

Towards a Compositional Semantics for English Intonation*

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Brown, Currie and Kenworthy 1980 and Brown 1983 provided an important corrective to the discussion of information structure of that time by reasserting the central role of intonation in its expression in English. Bolinger (1958, 1961) and Halliday (1963, 1967a,b) had laid the foundation of a discourse semantics for tunes, but their insights had largely been ignored in subsequent work on information structure attempting to extend Halliday's given-new distinction by Haviland and Clark (1974), Clark and Clark (1977), Clark and Haviland (1977), Prince (1981), and Sanford and Garrod (1981). In more recent work by Selkirk (1984), and particularly Hirschberg and Pierrehumbert (1986) and Pierrehumbert and Hirschberg (1990), among others, there has been a renewed attempt to define a compositional semantics of information and propositional attitude for the intonational system.

The present paper offers a new semantics for the tones which I believe to be closer than earlier work (including my own) to the spirit of Halliday's and Brown's original insight that the tones are as directly associated with elements of a compositional discourse semantics as are words with more traditional elements of semantics.¹

1 Tones and Information Structure

I begin by assuming that all pitch accents, high or low, simple or compound, are in the first place properties of the words that they fall on, and that they mark the interpretations of those words as contributing to the distinction between the speaker's actual utterance and other things that they might be expected to have said in the context to hand, as in the "Alternative Semantics" of Karttunen (1976), Karttunen and Peters (1979), and Rooth (1985, 1992). In this sense, all pitch accents are *contrastive*. For example, in response to the question "Which finger did he bite?", the word that contributes to distinguishing the following answer from other possible answers via

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¹Since Brown, Currie and Kenworthy 1980 and Brown 1983 carried out their study on Edinburgh Scots English, and the analysis presented here is based on Standard American and Southern British English, it is perhaps helpful to point out that the tonal system of the Edinburgh dialect is in the aspects considered here (unlike that of Glasgow and a number of other dialects) almost identical to that of standard southern English.

reference is the deictic “this”, so the following intonation is appropriate.²

(1) He bit THIS one .

H* LL%

It is important to be clear from the start that the set of alternative utterances from which the actual utterance is distinguished by the tune is in no sense the set of all possible utterances appropriate to this context, a set which includes infinitely many things like “Mind your own business,” “That was no finger,” “What are you talking about?” and “Lovely weather we’re having.” Rather, the presupposed set of (presumably, ten) alternative utterances is *accommodated* by the hearer in the sense of Lewis (1979) and Thomason (1990), like any speaker presupposition that is not actually inconsistent with their beliefs. This does not imply that such alternatives sets are confined to things that have been mentioned, or that they are mentally enumerated by the participants—or indeed that they are necessarily even finite.

In terms of Halliday’s and Brown’s given/new distinction pitch accents are markers of “new” information, although the words that receive pitch accents may have been recently mentioned, and it might be better to call them markers of “not given” information. That seems a little cumbersome, so I will use the term “kontrast” from Vallduví and Vilkuna 1998 for this property of English words bearing pitch accents, spelling the corresponding verb “k-contrast”.³

I’ll further attempt to argue that there are just two independent semantic binary-valued dimensions along which the literal meanings of the various pitch accent types are further distinguished. The first of these dimensions distinguishes between what I’ll continue to call “theme” and “rheme” components of the utterance, using these terms in the sense of Bolinger (1958, 1961) rather than Halliday. Theme can be thought of informally as the part of the sentence corresponding to a question or topic that is presupposed by the speaker, and rheme is the part of the utterance that constitutes the speaker’s novel contribution on that question or topic. However, it will become clear below that the notion of theme differs from that of topic as defined by, for example, Gundel (1974); Gundel and Fretheim (2001) in being speaker-defined rather than text-based.

The second dimension along which the pitch accent types are distinguished concerns whether or not this particular theme or rheme is mutually agreed. This notion is related to various notions of Mutual Belief or Common Ground proposed by Lewis (1969), Cohen (1978), Clark and Marshall (1981) and Clark (1996).⁴

Both of these components of meaning are projected by the process of grammatical derivation from the words that carry the pitch accent to the prosodic phrase corresponding to these information units. (I’ll ignore the nature of the grammar and the process of derivation here, and the interesting question of how intonational phrasing may on occasion depart from traditional constituent structure, but I’m assuming the CCG-based grammar presented in Steedman 2000a.)

²The notation for tunes is Pierrehumbert’s, see Pierrehumbert and Hirschberg 1990 for details including characteristic pitch-contours.

³In Steedman 2000a and earlier work I called this property “focus”, following the “narrow” sense of Selkirk (1984). However this term invites confusion with the “broad” sense intended by Hajičová and Sgall (1988) and Vallduví (1990), which is closer to the term “rheme” as used in the present system, and in Steedman 2000a and Vallduví and Vilkuna 1998.

⁴Hobbs (1990), who proposes a very different revision of Pierrehumbert and Hirschberg (1990) to the present one, also gives a central role to Mutual Belief.

I'll also try to argue that the intonational boundaries such as those sometimes referred to as "continuation rises," which delimit the prosodic phrase, fall into two classes distinguishing which of speaker and hearer is responsible for, or in terms of the related account of Gunlogson (2001a,b) is committed to, the corresponding information unit.⁵

I'll assume that the speaker's knowledge can be thought of as a database or set of propositions in a logic (second-order, since themes etc. may be functions), divided into three subdomains, namely: a set *S* of facts that the speaker is committed to; a set *H* of facts which the speaker regards the hearer as committed to; and a set *AGREED* consisting of those facts which both are actively committed to. The latter is not merely the intersection of *S* and *H*: the speaker may regard the hearer as committed to a belief whilst knowing that in fact they do not regard themselves as so committed. In Steedman 2000a, *S* and *H* are treated as modalities [*S*] and [*H*] of a modal logic, and it is reasonable to treat mutual agreement *AGREED* the same way, as a modality [*AGREED*], as proposed by Stone (1998) for mutual belief.

These classifications can be set out diagrammatically as in the tables 1 and 2. If a theme or a

	<i>AGREED</i>	\neg <i>AGREED</i>
<i>THEME</i>	L+H*	L*+H
<i>RHEME</i>	H*, (H*+L)	L*, (H+L*)

Table 1: The Meanings of the Pitch Accents

Speaker Committed	L, LL%, HL%
Hearer Committed	H, HH%, LH%

Table 2: The Meanings of the Boundaries

rheme is marked as agreed, then it's in *AGREED*, whoever is explicitly claimed to be committed to it. If it is not so marked, then it is not in *AGREED*, *even if it is in both S and H*. This last possibility arises because *H* is only the speaker's view of what the hearer is committed to, not the hearer's own. It follows that a theme or rheme may be believed by the speaker, and held by the speaker to be something that the hearer is committed to, without the hearer's actually agreeing to it. We will come to an actual case of this later on.

At first glance, this proposal might appear to miss the point entirely. Where are notions like "topic continuation" (Brown, Currie and Kenworthy 1980) and "evaluation with respect to subsequent material" (Pierrehumbert and Hirschberg 1990), or the latter authors' scales of commitment and belief? I'm going to argue that many of the effects that have been associated with intonational tunes rise from the interaction of literal meanings made up of the above simple components with the context. To consider this claim we need some examples.

2 An Example: Pitch Accents

The first example commemorates Miles Davis' response to Dave Brubeck's question concerning his reason for playing *E*_♭ as the final note of Brubeck's tune *In Your Own Sweet Way*, in place of

⁵In Steedman 2000a, I called this dimension "ownership," which now seems too metaphorical to be helpful.

E as written:⁶

(2) DB: Why did you play *E*-natural?

MD: (Why didn't YOU) (WRITE *E*-natural ?)
 L+H* LH% H* LL%
 background kontrast kontrast background
 theme rheme

The LH% boundary splits the utterance into two intonational phrases and two information units. The L+H* accent marks the first of these units as theme (L*+H would also be appropriate). It falls on the word *you* because its referent (Brubeck) is the element that distinguishes *this* theme from the other themes that are available. The set of available themes, which we will call the “Theme Alternative Set” (TAS) is presupposed by Davis and accommodated by Brubeck as including just two possible themes. These can be thought of informally as “Why did/didn't Davis do *x*?” and “Why did/didn't Brubeck do *x*?” More formally we can think of the Theme Alternative Set as a set of lambda terms, which for this context is as follows, in which ± stands for polarity:

(3) { $\lambda vp.\lambda reason.cause'reason(\pm do'vp brubeck')$ }
 { $\lambda vp.\lambda reason.cause'reason(\pm do'vp davis')$ } }

(I'm assuming here that the fragment *Why didn't you* is assigned a meaning which is a function from VP interpretations to *why*-question interpretations—the latter being themselves functions from adverbial interpretations to causal propositions. This is in fact what the CCG grammars outlined in Steedman (2000b) actually deliver, given an appropriate lexicon.)

Other themes and Theme Alternative Sets are possible. For example, a further L+H* pitch accent on *didn't* is possible:

(4) (Why DIDN'T YOU) (WRITE *E*-natural ?)
 L+H* L+H* LH% H* LL%

By saying (4), Davis presupposes, and Brubeck accommodates, a Theme Alternative Set which informally can be thought of as “Why did Davis do *x*” and “Why didn't Brubeck do *x*”, and can be written as:

(5) { $\lambda vp.\lambda reason.cause'reason(-do'vp brubeck')$ }
 { $\lambda vp.\lambda reason.cause'reason(+do'vp davis')$ } }

In both cases, words whose interpretation distinguishes the intended theme from the others—which is how “k-contrasted” or “not given” is defined in the present system—bear pitch accents, while those that do not contribute to the distinction—which is how we define “background” or “given”—do not. (See Prevost and Steedman 1994; Prevost 1995 for further detail on the determination of pitch accent placement in sentence generation.)

We do not need to think of the Theme Alternative Sets as closed under terms that are already in play in the conversation. A more general representation of the TAS for (2) reminiscent of the “Structured Meaning” approach of Cresswell (1973, 1985) and von Stechow (1981) can be

⁶Miles was of course absolutely right. The tones shown in the example are conjectural, however, given his complete lack of F_0 .

obtained by abstracting over the element(s) corresponding to accented words, thus:

$$(6) \lambda_{subj}.\lambda_{vp}.\lambda_{reason}.cause'reason(\pm do'vp\ subj)$$

Similarly, the TAS for (4) can be written as follows:

$$(7) \lambda_{polarity}.\lambda_{subj}.\lambda_{vp}.\lambda_{reason}.cause'reason(polarity(do'vp\ subj))$$

Of course, themes including this one may not, and in fact usually do not, bear any pitch accent at all, as in:

$$(8) \text{ (Why didn't you) (WRITE } E\text{-natural ?)} \\ \text{H*} \qquad \qquad \text{LL\%}$$

Such noncontrastive or “unmarked themes” presuppose or are accommodated to a singleton TAS—in this case the following:

$$(9) \{ \lambda_{vp}.\lambda_{reason}.cause'reason(-do'vp\ brubeck') \}$$

Thus according to the present theory, as Halliday and Brown insisted, what is “new”, “not given,” or k-contrasted vs. what is “given” or background is determined by the speaker, not a property of a text or context alone (Brown 1983:67). By the same token, the notion of theme is also speaker-determined, not text-based as is the notion of topic of Gundel (1974); Gundel and Fretheim (2001).

Similar considerations govern the effect of the rheme-tune in (2) and (4). The H* accent marks the second information unit as a rheme, and it falls on the word *write* because it is the interpretation of that word that distinguishes *this* rheme from the others that the context affords. This set of available rhemes, which we will call the “Rheme Alternative Set” (RAS) is, again presupposed/accommodated by the participants to include only doing things to $E\uparrow$. In this particular case we can think of the RAS as being closed under the things that have actually been mentioned—that is as

$$(10) \left\{ \begin{array}{l} \lambda x.play'e\uparrow'x \\ \lambda x.write'e\uparrow'x \end{array} \right\}$$

Again, we can again think of the RAS more generally by abstracting over the transitive predicate in structured-meaning style:

$$(11) \lambda tv.\lambda x.tv\ e\uparrow'x$$

We have so far passed over the role of the particular boundary tones in (2) and (4). Earlier we identified this role as assigning responsibility for theme/rheme status to either speaker or hearer. Thus the claim must be that in the above examples the theme is marked by Miles Davis as Brubeck’s responsibility, whereas the rheme is marked as his own. To see what this means, and to understand the implication of table 1 that both are “agreed”, we must look more broadly at the function of the boundary tones.

3 An Example: Boundaries

Brown (1980:30) identifies the role of high boundaries as indicating that there is more to come on the current topic from some participant. Pierrehumbert and Hirschberg (1990:304-308), from whom the following example is adapted, make a related claim concerning interpretation with

respect to succeeding material (again, this may come from either participant):

- (12) a. Attach the jumper cables to the car that's running,
L+H* L+H* LH%
- b. Attach them to the car you want to start,
L+H* L+H* LH%
- c. Try the ignition,
L+H* L+H* LH%
- d. If you're lucky,
L+H* LH%
- e. You've started your car.
H* LL%

Pierrehumbert and Hirschberg don't actually specify the pitch-accent types for this example, but L+H* seems appropriate for all accents except those in the last clause—in fact, H* accents sound quite odd, for reasons we'll come to. In present terms, this means that the earlier clauses are all themes, and illustrates the fact that multiple themes, and in fact isolated themes without any rheme, are all possible.

It is interesting to consider the effect of replacing the LH% boundaries by LL% boundaries, retaining the L+H* accents. This manipulation does not affect the coherence of the example very much. The main effect is to make the speaker's prescription seem somewhat abrupt and discouraging of any interruption, and to be generally unconcerned with whether or not it is making any sense to the hearer. In comparison, the original (12) seems more attentive, and to invite the hearer to take control of the discourse if they want to.

I'm going to claim that in both cases the forward motion of the discourse is the same, and is brought about, not by the inclusion of high boundaries as such, but by the rheme-expectation stemming from the theme-marking L+H* pitch-accents. The specific "kinder, gentler" effect of the version with LH% boundaries arises from their primary meaning of marking hearer-commitment. By marking the themes as, in the speaker's view, the hearer's responsibility (although in fact, of course they may be completely new to the hearer), the possibility of the latter taking control of the discourse is maintained at every turn.

These claims are borne out by considering the effect of substituting H* rheme accents for L+H* in both high- and low- boundary versions. With high boundaries, the instructions become quite irritating, and seem to imply that the hearer knows all this already. With low boundaries, the effect is again abrupt and not hearer-oriented. In both cases, coherence (though inferable from world knowledge) is reduced.

I'm further going to claim that all the related effects of high boundaries, which have been variously described in the descriptive literature as "other-directed", "turn-yielding", "discourse-structuring," or "continuation" are similarly indirect implicatures that follow from the basic sense of high boundaries, which is to identify the hearer as in the speaker's view committed to the relevant information unit.

The claim that speakers can attribute responsibility for information units to the hearer and thereby achieve rhetorical effects like continuation and other-directedness by indirection is perhaps hard to swallow. I cannot resist an anecdote that shows not only that this is what is going on, but that, as with all indirect speech acts, these effects are hard to control in unfamiliar social

situations, and can produce unwelcome effects.

When I first went to live in the United States, I was puzzled to find that barmen considered me impolite when I asked for a beer (in impeccable Standard American English (SAE)—note the assured use of the verb “get” rather than British “have”) as follows:

- (13) #Can I get a Sam Adams?
H* H* LH%

Such a response was perceived as rude and aggressive. What I should have said was the following:

- (14) Can I get a Sam Adams?
H* H* HL%

The meaning of the H% in (13), according to the present theory, is that the bartender is committed to this rheme concerning the speaker’s needs. British English speakers regard this claim as quite appropriate, in fact as almost excessively ingratiating. To Americans, by contrast, it is only possible to make claims like this when they are literally true—for example, if one has already made the request a number of times and is on the point of either giving up or turning nasty (Ladd 1996). Otherwise, SAE speakers expect you to stay out of their head and take responsibility for your own rhemes by using an L% boundary.⁷

It’s unclear whether this difference should be explained in terms of conventionalization on the British side, or in terms of other more fundamental cultural differences (last echoes of the spirit of the Blitz versus those of frontier individualism, perhaps), or both.

On the other hand, in both dialects/cultures, the H*LH% tune is entirely appropriate for echo questions (Ladd 1996) such as the following, in which the presupposition that the hearer is committed to the rheme is by definition true:

- (15) A: I have just bought a MONDRIAN
H* LL%
B: You’ve bought a MONDRIAN?
H* LH%

4 The Full System

We are now ready to look at the entire system laid out in tables 1 and 2, via some simpler minimal pairs of examples in which tones including the L* pitch accents and boundaries are systematically varied across the same text.

If we limit ourselves for the sake of simplicity to tunes with a single pitch accent, assume that H*+L and H+L* are not distinct from H* and L*, and take LL% and LH% as representative of the two classes of boundary then the classification in tables 1 and 2 allow eight tunes which exemplify the $2^3 = 8$ possible combinations of these three binary features. It is instructive to consider the effect of these tunes when applied to the same sentence “I’m a millionaire,” uttered

⁷An LL% boundary is also possible in (14), though it does not work as well as HL% with the question form of the request. (This is keeping with Pierrehumbert and Hirschberg’s claim that the H phrasal tone component of the boundary marks the information unit as to be interpreted with respect to a subsequent one, which is appropriate for a question.) With other content, such as “I’d like a Sam Adams” and even rhetorical questions like “Would I like a Sam Adams!” it is fine, while LH% remains inappropriate to American ears.

in response to various prompts. It's important to realize that all these responses are indirect, and their force depends on whether the participants regard being a millionaire as counting as being rich.

(16) A: You appear to be rich.
B: I'm a MILLIONAIRE.
 H* LL%
(Rheme, agreed, B's commitment.)

(17) A: You appear to be poor
B: I'm a MILLIONAIRE.
 L* LL%
(Rheme, not agreed, B's commitment.)

(18) A: Congratulations. You're a millionaire.
B: I'm a MILLIONAIRE?
 H* LH%
(Rheme, agreed, A's commitment.)

(19) A: Congratulations. You're a millionaire.
B: I'm a MILLIONAIRE?
 L* LH%
(Rheme, not agreed, A's commitment.)

The above four responses can be assumed to consist of a single rheme.⁸ The ones involving an L* pitch accent mark the rheme as being not agreed. However, the pitch accent itself does not distinguish who the opposition is coming from. This is not an ambiguity in the pitch accent itself. Rather, the identification of the source of the conflict and the entire illocutionary force of the response depends on inference on the basis of what else is known about the participants' beliefs. Thus, in (17), the one who appears to doubt the proposition in the second utterance is the hearer, but in (19) it is the speaker. In different contexts, the difference could be reversed or eliminated.

A similar pattern can be observed for the theme pitch accents:

(20) A: You appear to be rich.
B: I'm a MILLIONAIRE.
 L+H* LL%
(Theme, agreed, B's commitment.)

(21) A: You appear to be poor.
B: I'm a MILLIONAIRE.
 L*+H LL%
(Theme, not agreed, B's commitment.)

⁸Under the proposal in Steedman 2000a, they could also be analyzed as an unmarked theme "I'm" and a rheme "a millionaire". In this particular context it makes very little difference, and we'll ignore these readings.

(22) A: You appear to be a complete jerk.
 B: I'm a MILLIONAIRE.
 L+H* LH%
 (Theme, agreed, A's commitment.)

(23) A: You appear to be a complete jerk.
 B: I'm a MILLIONAIRE.
 L*+H LH%
 (Theme, not agreed, A's commitment.)

At first encounter, it may appear that these tunes must mark rhemes, like those in (16) to (19). However in Steedman 2000a, I show that these are in fact isolated themes, of the kind we have already noticed in connection with example (12), and which are also identified in German by Büring (1997a,b). These isolated themes they achieve the effect of a response (as well as various other implicatures of impatience, diffidence, etc.) via the indirect speech act of leaving the hearer to generate the rheme for themselves.

One again, the tunes involving L*+H accents imply disagreement or absence from mutual belief. Once again, the source of the disagreement can only be identified from the full discourse context. In the case of (22) and (23), it is important to remember that the speaker's LH% boundary means only that the speaker *views the hearer as* committed to these themes. As far as the hearer is concerned, that is not the same as an actual commitments. Thus the L*+H in (23) simply has the effect of correctly excluding from the mutual belief set *AGREED* this theme which the boundary marks as in *H*, in spite of the fact that can also be inferred to be in the speaker's own beliefs *S*. This is the possibility that was noticed in the discussion of tables 1 and 2: it seems a fundamental property of the system that there is a distinction between a proposition merely being in both *S* and *H* and it actually being in *AGREED*. The former amounts to a claim by the speaker that both participants *ought* to be committed to it. The latter is a claim by the speaker that both actually *are* committed.

Example (23) is identical in information structural terms to the following example, extensively discussed by Ward and Hirschberg (1985) (see Pierrehumbert and Hirschberg 1990:295, (26)):

(24) A: Harry's such a klutz.
 B: He's a good BADMINTON player.
 L*+H LH%

In terms of the present theory, the response is an isolated theme, which achieves its effect of contradiction by: b) claiming via an LH% boundary that the hearer is committed to the proposition; b) claiming via the L+H* pitch accent that the theme is not (yet) mutually agreed, even though the hearer may in fact believe its content already; and c) leaving the speaker to infer for themselves on the basis of their world knowledge about badminton players the implicated rheme, that Harry is not in fact a total klutz. The contradiction is particularly effective, because a and b between them further implicate that A's original remark was pretty stupid, and thereby force the hearer to infer this intended further conclusion for themselves, without the speaker explicitly saying so. However, this effect of the utterance is an indirect speech-act or conversational implicature, not part of the literal meaning of the words or the tones.

As an aside, it is striking that within the present theory, such conversational implicatures

can be analyzed solely in terms of knowledge and modality, without appealing explicitly to notions of cooperation, flouting, or to speech-act types and illocutionary force recognition. Many of the examples discussed by Grice (1975) and Searle (1975) seem to be susceptible to similar knowledge-based analysis, making Speech-act-theoretic analyses merely emergent, as in Steedman and Johnson-Laird (1980) and Cohen and Levesque (1990).

For example, consider Grice’s famous analysis of the sarcastic or ironic conversational implicature achieved by saying “You’re a fine friend!” in a situation where the hearer has actually done the speaker a disservice. His analysis requires the hearer to detect that the speaker has flouted a conversational maxim (Quality), to assume that the speaker is still cooperating and therefore (by a step that is not quite clear), to infer that the speaker must mean the opposite of what they said. It is interesting however, to observe that one intonation contour with which such sarcastic comments are characteristically uttered is the following:

(25) You’re a FINE FRIEND !
 L* L* LH%

This all-rheme utterance is marked by the L* pitch accents as not agreed or in Mutual Belief, and by the LH% boundary as being something the hearer is in the speaker’s view committed to. It is the latter marking that makes the hearer compare the speaker’s proposition with their own beliefs, and identify the Rheme Alternative Set as something like the following:

(26) $\left\{ \begin{array}{l} (-fine'(friend' self')) \\ (+false'(friend' self')) \end{array} \right\}$

At this point, the speaker has achieved their goal of making the hearer aware of their own misdeed, and the indirect speech-act is complete, without any appeal to cooperation, maxims, or rules explicitly associating maxim-violating utterances with their negation. Indeed the effectiveness of the indirect accusation is greatly increased by the fact that the speaker has got under the hearer’s guard, forcing them into coming up with this thought for themselves, rather than stating it as a speaker commitment, which the hearer might reject. We as linguists may identify this as illocutionary uptake of an act of sarcasm, but the participants don’t need to know about any of this.

5 Conclusion

Although the proposal above builds very directly on earlier work by Brown, Pierrehumbert, and Hirschberg, as well as my own, it remains little more than a preliminary sketch. A number of very pressing problems have been pushed to one side. Among them are: the notoriously poor reliability with which ToBI annotators can draw the L+H*/H* distinction that is assumed in many of the examples here (Taylor 2000); the implications for the present theory of a number of experiments purporting to show that Gundel’s topic/focus distinction (which I have claimed to differ from the theme/rheme distinction) is not systematically correlated with tone (Hedberg and Sosa 2001, 2002; and the fact that non-native speakers of English (and native speakers with damage to their vocal chords, including Miles Davis), as well as all users of the written form of the language, manage to be understood without distinguishing many (or even any) varieties of pitch accent.

However, the system has a number of properties that may make it worth pursuing these

questions further. It is a strikingly simple system, reducing the literal meaning of the tones to just three semantically grounded binary oppositions. Crucially, it grammaticalizes a distinction between the beliefs that the speaker *claims* by their utterance that the speaker is committed to, and those that the hearer actually *is* committed to. It is only the latter set that includes Mutual Beliefs. It is therefore consistent for the speaker to claim and/or implicate that both they and the hearer are committed to a proposition, but that it is not mutually believed. This is a move in the present theory that is forced by examples like (24) and the minimal pairs in (16)-(23).

The theory places a correspondingly greater emphasis on the role of speaker-presupposition (and its dual, hearer-accommodation, and by inference and implicature. To that extent, the present theory follows the tradition of Halliday and Brown, in claiming that it is the speaker who, within the constraints imposed by the context and the participants' beliefs and intentions, determines what is theme and rheme, and what contrasts they embody, and not the text.

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