

Presupposition and Shared Knowledge in *It*-Clefts

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In this paper, I present a view of the relative roles of logical presupposition and shared knowledge in *it*-cleft constructions. I will argue for a view of *it*-clefts in which presupposition on the one hand, and indicators of shared information on the other, are understood to have separate functions: indicators of shared knowledge, including prosody, are argued to relate to a speaker's *assumptions* about the state of the hearer's knowledge and attention, while presuppositions generated on the basis of syntactic form are argued to indicate a speaker's *requirements* for what should be included within the hearer's discourse model. In the light of this view, I review three common assumptions about clefts relating in particular to the interrelationship of logical presupposition, shared knowledge, and prosody, and show how the view argued for here gives an improved analysis of some previously problematic examples. Finally, I make some suggestions regarding what a strict separation between logical presupposition and shared knowledge might imply for psychological accounts of how *it*-clefts are processed.

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1 Introduction

It is commonly assumed in the literature that some notion of presupposition, and/or some notion of shared knowledge, is central to the explanation of the discourse function of *it*-clefts. However, the claims that have been made are often contradictory, and no clear picture has emerged regarding what notions are the relevant ones. In this paper, I attempt to clarify this situation by presenting a view of the relative roles of presupposition and salient shared knowledge in *it*-cleft constructions in which presupposition on the one hand, and indicators of shared knowledge on the other, are understood to have separate functions, and I present in outline what these functions are. In support of this view, I present a re-analysis of three claims that have appeared in the literature in relation to presupposition, prosody, and shared knowledge in *it*-clefts, and show how a more satisfactory result is achieved on this approach. In conclusion, I present some data that indicates the need for a further refinement to the notion of shared knowledge, particularly in relation to prosody, and make some suggestions regarding what a strict separation between logical presupposition and shared knowledge implies for the currently-accepted model of how clefts of various kinds are processed, as exemplified by Clark and Haviland's [1977] account.

1.1 Presupposition and Shared Knowledge

Presupposition

Cleft constructions have for some time been taken to belong to the class of construction that induces, conveys, or requires PRESUPPOSITIONS (see, for example, Keenan [1971], Chomsky [1971], Gazdar [1979] *inter alia*). The general suggestion is that such presuppositions are systematically associated with the syntactic structure of the cleft, so that a positive *it*-cleft such as (1a) and its negative counterpart in (1b) would require or create a presupposition such as (1c), generated by the substitution of the content of the clefted constituent with a suitable existentially-quantified variable:

- (1) a It was John who left.
b It wasn't John who left.
c $\exists x \textit{leave}(x)$

While it is agreed that propositions such as (1c) have special properties, there is little agreement as to the role of such propositions in the connected discourses from which they arise. Pragmatic theories of presupposition would suggest that a presupposed proposition such as (1c) has a particular status in relation to the shared knowledge of the interlocutors: for example, either that it would be entailed by the ‘common ground’ of the conversation at the point of speaking (e.g. Karttunen [1974], Karttunen and Peters [1975]), or would be already assumed by the interlocutors in some other sense, such as a pre-existing belief (e.g. Stalnaker [1974]). In what follows, however, I hope to show that this is not the appropriate notion to attach to the syntax of the *it*-cleft. Instead, syntactically-generated presuppositions such as (1c) are more sensibly treated in the manner proposed within a broadly semantic approach, in that the presupposed proposition can be viewed as a condition for the carrier sentence to have a truth-value. While semantic accounts of presupposition differ widely in detail (and are not wholly divorced from pragmatic issues in their implementation), the view adopted here is that based on that of van der Sandt [1988], in which a positive sentence such as (1a) would presuppose and entail a proposition such as (1c), while a negative sentence such as (1b) would only presuppose it.

There are several tests available for this notion of presupposition, (cf. van der Sandt [1988]), most of them based upon the fact that logical presuppositions are immune from operators that express negation, possibility, questioning—in fact any kind of doubt about the truth of the presupposed proposition. Using *regret* as an example of a presupposition-inducing construction, we can see that the scope of any such operator is limited to casting doubt upon or negating the fact that regretting is taking place, while the presupposed content of the complement of *regret*—that is, the regretted fact or event—remains unscathed. In all the following cases, therefore, it is true that John's dog is brown:

- (2) a John regrets/does not regret that his dog is brown.
b Does John regret that his dog is brown?
c I am/I am not sure whether John regrets that his dog is brown.
d It is possible/not possible that John regrets that his dog is brown.

Later in the discussion, these tests for presupposition will be applied to *it*-clefts of various kinds in answer to some suggestions that have been made about them.

Shared Knowledge

Although, as I have suggested above, it is not possible by means of a simple syntactic operation on the *it*-cleft to derive a proposition that is likely to be shared between interlocutors, a notion of shared knowledge is still as relevant to the description of *it*-clefts as any other class of utterances. Accordingly, following Clark and Marshall [1981] and Joshi [1982], I take ‘shared knowledge’ to be those beliefs that conversational participants come to believe to be shared among them as the direct result of the conversational interaction. Approximating to the practice of Halliday [1967, 1976, 1985], Gussenhoven [1983], Taglicht [1984] and others, I will be making the fairly simplistic assumption that the appearance of prosodic nuclei correlates broadly with the presence of information that is assumed by the speaker to be New to the hearer, at least with respect to the current discourse segment (cf. Pierrehumbert and Hirschberg [1986:142]). For the purposes of the investigation, I will need a simple metric that will allow me to note cases in which the prosodic evidence seems to point to the presence of New information. While the exact mapping between prosody and New information is still an open research question, it is generally accepted that nuclear accents are among the indicators (although not the sole indicators; cf. for example Pierrehumbert and Hirschberg [1990]) that information assumed to be New is within the scope of the nucleus. It is now clear that accent *type* is also an important clue to information status: the data examined here are not of sufficient quality for this information to be available, and so the description of the exact information structure of clefts awaits further study. For the purposes of the current research, however, accent placement serves as sufficient indication, especially since many of the claims I will examine use similar data.

Having set up the notions of presupposition and shared knowledge that will be used in this account of *it*-clefts, it is instructive to see how clefts and non-clefts might be analysed into presupposed/non-presupposed (or ASSERTED) information on the one hand, and shared and non-shared on the other. The table below gives an analysis for some examples, indicating the location of pitch accents by means of small capitals. On the approach taken here, canonical declarative (e.g. non-cleft) constructions are held not to presuppose, but can be construed to consist of both shared and non-shared knowledge on the basis of accent placement¹, among other indicators. All three clefts, regardless of accent placement, are taken to presuppose and assert the same propositions, although their accent placement suggests differing divisions into shared and non-shared knowledge².

Utterance	Shared	New	Presupposed	Asserted
JOHN left	<i>left(x)</i>	$x = j$	—	<i>left(j)</i>
John LEFT	$P(j)$	$P = leave$	—	<i>left(j)</i>
It was JOHN who left	<i>left(x)</i>	$x = j$	<i>left(x)</i>	$x = j$
It was John who LEFT	$P(j)$	$P = leave$	<i>left(x)</i>	$x = j$
It was JOHN who LEFT	$P(x)$	$P = leave, x = j$	<i>left(x)</i>	$x = j$

The distinction between presupposition and shared knowledge, moreover, reflects a distinction in the discourse function of the two systems: as I describe more fully in section 3, indicators of shared knowledge such as prosody indicate a speaker’s ASSUMPTIONS about the state of the hearer’s knowledge and model of the discourse, while presupposition indicates a speaker’s REQUIREMENTS as to what information *should* be present in the hearer’s knowledge. As I will go on to show, given the two notions of presupposition and shared knowledge outlined above, some important puzzles and controversies surrounding the *it*-cleft can be ironed out relatively straightforwardly.

¹Note that the analysis of *John* is not the only one possible, but is intended to serve as an example. The interpretation represented assumes the narrow-scope interpretation of the accent, suitable for a context in which John is assumed to be already under discussion.

²Again, different interpretations of the scope of accents are possible. It is important to note, too, that the final example features more than one accent, which is often the case in *it*-clefts. The relevant point here is that, whatever the status of the information conveyed by the cleft in terms of the current discourse, the same presupposition and assertion are directly derivable from syntactic form.

1.2 The Clefts Data

The data upon which this study is based consist of 256 examples of naturally-occurring *it*-clefts, both spoken and written, first discussed in Delin [1989]. Written examples were drawn from the Lancaster-Oslo-Bergen (LOB) Corpus, and spoken examples from the Survey of English Usage (SEU) Corpus (Svartvik and Quirk [1980]) and from my own collection of casual conversational data. During the exposition I also use examples drawn from Ellen Prince's [1978] paper. For simplicity, invented examples also appear in the discussion of presupposition, where no empirical conclusion is being drawn.

In order to give an idea of the kinds of *it*-cleft that are common in everyday usage, it is as well to consider some naturally-occurring data at this point. Some written examples taken from Prince [1978] appear in (3a) and (3b); (3c) and (3d) are from the LOB corpus of written English:

- (3) a It was ten years ago this month that young Irwin Vamplew was bopped on the head with a nightstick while smashing windows in Berkeley in order to end the war in Vietnam.
- b It is through the writings of Basil Bernstein that many social scientists have become aware of the scientific potential of sociolinguistics.
- c It is at this stage that the helpless insect is in great danger—especially from ants.
- d Maybe it was the early training which expected a complete cessation of noise of any kind when music was being performed, that causes me and others like me to find it quite impossible to talk or listen when there is 'background noise'.

Some spoken examples appear in (4): (4a-c) are taken from the Survey of English Usage corpus: (4d) is from my own data from casual conversation:

- (4) a A: Joe Wright you mean
B: Yes yes
A: I thought it was Joe Wright who'd walked in at FIRST.
- b A: Simon Crawley ...he's the Gallic person yes yes
A: Now is it Simon Crawley who's the editor of the Tundraland and Westingham
- c A: You see one has often seen this happen
B: It's this sort of thing that makes an absolute fool of Mallet
- d That isn't a proper error. It's just me that can't TYPE.

2 Some Assumptions About *It*-Clefts

As I claimed above, a distinction between presupposition on the one hand, and shared knowledge on the other, can shed some light on some puzzles surrounding the *it*-cleft that have arisen in the literature. Of the various assumptions that have been made about *it*-clefts, three in particular have been influential in shaping our view of how *it*-cleft constructions function in discourse. These can be summarised as follows:

- The presupposed information borne by *it*-clefts is mutually known in the discourse (Rochemont [1986], Soames [1990] *inter alia*)
- Cleft syntax performs the same function as accent placement (Gazdar [1979], Prince [1986], Seuren [1986])
- The presence of nuclear or other accents in cleft complements affects the presuppositional nature of the cleft (Chomsky [1971], Ball and Prince [1977], Prince [1986])

The discussion of the first point, the relationship between cleft presupposition and shared knowledge, serves to provide evidence for what I have already presented as an assumption of my own: that the relevant notion of presupposition for clefts does not need to invoke mutual knowledge. The second and third points will be discussed together as part of a more detailed analysis of the relationship between cleft syntax and prosody.

2.1 Are Cleft Presuppositions Mutually Known?

It is often suggested that the content of *it*-cleft presupposition is information that is expected to be already within shared knowledge. Rochemont [1986:32], for example, claims that *it*-cleft complements must be ‘directly c-construable in virtue of prior discourse’. He describes the notion of direct c-construability [1986:62] as follows:

Direct C-Construability : A phrase P is directly c-construable if:

1. P has a discourse antecedent; or
2. the attention of the participants has been directed towards the intended referent of P in the physical environment.

Soames [1989:605] also sees *it*-clefts as typically, if not invariably, containing information that is shared between speakers. While he acknowledges that a cleft such as *it was Mary who broke the typewriter* could appear in a conversation where the assumption *someone broke the typewriter* is not present, he suggests that they represent an aberrant use of the construction:

...there is something a bit odd about such a case—a kind of pretense that the (or a) topic of conversation prior to the remark was that of determining who broke the typewriter. For a speaker to utter [this example] in a conversation in which this is not at issue is for him to reveal that his conception of the conversational plan differs from that of the other conversational participants. This suggests that [this example] pragmatically requires the (or a) topic of conversation prior to the utterance will be that of determining who broke the typewriter. A conversation satisfying this requirement will be one in which [the presupposition] is entailed by the common background.

[Soames 1989:605]

Similar claims appear, either explicitly or implicitly, in Hutchinson [1971], Hornby [1974], Glatt [1982:89], and Fletcher [1984]. A related assumption

appears in Haviland and Clark [1974], Carpenter and Just [1977] and Clark and Clark [1977:89], all of whom hold a view of sentence processing in which the complement of the cleft is expected by default to contain information from the conversational background.

As I have suggested elsewhere (Delin [1992]), the reason that cleft presuppositions have traditionally been assumed to specify information that is mutually known perhaps lies in the fact that much of the discussion of *it*-clefts has centred around decontextualised examples. Citation forms such as (5) are conventionally articulated with prosody that suggests that the presupposed information does indeed belong to shared knowledge (or, on a fairly traditional Hallidayan view, implies the content of the cleft complement to be ‘Given’). This default pattern places a pitch accent upon the clefted constituent (in this case, *John*), while the cleft complement (*who ate the beans*) is usually devoid of pitch accents, and pronounced with falling intonation:

- (5) It was JOHN who ate the beans.

However, the prevalence of decontextualised examples such as (5) in the early discussions of *it*-clefts has given rise to the perception that examples with this articulation, together with the information content it implies, are the ‘default’ or ‘normal’ type of *it*-cleft³.

It has already been noted in the literature that examples such as (5) are not the only, or indeed the predominant, type of cleft, but this observation has often gone unnoticed in subsequent work. Perhaps the first to observe that the ‘default’ articulation was not the only one for *it*-clefts was Chomsky [1971:70], who noted an example which he saw to be a case of ‘deviation’ in the processes that assign the ‘normal’ intonation contour. These ‘deviant’ cases are those in which one or more prosodic nuclei appear in the cleft complement, possibly in addition to a nucleus on the clefted constituent.

³For example, Chafe [1976] considers only this prosodic pattern in drawing his conclusion that clefts serve to mark a syntactic focus of contrast. Creider [1979] makes a similar assumption about the data for his argument that clefts are syntactic focusing devices, stating that examples in which other intonation contours appear are a reversal of ‘normal values’ [1979:15] which only appear in specific ‘metacontexts’. Halliday [1985] reverses the normal values of ‘marked’ and ‘unmarked’ information focus for clefts, stating that accenting at the end of the construction is the ‘marked’ case.

Chomsky’s example was as follows:

- (6) Is it John who writes POETRY?

Prince [1978] pointed out that this second accent pattern was characteristic of a large number of cases, and that accompanying it was an information structure that was distinct from the ‘default’ cases. This second type of cleft, which she terms the INFORMATIVE-PRESUPPOSITION or IP cleft, has nuclear accents appearing in its complement clause, as in this example in (7) (reproduced from (3a) above):

- (7) A: Joe Wright you mean
B: Yes yes
A: I thought it was Joe Wright who’d walked in at FIRST.

Most important about clefts of this type is Prince’s observation that they appear to presuppose information that is at least partially New to the hearer—i.e., information that is not currently shared knowledge. It is clear that examples such as (8) [LOB G29 95] contain such information in the presupposed portion:

- (8) In complete self-effacement, sweeping all pity aside, she gave herself to Helen, working tirelessly to open lines of communications between the imprisoned child and the world of people and nature around her. *It was the day after Anne Sullivan’s arrival that Helen learned the finger language for the word ‘doll’.* Anne spelt it into her hand very slowly and deliberately, and got Helen to imitate.

Despite Prince’s convincing argument, however, there is still a residual feeling in the literature Informative-Presupposition *it*-cleft is at best parasitic on the ‘normal’ type, and at worst, a rarely-acceptable deviant usage⁴.

It is quite clear, however, that Informative-Presupposition *it*-clefts do presuppose information that is not currently shared in the discourse context. Several kinds of evidence support this conclusion. First of all, if the *it*-cleft *were* to presuppose only shared information, it would almost certainly

⁴Exceptions to this are Geluykens [1984, 1988], Declerck [1988], Collins [1991], and Hedberg [1990], who present excellent surveys of a full range of data.

be unique among presuppositional constructions. Stalnaker [1974:191] and Karttunen [1974:202], for example, observe that presupposed information may frequently appear in contexts where the presupposed information is not currently satisfied. Schmerling [1976:77] noted examples of factives such as *realise* bearing accented constituents in their complements. For example: *I didn't realise Mary was BALD!* We are all familiar, too, with cases where the presuppositional complement of *regret* is used to inform us of previously unknown, non-shared information, as follows:

- (9) a The management regrets that no responsibility can be taken for coats and other possessions left in this cloakroom.

It is also known that definite referring expressions, which like cleft constructions are generally thought of as presupposing, are often used in ways that fail to correlate with existing mutual knowledge, although their use has been assumed in the literature on anaphor resolution to reflect particular existing focus levels (cf. for example Reichman [1985]). Clark and Marshall [1981:45] improve upon Hawkins' [1978] model of definite reference by allowing shared knowledge to be acquired *subsequently* to the act of reference, thereby capturing the many cases in which definite referring expressions are used to refer to entities that are not yet in mutual knowledge. This phenomenon is popularly labelled ACCOMMODATION in the semantics literature, following Lewis [1979].

As a second piece of evidence that *it*-clefts can convey information that is not currently shared, there are many cases where it is obviously unlikely that the hearer has any idea about the content of the presupposition. Considering the cases of (3c) and (4d), for example, it would be counterintuitive to say that [*at some stage*] *the helpless insect is in great danger* or [*someone*] *can't type* is information that has to be currently shared and salient between the speakers. In the latter case, for example, the conversation is about a transcript of a questionnaire given to subjects in an experiment. The topic of the discussion was whether an error in the script was originated by the subject in her (handwritten) exercise or by the typist doing the transcription. It is therefore by no means clear from the context that *someone can't type*. In addition, as Prince [1978] points out, there is the sheer *length* of the presupposing constituents. It is hard to see on any definition of 'new' information how a complement clause such as the one appearing in (10)

could fail to be informative⁵:

- (10) Yet it is Mr. Coward . . . who offers himself as the man to lead the poor, stumbling audiences out of the theatrical dark and into the bright, brave noonday where it is always perfect anyone-for-tennis weather, and where nothing as vulgar and squalid as a stove is ever mentioned, but where lots of nice, jolly, fun-giving adultery to the immense, brittle amusement of the master is.

Moreover, information can be presupposed in cleft complements that could not be satisfactorily called ‘knowledge’ at all. When a performative verb and its complement appear in a cleft presupposition, it is arguably the case that the presupposed ‘knowledge’ did not exist before it was created at the time of speaking, as in (11):

- (11) It is with great pleasure that I name this ship the *Aurora*.

There is, in addition, evidence from prosody that non-shared information can indeed appear in the presupposed content. The first is the appearance of nuclei on the complement constituent, which, as I outlined in section 1 above, are taken here to be fairly uncontroversial indicators that New information is nearby. As reported in Delin [1989:172], 38 out of a sample of 50 spoken cleft constructions carried at least one nucleus on the complement clause⁶. Further, if we adopt Halliday’s view that every tone group obligatorily carries *some* new information, we would expect any cleft complement that is composed of one or more complete tone groups to be a bearer of presupposed new information.

Faced with examples such as these, it becomes more difficult to conclude that the function of cleft presuppositions is to specify information currently in mutual knowledge. As Prince [1978:898] points out, the point of Informative-Presupposition *it*-clefts is that they contain information that is New to the hearer or reader in the complement clause. And compared to other presuppositional constructions as noted by Stalnaker and Karttunen, the phe-

⁵LOB corpus, beginning line number A19 56.

⁶That is not to suggest that complement-accent and clefted-constituent accent are mutually exclusive accent patterns for clefts. Many examples have accents on both the clefted constituent and the complement clause.

nomenon of cleft presuppositions conveying non-shared information is not particularly strange.

2.2 The Interaction Between Accent and Syntax

We will turn now to two assumptions concerning the interrelationship between the position of pitch accents and the presupposition derived from the cleft. First, it is often assumed that what is signalled by the cleft syntax is the same as what is indicated by the presence of prosodic nuclei in particular locations: that is, ‘marked’ or ‘contrastive’ accent is often assumed to have the same effect as a syntactically-marked logical presupposition in English. For example, on the view suggested by Jackendoff [1972], Gazdar [1979], and Seuren [1986], cleft sentences such as (12a) and sentences with ‘marked stress’ such as (12b) both convey a logical presupposition, (12c):

- (12) a It was JOHN who left.
b JOHN left.
c $\exists x \textit{leave}(x)$

There are several reasons, however, to question the assumption that both stress and syntax signal logical presupposition. Firstly, Rochemont [1986] has pointed out that logically presupposed information and deaccented information do not always have the same discourse interpretation. In Rochemont’s ‘presentational’ sentences, which are generally descriptive of appearances and disappearances, accent placement does not apparently indicate the location of shared information, nor would we want to say that it indicated presupposition. In this way, (13a) is capable of a broad-focus interpretation in which there is no suggestion of either sharedness or presupposition of (13b):

- (13) a A LETTER arrived for you.
b Something arrived for you.

The cleft in (14), however, apparently indicates both presupposition and sharedness:

(14) It was a LETTER that arrived for you.

We can see that the distinction between (13a) and (14) is based on a presuppositional distinction by applying a test for logical presupposition. We noted above that good tests for presupposition consist of embeddings within contexts that question or cast doubt on the truth of the relevant sentence. For examples such as those in above, a context that preserves the same accent pattern is clearly required. The context *why do you think that ...?* fits these requirements. The following examples show that in the non-cleft case, the entire content of the sentence can be construed as falling within the scope of the question: plausible contrasts could be that the hearer might have thought more or less anything else, from a phone-call coming to the dog escaping out of the front door, depending on context⁷. In the cleft case, all that is questioned is the non-presupposed content: *what* arrived:

- (15) a Why do you think that a LETTER arrived for you?
b Why do you think that it was a LETTER that arrived for you?

For sentences with ‘presentational’ content, therefore, the syntactic marking of presupposition has effects that are different from those conveyed by the placement of the nucleus.

Secondly, as I have argued elsewhere (Delin [1992]), similar discrepancies in interpretation arise in the case of ordinary, non-presentational cleft and non-cleft sentences with the same accent pattern. In the following case, a cleft appears with several nuclei in the complement clause, indicating the presence of new information:

⁷Again, a narrow-scope interpretation of the accent is also possible here: *a letter* might be contrasted with *a parcel*. This does not affect the point being made, however: what is important is that, in the non-cleft case, any scope interpretation up to and including the broadest scope is possible, whereas the cleft only allows a narrow-scope interpretation.

(16) B: To be frank, I've heard from a number of sources that when you were interviewed for a job here that you think that you didn't get the job because of me

A: Oh no, I never said that ... I went to great pains to tell people that you were the one supporting me. In fact, it was VERY shortly AFTER that INTERVIEW that I sent my circular letter AROUND to various scholars and I sent YOU a copy

In this case, the cleft complement, although it contains information that is new to the discourse, appears to *remind* speaker B of the content of the presupposition. An equivalent constructed non-cleft, however, does no such thing: it merely *informs* the hearer of the new information, giving no intimation that it has been evoked at any previous time:

(17) In fact, VERY shortly AFTER that INTERVIEW I sent my circular letter AROUND to various scholars and I sent YOU a copy

I would suggest that the difference in interpretation here is due to the fact that the cleft involves a logical presupposition where the non-cleft does not, despite their identical accent patterns. The result here is that the cleft appears to be referring to information that is in some sense 'in the public domain', although not necessarily salient in the current discourse (cf. Prince [1978:903], Delin [1992:302]).

Examples such as (16), in which nuclei appear in the complement clause, are relevant to the second point concerning the interrelationship between accent and syntax that I wish to address here. It is suggested by Chomsky [1971:70] that examples where nuclei appear in the presupposing constituent of the cleft are in some way 'distinct in semantic interpretation' from those with the 'normal' intonation contour. While Chomsky does not elaborate on what distinctions in semantic interpretation might result from these examples, it has been suggested by Ball and Prince [1977:585] that the appearance of stress has the effect of *cancelling* the logical presuppositions of negative sentences:

It-clefts differ from *wh*-clefts, and to our knowledge from all factive constructions, in that extra stress within the complement

can release the stressed item from the presupposition, when there is a matrix negation.

[Ball and Prince 1977:585]

The critical example they give for their conclusion appears in (18):

(18) It isn't JOHN that shot MARY—it's MARY that shot JOHN!

Of course, given the relationship between accent placement and non-shared knowledge discussed in section 1 above, the claim that is really under examination here is that new, non-shared information in cleft complements is presupposition-cancelling.

Ball and Prince's example is an interesting and particular case, which I will return to shortly. First, however, it should be established that stress *in general* does not serve to cancel presupposition in *it*-clefts. To show that logical presupposition can persist when stresses appear in cleft complements, we can apply the four tests for logical presupposition listed by van der Sandt [1988]. These four tests are:

- embedding under negation;
- embedding under modality;
- the antecedent test; and
- the test for constancy under illocutionary force.

According to the most traditional of the four tests, the negation test, the logical presuppositions of a sentence are just those entailments that are preserved under negation. Negating a sentence and comparing it with its positive counterpart should therefore reveal presuppositions as those propositions that are true in both cases. The next two tests, the modality and antecedent tests, are attributable to Karttunen [1971]; the modality test is similar to the negation test, except it uses a possibility operator rather than negation, and the antecedent test involves making the sentence under

analysis into the antecedent of a conditional. The test involving speech acts, originated by van der Sandt [1988], uses presuppositional constructions to perform a variety of speech acts; if propositional meanings are preserved across these contexts, it is assumed that these are the presuppositions of the carrier sentence.

The negation test shows that the proposition conveyed by the cleft complement or *wh*-clause is preserved under negation. In example (19), the positive and negative sentences (a) and (b) both preserve the truth of (c), showing that, even with focus or New information in the presupposed proposition, logical presupposition is preserved⁸:

- (19) a It was John that ate BEANS.
b It wasn't John that ate BEANS.
c Someone ate beans.

The modality test involves the creation of a context in which a modal operator such as *possibly* has scope over the potentially presupposing sentence. Again, if any entailment is preserved in this context, this entailment is said to be presupposed. In the following example, the (a) sentence implies the truth of the (b) sentence:

- (20) a It is possible that it was John that ate BEANS.
b Someone ate beans.

In the third test, an appropriate context is constructed by making the carrier sentence the antecedent of a conditional construction. An example of this test at work appears in van der Sandt [1988:39], using sentences with *manage to* and *be glad that*. *Manage* is an example of an implicative verb, which entails its complement. *Be glad that*, on the other hand, presupposes its complement. On this test, therefore, we would expect the truth of the complement of *manage to* to be cancelled or suspended in the conditional, while the proposition carried by the complement of *be glad that* is preserved.

⁸Note that it is possible for accents also to appear on the clefted constituents in both cleft examples. This affects the interpretation of what is shared knowledge on encountering the utterance, but is not relevant to the presupposition-bearing part of the cleft. Whether the presence of one or more accents in the presupposing portion affects interpretation, however, is what we are involved in elucidating here.

Van der Sandt's examples show this to be the case: (21) does not require that (23) be true, while (22) does:

- (21) If Charles managed to leave the country, he will never come back.
- (22) If Charles was glad that he left the country, he will never come back.
- (23) Charles left the country.

When the antecedent test is applied to clefts with New information in the putative presupposition, a similar pattern emerges. It appears that the cleft construction (the (a) sentence) requires the complement proposition (c) to be true; the declarative (b) does not:

- (24) a If it was John that ate BEANS, Bill will be disappointed.
- b If John ate BEANS, Bill will be disappointed.
- c Someone ate beans.

The function of the stress in (24a) is contrastive: it singles out a (presupposed) bean-eating action as possibly having John as its agent, contrasting it with other actions known to have taken place—cake-eating, or beer-drinking, for example.

The final test for logical presupposition is that they are constant under illocutionary force. Briefly, if a proposition is conveyed by a particular sentence regardless of whether that sentence is used as a question, an assertion, or any other kind of speech act, then that proposition is an elementary presupposition of the carrier sentence. The following examples demonstrate that a clefts appearing in the form of a question with New information in it (the (a) example) preserves the truth of the (b) sentence below:

- (25) a Was it John that ate BEANS?
- b Someone ate beans.

A simple declarative sentence with the same accent pattern, however, shows that entailments are not constant under illocutionary force. (26a) entails both *John ate beans* and (26b):

- (26) a John ate BEANS.
b John ate something.

The question form of the same utterance, however, does not necessarily have the same entailments. (27a) may entail (26b), but it certainly does not entail that John ate beans, or indeed that John ate anything:

- (27) Did John eat BEANS?

In some fairly conventional sense, then, presupposition appears to be preserved, even when an accentual nucleus appears on the presupposed information. The antecedent test and the test for consistency under illocutionary force, moreover, show that constructions that are not syntactically presuppositional do not have the same property, even in cases where their information structure is identical.

Now that we have seen that logical presupposition is not routinely cancelled by the appearance of stress in the presupposing constituent, we can return to Ball and Prince's example. In the example they give (reproduced as (28a)), it does indeed appear that the presupposition is cancelled—i.e., it does not presuppose (28b):

- (28) a It isn't JOHN that shot MARY—it's MARY that shot JOHN!
b Someone shot Mary.

It is possible to show, however, that the cancellation of the presupposition in such examples is an epiphenomenon of the context in which the example appears, rather than a systematic effect of stress. In fact, (28a) is acceptable within a range of possible contexts, only *some* of which are presupposition-cancelling. For example, imagine a context in which we are trying to match three potential murderers, John, Jane, and Bill, with two bodies, those of Mary and Mike. If we were to use a sentence like (29a) in this case, the presupposition, glossed as (29b), would remain intact:

- (29) a B: And it isn't JOHN that shot MARY, as he doesn't own a gun!
b Someone shot Mary

In Ball and Prince’s example, the presupposition is cancelled because it appears in a context in which information is presented that is *mutually exclusive* with the presupposition: if Mary shot John, as we find out immediately after the clefted utterance, then the presupposition that she herself was shot is unlikely to be true (given our knowledge about what shooting involves, and the capabilities of the victim after the event). In effect, a speaker of such an example would be ‘quoting’ or ‘echoing’ the presupposition in order to contradict it. Examples such as (29), however, show that it is possible to place the same stress pattern in contexts where no mutually-exclusive information exists or is available. In these cases, the presupposition is either preserved, or more information is required to establish cancellation.

Particular accent patterns, then, may support readings consistent with contexts in which presuppositions fail to survive on the basis of inconsistency. This is a fairly ordinary property of logical presuppositions, and it should not be concluded that it is the presence of stress that is *causing* the cancellation. Again, this behaviour is not restricted to *it*-clefts alone: similar cancellation behaviour can be replicated straightforwardly in other presupposing constructions. In each of the cases in (30), a factive construction has its presupposition cancelled by the presence of mutually exclusive information. In each case—as with Ball and Prince’s example—the speaker is apparently ‘quoting’ or ‘echoing’ the presupposed information in order to contradict it. On this basis, reverse *wh*-clefts such as (30a), and factives like *regret* as in (30b), are fine:

- (30) a The CAR wasn’t what hit the BUS—the BUS was what hit the CAR!
 b She didn’t regret that JOHN shot MARY—she regretted that MARY shot JOHN!

2.3 Three Assumptions: Summary

First of all, we saw in this section that the presuppositions that are indicated by the syntax of clefts do not have to be mutually known by speakers at the time of the presupposition. Two kinds of evidence support this conclusion: first, that prosodic indicators traditionally associated with ‘Newness’ of information, namely that prosodic nuclei and certain intonational tunes

appear regularly within the presupposition-carrying part of the cleft construction; and second, that information that cannot possibly be mutually known on the basis of the discourse context can appear in presupposing environments.

Second, it was demonstrated that stress and syntax in clefts cannot perform the same task—that is, it cannot be the case both indicate logical presupposition. We saw this through differences in the discourse function of de-accenting in presentational sentences, and through differences in interpretation that arise between informationally-identical cleft and non-cleft constructions.

Third, we saw that accent *per se* is not presupposition-cancelling, even in *it*-clefts alone. Instead, the context in which the presupposition appears is responsible for the cancellation of the presupposition. In such contexts, it may well be the case that an accent will appear on the presupposing constituent, simply because of the way accents behave in context. The same accent pattern, however, may also be consistent with other, non-cancelling contexts, so it is not possible to attribute the cancellation behaviour to the presence of accents. In addition, we saw that this behaviour is not restricted to *it*-clefts: it is general to presupposing constructions of several kinds.

These conclusions support the view outlined above, in which a clear separation is maintained between the prosodic-informational system on the one hand, and syntactically-generated presupposition on the other. In the next section, we will look more closely at how these separate pragmatic features operate.

3 Marking Requirements and Marking Assumptions

So, how do the notions of shared knowledge and logical presupposition interact? I want to suggest that the distinction between the informational-prosodic system and logical presupposition is that only the former indicates the current assumptions that the speaker holds about the hearer's model

of the discourse⁹. The view of the function of presupposition adopted here follows that suggested by van der Sandt [1988], namely that presupposition simply marks *requirements* that the speaker is placing on the hearer’s model of the discourse, regardless of what is current. We can summarise this dichotomy in tabular form, as follows:

Status of Information	Linguistic Indicator	Speaker is marking
Shared knowledge	Prosody	Assumptions about h’s current discourse model
Logical Presupposition	Syntax	Requirements for next state of discourse model

3.1 Logical Presuppositions in Discourse: Marking Requirements

In the discussion above, we saw that logical presupposition is not dependent on, or affected by, whether or not the speaker can assume that the hearer already knows or has access to the information. The only case in which current knowledge interacts with presupposition is the case in which information that is mutually exclusive with the presupposition is already available to both speaker and hearer.

We have known since Stalnaker [1974] that logical presuppositions need not contain information that is already entailed by the context. Moreover, Prince [1978], Geluykens [1984], and Delin [1989] have discussed the broad range of information types that can appear in presuppositions of cleft constructions of various kinds, and it appears that, in general, presupposed information can stand in more or less *any* relationship with the preceding discourse or the discourse situation—modulo various coherence constraints that operate on individual constructions (cf. Delin [1989]). Logical presuppositions are conveyed by presupposition-triggering syntactic structures such as clefts regardless of whether the hearer/reader is assumed by the speaker/writer to be already aware of the presupposed proposition, or currently thinking about it, or able to infer it—in fact, it seems that assump-

⁹In fact, it is sometimes the case that the intonation contour relates to the speaker’s *own* model of the discourse. This situation is not the norm, however. I will return to this issue in section 4 below.

tions about the current state of the hearer’s model of the discourse, or knowledge in general, are quite simply irrelevant to the appearance of presuppositions.

Neither need the speaker believe the presupposed proposition themselves; in ‘echo’ cases, for example, the speaker may restate the presupposition for the purposes of making it salient in order to contradict it, as in the following example due to Keenan [1971:52]:

- (31) You say that someone in this room loves Mary. Well, maybe so. But it certainly isn’t Fred who loves Mary. And it certainly isn’t John ... (We continue in this way until all we have enumerated all the people in the room.) Therefore no-one in this room loves Mary.

Markers of logical presupposition such as *it*-clefts are therefore not produced obligatorily on the basis of factors of knowledge and belief. I would like to suggest instead that one function of *it*-clefts is to mark information as intended to be treated in a certain way. That is, in this respect clefts are non-obligatory (although there may be other discourse factors that require their use that are not dealt with here) and operate in relation to the goals of the speaker to achieve certain effects, rather than being produced out of constraints imposed by the current state of some model of the discourse. Precisely *how* the information should be treated by the hearer is still an open question with respect to what is known about the psychological processing of presuppositions. A good candidate hypothesis, however, has been suggested by van der Sandt [1988] and others following, to the effect that presupposed propositions are treated as ANAPHORIC by hearers. That is, they convey the suggestion that an antecedent is required for the presupposed information—although, crucially, they do *not* convey any assumption that such an antecedent is *actually* available. On encountering a presupposition, therefore, a hearer must attempt to locate an antecedent for it, and if he or she fails, the content of the presupposition should be added to the hearer’s discourse model—subject to certain truth-maintenance constraints (cf. van der Sandt [1988]) and discourse constraints (cf. Delin and Klein [forthcoming]) on the addition of the particular information. As I noted above, the process of adding information to the discourse model in this way has been termed ACCOMMODATION by Lewis [1979]. Presenting information as presupposed has, in addition, various discourse effects, such as indicat-

ing that information is in some sense true, non-negotiable information (cf. Prince [1978], Delin [1992]).

3.2 Prosody in Discourse: Marking Assumptions

While presupposition is about marking *requirements* about how information is to be processed, prosody is about marking *assumptions* about what is currently the state of shared knowledge. Evidence for a distinction between the requirements that are marked by presupposition and the assumptions marked by prosody is available when we look at the phenomenon of accommodation in each case. Presupposition can be used creatively in order to persuade a hearer to accommodate previously-unknown information into the discourse context. However, although presupposition does not distinguish between shared and non-shared information, the intonation contour with which the presupposed information is articulated must still reflect the distinction faithfully. Prosody, then, has to be correct for the current state of shared knowledge. If this is not the case, inappropriate discourse results: prosody cannot therefore be used creatively to effect changes in the hearer's discourse model. For example, (32a) features a cleft which has non-shared information in the presupposed portion. This is marked appropriately by the presence of a nucleus. If we adapt the example, as in (32b), to feature an intonation contour that implies the information is already shared, the discourse becomes ill-formed. The speaker seems to be suggesting, incorrectly, that the information *someone can't type* is currently shared:

- (32) A: (looking at transcript of experimental session with a subject) Did the subject really make this error?
a B: That isn't a proper error. It's just me that can't TYPE.
b B: That isn't a proper error. # It's just ME that can't type.

Prosody, then, has to follow current assumptions, rather than requirements; if it does not, comprehension (and in this case, accommodation of the presupposition) is impaired.

4 Concluding Remarks

In this paper, I have tried to show that an analysis of cleft constructions requires a separation between logical presupposition on the one hand, and shared knowledge as signalled by prosody on the other. In the process of arriving at this view, I have demonstrated a range of problems with some previous claims about the way *it*-clefts operate in discourse, particularly with respect to the interaction between their prosody, their syntax, and shared knowledge.

At this point, I would like to add two comments on related topics. The first concerns the function of pitch accent. One use of deaccenting and falling pitch contour appears to run counter to the view that pitch accents function as indicators of shared knowledge. It appears that there is one situation in which the speaker's choice of accent pattern is *not* determined by his or her assumptions about what the hearer believes to be mutually believed. These cases are those in which a speaker suddenly realises the answer to a long-standing but private question. These utterances, frequently either *it*-clefts such as (33a) or reverse *wh*-clefts like (33b), are typically articulated with falling intonation, and no pitch accents on the presupposed constituent:

- (33) a A: And then I rang Maurice, but he was out.
B: Ah, so it was HIM who was at the office so late last night!
- b A: That was my friend Mike.
B: So THAT'S what he looks like.

In these cases, the intonation implies that the presuppositional content is shared knowledge, whereas in fact it is *New* to the hearer. Instead of the examples in (33) being seen as evidence that the speaker has erroneous assumptions about what is mutually believed, however, the discourses in which they appeared went forward with no repair being necessary. What seems to happen in these cases is that the hearer, applying the assumption that the speaker is a normal user of the language and is trying to be cooperative, will know that the content of the utterance is not shared although apparently signalled to be so, and will infer from this that the intonation contour with which the utterance is articulated cannot possibly refer to mutual knowledge. Instead, the intonation contour is generated 'selfishly' by

the speaker on the basis of his or her personal model of what is salient: he or she has *switched* the model of the discourse in relation to which the contour is generated. In these cases, then, the mismatch between the intonationally-implied ‘shared knowledge’ status of the information and its actual status causes the hearer to make a pseudo-Gricean inference: the speaker is unlikely to be committing so gross an error of judgement with respect to what is shared knowledge, and so must be basing the intonation contour on some private knowledge source. In these cases, then, the presupposed information is treated as if it were new, and, in the absence of anomaly when it is compared to the existing background, accommodated by the hearer.

My second comment concerns the implications of the view of the relative roles of presupposition-indicating syntax on the one hand, and shared-knowledge-indicating prosody on the other, for the psychological processing of constructions such as clefts. Clark and Haviland [1977] give an account of sentence processing in general, and of the processing of cleft constructions in particular, which centres on the view that the task of a hearer on encountering an utterance in discourse is to find the optimum means of integrating the content of that utterance into memory. On Clark and Haviland’s account, one of the first tasks of a hearer or reader in processing a unit of language is to identify, on the basis of the cues given by the speaker, which part of the message has an antecedent in memory. Clark and Haviland refer to this identification task as the application of the GIVEN-NEW STRATEGY, in which hearers and readers identify Given information as that which has a unique antecedent, the location of which is the address or location in memory at which the incoming information is to be stored. Clark and Haviland’s claim is that hearers or readers encountering a device such as a cleft are able from the form of the cleft to recognise information for which an antecedent should be present in memory, and go on to identify antecedents for that information (Clark and Clark [1977] express this as the search for information in memory that is CONGRUENT with the Given information). Although Clark and Haviland’s model allows for ‘Bridging’ inferences to take place when the cleft presupposition contains New information, it is again assumed that the ‘default’ cases are those in which the presupposition is indeed Given. However, as I note elsewhere (cf. Delin [1989]), in naturally-occurring data, those clefts in which the presupposition is genuinely retrievable at the time of the hearer’s encountering it are actually less frequent than the cases where it is not. In reverse *wh*-clefts in particular, for which we would expect Clark and

Haviland's model to make similar predictions for (i.e., that the presupposition would be assumed to be the locus of 'Given' information), information which has no antecedent in the discourse appears in the presupposed constituent in *nearly every case*. This means that the more expensive processing strategy will be the one that is most frequently required. We might therefore want to question, for spoken examples at least, how hearers really do process clefts: if it is so infrequently a successful strategy for them to treat the presupposition as 'Given' (that is, if they fail to find an antecedent for the information so often) one would expect them to abandon the strategy of using syntactic cues in favour of more reliable indicators. They might therefore be more likely to take account of the prosodic cues which I am claiming are the indicators of what is *actually* assumed by the speaker to be retrievable in the discourse. For *it*-clefts and reverse *wh*-clefts, it is likely that the latter strategy is the less expensive. This is an empirical question, and awaits further research.

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