissed Meg' tells us what kind of a relation will be relevant to interpreting the e-type. The relevant definite description will presumably be something like 'his_i kissing of Meg', where 'his' depends on the value of 'a man' in the antecedent sentence⁹. If this is right, we can explain the anaphoric connection by appealing to surface structure. *Pace* C&L, there is no *a priori* reason to think that hidden and visible indexicals should do equally well at licensing anaphora. In fact there is good reason to think they don't because visible material provides contextual salience, while hidden material needn't.

The upshot is that C&L's test for hidden indexicals gets no help from the Davidsonian event variables. The disanalogy is right at the surface. Salience is not a well-understood mechanism; but we do have a grip on some of the typical causes of salience. Explicit syntactic material is a well-known and studied cause. In any case, none of this tells us very much about the necessity or sufficiency of anaphoric relations when evaluating the syntactic plausibility of hidden structure.

Conclusion

(1) lacks plausibility and should be rejected. Furthermore, even C&L's best case for (1) is strongly disanalogous with S&S proposed variables and so provides no paradigm by which to judge. The main problem is their claim that hidden indexicals are 'just the same' as visible indexicals and that they therefore should

9 Ernie Lepore pointed out that the interpretation of the anaphor shouldn't require uniqueness, i.e. Meg to have not been kissed before by one of the men in question. This is a problem for any descriptive approach to e-type anaphora, and so not a special problem here. Recourse to Neale's numberless operator should solve the problem, though perhaps not all problems associated with E-types and uniqueness (see Chierchia, (1995)). Thanks to Peter Ludlow and Daniel Nolan for advice and discussion.

exhibit the same behaviour *vis a vis* licensing anaphors. There is no reason to think this, especially if as is overwhelmingly plausible, visible structure alters contextual salience. Hidden structure is fairly shy about interaction with pronouns unless it is chaperoned by relevant surface structure or contextual salience. We should learn to be wary of positing syntactic constraints that are motivated by processes such as pronoun interpretation that are pragmatic.

A charitable reader won't read into the preceding an endorsement of a syntactic solution to domain restriction. The case for the syntactic reality of S&S type variables strikes me as at best still open, at worst, dubious. Fortunately, I am not attempting to solve the vexing problem of domain restriction. I merely want the evidence to be considered without distraction. C&L's argument strikes me as just such a distraction.

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