'Blazing a trail':
moving from natural to linguistic meaning in accounting for the tones of English

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1.   Introduction

'Intonation… assists grammar—in some instances may be indispensable to it—but it is not ultimately grammatical… If here and there it has entered the realm of the arbitrary, it has taken the precaution of blazing a trail back to where it came from.

(Bolinger 1983: 106-108)

This paper follows previous work within Relevance Theory in assuming the existence of fully linguistically encoded intonational meanings, and so moving further into 'the realm of the arbitrary' than Bolinger would have recommended. But it takes Bolinger's view seriously in that it considers how little linguistically encoded meaning we need to assume in order to account for the tones of English. One assumption behind this approach is that the framework of Relevance Theory, and the strong predictions it makes about pragmatic interpretation, makes it easier to test Bolinger's ideas.

The paper considers just five tones — FALL, RISE, RISE-FALL, RISE, FALL-RISE and LEVEL — and these will be represented as follows:[1]

(1)   FALL: Syntax is   \easy

(2)   RISE: Syntax is   /easy

(3)   RISE-FALL: Syntax is   ^ easy

(4)   FALL-RISE: Syntax is   ᵛ easy

(5)   LEVEL: Syntax is   > easy

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[1] To keep things simple, the paper assumes (an idealised version of) a variety of 'Standard Southern British English', and considers only five tones, as listed in (1)-(5).

The paper does not attempt to address all of the questions which any account of intonational meaning needs to consider. Instead, it focuses on just one question: how do we account for the intuition that there is something 'iconic' or 'natural' about intonational meaning? While the paper proposes semantic analyses of the five tones, it does not explore the analyses in detail nor present evidence to test or defend them. The aim at this stage is simply to show how the analyses exploit Relevance Theory and assume very little linguistically encoded meaning.

The paper adopts assumptions about intonational meaning made in previous work within Relevance Theory, and these are explained in Section 2. Section 3 presents the semantic analyses and shows how they build on Imai's (1998) proposal that FALL is a 'default' tone and that RISE encodes 'reservation of judgement' about some aspect of the utterance.

2.   **Intonational Meaning**

This section presents answers to questions about iconicity and the contribution of intonational meaning developed within the framework of Relevance Theory by a number of theorists including Clark and Lindsey (1990), Escandell-Vidal (1998, 2002), Fretheim (1998), House (1990, 2006), Imai (1998), Vandepitte (1989), and Wilson and Wharton (2005, 2006). These answers are then presupposed by the discussion in section 3.

As mentioned above, intonational meanings seem to be both conventional/linguistic in some ways and natural/iconic in others. The most famous proponent of the view that intonational meaning is iconic is, of course, Dwight Bolinger. While he presented a large amount of evidence to support his view (see, for example, Bolinger 1983 and papers in Bolinger 1985, 1989), he did not suggest that intonational meaning was purely iconic:

'To maintain that intonation is basically iconic is not to maintain that its

implementations from language to language will be identical — that would

be to insist on perfect iconism, which . . . can be found only when a thing is

the icon itself. Adaptations are bound to creep in, some of them even

seeming to contradict the expected occurrences of up and down. For

example, a favourite observation of the grammatical school of intonology is

that some languages have rising terminals on declaratives as well as on

questions, not just occasionally but regularly. In the two or three cases that

I have information about, all that this represents is a shift in the center of

gravity along the polar opposition: declaratives rise, but questions rise

higher. To prove the case for iconism, one needs a language in which

declaratives rise and interrogatives fall.'

(Bolinger 1983: 100)

So Bolinger allows for the existence of conventional intonational meanings but claims

that these are constrained by the essentially iconic nature of intonation. Alongside the

regularities noted by Bolinger are the differences across dialects which suggest that

intonational meaning is part of a coded system and which have led others, notably

Gussenhoven (1983) and Sag and Liberman (1975), to propose that intonational

meaning is linguistic. These facts have led some theorists to propose that there are two

kinds of intonational meaning. Clark and Lindsey (1990), for example, suggested that

intonation could convey meanings by virtue of iconic resemblances to affective

representations as well as through conventional encoding. More recently, Wilson and

Wharton (2005, 2006) have suggested that intonational meanings come in three

varieties. As this figure shows, they propose that prosodic inputs can be either natural or linguistic and that natural inputs can be either natural signs or natural signals:

Figure 1

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                        Prosodic inputs
                         /          \
                        /            \
                    'Natural'      Linguistic
                     /    \             |
                    /      \            |
                Signs    Signals        |
                  |        |            |
                  |        |            |
              Inference  Coding   Coding (plus inference)
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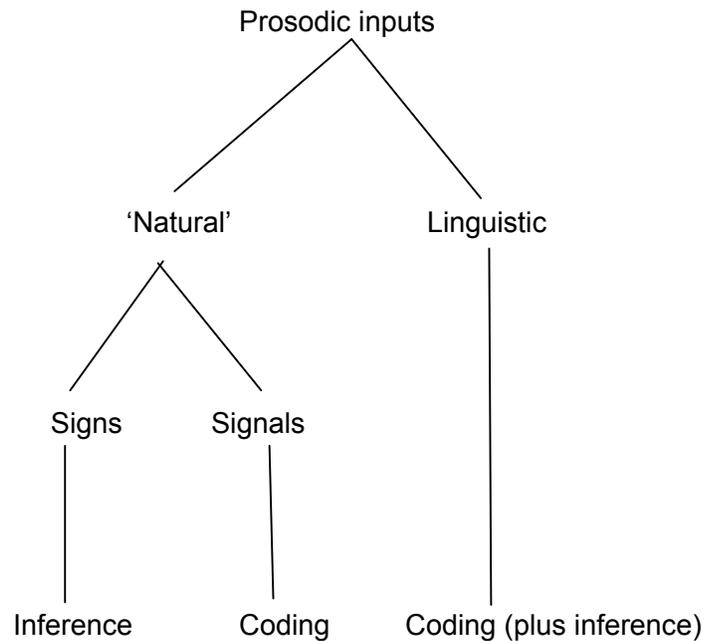
(from Wilson and Wharton 2005)

A natural sign is an input which provides evidence of something without having a communicative function. Natural signs are interpreted inferentially and not decoded. Examples include shivering or prosody affected by drunkenness. A natural signal is an input which is genuinely coded and inherently communicative. In some cases, meanings of natural signals are derived purely on the basis of decoding. In others, inferences are then made based on the interaction of the encoded meaning and available contextual assumptions. Examples include smiling and affective tones. Linguistic signals, of course, have linguistically encoded meanings. They are decoded and inferences are then made based on the interaction of encoded meanings, contextual assumptions and pragmatic

principles. Examples include lexical meanings, meanings associated with particular syntactic forms and, of course, some prosodic meanings.

Wilson and Wharton's model suggests that intuitions about iconicity follow partly from the use of prosodic inputs as natural signs and signals. But the approach I am presenting in this paper also aims to take account of Bolinger's claim that encoded linguistic meanings do not entirely give up their iconic nature. The method used to achieve this was to start from an assumption of total iconicity and introduce only as much encoded meaning as is needed to account for the meanings of the tones. As has been shown in a wide number of cases, a powerful pragmatic theory such as Relevance Theory can build on relatively impoverished semantic representations in accounting for utterance interpretation. It is clear, though, that the tones of English do constitute a linguistic system which goes beyond natural meanings.

When considering the nature of linguistically encoded intonational meaning, the natural assumption within Relevance Theory is that intonational meaning is procedural, i.e. it encodes procedures which help to constrain or guide inferential processes, rather than contributing concepts or conceptual representations (for discussion of the conceptual-procedural distinction, see Blakemore 1987, 2002; Wilson and Sperber 1993). Escandell-Vidal (1998, 2002) and Fretheim (1998), for example, assume that intonation encodes procedures which guide the addressee in identifying the 'higher-level explicatures' of utterances. They present convincing arguments for their analyses and show how these analyses contribute to an account of a range of utterances in Spanish (Escandell-Vidal) and Norwegian (Fretheim). The proposal presented here also assumes that intonational meaning is procedural and builds particularly on the work of Imai (1998).

3.   **English Tones**

The suggestions made in this section are tentative and are not fully explored or defended here. They will no doubt be refined significantly as further data is considered. The aim here is to consider how they were arrived at and how they relate to intuitions about iconicity. Here they are, stated in simplified terms:

(6)   The meanings of English tones:

FALL: The proposition expressed is entertained as either a description of a state of affairs or as an interpretation of a thought of someone other than the speaker at the time of utterance.

RISE: An explicature of the utterance is entertained as an interpretation of a thought of someone other than the speaker at the time of utterance.

RISE-FALL: The proposition expressed is entertained as either a description of a state of affairs or as an interpretation of a thought of someone other than the speaker at the time of utterance AND an explicature of the utterance is considered surprising.

FALL-RISE: The proposition expressed is entertained as either a description of a state of affairs or as an interpretation of a thought of someone other than the speaker at the time of utterance AND an explicature of the utterance is entertained as an interpretation of

a thought of someone other than the speaker at the time of utterance.

LEVEL: This utterance is not yet complete.

Each of these requires some explanation. The proposed analysis of FALL aims to capture the notion (as proposed by Imai 1998 and originally suggested by Lieberman 1967) that FALL is the 'default' tone. All utterances are either descriptions or interpretations of either the speaker's own thought or someone else's. The addressee needs to work out inferentially who is entertaining the proposition expressed and whether it is entertained as a description of a state of affairs or as an interpretation of someone else's thought (including the possibility that it might be a thought the speaker had at some other time).

The analysis of RISE follows Clark and Lindsey (1990), Escandell-Vidal (1998, 2002), Fretheim (1998) and Imai (1998) in assuming that rises encode information about 'higher-level explicatures' of the utterance, i.e. about propositions which embed the proposition expressed under a higher-level representation (e.g. *'the speaker desires that...', 'the speaker thinks that the hearer thinks that...', 'it would be ridiculous to assume that...'*).

There has been considerable discussion around the notion of 'explicature' within Relevance Theory (for an extended discussion of this see Carston 2002). Simplifying for the purposes of this paper, an 'explicature' is a development of the semantic representation of an utterance and a 'higher-level explicature' is an explicature which embeds 'lower-level' explicatures, within a higher-level description (e.g. attributing them to others or representing an attitude to them such as surprise or doubt). So an utterance of (7a) might lead the hearer to infer the proposition (7b) higher-level explicatures such

as (7c) or (7d) (to keep things simple, these are represented informally and incompletely here by English sentences):

(7)   a.   *Utterance:*

It is.

b.   *Proposition expressed:*

The apple the speaker is holding is organic.

c.   *Possible higher-level explicature:*

John said that the apple the speaker is holding is organic.

d.   *Possible higher-level explicature:*

The speaker is sceptical about John's claim that the apple the speaker is holding is organic.

(7c) might be inferred if you utter (7a) in a situation where we share the assumption that John knows whether or not the apple you are holding is organic and I have just asked you whether you checked with John. (7d) might be inferred if I have just told you that John said the apple was organic and you reply by uttering (7a) while looking at the apple with an expression of doubt.

RISE-FALL is here treated as encoding the same as FALL but adding the assumption that the speaker is finding an aspect of what is communicated particularly significant (in particular, more significant than would have been the case if the speaker had selected the tone FALL).

FALL-RISE is analysed as consisting of the combination of FALL and RISE.

LEVEL is treated as indicating that the speaker's current utterance is not complete. Typically, it is taken to communicate that the speaker has something else to complete before finishing her utterance.

While these analyses aim to build on insights in a wide range of previous work (including work by Brazil 1975, Gussenhoven 1983, House 1990 and 2006, Vandepitte 1989), the work that has been most influential here is the proposal by Imai (1998) who suggests treating FALL as the default tone and RISE as encoding that the speaker is 'reserving judgement' about some aspect of her utterance.

Perhaps the most striking thing about Imai's proposal is its simplicity. The current proposal aims to build on this, but it makes a slight adjustment to the suggestion about the meaning of RISE, it says a little more about the meanings of the more complex tones RISE-FALL and FALL-RISE and it claims that there is a linguistically encoded meaning for LEVEL tones.

While this proposal sees the meanings of each of the tones as genuine cases of linguistically-encoded meaning, it developed from the observation that the different interpretations of some of them seem to share properties with the different interpretations of utterances which do not exploit linguistically encoded meaning differences. For examples, differences between the interpretations of utterances with a FALL and a RISE-FALL, seem to share properties with classic examples in Relevance Theory, such as the range of repetitions in (8) and the pair of utterances in (9):

(8)   a.   Here's a red sock, here's red sock, here's a red sock.

      b.   We went for a long, long walk.

      c.   There were houses, houses everywhere.

      d.   I shall never, never smoke again.

      e.   There's a fox, a fox in the garden

f.   My childhood days are gone, gone

<div align="center">(Sperber and Wilson 1995: 219)</div>

(9) a.   How are you?

b.   How are you these days?

<div align="center">(Zegarac and Clark 1999: 336)</div>

Sperber and Wilson show that we can explain the various effects of the repetitions in (8) simply by assuming the Relevance Theory utterance interpretation procedure and without making any assumptions about the meaning of repetition itself. In each case, the extra effort guarantees extra effects and the particular kinds of effects in each case are determined by the relative accessibility of different hypotheses about what they might be. In (8a), we assume the laundry-sorting speaker has found more than one red sock. In (8b), we assume the walk was longer than we might have expected. And so on. Zegarac and Clark discuss the contrast between (9a) and (9b) where the extra effort involved in processing *these days* leads to extra effects, typically along the lines that the speaker of (9b) is taken to be more genuinely interested in how the hearer is (less 'phatic') than would have been assumed for the speaker of (9a).

Similarly, there is an intuition that the speaker of an utterance with a RISE-FALL tone is taken to find the proposition expressed more interesting than would be the case if they produced the same utterance with just a FALL. This seems to invite a treatment in terms of Relevance Theory where the extra effort involved in the RISE plus FALL gives rise to further effects than would follow from just a FALL. If we assume, as Imai does, that FALL is the default tone, then a statement uttered with a FALL will be taken to be a straightforward statement but a statement accompanied by a RISE-FALL puts the hearer to extra effort which must be offset by extra effects. Given Relevance Theory, and

without assuming any further linguistically encoded meaning, we would expect the hearer to search, in order of accessibility, for effects that the speaker could have intended, which would justify the extra effort. This will, of course, depend on the specific range of contextual assumptions available to the hearer. An utterance of *'syntax is easy'* with a RISE-FALL tone when there are relatively few relevant contextual assumptions available, say when the speaker has come home from her first day on her linguistics degree and her first syntax class, might lead the hearer to think that the speaker is surprised to find how easy syntax is (giving rise in turn to relevant implicatures which follow from this). In a context where there are more relevant contextual assumptions available, the extra effort will be justified in different ways. Suppose, for example, that I have been telling you how tough you will find the syntax part of your linguistics degree and you emerge from your first syntax class to proclaim that *'syntax is ^easy!'* In this context, I will assume that the extra effort indicates your surprise at how wrong I was. To take a third example, suppose I am warning a third party in your hearing about how tough syntax is when you interrupt to point out that *'syntax is ^easy!* In this context, I will assume the extra effort indicates that you are surprised to have to point out how easy syntax is.

The possibility of explaining the difference between interpretations of the RISE-FALL tone and the FALL tone along these lines is very suggestive. Although not discussed here, similar reasoning would seem to be available to account for other contrasting interpretations of tones such as the difference between a HIGH FALL and a LOW FALL, or between a HIGH RISE and a LOW RISE. (Roughly, the higher you go, the more relevant you consider your utterance and the lower the less relevant). On top of this, the assumption that FALL is a default tone suggests a pragmatic account of the interpretation of LEVEL tones. If FALL is default, as suggested by Lieberman (1967) and Bolinger (1983), then the use of a LEVEL tone suggests an active effort on the part of

the speaker not to allow her utterance to take the default shape. A natural interpretation is that this is because she has not completed her utterance. Often, of course, an utterance with a LEVEL tone is then followed, or completed, by an utterance (or final part of an utterance) with a FALL.

So we can get quite far in accounting for the tones of English just by assuming that FALL is default and assuming that departures from FALL can be pragmatically explained. This suggests the possibility of considering how far an analysis might go based on assuming very little linguistically encoded meaning. Developing an account based on the most minimal departures from non-encoded meanings could be seen as 'blazing a trail' from natural to linguistic meanings.

Of course, an account of the tones of English requires more than just these pragmatic contrasts. First we need to know the roles of FALL and RISE in this dialect. Second, we need to know what is encoded by FALL and what is encoded by RISE. Imai's suggestion that FALL is the default tone can be seen as the first step. In assuming this, Imai reflects Bolinger's comment about falling and rising pitch:

'In the course of an action we are up and moving; at the end, we sit or lie down to rest. In a discourse this translates to higher pitches while utterance is in progress and a fall at the end. In this we have the almost universal downdrift observed as an utterance draws to its close, as well as the opposite tendency when something further is expected such as a continuation clause or the answer to a question.'

(Bolinger 1983: 99)

Imai (1998: 73) credits Philip Lieberman (1967) as the theorist who 'first pointed out the unmarkedness of the falling tone from a physiological point of view'.

But, of course, we need to know more than this in order to understand intonationally well-formed utterances. Imai points out problems with previous suggestions (e.g. Brazil 1975, Gussenhoven 1983) and proposes that the FALL tone encodes no specific information, whereas RISE encodes 'reservation of judgement' about some aspect of the utterance. The analyses in (6) above aim simply to adopt Imai's proposal that FALL is the default tone while making different proposals about the other tones.

For RISE, the new analysis proposes something less specific than 'reservation of judgement'. Rather, this analysis falls into line with Escandell-Vidal (1998, 2002) and Fretheim (1998) by suggesting that RISE encodes information about 'higher-level explicatures' to the effect that one of these represents interpretive representation of a thought of someone other than the speaker, e.g. the 'question' interpretation which, in Relevance terms, treats the proposition expressed as an interpretation of a desirable thought.

The new analysis assumes, contra Imai, that a RISE-FALL is a kind of FALL which encodes more than is encoded by just a FALL, namely that the speaker finds an explicature of her utterance surprising.

The new analysis assumes, with Imai, that a FALL-RISE amounts to a combination of a FALL ('default' tone) with a RISE (interpretive representation of someone else's thought).

The new analysis assumes, going beyond the scope of Imai's discussion, that LEVEL encodes incompleteness of the current utterance.

The overall claim is that the meanings of the various tones are genuine cases of linguistically encoded meaning but that the encoded meanings are extremely general and interpretations of utterances exploit our highly developed inferential ability. Intuitions of iconicity arise partly because intonation can be used in natural signs and

signals, as envisaged by Wilson and Wharton (2005), and partly because the inferential processes involved resemble processes involved in exploiting contrasts which are not based on linguistically encoded meaning differences.

4.   Conclusion

These proposals are only briefly sketched here, and only as a first step. They will no doubt be refined considerably in the light of further data. The aim has been to indicate how an account might be developed which assumes linguistically encoded meanings for the tones but also does some justice to intuitions of iconicity. While the analyses proposed here should be seen as fully linguistically encoded meanings, it is arguable that a speaker who was not aware of these meanings could still achieve a fair amount of success in trying to work out the meanings of a range of intonationally well-formed utterances. This approach aims to make sense of Bolinger's 'trail-blazing' idea within a specific approach to linguistic semantics and pragmatics.

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