

THE RELEVANCE OF INTONATION?

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Abstract

Exactly how to deal with intonational meaning is a problem for linguistic theory. The theory of relevance enables us to look afresh at the role of intonation in utterance interpretation. A close analysis, within a relevance-theoretic framework, of the inference procedures involved in interpreting a particular conversational exchange (borrowed from Sperber & Wilson 1986) suggests that prosodic choices impose conventional constraints on context selection. It is claimed that the prime function of intonation is to anchor an utterance to its context.

1. Introduction

A satisfactory account of the nature of intonational meaning continues to elude linguists, though the importance of intonation, and of prosody generally, in contributing to utterance interpretation is undisputed. One area in which theories differ is in their assessment of the extent to which intonational systems are regarded as part of a language's linguistic code, implying that their meaning can be recovered by simple decoding: such a view is implicit in a 'morphemic' analysis of nuclear tones (cf Ladd 1980; Gussenhoven 1983a). A second area of dispute relates to the primacy given to particular types of meaning (grammatical, attitudinal, discoursal, etc): can it be reasonably proposed that one such type is 'primary', and that other types are derived, or 'secondary'? That intonation has diverse functions can be readily demonstrated with a well-chosen set of examples. What is less easy to provide is a theory which integrates these different functions, and which shows where intonational meaning fits into semantic and pragmatic theory.

This paper does not claim to supply just such a theory, but it does try to move in the right direction. Specifically, I shall consider how the insights of relevance theory can illuminate the problem, and help us towards a better understanding of the role of intonation in utterance interpretation.

2. Background

2.1 Semantics and pragmatics

Some of the specific claims of relevance theory will be discussed in section 3; here I shall merely present some preliminary, probably oversimplified assumptions about the domain of semantics and pragmatics. I am assuming that semantics is concerned with lexical meaning and with truth-conditions at sentence level. Pragmatics will include any aspect of utterance interpretation which relies on the context of utterance.

In describing the 'meaning' of an utterance, we must distinguish between what is explicitly communicated in the way of assumptions (the

'explicatures' in Sperber & Wilson 1986 terminology), notably the propositional form, and a set of implicatures, further propositions which are implicated rather than stated explicitly. Implicatures are derived pragmatically, by reference to the context. The propositional form, however, -- what we tend to mean by 'what is said' -- is derived partly by linguistic decoding, partly by pragmatic inference procedures. Natural language sentences tend to under-specify propositions, so that decoding alone, yielding the conventional sense of the linguistic form, is not enough for us to be able to recover a proposition, assuming that complete propositions must be truth-evaluable. The assignment of referents to referring expressions, and in some cases disambiguation of words or phrases with more than one sense, processes which depend on making inferences from the context, must take place before the proposition can be complete (cf Grice 1975). Just how much pragmatic inferencing is legitimate in deriving an explicit proposition is explored in detail in Carston (1988), but will not be further discussed here.

The point here is that there is no simple equation between 'what is said' and linguistic decoding, on the one hand, and 'what is implicated' and pragmatic inferencing on the other. Inference procedures can be crucial in the recovery of explicit content as well as of implicatures.

Grice (1975) makes an important distinction between 'conventional' and 'conversational' implicatures. Conventional implicatures occur when particular linguistic forms (like 'but' and 'therefore') are used, forms which do not alter the truth conditions of a proposition but which carry implications which cannot be cancelled. Conversational implicatures are implied by the context of utterance without being linguistically directed in the same way.

2.2 Intonational form and function

For the purposes of this paper, I shall be assuming a contour-based formal analysis within the British tradition, ignoring the finer points of difference between the systems proposed by e.g. O'Connor & Arnold (1973), Crystal (1969), Halliday (1967a) etc. Furthermore, my examples will assume patterns typical of an RP variety of English, though I recognise that regional differences may be substantial. The generalised British model considers the domain of intonation to be the tone group, an intonational phrase which usually coincides with some grammatical constituent, such as clause, or NP, but not in a directly predictable way. Within tone groups, there may be a succession of component parts: an obligatory component is the nucleus, which is an accented syllable, i.e. one made prominent by both rhythmic stress and pitch. Tone groups may contain more than one accent, but the nucleus is always the last accent in the group. The nucleus initiates one of a set of nuclear tones, pitch configurations such as falls or rises which characterise the shape of the remainder of the group. The tones may be realised entirely on the nuclear syllable, if it is group-final, or be extended over a succession of unaccented syllable in the tail. Completion of the tone contour signals a tone group boundary. Any accented material preceding the nucleus indicates the presence of a head, and any initial unaccented syllables constitute a prehead. The location of nuclear accents and the choice of nuclear tone will be the main variables concerning us here. The tonetic marks used on the examples, like much of the above terminology, are

derived from O'Connor & Arnold (1973).

Sequences of tone groups are no more predictable than sequences of sentences, but there are certainly ways in which groups can be said to be linked coherently into larger units; there is no general agreement as to how complex units larger than the tone group should be defined.

Conventional accounts of intonational function show its role to be extremely diverse. Looking at the prosodic system as a whole, it is not just the choice of tone or tune which contributes a meaning, but also the way a text is divided into groups, and the location of the accents which carry the tunes; how wide a pitch range is being employed is also significant. To illustrate the diversity attached to intonational meaning, we can look at the 'three distinct meaningful choices' which Halliday (1967a) identified. Tonality, or division into tone groups, is associated with a grammatical function, making it clear which pieces of linguistic material belong together. Tonicity, or nucleus-placement, is said to have a focusing function, structuring the informational content of a tone group into what should be treated as 'given' or 'new', and highlighting the important bits. Tone -- the choice of the nuclear tone itself -- has been interpreted as expressing all manner of things, including grammatical mood, speech act, speaker attitude and emotion, continuity vs. finality, the state of play in the developing discourse, and so on.

3. Information and discourse structuring

An important aspect of intonational meaning which I shall develop further is the idea of information structuring. The concept is usually associated with what is or is not made prominent within a tone group. The nucleus (Halliday's 'tonic') acts to focus the 'new' information in a tone group, though not always unambiguously: in (1a), for example, 'guitar' would definitely be marked as new, but the domain of focus could include some or all of the preceding material:

- (1) a. Joe's learning the guiTAR
- b. JOE's [learning the guitar]

In (1b), focus has switched to 'Joe', and by convention the bracketed portion after the nucleus would be considered 'deaccented', out of focus, and associated with old or 'given' information. Note that the truth conditions are the same for the propositions expressed in both sentences. However, we find that we cannot always associate post-nuclear or tail material with what is given:

- (2) - What's happened?
- The Prime MINister has resigned

or indeed nuclear material with new:

- (3) - Would you like tea or coffee?
- TEA, please.

Gussenhoven's (1983b) rules for assigning accents to focused material help us to infer the domain of focus more reliably in examples like (2), but cannot predict focus itself, which is speaker-controlled. If we take the idea of new and given as being literally calculable from what has been already mentioned in the discourse, we are doomed to disappointment when it comes to forcing intonational form to fit the facts. There is no direct predictability possible from the context; as Halliday himself said, 'what is new is in the last resort what the speaker chooses to present as new, and predictions from the discourse have only a high probability of being fulfilled' (1967b: 211).

A discourse model of intonation, such as that developed by Brazil (see e.g. Brazil et al. 1980), proposes that comparable relationships may exist between tone groups. Choice of tone is seen as marking the discourse status of the tone group as a whole; a falling, or proclaiming tone 'marks the matter as new', while the function of a rising, or referring tone (particularly the fall-rise) is 'to mark the experiential content of the tone unit, the matter, as part of the shared, already negotiated, common ground, occupied by the participants at a particular moment in an ongoing interaction' (1980:15). In other words, we have the given/new distinction applied at inter-tone group rather than intra-tone group level, as exemplified in Brazil's own example, reproduced here as (4):

- (4) a. When I've finished 'MIDdlemarch | I shall read Adam 'BEDE
 b. When I've finished 'MIDdlemarch | I shall read Adam 'BEDE.

However, this neat division suffers from the same problems as we found inside tone groups – it is relatively easy to find examples of given information produced with a 'proclaiming' tone:

- (5) I told you, I don't 'WANT to go

and of new information realised with a 'referring' one:

- (6) - What are you doing today?
 - Well this morning I'm going 'SHOPping | and this afternoon I'm finishing my 'PAPer.

What both Brazil and Halliday refer to as 'new' vs 'old' or 'common' ground might be better characterised as foreground vs background. This does not commit the speaker to any precise assessment of the knowledge he shares with the listener, but allows him to structure his utterance in a way which will simultaneously reflect his own assumptions, and his assessment of what it is appropriate to present as background or foreground, for the benefit of his listener.

At the very least, the relationship between the falling and rising tones in (4a) and (4b) implies some kind of inequality – a sense in which the content of the tone group with the fall-rise is presented as 'subordinate' to that in the tone group with a fall. But in (6), there is no reason to suppose this: the fall-rise in the first group may denote nothing more than simple continuity

('there's more to follow'), or temporal ordering. So any subordination would have a purely structural orientation, nothing to do with the matter of the respective tone groups.

One also has to account for cases where groups carrying rising tones stand on their own, and not in any explicit relationship with groups carrying falls; compare (7a) and (7b):

- (7) a. That's what he **SAID**
- b. That's what he **°SAID**.

Can the notion of 'background marking' help us to recover the implications of reservation, of 'yes, but...', associated with (7b)? Or does the fall-rise here have nothing to do with information or discourse structure? I shall return to this question in section 4.

Despite the apparent limitations of the discourse model, there is something theoretically appealing about the idea that background/foreground relationships can be established both within and between tone groups, thus allowing a generalisation to be made regarding the roles of accent placement and tone choice. Perhaps it will be possible to derive the other types of tonal meaning which have been proposed (for example, Cruttenden's (1984) observation that rises have a 'limiting' function, and falls a 'reinforcing' one) from a basic background/foreground characterisation? We shall still have to tackle the problem of how to differentiate between different types of fall or rise, of course.

If we accept that intonation does play a role in distinguishing background from foreground information, we shall have to consider how to account sensibly for a situation in which linguistic material may be simultaneously marked as background and foreground (within tone groups and in relation to other tone groups). The problem suggests some kind of hierarchical processing activity. As listeners, we cannot grasp all the implications of an utterance tone group by tone group, but must wait until all relevant background/foreground relationships have been expressed before opting for a final interpretation. As speakers, we must plan our utterances with these relationships in mind, to guide the listener to the preferred interpretation. If this hypothesis is correct, you would expect to find simpler intonational structures in spontaneous speech, reflecting ad hoc planning, and more complicated ones in prepared, non-spontaneous speech, where the speaker may be presumed to have considered these relationships in advance. Informal observation suggests that this is true (see House (forthcoming) for an analysis of some complex structures derived from reading aloud).

4. Relevance theory and the pragmatic role of intonation

4.1 Intonation and inferencing

An account of intonational function becomes more coherent, less diffuse, if one considers its role to be fundamentally pragmatic. All the different aspects of intonational 'meaning' can be seen as a process of establishing the most important context for an utterance, within which the utterance may receive its most relevant interpretation. The prime and overriding function of

prosody is to anchor an utterance to its context, narrowing down the range of possibilities associated with it. Within a language, certain intonational highlighting devices have become highly conventionalised, and can be used in the calculation of implicatures in very specific ways. However, I would argue that this conventionalisation stops short of becoming a 'code', or intonational 'lexicon'; intonation devices are markers rather than morphemes.

This does not preclude intonation from contributing to the explicature, the 'what is said' of an utterance; but it restricts its role to those pragmatic procedures necessary to establish the explicit proposition, such as referent assignment and disambiguation. If an alternative formal strategy, say, lexical or syntactic, is adopted to convey a particular meaning, then this meaning may be recoverable by a direct decoding process. I am suggesting that if the same meaning is conveyed intonationally, it will be recovered by a process of inferencing rather than decoding.

At this point an appeal to the theory of relevance becomes relevant, since it provides a useful framework within which to explore the contribution of intonation to utterance processing.

4.2 Relevance theory

As expounded in Sperber & Wilson (1986), relevance theory is at base a theory of cognition, of information processing, which gives rise to a theory of ostensive inferential communication. In brief, the principle of relevance states that 'every act of ostensive communication communicates the presumption of its own optimal relevance' (1986: 158). Linguistic communications are prime examples of ostensive communication. The hearer, it is claimed, can assume that an utterance will afford him a satisfying range of 'contextual effects' in return for the least amount of processing effort required to derive them. In this framework, the context is not restricted to notions like 'what has been said already'; it means the dynamic, ever-changing set of assumptions (taking the form of propositions) stored in memory, some of which will be more accessible than others. Contextual effects will modify and enrich the set of assumptions which constitute one's 'cognitive environment' at a given moment. There are three kinds of contextual effects, all of which involve the 'contextualisation of (P) [new information] in the context (C) [old information]' (1986: 107):

(i) when new propositions are added to a stock of old assumptions, connections between them may be recognised. New and old propositions may be used as premises in a deduction process, yielding further assumptions, derived synthetically from old and new together, and not derivable from either old or new independently; these are the contextual implications;

(ii) a new proposition may supply evidence to strengthen an existing assumption;

(iii) a new proposition may supply evidence to weaken or even cancel an existing assumption.

For an utterance to be relevant in a context, it must have contextual

effects in that context. A corollary of the principle of relevance is that 'it is relevance which is treated as given, and context which is treated as a variable' (1986: 142).

So in a communication situation, a speaker will often need to guide a hearer towards the relevant context for processing his utterance. He may need to refer to information -- assumptions -- which is 'old' for both of them, but which needs to be brought to the hearer's attention to set the scene for the subsequent exchange. Its status as relevant background information for the new information is then established. 'Background' and 'foreground' must be independent of what is actually given or new; Sperber & Wilson make this explicit in their own discussion of focal stress: 'background information is information that contributes only indirectly to relevance, by reducing the processing effort required; it need be neither given nor presupposed. Foreground information is information that is relevant in its own right by having contextual effects; it need not be new' (1986: 217).

The link with intonation must be becoming obvious: intonation can make relatively explicit the distribution of background and foreground information. Material which is presented intonationally as if it were background is meant to guide the hearer to the relevant set of assumptions against which to calculate the contextual effects of the foreground information.

Wilson & Sperber (1979) have already given a suggestive account of how 'focal stress' (roughly equatable with nucleus placement) cuts down processing costs by allowing one to derive the entailments (analytic implications) of an utterance in an ordered set, so that the most important and relevant ones come to the fore. In the following examples, I should like to demonstrate how focus distribution, amongst other things, assists in the calculation of implicatures.

4.3 Mary, Peter and the Mercedes

I am using as my main example an exchange borrowed directly from Sperber & Wilson (1986: 194), reproduced here as (8):

- (8) a. Peter: Would you drive a Mercedes?
- b. Mary: I wouldn't drive 'ANy expensive car.

Capitalisation, to indicate 'focal stress', is as supplied by Sperber & Wilson; the falling nuclear tone is my own suggestion, which seems appropriate enough to what they describe as an 'ordinary assertion'. Mary's indirect reply (8b) introduces the concept 'expensive car': new in a strict discourse sense (it has not previously been mentioned), arguably given in that it is inferable from Peter's reference to a Mercedes. In formal terms, the concept is presented as part of the deaccented, post-nuclear material normally associated with background information. Sperber & Wilson claim that (8b) gives access to (9):

- (9) A Mercedes is an expensive car

because it gives Peter immediate access to his encyclopaedic information

about expensive cars, which plausibly includes (9). He uses this as an 'implicated premise' in order to derive (10) as an 'implicated conclusion':

(10) Mary wouldn't drive a Mercedes.

Whatever accent pattern Mary used, Peter would gain access to his own assumptions about expensive cars, whatever they might be. However, Peter's straightforward progression from premise (9) to conclusion (10) depends crucially on the accent distribution of (8b).

What Mary is implicating first and foremost in (8b) is (11):

(11) Mary believes that a Mercedes is an expensive car.

Since it is Mary's opinion that is being sought, this allows Peter to reach conclusion (10) quite straightforwardly, whether or not he shares the assumption in (9). But we should note some other possible consequences of Mary's response. If Peter already shares the assumption in (9), then he will be able to use Mary's reply to derive his conclusion at minimal cost; incidentally, he will have received evidence to strengthen his belief in (9). If, on the other hand, he erroneously thought that Mercedes were cheap, or indeed had no preconceptions about the cost of a Mercedes (Peter may be only three years old, for all we know), the background assumption (11) which Mary is supplying, which gives access to the proposition in (9), will itself modify and enrich Peter's cognitive environment, and in so doing presumably increase his processing costs. Perhaps it is possible to regard the background information as having had 'contextual effects' in its own right, even if it is only indirectly relevant to interpreting the answer to Peter's question.

Mary must take responsibility for the truth of (11), and secondarily of (9) and (10), but only because of the accent placement and intonation she has used. The conventions associated with deaccenting (and it is legitimate to regard the group-final noun phrase 'expensive car' as deaccented here) invite the hearer to label the deaccented material as either explicitly given or in some way inferable from the already constructed context. He will identify this material in relation to the most immediate plausible antecedent, typically an item which shares the same semantic role as the deaccented expression, in this case the argument 'Mercedes' in (8a). The circumstances in which deaccenting is allowable in grammatical constructions of this type are in fact tightly constrained: the expression in question must be synonymous with, or co-referential with, or superordinate to, some item in the context.

It is the formal, phonological device of deaccenting which is constraining Peter's selection of a context in processing Mary's utterance. Should it, therefore, be analysed as authorising an instance of one of Grice's 'conventional' implicatures, an implicature made on the basis of a linguistic form? This is tricky: we should want to say 'yes' in the sense that implicature (9) is linguistically directed; 'no' insofar as (9) is cancellable, since the same form, (8b), could yield a different proposition in a different context -- where the antecedent was a Porsche, for instance. I would suggest

that the implicatures motivated by accent assignment are not so much conventional implicatures (which Blakemore 1987 has persuasively reanalysed as 'semantic constraints on relevance'), as conventional constraints on context selection.

To demonstrate that it is Mary's accent distribution in (8b) which has given rise to conclusion (10), we must consider the effects of changing Mary's nucleus placement. Suppose that Mary had instead said:

- (12) I wouldn't drive any ex'PENSive car.

The change in linguistic form does not alter the truth conditions of the proposition expressed, but it certainly alters the implicatures whose calculation Mary has authorised. The notion 'expensive' is no longer inferable, and Mary is no longer guaranteeing the truth of (11). A plausible implicated premise might now be:

- (13) Mary sees no necessary correlation between a Mercedes and an expensive car

and any implicated conclusion will be equivocal:

- (14) Mary would not drive a Mercedes if it were expensive, but she would consider doing so if it were not.

Peter may still derive (9) and (10) from her response, but if so, it will be on his own responsibility.

If Peter's original question had been (15):

- (15) Would you drive a second-hand Mini?

and Mary had used (12) as her reply, the implicated premise would be as in (13), substituting 'second-hand Mini' for 'Mercedes'. Peter's own knowledge about the value of cars might tempt him to conclude (16):

- (16) Mary would drive a second-hand Mini

but again Mary is not guaranteeing the truth of this conclusion, because she has not chosen an accent pattern which allows 'expensive' to be associated with an item already in the context; Peter's conclusion will be on his own responsibility.

Now supposing, instead, that Mary had replied to (8a) with (17):

- (17) (i) Well 'ACTually | (ii) I wouldn't drive 'ANY expensive car | (iii) because I can think of 'BETter ways to spend my money.

Here we have three tone groups, each with its own internal focus distribution as cued by the nuclear accents; two of the groups carry rising tones, and one a falling tone. If, rather than attributing a specifically 'referring' function (Brazil) to the fall-rise (or indeed Gussenhoven's 'selecting'

function), we adopt the weaker hypothesis that it is a marker of background information, we can attempt to trace Peter's processing of the utterance. The first tone group has little to contribute to the proposition itself, being more in the nature of an expression of 'social convergence' (cf Brazil et al. 1980: 53); the background status of the group is orientated towards the social situation. Any implicatures authorised by the tone itself may be something like:

- (18) This is a piece of background material

from which Peter may infer:

- (19) There is more to follow (no foreground tone group has yet been uttered)

and from the interaction of tone with text:

- (20) This is an expression of social convergence.

The focus distribution in the second tone group has already been discussed; the fall-rise tone will again convey (18). At the same time, the matter of the tone group constitutes a reply to Peter's question, so (20) will be inapplicable. Since nothing has as yet been uttered with a falling tone, (19) may well be inferred as a first hypothesis, in which case the content of the tone group will be noted and placed in some temporary store before being committed to the context. Inference (19) will be confirmed as soon as Mary embarks on the third tone group, in which the nucleus placement again marks an internal division into background and foreground: 'ways to spend my money' is marked as background, and according to deaccenting conventions will be inferred as a superordinate category, of which driving (hence buying) a car is a member. The falling tone on 'better' will convey the implicature:

- (21) This is a piece of foreground material

which will allow Peter to infer:

- (22) At this point there is sufficient material for me to commit this new information to the context.

Provided that an adequate prosodic break ensues, the new sets of assumptions derived from the utterance will be committed to the context and the contextual effects calculated. The hypothesis being made here is that there will be a delay in completing the processing of material marked as background, as it will be assumed that the assumptions conveyed are themselves required as context for some further, foreground information. Matter marked as foreground, on the other hand, may be evaluated immediately.

Background tone groups can, of course, be tagged on after a falling tone to supply a retrospective context; Mary might well have replied with:

(23) No I 'WOULDn't I ,Actually.

Assuming that there is no substantial prosodic break between the two groups, the hearer will have no difficulty in identifying the second as supplying additional background against which to process the first, and will make any necessary revisions to the contextual effects calculated. If this is the case, then the association of rising tones with 'incompleteness' is only a secondary effect, derived from their status as background markers.

In the example given in (17), we cannot really argue that the information matter of the second tone group is itself 'background', in the sense of being 'subordinate' to that in the third (cf example (6) above); if anything, the relationship of cause and effect would imply the opposite. The orientation of background to foreground in this instance is purely structural, indicating pre-planning of the complete utterance by the speaker. She could equally well have produced the reply with a falling tone on 'any', in which case the second and third tone groups would have been processed sequentially, and the link between them conveyed lexically by 'because', and not intonationally.

If the hypothesis about the processing of background material is correct, it would shed some light on why matter marked by the various rising tones is typically interpreted quite differently when it occurs in isolation, from when it is embedded in a sequence including a falling tone. Supposing Mary had replied as follows:

(24) I wouldn't drive 'ANy expensive car

and had followed this with a pause, and perhaps an expectant look at Peter. He will perceive that she has finished speaking, and will therefore be forced to make the best of interpreting an utterance marked in an unspecified way as background. Implicature (18) will still hold, and (19) will still be derived as a first hypothesis, to be replaced by something like:

(25) Some piece of foreground information has been left unsaid.

There is a gap where foregrounded material might be expected. When the hearer encounters such a gap in processing an utterance, he must formulate some hypotheses about the most relevant orientation of the background/foreground relationship: is it, for instance, simply structural, implying an incomplete utterance, or one which he himself is being invited to complete? Or is he being required to look at the cognitive content of the tone group in a particular way, and to draw inferences relating to the likely cognitive content of the 'unsaid' material? Vandepitte (1987) makes a useful and suggestive classification of the 'domains of meaning' (corresponding to the possible orientations) within which tones may be interpreted: attitudinal, social, illocutionary, discursive and cognitive. She argues, persuasively, that 'if a listener has several options for interpreting a tone, he will choose the optimally relevant one -- or at least the one consistent with the principle of relevance' (1987: 45).

The particular background tone chosen by the speaker is likely to be the hearer's best guide to the available options. In other words, the selection of a tone belonging to a particular 'natural class' will carry one set of implicatures (background vs foreground), while the selection of a specific member of that class will carry further implicatures. Such a hypothesis has clear implications for the task of establishing an inventory of 'contrastive' tones; it also highlights the problems in distinguishing class-membership 'meanings' from individual tone 'meanings' (cf Gussenhoven 1983a). The task is further complicated by the interaction with key choice (loosely defined as pitch range), which also appears to license particular implicatures (though this issue is not explored in detail in this paper).

In (24), we have an example of a fall-rise tone, a tone which has inspired many attempts to characterise its 'meaning' in both RP and American English: as well as the discourse meanings already mentioned, it has been associated with an attitude of 'reservation', 'the tone of which the native speaker feels "there's a 'but' about it"' (Halliday 1967a: 41); 'implied contrast' (O'Connor & Arnold 1973: 66-73; Bing 1979: 268); 'implicating uncertainty' (Ward & Hirschberg 1985). Ladd's 'focus within a given set' (1978: 161), together with the idea of implied contrast, probably come nearest to capturing the implications of the fall-rise in an unlinked tone group. It seems that the fall-rise can highlight the content of the tone group in a particular way, selecting the focused items from an unspecified generic set, and presenting them as being in potential contrast with some co-hyponym(s) from the same set. The missing foreground information required to fill the gap, and which will explain the implied contrast, will be found by inferring the possible relevant co-hyponyms, which can only be done if an appropriate set is first identified.

So, the fall-rise is marking the tone group material as background. The conventions attached to this particular tone further implicate that there is some background set of items in the context of which the focused items and their unspecified co-hyponyms should be contrasted. This background set will be the context relevant to the calculation of contextual effects. In an unlinked tone group, the background orientation of the fall-rise is paradigmatic, or systemic -- towards the choice of the linguistic material itself rather than to its potential structural links. Unlinked simple rises, on the other hand, are more likely to have a syntagmatic, or structural orientation. Something of this difference still survives when the groups are explicitly linked to foreground tone groups. This idea is echoed in Fox (1984), who characterises the 'fall-rise + fall' pattern as 'dissociative subordination', and the 'low rise + fall' combination as 'associative subordination' (1984:131).

To return to (24): as luck would have it, this additionally involves an interaction between the fall-rise and a negated quantifier, 'any' (see Palmer 1922 for an early discussion of this problem). In the spirit of Ladd's argument, this would involve picking out 'any' as one of a set of quantifiers, in potential contrast with 'some', 'one' etc. The most probable conclusion for Peter to derive is not (10), but (26):

- (26) There are possibly some expensive cars which Mary would

consider driving

though some ambiguity will remain. If (26) is a possible inference to make, then this must mean that the actual propositional form of (24) is different from that of (8b), as the truth conditions are different. The choice of tone seems to be directing this new interpretation of Mary's reply. But the utterance is still ambiguous; we cannot claim that the fall-rise must be interpreted in this way here. What the tone seems to be doing is to mark an underspecified proposition in such a way that it guides the hearer to the most relevant of competing alternatives, in this case the a) 'whichever, whatever, no matter what' sense of 'any', rather than the b) alternative, 'even one'. Negating b) yields the meaning 'none', whereas negating a) yields 'not just whichever', an interpretation which more readily lends itself to contrast with other members of a set of possibilities.

5. Discussion

The main claim being made here is that all types of intonational 'meaning' are recoverable using pragmatic rather than decoding processes. The implicatures associated with particular prosodic strategies may be highly conventional within a language or variety of a language, so much so that in certain circumstances the contribution to utterance meaning seems to be completely explicit. The intonational system operates independently of lexicon and syntax to provide conventional constraints on the selection of a context for the utterance in question.

The theory of relevance provides us with a theoretical framework for this account of intonation. Consideration of how communication takes place makes it clear that the process of acquiring new knowledge involves an interaction between background and foreground information. Systematic intonational choices within and between tone groups serve to structure the informational content, guiding the listener towards making the correct dynamic assessment of what should be treated as context and what as new information. They can also orientate the listener towards the type of context that is going to be relevant -- paradigmatic vs syntagmatic, social vs attitudinal vs discourse, etc.

The discussion relating to the processing of successive tone groups has speculated that groups marked as background are processed differently from those marked as foreground. House (forthcoming) explores this issue further, and proposes that utterances can be divided up for processing purposes into 'processing units', which may include several tone groups in co-ordinating and subordinating relationships to each other.

There are of course a number of other prosodic conventions which have not been explored here, but which would repay analysis within the framework set out above. The implicatures generated by pre-nuclear ('head') contours, and so-called 'holistic' contours are a case in point, as is the selection of key. It could be that key is itself a factor in the selection of tone: it has often been observed that fall-rises are common in initial (background) tone groups, whereas a simple low rise is preferred finally, when a retrospective background is being provided (compare (27a) and (27b):

- (27) a. 'ACTually, I think she's got a 'POINT
b. I think she's got a 'POINT, ACTually.

Choice of high key can be established very quickly with a fall-rise, where the pitch peak always coincides with the accented syllable. Low rises, by contrast, tend to be rather narrow in range, and may be a more suitable choice in a final, 'comment' position, where only a relatively low key is required.

Intonational manipulation is of course only one of many formal linguistic strategies for guiding the listener towards the correct choice of context. Often enough, prosodic patterns will simply echo and reinforce grammatical structure. But a speaker may exploit the autonomous nature of intonation by producing patterns in apparent conflict with the content of the message; such conflicts generate their own implicatures, and are often blamed for misunderstandings, but enormously enrich the communicative possibilities of spoken language.

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References

- Bing, J.M. (1979) "Aspects of English prosody", unpublished PhD dissertation, University of Massachusetts
- Blakemore, D. (1987) Semantic constraints on relevance, Oxford, Blackwell
- Brazil, D., Coulthard, M. & Johns, C. (1980) Discourse intonation and language teaching, Harlow, Longman
- Carston, R. (1988) "Implicature, explicature and truth-theoretic semantics", in R. Kempson (ed), Mental representations: the language-reality interface, Cambridge, CUP
- Cruttenden, A. (1984) "The relevance of intonational misfits", in Gibbon & Richter (1984), 67-76
- Crystal, D. (1969) Prosodic systems and intonation in English, Cambridge, CUP
- Fox, A. (1984) "Subordinating and co-ordinating intonation structures", in Gibbon & Richter (1984), 120-133
- Gibbon, D. & Richter, H. (eds) (1984) Intonation, accent and rhythm, Berlin, de Gruyter

- Grice, H.P. (1975) "Logic and conversation", in P. Cole & J.L. Morgan (eds), Syntax and semantics 3: speech acts, New York, Academic Press
- Gussenhoven, C. (1983a) "A semantic analysis of the nuclear tones of English", Bloomington, IULC; reprinted in Gussenhoven (1984)
- Gussenhoven, C. (1983b) "Focus, mode and the nucleus", Journal of Linguistics 19, 377-417; reprinted in Gussenhoven (1984)
- Gussenhoven, C. (1984) On the grammar and semantics of sentence accents, Dordrecht, Foris
- Halliday, M.A.K. (1967a) Intonation and grammar in British English, The Hague, Mouton
- Halliday, M.A.K. (1967b) "Notes on transitivity and theme in English: part 2", Journal of Linguistics 3, 199-244
- House, J. (in press, 1989) "Intonation structures and pragmatic interpretation", in S. Ramsaran (ed), Studies in the pronunciation of English, London, Routledge
- Ladd, D.R. (1980) The structure of intonational meaning, Bloomington, Indiana University Press
- O'Connor, J.D. & Arnold, G.F. (1973) Intonation of colloquial English, 2nd edition, London, Longman
- Palmer, H.E. (1922) English intonation, with systematic exercises, Cambridge, Heffer
- Sperber, D. & Wilson, D. (1986) Relevance, Oxford, Blackwell
- Vandepitte, S. (1987) "A pragmatic function of intonation: tone and cognitive environment", unpublished MA dissertation, University College London.
- Ward, G. & Hirschberg, J. (1985) "Implicating uncertainty", Language 61, 747-776
- Wilson, D. & Sperber, D. (1979) "Ordered entailments: an alternative to presuppositional theories", in C.K. Oh & D. Dineen (eds), Syntax and semantics 11: presuppositions, New York, Academic Press