Dislocated Cosuppositions

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1 Introduction

As a preliminary illustration of the problem this paper is concerned with, consider the sentence in (1). [*On notation:* a speech accompanying (or, co-speech) gesture is notated as a subscript in SMALL CAPITALS after the expression it co-occurs with. The modified expression is put between square brackets if it contains several words.]

(1) a. John punished$_{\text{SLAP}}$ his son.[1]
⇝ John punished his son by slapping him

b. John [took the elevator]$_{\text{UP}}$.[2]
⇝ John took the elevator to go up

In each case, the co-occurring gesture enriches the basic meaning of the sentence in a manner that is clearly keyed to its iconic shape. As with any other form of enrichment, one may ask three major questions about gestural enrichments: (i) what is the *form* of the gestural enrichments?,[3] (ii) what is the *projection profile* of gestural enrichments?, and (iii) what is the *epistemic status* of gestural enrichments?. Building on [3], this paper aims at contributing to each of these questions. Beginning with question (ii), made more explicit in (2), we need to embed gesturally modified expressions in the scope of logical operators and inquire about the fate of the gestural inference as it projects through these operators. The salient case of negation is given in (3).

(2) **The projection problem for co-speech gestures.** How are the enrichments of expressions modified by co-speech gestures inherited by complex sentences? (from [3], see also the pioneering work of [1])

(3) a. John did not punish$_{\text{SLAP}}$ his son.
⇝ if John had punished his son, he would have done so by slapping

b. John did not [take the elevator]$_{\text{UP}}$.
⇝ if John had taken the elevator, he would have done so to go up

*I am greatly indebted to Philippe Schlenker and Benjamin Spector. All errors are emphatically mine.

[1] 'SLAP' stands for a slapping gesture in "neutral position" (i.e. close to torso).

[2] 'UP' stands for an upward movement of arms.

[3] Example: the form of the scalar implicature associated with a sentence of the form 'some As B' is 'not all As B', the form of the homogeneity inference associated with a sentence of the form 'the As B' might be taken to be 'either all As B or all As not B', etc.

The judgments reported in (3) (following '$\rightsquigarrow$') become sharper once appropriate context is provided. For example, compare an utterance of (3b) "out of the blue" versus in the context specified in (4).

(4) [Context: the building has ten floors. Mary's office is on the 5th. We do not know where John's office is. John does not know where Mary's office is. He has been looking for her.]
A: Did John manage to find Mary's office?
B: No... he got lost on the 5th floor...
A: How did *that* happen? Her office is right in front of the elevator!
B: Well, he didn't [take the elevator]$_{\text{UP}}$, he used the stairs instead.

The inference suggested in (3b) is quite sharply felt in (4): John's office (or at least his starting point before he went looking for Mary) is on a floor below the 5th: he did not use the elevator, but *if he had done so, he would have gone up.*

2 The Cosuppositional Analysis

The starting point of this paper is [3]'s "cosuppositional" analysis of gestural enrichments. This analysis takes the form of the judgments provided in (3) quite seriously. With a good deal of simplification, it can be summarized as follows.

(5) The Cosuppositional Approach. (hf. CA) If a predicate α embedded in a sentence ϕ uttered in context C is accompanied by a gesture G, the local context of α in ϕ relative to context C must entail $\boldsymbol{\alpha} \Rightarrow \boldsymbol{G}$:[4]

$$\vDash_{lc(\alpha)} \boldsymbol{\alpha} \Rightarrow \boldsymbol{G}.$$

In words, the cosuppositional analysis requires that the gesturally modified expression must entail the content of the accompanying gesture in its local context. The intuition behind this requirement is that iconic, co-verbal gestures *illustrate* the *local* meaning of the expressions they modify. "Local meaning" is here understood as semantic denotation relative to a given local context, where the latter is formulated on the basis of [2]'s theory of local contexts. Thus, if α is some predicate and $lc(\alpha)$ is its local context, the local meaning of α boils down to $lc(\alpha) \wedge \boldsymbol{\alpha}$. "Illustration" is quite simply cashed out as entailment. The requirement, therefore, can be formalized as $\vDash_{lc(\alpha)\wedge\boldsymbol{\alpha}} \boldsymbol{G}$ which is equivalent with $\vDash_{lc(\alpha)} \boldsymbol{\alpha} \Rightarrow \boldsymbol{G}$. The analysis, thus, is tantamount to saying that a predicate/gesture complex 'α_{G}' triggers the presupposition that $\boldsymbol{\alpha} \Rightarrow \boldsymbol{G}$.

Schlenker's CA answers the three questions posed at the beginning of this paper as follows: (i) gestural enrichments are pieces of information that are conditionalized on the assertive content of the expressions they modify, (ii) gestural enrichments project like presuppositions do in general, and (iii) gestural enrichments receive the same epistemic treatment as root as presuppositions, namely they must be entailed by the Common Ground[5] (for the utterance to be acceptable).

[4]Here and throughout: for any expression α, $\boldsymbol{\alpha} = [\![\alpha]\!]$. For a gesture G, $\boldsymbol{G}$ is also taken to be the model-theoretic object it "denotes".

[5]Common Ground: the conjunction of all propositions that the interlocutors take for granted at a particular point of a conversation. Context Set: the set of all possible worlds that are compatible with the Common Ground. See Stalnaker.

CA accounts for the judgments reported in (3) immediately: presuppositions project from under negation, therefore, e.g., (3a) is predicted to put the following requirement on the Context Set, C: any world w in C is such that either John did not punished his son in w, or John punished his son by slapping in w (i.e., C entails that John did not punished his son by any mean other than slapping). Exactly the same prediction is made for the unembedded case, (1b). The predicted "net effect" is of course correct: if C entails that John did not punished his son without slapping him, adding the information that John *did* punish his son will contextually convey that John punished his son by slapping him.[6]

CA also makes welcome predictions for the cases of embedding gesturally modified expressions in the scope of the quantifiers 'every' and 'no', (6). As is well-established, presuppositions project universally out of the scope of 'every' and 'no'. The cosupposition associated to the predicate '$\lambda x.\ x$ punished$_{\text{SLAP}}$ x's son' is the property [$\lambda x.$ **punished**(x,x's son) $\Rightarrow$ **slapped**(x,x's son)]. Once this presupposition is projected universally to root, one gets the predicted inferences in (6) which line up nicely with the attested inferences.

(6) a. Each of these ten guys punished$_{\text{SLAP}}$ his son.
⇝ Each of the guys punished his son by slapping him (attested)
⇝ $\forall x \in \boldsymbol{guys} : \boldsymbol{punished}(x, x\text{'s son}) \Rightarrow \boldsymbol{slapped}(x, x\text{'s son})$ (predicted)

b. None of these ten guys punished$_{\text{SLAP}}$ his son.
⇝ Each of the guys would have slapped his son, had he punished him (attested)
⇝ $\forall x \in \boldsymbol{guys} : \boldsymbol{punished}(x, x\text{'s son}) \Rightarrow \boldsymbol{slapped}(x, x\text{'s son})$ (predicted)

However, as Schlenker points out, the predictions made by CA are in some cases *too strong*. This is in particular the case for non-monotonic environments.

(7) a. Mary is unaware that John punished$_{\text{SLAP}}$ his son.
⇝ John punished his son by slapping him (attested)
⇝ $\boldsymbol{punished} \wedge (\boldsymbol{punished} \Rightarrow \boldsymbol{slapped}) \wedge \mathrm{B}_{\mathrm{M.}}(\boldsymbol{punished} \Rightarrow \boldsymbol{slapped})$[7] (predicted)

b. Some but not all of these ten guys punished$_{\text{SLAP}}$ their son.
⇝ Some of the guys punished their son by slapping, the rest did not punished their sons in any way (attested)
⇝ $\forall x \in \boldsymbol{guys} : \boldsymbol{punished}(x, x\text{'s son}) \Rightarrow \boldsymbol{slapped}(x, x\text{'s son})$ (predicted)

Consider (7a). It is reasonable to analyze a sentence of the form 'S is unaware that P' as presupposing that P and asserting that it is not the case that S believes that P, $\neg \mathrm{B}_{\mathrm{S}}$. Therefore, regarding presuppositions triggered in the subordinate clause, we predict that, first, these must project to root (8a) and, second, these must be entailed by the beliefs of the attitude holder (8b).

(8) Mary is unaware that John has stopped smoking

a. ⇝ John used to smoke but no longer does

b. ⇝ Mary believes that John used to smoke

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[6] Just why the conditional force of the inference is not felt for the unembedded cases in (1) is a question that I will follow Schlenker by ignoring.

[7] Here '$\boldsymbol{punished}$' is short for '$\boldsymbol{punished}(\boldsymbol{John}, \boldsymbol{John's\ son})$'. Same with '$\boldsymbol{slapped}$'. For any P, '$\mathrm{B}_{\mathrm{M.}}$(P)' stands for 'Mary believes that P'.

The problem raised by (7a) is that an utterance of (7a) can easily be understood such that only the first of these prediction is born out. The sentence itself presupposes that John punished his son, since the cosupposition that if John punished, he slapped also projects to root, we predict the overall presupposition that John punished his son by slapping him. But, the second prediction (namely, that Mary believes that John did not punish his son without slapping him), if available at all, is not easily accessible.

The problem raised by (7b) is similar: presuppositions triggered in the scope of the complex determiner 'some but not all' project universally to root, (9); consequently, CA predicts, not only that some guys punished their son by slapping, but also that for each of the guys who did not punished their son, if they had done so, they would have slapped. This latter inference is at least not easily accessible (but see the discussion in section 4); (7b) can very naturally be understood to imply that those guys who did in fact punish their son did so by slapping, without making any implication about the punishing habits of the other guys.

(9) Some but not all students have stopped smoking.
$\rightsquigarrow$ Every student used to smoke

In the next section I will discuss a solution to the problems raised in (7) which is formulated by Schlenker himself. Once the limits of that solution are made explicit, I will turn to my own proposal in section 4.

3 The "Supervaluationist" theory

Let us go back to the problem raised by 'unaware' in (7a) repeated below.

(10) Mary is unaware that John punished$_{\text{SLAP}}$ his son.
$\rightsquigarrow$ John punished his son by slapping him (attested)
$\rightsquigarrow$ $\textbf{\textit{punished}} \wedge (\textbf{\textit{punished}} \Rightarrow \textbf{\textit{slapped}}) \wedge \mathrm{B}_{\mathrm{M.}}(\textbf{\textit{punished}} \Rightarrow \textbf{\textit{slapped}})$ (predicted by CA)

Consider the following line of attack. What happens when a gesture modifies an expression, as in (10), is that two propositions are made salient for the audience to choose from. In the case of (10) these could be (11a) and (11b).

(11) a. That Mary is unaware that John punished his son.
$\underline{\mathrm{P}} \wedge \neg \mathrm{B}_{\mathrm{M}}(\mathrm{P})$[8]

b. That Mary is unaware that John punished his son by slapping him.
$\underline{(\mathrm{P} \wedge \mathrm{S})} \wedge \neg \mathrm{B}_{\mathrm{M}}(\mathrm{P} \wedge \mathrm{S})$

What would the audience do, when they are faced with such a choice? One possible answer is that the audience are inherently conservative: they "focus attention" only to those situations in which both propositions in (11) are simultaneously true (/false). In other words, they assume the speaker would not make an utterance like (10) if he believes that the two propositions in (11) have distinct truth-values. The prediction, then, is that an utterance of (10) is true (/false) iff both propositions (11a) and (11b) are true (/false). Interestingly, this prediction is *weaker* than the one made by CA. Since $\mathrm{P} \wedge \mathrm{S}$ is stronger than P while $\neg \mathrm{B}_{\mathrm{M}}(\mathrm{P})$ is stronger than $\neg \mathrm{B}_{\mathrm{M}}(\mathrm{P} \wedge \mathrm{S})$, (10) is predicted to be true if and only if $(\mathrm{P} \wedge \mathrm{S}) \wedge \neg \mathrm{B}_{\mathrm{M}}(\mathrm{P})$. No problematic inference is predicted pertaining to Mary's beliefs, as desired.

[8]Underlining marks for presuppositionality.

The general principle underlying the reasoning spelled out in the previous paragraph can be summarized as follows.

(12) The "Supervaluationist" Analysis.[9] (hf. SA) Let ϕ be a sentence that contains the predicate α, $\phi = \phi[\alpha]$. An utterance of $\phi[\alpha_{\mathrm{G}}]$ is judged true (false) iff both $\phi[\alpha]$ and $\phi[\alpha \wedge \mathrm{G}]$ are true (resp. false).

Here is another example that is adequately dealt with by SA.

(13) Exactly one of these ten guys punished$_{\text{SLAP}}$ his son.
$\rightsquigarrow$ Exactly one of the guys punished his son by slapping, the rest did not punished their sons in any way

Since CA is built on the Transparency Theory as its projection engine,[10] it predicts the cosupposition triggered in the scope of 'exactly one' in (13) to project universally to root, quite the same as the case of 'some but not all'. The result is the correct prediction that one guy punished his son by slapping and the rest did not punish their son and the *in*correct prediction that for each of the guys who did not punish their son, if they had done so, they would have slapped. Here again, the prediction made by SA is adequately weak; as the reader can easily verify, if an utterance of (13) is true iff both (14a) and (14b) is true, then an utterance of (13) is true iff one guy punished his son by slapping and the rest did not punish their son in any way. No inference is predicted regarding the guys who did not punish their son, as desired.

(14) a. Exactly one of these ten guys punished his son.
b. Exactly one of these ten guys punished his son by slapping him.

Unfortunately, SA has problems of its own (which Schlenker points out). Specifically, the predictions made by SA are sometimes *too weak*, sometimes to the point of triviality. For example, the prediction made for (7b), repeated below, is that it is true iff some guys punished their son by slapping and some guys did not punish their son in any way; this is too weak, as it allows for there being guys who punished their son in some way other than by slapping.

(15) Some but not all of these ten guys punished$_{\text{SLAP}}$ their son.
a. Some but not all of these ten guys punished their son.
b. Some but not all of these ten guys punished their son by slapping him.

Further, when a gesturally modified expression is embedded in a Downward Entailing environment, SA predicts *no enrichment* to the truth-conditions of the the sentence. For example, (6b), repeated below, is predicted to be true iff none of the guys punished their son in any way. The reason being that since (16a) entails (16b), the requirement that both be true boils down to the requirement that (16a) be true.

[9] This principle is *reminiscent* of the type of reasoning that supervaluationist logics are known for, hence the title and the quotation marks.
[10] Transparency Theory predicts in general presuppositions triggered in the scope of quantifiers projects universally to root.

(16) None of these ten guys punished$_{\text{SLAP}}$ his son.

a. None of these ten guys punished his son.

b. None of these ten guys punished his son by slapping him.

To recap (and repeat), the predictions made by CA are sometimes too strong while those made by SA are sometimes too weak. One might wonder whether the two should be put together. There are two main obstacles to this idea. First, SA and CA seem two entirely distinct mechanisms, a marriage between the two (regardless of the exact details) seems hopelessly disjunctive ("conceptually odd" in Schlenker's words). Second, it is not entirely clear just how the two analyses must be "linked" together. To see this, consider Schlenker's own suggestion.

(17) A co-speech gesture is treated in terms of SA (= (12)) unless this fails to strengthen the meaning, in which case it is treated in terms of CA (= (5)).

This way of linking CA and SA immediately runs into a problem with (15): in that case, as I have noted, SA *does* strengthen the meaning, but it does not do so sufficiently. In the next section I will formulate a proposal that solves these two problems (i.e., the linking problem and the problem of conceptual oddity) in one stroke. I will then show that this new principle coupled with a new bridge principle to link the predicted inferences with the background assumptions yields empirically adequate predictions.

4 Dislocated Cosuppositions

To spell out my proposal, I need to define several auxiliary notions. Let α be a predicate, and ϕ a sentence that contains (an occurrence of) α. We can construct a sequence β_i of property- or proposition-denoting constituents of ϕ with the following properties: (i) $\beta_0 = \alpha$, (ii) $\beta_n = \phi$, and (iii) for each $i \in \{0, \ldots, n-1\}$, $\beta_i \sqsubseteq \beta_{i+1}$ (β_i is contained in β_{i+1}). Let me call this the formation sequence of ϕ relative to α. Further, given a Context Set C, we can annotate each β_i with its local context, $lc(\beta_i)$, given [2]'s algorithm.[11] Finally, I need a notion of logical/contextual entailment which applies to property- and proposition-denoting expressions.

(18) Let β and β' be two expressions of a type that 'ends in t' which can take n arguments. let C (the "context") be a model-theoretic object of the same type. Then,

a. $\beta \vDash \beta'$ iff for all objects $x_1, \ldots, x_n$ of appropriate types, if $[\![\beta]\!](x_1)\ldots(x_n) = 1$, then $[\![\beta']\!](x_1)\ldots(x_n) = 1$.

b. $\beta \vDash_{\text{C}} \beta'$ iff for all objects $x_1, \ldots, x_n$ of appropriate types, if $\text{C}(x_1)\ldots(x_n) = 1$ and $[\![\beta]\!](x_1)\ldots(x_n) = 1$, then $[\![\beta']\!](x_1)\ldots(x_n) = 1$.

My proposal can now be formulated as follows.

(19) The Dislocated-Cosuppositions Analysis. (hf. DC) Let ϕ be a sentence that contains the predicate α, and let $\langle \beta_0 = \alpha, \ldots, \beta_n = \phi \rangle$ be the formation sequence of α relative to ϕ, and let G be some gesture. An utterance of $\phi[\alpha_{\text{G}}]$ is admitted by a context C only if there is some $i \in \{0, \ldots, n\}$ such that (i) $\beta_i[\alpha] \nvDash \beta_i[\alpha \wedge \text{G}]$ but (ii) $\beta_i[\alpha] \vDash_{lc(\beta_i)} \beta_i[\alpha \wedge \text{G}]$. If felicitous in C, $\phi[\alpha_{\text{G}}]$ is interpreted as $\phi[\alpha]$.

[11] The more accurate notation is $lc(\text{C}, \beta_i, \phi[\,\cdot\,])$.

The reasoning that is compressed in (19) can be unpacked as follows. Consider an utterance of $\phi[\alpha_{\text{G}}]$, where α is a predicate and G is a co-occurring gesture. For each constituent β of ϕ that contains α, a "gestural alternative" can be constructed by conjoining the "meaning" of G with α, $\beta[\alpha \wedge \text{G}]$.[12] Among these constituents, one can identify those that do not semantically entail their gestural alternatives. Then, the utterance is acceptable in C as soon as one of these constituents *contextually* entails its gestural alternative (in its local context).

I would like to make three remarks immediately. First, it is always the case that the inference generated by $\beta_0 = \alpha$ is identical with the cosupposition predicted by CA. Second, for every example discussed in this paper, the inference generated by $\beta_n = \phi$ is identical with the one generated by SA. This, indeed, in the sense in which CA and SA can be viewed as the outcomes of the same algorithm applied locally and globally. Third, (19) as it stands predicts "intermediate" inferences. I have not been able to construct good examples to establish whether this is a good or a bad prediction, but it should be clear that in case there are no such intermediate inferences (19) can be reformulated to make reference only to the most global and the most local constituents. This issue will not be relevant in the rest of this paper.

I will now work through the examples discussed above to evaluate the predictions of (19). Let us begin with the case of the universal quantifier 'every'.

(20) Every one of these ten guys punished$_{\text{SLAP}}$ his son.

a. $\beta_0 = \lambda x.\ x$ punished x's son
$lc(\beta_0) = \lambda w.\lambda x.\ w \in \text{C} \wedge x$ is one of the guys in w

b. $\beta_1 =$ [every guy] [$\lambda x.\ x$ punished x's son]
$lc(\beta_1) = \lambda w.\ w \in \text{C}$

In the case of (20) since the local context of the scope (viewed extensionally) is simply the set of all guys, the inference triggered by both (20a) and (20b) boils down to the same; (20a) predicts the inference that for each guy g, if g punished his son, he slapped him and (20b) predicts the inference that if every guy punished his son, then every guy punished his son by slapping. This is of course the same prediction that CA makes, which in conjunction with what the sentence (20) (without the gesture) asserts, yields the attested inference that every guy punished his son by slapping him. Next, consider the case of the negative quantifier 'no' (which, remember, was problematic for SA).

(21) None of these ten guys punished$_{\text{SLAP}}$ his son.

a. $\beta_0 = \lambda x.\ x$ punished x's son
$lc(\beta_0) = \lambda w.\lambda x.\ w \in \text{C} \wedge x$ is one of the guys in w

b. $\beta_1 =$ [no guy] [$\lambda x.\ x$ punished x's son]
$lc(\beta_1) = \lambda w.\ w \in \text{C}$

Here, no inference is predicted to arise by (21b) because β_1 logically entails $\beta_1[\alpha \wedge \text{G}]$ (= [no guy] [$\lambda x.\ x$ punished x's son by slapping]), violating the condition (i) of (19). The only option, therefore, is for (21a) to trigger an inference, which, as with (20a), boils down to the presupposition that for each guy g, if g punished his son, he slapped him. This is again the same (correct) prediction that CA makes.

Let me know move on to the case of 'unaware' (which was problematic for CA).

[12] I am, of course, conflating meta- and object-languages here. This is merely to avoid clutter.

(22) Mary is unaware that John punished$_{\text{SLAP}}$ his son.

a. $\beta_0 =$ John punished his son
$lc(\beta_0) = \lambda w.\lambda w'.\ w \in \mathrm{C} \wedge w' \in (\mathrm{DOX}^{w}_{\mathrm{M.}} \cup \{w\})$[13]

b. $\beta_1 =$ Mary is unaware that John punished his son
$lc(\beta_1) = \lambda w.\ w \in \mathrm{C}$

DC predicts two possible inferences for (22). One option is (22a), which will generate the same the prediction as the one made by CA. The second option is (22b), which will generate the same the prediction as the one made by SA. Before elaborating on this ambiguity, let me also mentioned another example, involving 'exactly one'.

(23) Exactly one of these ten guys punished$_{\text{SLAP}}$ his son.

a. $\beta_0 = \lambda x.\ x$ punished x's son
$lc(\beta_0) = \lambda w.\lambda x.\ w \in \mathrm{C} \wedge x$ is one of the guys in w

b. $\beta_1 =$ [exactly one guy] [$\lambda x.\ x$ punished x's son]
$lc(\beta_1) = \lambda w.\ w \in \mathrm{C}$

Here again, the inference predicted by (23a) is the same as CA, while it can easily be verified that the inference predicted by (23b) is that of SA. Now, is the ambiguity predicted by DC regarding, e.g., (22) and (23) undesirable? Not necessarily. Although the facts are at the moment rather unclear, ? find that 'exactly one' at least sometimes gives rise to universal inferences. The important point, for my purposes was to construct a system which can derive the inferences that Schlenker's CA could not. But the resulting system predicts systematic ambiguity. The evaluation of this prediction needs to be postpones until the facts are cleared up.

Finally, let me point out that one problem still remains, having to do with 'some but not all' (the same point can be made with 'between n and m', 'an odd number of', etc.).

(24) Some but not all of these ten guys punished$_{\text{SLAP}}$ his son.

a. $\beta_0 = \lambda x.\ x$ punished x's son
$lc(\beta_0) = \lambda w.\lambda x.\ w \in \mathrm{C} \wedge x$ is one of the guys in w

b. $\beta_1 =$ [some but not all guy] [$\lambda x.\ x$ punished x's son]
$lc(\beta_1) = \lambda w.\ w \in \mathrm{C}$

The problem is that since the predictions made by DC match those made by CA and SA, DC *cannot* account for (24); the prediction made on the basis of (24a) is too strong while the one made on the basis of (24b) is too weak. This is indeed the same problem that Schlenker's proposal (17) was faced with. To solve this problem, I'd like to submit that inferences triggered by DC do not receive the same epistemic treatment as root as presuppositions. It is a common assumption, following Stalnaker, that, at root, presuppositions are epistemically interpreted as in (25).

(25) Stalnaker's Bridge Principle. If a sentence ϕ presupposes that p, it can be felicitously used in context C only if C entails p.

[13] For a proof that the local context of the clause that is embedded under 'unaware' is the one given here, see [3]. $w' \in \mathrm{DOX}^{w}_{\mathrm{M.}}$ iff w' is compatible with what Mary believes in w.

I would like to propose that DC-triggered inferences are epistemically ambiguous in the following sense. Intuitively, for a sentence ϕ to be acceptable in context C, (25) requires that the presupposition of ϕ be true at every world of C. I would like to claim that DC-triggered inferences come with the following requirement: either every world of C makes the DC-triggered inferences true or every world of C *in which the assertive content of the sentence (without the gesture) is true* makes the DC-triggered inferences true. Let me implement this idea. Let W be the set of all possible worlds, and $\phi[\alpha_{\text{G}}]$ a sentence that contains a predicate-accompanying gesture. Construct the set C* such that (i) C* admits $\phi[\alpha_{\text{G}}]$ and (ii) no super-set of C* admits $\phi[\alpha_{\text{G}}]$. Then, $\phi[\alpha_{\text{G}}]$ can be felicitously used in a context C only if either $\text{C} \subseteq \text{C}^*$ or $(\text{C} \cap \{w : [\![\phi[\alpha]]\!]^w\}) \subseteq \text{C}^*$.

Let me briefly show why this move solves the problems of (24). Regarding the inference generated by (24a) in the scope of 'some but not all', we now have two options as to its epistemic treatment. Option one is that we impose the universal inference (that for each of the guys g, if g punished his son, he did so by slapping him) on the common ground, as we have been doing all along. This of course generates undesirable inferences regarding the guys who did not punish their son. Option two is to require the following: every world in the Context Set which makes the sentence 'some but not all of these ten guys punished his son' true, must make the inference that for each of the guys g, if g punished his son, he did so by slapping him true as well. This second option is a weaker imposition on the common ground than the first; for example, it is allowed that there be a world in the context set in which all guys punished their son by pulling his ear. What *is* required is that if some but not all guys punished their son, then all of them did so by slapping him, which is of course the target inference.

5 Conclusion

Co-speech gestures have only recently been studied by formal semanticists. Ebert & Ebert and Schlenker take a healthy attitude towards this freshly noticed phenomena: they try to assimilate them to better known phenomena (appositives in the case of E&E, presuppositions in the case of Schlenker) and study how they diverge. The attitude taken in this paper was to build on the disciplined approach of Schlenker in particular and ask the following question: what is the minimum amount of change that the cosuppositional analysis must go through, to make it empirically adequate? The resulting system is certainly rather baroque. My hope is that its empirical force can be used a basis to build a conceptually more elegant system.

References

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