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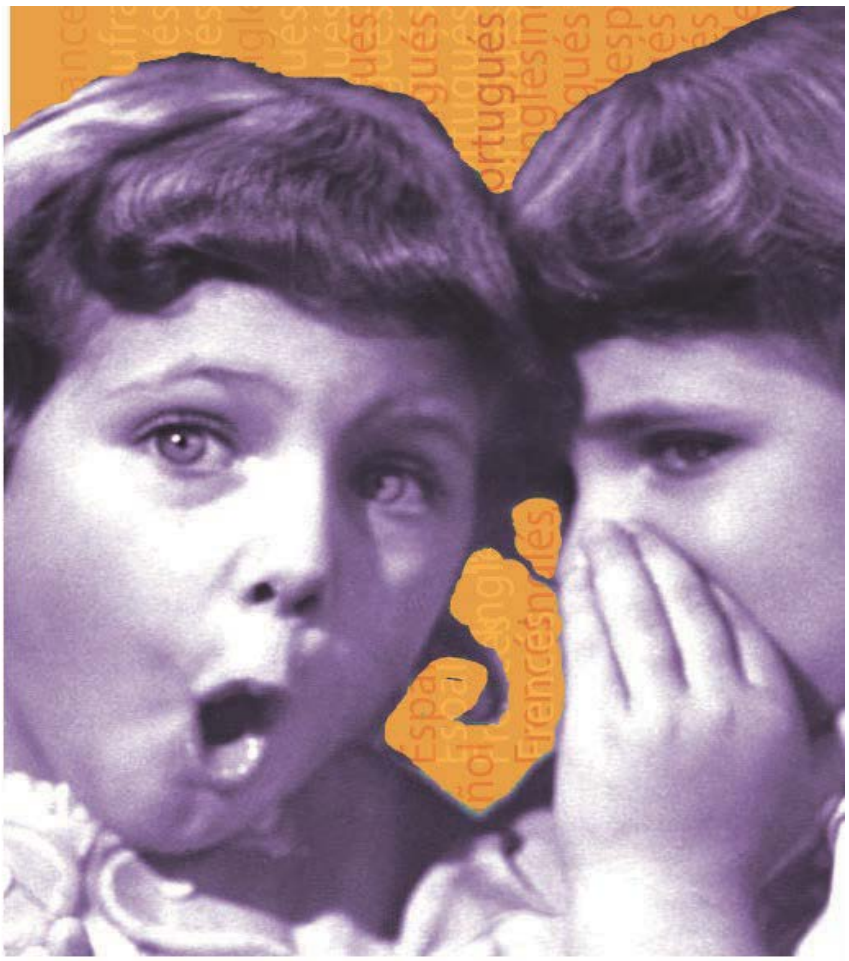

Didáctica de la Fonética de las Lenguas Extranjeras

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THE TONETIC TRANSCRIPTION OF AUTHENTIC AUDIO MATERIALS: THE CASE OF NON-PROTOTYPICAL NUCLEAR TONES

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1. Introduction and theoretical background

The model and tonetic marks proposed by O'Connor and Arnold (1973) is still widely used at many English Teacher Training Colleges. This model is based on the British school of intonation, which assumes that the minimal tonal unit in the intonation phrase (IP) is the tone, a configuration of pitch movements to and from certain linguistically significant pitch turning points. The model proposes seven nuclear tone categories: high fall, low fall, high rise, low rise, fall-rise, rise-fall and level. The tones, as read by the authors in the audio material of *Intonation of Colloquial English* (op. cit.), exploit extreme starting points and endpoints, ostensibly intended for perceptual salience. There is no falling tone which starts high and ends at a mid pitch, for instance: both types of falls, and the rise-fall, are described as reaching the speaker's baseline. The fall-rise is described as a fall from a mid-high pitch down to the baseline, with its rising terminal reaching the middle of the range. The two types of rises, high and low, are labelled in terms of their endpoint, as these are the carriers of meaning. The high rise is said to begin mid and end high; the low rise starts low and ends mid.

Tone marks used by O'Connor & Arnold are iconic; they show pitch direction in the shape of downward or upward lines, and the marks are placed high or low with respect to the line of print, to represent the starting points or endpoints of the seven tones. This degree of simplification is achieved at the expense of naturalness when reading aloud from scripted texts. The wide step-ups between the pre-head and the onset syllable, the static pitch in high heads, the wide step-downs from a high head to the low beginning of a low rise- all these features, when intoned, make speech song-like. When authentic materials are used, there often arises the difficulty of representing tonetically what is heard in the recorded text in a way which allows reading aloud that text without sounding as if singing, albeit still within a simplified level of description with respect to the original. The purpose of this paper is to examine the phonetic properties of nuclear tones which deviate from the tones described by O'Connor & Arnold. Their nuclear tones may be

regarded as *tonal prototypes*. The term 'prototype' is employed here in the sense of 'most perceptually salient for the learner of L2 intonation'. In cognitive linguistics, when an example deviates from a prototype, the degree to which it does so renders it a 'less good' example than the prototype; the greater the degree of deviation, the 'less good' the example. The examples on the periphery of a category are 'poor' members of that category (Geeraerts, 1989). The forms of nuclear tones, or pitch accents, which will be explored in this paper were selected because are 'less good' or 'poor' exemplars: they do not allow a straightforward categorisation (and therefore, its labelling) according to the tonal categories established by O'Connor & Arnold. In some cases, the uses to which tones are put in the scripts are also non- prototypical, e.g. a seemingly level tone used to ask a checking question is perceived as a 'less good' example of question intonation as compared with a rise or a fall-rise.

Data and methodology

Two scripts were used as sources of data. The first one is the screenplay of 'Communication problems' an episode of the TV series *Fawlty Towers* (BBC TV, 1979). The second one is 'Doctor Tobacco', a skit from the TV series *A bit of Fry and Laurie* (BBC TV, 1986).

Four experienced transcribers, teachers of phonetics, were asked to describe the tones phonetically and the meanings they conveyed to them. Samples were chosen because they were felt to differ from the prototypical pitch movements in the contours approach.

A preliminary exploration of the pitch contours of some 'less good' examples was carried out using Praat 5.3.82. The configurations analysis, on which the notion of 'tone' as pitch movement is based, is not always useful for the description of intonation patterns that deviate from what is perceived unequivocally as a falling contour or a rising contour. The nuclear pitch accents found in the data do describe falling and or rising patterns, but they differ from the prototypes in ways which affect their overall shapes and the auditory percept formed by listeners on the basis of such differences. For this reason, the shapes

of the contours found were examined taking into account the following parameters[1], which determine the form of the pitch contour:

a) the temporal realisation or *alignment* of turning points (F0 peaks and F0 troughs) within the syllable; this is known as *F0 timing* or *tonal alignment;*

b) the pitch heights of significant turning points, known as *F0/pitch scaling*.

Analysis

All the samples selected have three features in common: they occur quite frequently in the sceen plays analysed; the endpoint of the nuclear tone contours do not reach the expected pitch height, and there is a narrowness of pitch excursion which conveys a sense of non-finality or some degree of detachment. Three groups of recurrent patterns were identified, and the following samples were chosen as representative of non-prototypicality (capital letters show the location of the nuclear tones).

Group 1: examples assimilable to the falling contour category.

A ||I'm a conman||And you| are a MORon|| Speaker SF (male)

B || No it ISnt|| Speaker JC (male)

C ||It's not big enough to drown a MOUSE|| Speaker MR (female)

Group 2: examples assimilable to the falling-rising contour category.

D ||The leaf | oRIGinally | comes from America, I believe|| It's called tobacco|| Speaker SF (male)

Group 3: examples assimilable to the rising-contour category. Speaker MR (female)

E ||Are you the MANager||

Group 1 Peripheral members of the 'falling contour' category

The prototypical falling tone (pitch accent in AM terms) may begin at a high pitch or at a mid pitch (O'Connor & Arnold's high fall and low fall, respectively). In both cases, the descent reaches the bottom line of the range, i.e. the speaker's baseline, which remains constant for an individual speaker.

[1] These are the defining pitch events in the autosegmental-metrical approach to intonation analysis (Pierrehumbert, 1980, in Ladd, 1996) and the ToBI labelling system.

The nuclear tones in the data usually include a slight descent from high to mid or mid-high, followed by a level terminal. They are characterised by a pitch range which is considerably narrower than the ranges produced by the speaker in other parts of the screenplays analysed, where the speaker produces clear-cut cases of falling tones. The non-prototypical nuclear tones chosen to exemplify 'less good' examples are comparatively flat patterns which do not reach the speaker's baseline. In this study, these patterns were compared to clear cases of prototypical falls produced by the same speaker in other parts of the script.

The transcribers were exposed only the words bearing the non-prototypical nuclear tones to cancel the effects of contextual cues provided by lexis or syntax:

Sample A is an interesting example when analysed with Praat. It occurs immediately after a prototypical fall-rise on YOU, which in turn is preceded by a prototypical falling tone on CONman. This proximity provides a sharp, perceptible contrast between the two types of fall.

(Fig. 1)

Two issues should be noted about the contour on MORon: the F0 remains relatively constant within each syllable, in contrast with the fluctuations within CON and man. The combination of a relatively constant F0 and the duration of each syllable makes the flatness of each part of the contour clearly perceptible.

The transcribers did not have access to the pitch track. They listened to the contour and they described the pitch accent on MORon as falling, but noted that the fall was 'narrow' and that the post-nuclear syllable sounded as if 'dragged' on a sustained low tone, or 'lengthened as a low level pitch'. They described the speaker as sounding 'somewhat detached' or 'as if stating the obvious'.

Another example of a two-syllable word bearing the nuclear tone is Sample B, ISn't in "No, it isn't". One of the transcribers claimed that it was a type of fall but he had the impression that the speaker 'was going to continue talking' i.e., that this type of falling the tone was not utterance-final. However, the tone actually *is* utterance final, which might mean that the listener perceived that the tone does not reach speaker SF's baseline. Another listener classified it as a fall from high to mid. Again, this suggests that the listener was able to ascertain somehow that the second syllable in ISn't was not as low as it could have been in a prototypical fall. All four transcribers felt that, although the first syllable is higher in pitch than the second one, what they heard was not a prototypical fall, as the speaker did not reach his baseline. Interestingly, none of the listeners had had

any exposure to other parts of the screenplay where they could have established where that baseline might be. The question is why or how they felt that the contour did not reach the speaker's potential baseline (Fig. 2).

This impression may have been based on acoustic correlates. There are two mutually exclusive views of pitch height in the AM approach to intonation: the initialisation view and the normalisation view. While the former proposes that listener ascertain pitch height on the basis of the F0 in previous syllables, especially at the beginning of each IP, the normalising view holds that listeners perceive pitch height on the basis of the speaker's pitch range.

There is strong support for the hypothesis that listeners are able to locate an F0 reliably within a range without external context or prior exposure to a speaker's voice. (Bishop & Keating, 2012).

If this is true, it would explain what we can decide whether a pitch accent reaches a given speaker's baseline without the context of previous accents. This calculation of the pitch range is advocated by authors who favour the normalising view of pitch height (Ladd, 1996:xxx)

F0 scaling and variation are important because their placement and distribution have an influence in the listener's perception of the nuclear tone and how close or distant it is from the prototype. However, the ultimate goal is to provide a tonetic mark which, although not entirely faithful to the phonetic shape of the contour, will describe salient features which make the tone non-prototypical. A possible mark for samples A and B might be a raised falling contour from H to M which then levels off:

This tone seems to be the result of a compromise between some of the meanings of the fall and those of the fall-rise. If speaker JC had used a fall, he would have sounded definite, as if attempting to preclude any kind of retort by the listener. A prototypical fall-rise, with a perceptible terminal rise might have sounded like a mild correction, which speaker JC certainly does not want to express. The most suitable categorisation for the tones on MORon and ISnt in the sample is that of a stylised version half-way between a fall and a fall-rise. Stylisation involves the use of a sequence of static level tones rather than glides (Ladd, 1978:520 in Cruttenden1997:119), either in the form of 'a sequence of pitches corresponding to the two ends of the related gliding tone or else a simple level corresponding only to the end pitch of the related gliding tone' (Cruttenden, op. cit.) The

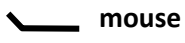
first refers to the ‘calling contour’, a well-known example of stylised intonation (represented by a raise equal sign =) consisting of a sequence of two pitch levels separated by an interval equivalent to a minor third, which conveys ‘implication that the message is in some sense predictable, part of a stereotyped exchange or announcement”, “nothing that you couldn’t have anticipated’ (Cruttenden, op. cit.), or present in ‘stereotyped, conventional almost ritual behaviour’ and also in children’s ‘jeering chants’ (Hirst, 1998:72).

The latter gloss is applicable to the context of the interaction from which the sample was taken. Miss Richards, a bad-tempered elderly woman, keeps complaining about the hotel room she has just been assigned. She refuses to turn on her hearing aid to save on battery power, insists that the device works perfectly all right; the hotel owner replies ‘No, it isn’t’ tauntingly, as it is quite clear that she is hard of hearing: she has been asking for repetition of almost everything she has been told so far. However, the starting point and endpoint in the sample tone are separated by an interval much wider than a minor third.

In his taxonomy of English tones, Windsor Lewis (1997) includes the *drop*, a falling tone which he describes as starting high and ending mid. The tone mark he proposes for this tone is Windsor Lewis acknowledges, without mentioning it, the role of F0 scaling in the expression of paralinguistic meaning: “the stronger the emotion a speaker is expressing the more likely are the tones employed to be of wide movement. The Drop type has the animation of the Fall but cuts off short of signalling finality”. He claims that occurrences of falls from H to M are frequent to the point that it could be categorised as a basic tone, although “the pedagogical literature contains little recognition of it.”

Sample C, MOUSE in “It’s not big enough to drown a mouse”, was also perceived as conveying ‘less involvement’ and ‘stating the obvious’. One of the transcribers reported hearing a ‘low level tone’, but since in OCA there is no such tone, he would mark it as a low fall. The other transcribers agreed on the low fall as a tone mark, but only for want of a mark showing that the tone tapers off on a lower pitch rather than drop at a constant rate. This lower pitch does not seem to be the speaker’s baseline low, as far as shown by a comparison with other final, categorical falls produced elsewhere in the data by this speaker (Fig. 3).

A possible ad-hoc tonetic mark for this contour might be**:**



From the point of view of meaning, this level contour could be regarded as a stylised falling tone, a simple level corresponding only to the end pitch of the related gliding tone. It can be considered that the speaker chooses not to use a prototypical baseline-falling tone in order to convey a degree of detachment and present the information as something quite obvious to both participants while at the same time she exploits the meaning 'finality'.

Group 2: Peripheral examples of the category 'falling-rising contour'

All the examples in this group are characterised by the presence of a contour which falls from a relatively high pitch to a low pitch short of the baseline, followed by a flattened end with very little variation in pitch (Fig. 5)

The word oRIGinally (pronounced | əˈrɪdʒəni | by speaker SF) is located in an utterance-medial IP. The sample was extracted from the original utterance and the transcribers were asked to listen to it. Although all four said they would mark the tone as a fall-rise from the point of view of its function, they all agreed that they could not hear a terminal rise on the word. None of them felt the tone belonged in the falling category.

An examination of the contour, both as part of the utterance and in isolation, shows that indeed, there is no terminal rise. On the basis of the contour shape alone, it would seem that the tone is a fall, not a fall-rise. However, there are two phonetic factors which may be responsible for the perception of the tone as a 'fall-rise with no rise at the end' but clearly 'not a fall'. One has to do with voice quality: the listeners may have calculated that the pitch of the endpoint was not the speaker's low (which tends to be accompanied by creaky voice). The second factor may play a role even more important in the perception of this tone as a peripheral example of a fall-rise: the significant issue is the lack of a continuous rate of decrease in F0 through the nuclear and post nuclear syllables as evidence that this is a non-falling tone. The graph shows that the falling trend after the peak suddenly decreases late in the syllable, and continues with a slower decrease rate, which was perceived as level pitch.

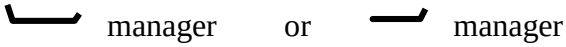
The absence of a terminal rise might originate to *compression* (Gussenhoven 2004:88), the reduction of the excursion size or pitch span caused by the proximity of the accented syllable on COMES in 'comes from America'. A possible tone mark for this tone is:

Group 3: Peripheral examples of the 'rising contour' category

This example (Fig. 6) was labelled as a high level tone by three listeners, although they all heard a narrow fall on the nuclear syllable, with the post-nuclear syllables slightly lower. Two of the listeners claimed to have hear a very slight higher pitch on the last syllable, only after listening to the sample several times. One listener thought the tone was a fall-rise with a very narrow pitch span and a high register.

As can be seen in the F0 track, the amount of variation within each syllable and across all three is relatively small. The nucleus on *manager* has a F0 minimum which occurs late within the nuclear syllable. Perceptually speaking, this late tonal alignment is responsible for the perception of the pitch change as a slight fall on the nuclear syllable. This descent, reaches approximately the middle of the speaker's range, and then there is a slight obtrusion late within the first post-nuclear syllable, followed by a very slight increase of mean F0 on the last syllable. The contour could be categorised as peripheral example of a rise. The rise fits a context where the speakers (older lady, customer, has already paid, recipient of service asking manager, provider of service) claims *dominance* (Brazil, 1997).

This tone differs from the prototypical high rise in the endpoint does not reach the speaker's potential top line. It may be the case that this tone is a stylised version of the high rise, as claimed by Ladd (1978). The nuclear tone could be marked:



Conclusions

When transcribing authentic material, two options are available, depending on how fine grained the transcription aims to be. *Assimilation* treats a non-prototypical tone as a member of the nearest tonal category, the usual procedure in transcriptions. *Specification* treats the non-prototypical tone as a member of a separate (but related in meaning) category (i.e. an allotone), following a given criterion (pitch range, to baseline vs not to baseline). It should be transcribed with an ad-hoc tone mark.

The tendency towards narrow contours, or the speaker's avoidance of extreme turning points, could be interpreted as a type of contour stylisation. It may be that speakers employ stylisation as a tool to convey varying degrees of involvement/detachment in the context of interaction. This would mean that the degree of engagement is not a categorical property only shown by the speaker's choice of orientation, as posited by Brazil (1997), but rather a scalar feature which may become manifest in the phonetic realisation of tones.

REFERENCES

BBC TV, 'Communication problems', in Fawlty Towers [TV series]. Rel. 19-2- 1979. Retrieved from https://www.youtube.com/watch?v=tcliR8kAbzcas 'A room with a view'15-6-2014.

BBC TV, 'Doctor Tobacco', in A bit of Fry and Laurie. [TV comedy]. Rel. 27-6-1986. Retrieved from https://www.youtube.com/watch?v=AH9_KhvtFYM 15-6-2014.

Bishop & **Keating** 2012: 'Perception of pitch location within a speaker's range'. Acoustical Society of America 132 (2): 1100-1112

Brazil, D. 1997: *The communicative Value of Intonation in English*. Cambridge: Cambridge University Press.

Cruttenden, A. 1997: *Intonation*. Cambridge: Cambridge University Press.

Geeraerts. D. 1989: 'Prospects and problems of prototype theory'. Linguistics 27(4): 587–612.

Gussenhoven, C. 2004: *The Phonology of Tone and Intonation*. Cambridge: Cambridge University Press.

Hirst, D. 1998: 'Intonation in British English'. In Hirst, D. & A. Di Cristo (1998) (Eds.) *Intonation Systems. A Survey of Twenty Languages*. Cambridge: Cambridge University Press.

Ladd, R. 1996: *Intonational Phonology*. Cambridge: Cambridge University Press.

O'Connor, J.D. & G.F. **Arnold** 1972: *Intonation of Colloquial English*. London: Longman

Boersma, P. & D. **Weenink** 2014: Praat: doing phonetics by computer [Computer program]. Version 5.3.82, retrieved 26 July 2014 from http://www.praat.org/

Windsor Lewis, J. 1997: *People Speaking: Phonetic Readings in Current English*. London: Oxford University Press.