UDC 811.111'342.8(076.5)

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EXAMINING INTONATION

1. INTRODUCTION

How can students' practical skills in identifying intonation patterns best be assessed?

In many universities in Britain, and perhaps elsewhere, the practical oral examination in phonetics includes an intonation test. It goes as follows. A short written sentence is put before the candidate. The first task is for the candidate to say the sentence aloud and then to describe the intonation pattern used. After that the examiner says the same sentence with a different pattern, and the candidate's second task is to describe the pattern the examiner used.

In this paper I report on this component in a practical phonetics oral exam conducted at UCL in summer 2006, as part of the first-year BSc programme in Speech Sciences. This was a face-to-face oral examination conducted separately for each candidate, with three people in the room: two examiners and the candidate. At least one of the examiners was not known to the candidate.

The test sentences set for the oral exam were the following. Each candidate was tested on just one of them, chosen by the examiner.

1. He's going to donate it to charity.
2. Allow him to say what he's thinking.
3. It has to include all the details.
4. Remind him to send us a postcard.
5. Consider the cost of the parking.
6. I ought to invite all the others.
7. Remember to post all those letters.
8. They wouldn't allow us to answer.

The procedure was that the examiner showed the candidate the sentence, which was written on a piece of paper. The candidate was first instructed to "say the sentence in any way you choose, and then describe the intonation pattern you have used". When the candidate had uttered the sentence, the examiner would usually ask him/her to repeat it, to fix the pattern in the candidate's mind (and perhaps in the examiner's, too).

In order to be fair to all candidates, the sentences are all of the same length, in each case with three words likely to be accented.

A candidate given the first sentence might say it aloud as

He's 'going to do°nate it to \char ity.

—and correctly describe the pattern used by saying 'I used one intonation phrase, I put the nucleus on the first syllable of *charity*, and the tone was a fall. The onset accent was on the first syllable of *going*'.

Depending on the level of detail required by the examiners, the candidate might also need to go on to say 'The nuclear fall was a high fall, the prehead *He's* was low, there was an onset accent on the first syllable of *going* with a high level head extending from *going* to the second *to*. There was a further rhythmic stress on the second syllable of *donate*'.

The examiner would then say aloud a different version, for example

¯He's ˎgoing to do\nate it to ˳charity.

—which the candidate would correctly describe by saying 'There was one IP, still with a falling nuclear tone, but the nucleus was now on the second syllable of *donate*. The onset accent was still on the first syllable of *going*.'

Depending on the level of detail required, the candidate might also need to say 'There was a high prehead on *He's*, and a rising head comprising the words *going to* and the first syllable of *donate*, and there was a rhythmic stress on the first syllable of *charity*'.

Other plausible ways of saying this sentence that might well be produced by either the candidate or the examiner include the following.

He's 'going to do°nate it to /\char ity.
He's 'going to do°nate it to ˎchar ity.
He's 'going to do°nate it to ˊchar ity?
He's \going to do\/nate it to ˳charity.
He's \/going to do˳nate it to ˳charity.
He's \going to do˳nate it to ˳charity.
\/He's going to do˳nate it to ˳charity?
He's \going to do\/nate it | to \char ity.

In what follows, the following intonation marks are used:

- nuclear tones \xx high fall, ˎxx low fall, ˎxx low rise, ˊxx high rise, \/xx fall-rise, /\xx rise-fall, ˃xx mid-level

- head accents ˈhigh (level), ˧˥(high) falling, ˌlow (level), ˨˩(low) rising
- rhythmic stress ˚
- intonation break |

Details of the patterns implied by these marks are given in Wells, 2006. They are a modification and simplification of the system used by O'Connor and Arnold, 1973.

In the theoretical model assumed in this article, the *unmarked* intonation pattern (= the neutral pattern, the default pattern) for a test sentence is assumed to be for it to be uttered:

- as a single intonation phrase
- with the nucleus on the stressed syllable of the last lexical item (which in the test sentences is the same as the last word)
- and with a falling tone.

Any other pattern is treated as *marked*.

2. SCORING

In Table 1 we present the patterns produced by 19 candidates and their examiners in one practical examination session, as noted down by the author, who was one of two examiners involved. All participants, both candidates and examiners, are believed to be native speakers of English. The candidate's score for each intonation pattern is the mark out of 5 (5 = best, 0 = worst) as agreed by the two examiners after the candidate had left the room. Typically the examiners would award one mark for the correct description of the location of the nucleus, one for the correct description of the nuclear tone, one for the correct description of the head pattern, one for the correct description of the pitch of the prehead and tail, and one for correct description of the rhythmic stresses. Half-marks were used, but no other fractional marks. The maximum score is 5 for the candidate's own production, plus 5 for the examiner's production, making a maximum total of 10. This constituted one fifth of the total score for practical phonetic performance. The scores for it were aggregated with those for various other kinds of practical test (dictation, ear-training, performance, recognition). The pass mark for the module overall was 40%, with 70% required for a first class.

speaker	pattern used	marked*			candidate's score
		|	_	\	
cand. 1	He's \going to do \/nate it | to \charity.	x			3
examiner	¯He's /going to do°nate it to \charity.				3
cand. 2	He's going to do\nate it | to \charity.	x			3
examiner	He's \going to do°nate it to \/charity.				2
cand. 3	Al'low him to °say what he's \thinking.				1
examiner	¯Al/low him to \say what he's °thinking.				1½
cand. 4	Al'low him to °say what he's \thinking.				1½
examiner	Al\low him to °say what he's \/thinking.				1
cand. 5	It \has to in°clude all the \/details.			x	1½
examiner	¯It /has to in\clude all the °details.				2
cand. 6	It 'has to include \all the °details.		x		5
examiner	It \has to in°clude all the \/details.				5
cand. 7	Remind /her | to send \/us | a \postcard.	x			0
examiner	Re\mind her to \/send us a °postcard.				5
cand. 8	Re\mind her to °send us a \/postcard.			x	3
examiner	Re'mind her to \send us a °postcard.				4
cand. 9	Con°sider the /cost of the \parking.				4
examiner	Con'sider the /cost of the °parking.				5
cand. 10	¯Con°sider the /cost of the \parking.				2
examiner	Con'sider the /\cost of the °parking.				2½

cand. 11	I 'ought to in˚vite all the \others.				3
examiner	¯I /ought to in˚vite \all the ˚others.				3
cand. 12	I \ought to in\/vite all the ˚others.			x	2
examiner	I \ought to in˚vite all the ˚others.				1
cand. 13	Remember to >post | all those \letters.	x			3
examiner	Re\member to ˚post all \/those letters.				3
cand. 14	Re'member to post \/all those ˚letters.		x	x	3½
examiner	¯Re/member to ˚post all those \letters.				4
cand. 15	They \/wouldn't al˚low us | to \answer.		x	x	1½
examiner	They \wouldn't al\/low us to ˚answer.				2
cand. 16	They \wouldn't al\/low us | to \answer.	x			2
examiner	They 'wouldn't al\low us to ˚answer.				1
cand. 17	He's 'going to donate it to /charity.			x	3
examiner	¯He's /going to do\nate it to ˚charity.				4
cand. 18	He's 'going to do/nate it | to \charity.	x			2
examiner	He's /\going to do˚nate it to ˚charity.				½
cand. 19	Al'low /him | to 'say what he's \thinking.	x			2
examiner	Al/low him to \say what he's ˚thinking.				3
	Mean score for student's own version				2.42
	Mean score for examiner's version				2.76
	Mean score overall				2.59

Table 1. Candidate's and examiner's intonation patterns, and candidate's score for identifying them. The columns headed 'marked' show those cases where a candidate used marked tonality (|), tonicity (_), or tone (\).

3. STUDENTS' PERFORMANCE

Looking just at the practical intonation scores, we see that the students had very mixed success. Just one of them (candidate 6) had a perfect score of 10, and one other (candidate 9, with a score of 9) nearly so. These were the only two of the nineteen candidates who can be said to have shown a thorough understanding of the 'anatomy' of English intonation and an ability to analyse intonation patterns correctly under stressful examination conditions.

The average practical intonation score for all nineteen candidates was 52% (5.2 out of 10), with scores ranging from a low of 25% to a high of 100%. By the criterion of the overall requirements, seven candidates failed (scoring under 40%) and twelve passed, of whom five achieved first-class results (70% or over).

As the outcome of a mere forty hours teaching covering the entire practical phonetics module, the students' achievement is reasonable. Those who can immediately hear the difference between a high pitch and a low pitch, a rising pitch and a falling pitch, a rhythmic beat and no rhythmic beat, do well. (It is obvious that singers and those with a musical bent typically fall into this category.) Some of those who cannot hear these differences at the start of the course learn to do so by the end. Some who could in principle hear the differences fail to apply themselves to their studies to the extent that they cannot perform the analysis when asked, or are so nervous when facing the examiners that they get confused. Others again, despite diligent efforts, seem to remain tone-deaf to such matters and thus destined to fail no matter how much they try.

4. CANDIDATES' CHOICE OF INTONATION PATTERN

As stated above, the students had a free choice of the intonation pattern they used for their own version of the test sentence. Some chose the simple unmarked pattern: a single intonation phrase, with the nucleus in the usual place, bearing the usual tone for the sentence type involved. Others chose to deviate from this in one or more respects: by breaking the material up into more than one IP, by locating the nucleus elsewhere than on the last word, or by selecting a rise or fall-rise tone, or by some combination of these. Did this influence their success in describing what they had done?

(i) Tonality (chunking). A speaker has considerable freedom to vary the number of intonation phrases (IPs, also known as word groups, tone units etc.) into which the material is divided. Each such group represents a chunk of information. In general, the slower and more hesitant the speech, the more chunks will be used. The default is considered to be one chunk (one IP) per clause. Each of the test sentences consisted of a single clause; none of them needed to be divided into two or more IPs. Nevertheless, it can be seen from the data in Table 1 above that eight of the 19 candidates chose to break the

material up in this way (recognizable by the presence of the break symbol "|" somewhere in the markup). Only one of them recognized that she had done so, and this recognition was after prompting. Not surprisingly, these candidates scored relatively poorly, with scores ranging from zero to 3, with a mean of only 2.06. In contrast, those who used a single IP achieved scores ranging from 1 to 5, with a mean of 2.68 (Table 2).

	score on own production (max. 5)	
	range	mean
examinees producing two or more IPs	0 - 3	2.06
examinees producing a single IP	1 - 5	2.68

Table 2. Scores on own production, by single/multiple IP used

The examiner's version of the test sentence always consisted of a single IP. Examiners would not introduce the complication of using multiple IPs unless perhaps to stretch an exceptional and clearly highly competent candidate.

The use of marked tonality means inevitably that there is more to describe: not only the location of the intonation break(s), but two or more places of the nucleus, two or more nuclear tones, etc. But there are no extra marks available to bump up the score of a candidate who might succeed in describing such extra detail (which none did).

(ii) Tonicity. In natural conversation, the nucleus is most likely to go at the end of the intonation phrase — more precisely, on the stressed syllable of the last lexical item. This unmarked tonicity is what is used if the speaker places the material in broad focus, as if in answer to the question "What happened?".

Thus our first example could be an answer to "What's he going to do?":

A. 'What's he ˚going to \do?
B. He's 'going to do˚nate it to \charity.

Any other nucleus placement is 'marked'. It involves the deaccenting of one or more items towards the end of the utterance. It probably signals contrastive focus or some other kind of narrow focus. The deaccenting of the material following the lexical item bearing the nucleus puts it out of focus, e.g. because it is 'given' (repeated or already known).

A. So 'how does this re˚late to \charity?
B. ¯He's ˛going to do\nate it to ˛charity.

With freedom to produce any pattern they chose, how many of the candidates chose to use marked nucleus placement? Inspection of the data shows that only three did so, namely candidates 6, 14 and 15. Candidate 15 was a special case, since she used two IPs, with marked tonicity only in the first (by deaccenting the item 'allow'). Their average score on their own production was 3.3, but they include the one candidate whose score was perfect. Clearly there is insufficient data to relate tonicity choice to score.

Examinees were not required to say anything about the meaning of particular intonation patterns, nor to contextualize them (suggest a context in which the pattern might be used). Nevertheless, native speakers are likely to have some awareness of the possibilities associated with each pattern, and may be able to use this to help them identify the intonation pattern they have chosen or that the examiner chooses. It is surmised that this is likely to apply particularly in the identification of marked tonicity.

(iii) Tone. The unmarked tone for most sentence-types is considered to be a fall: certainly so for statements, which is what the test sentences were. (For yes-no questions, on the other hand, and for various kinds of subordinate element, a rise or fall-rise is the unmarked tone.)

Inspection of the data in Table 1 shows that six of the candidates chose a marked tone. Candidates 5, 8, 12, and 14 used a fall-rise, as did candidate 15 in her first IP. Candidate 17 used a rise. The average score for these candidate's own production was 2.4, exactly in line with the score achieved by the candidates who chose an unmarked tone.

5. ADVICE TO EXAMINEES

What advice can be given to candidates facing a test of this kind? The best advice seems to be to keep things simple and natural. Candidates sometimes seem to enter the examination room determined to use a particular predetermined intonation pattern. If the wording of the sentence is not suitable for that pattern, they are unlikely to be able to stick to their plan, and may be thrown into confusion by the conflict between their original intention and their implicit awareness of the pragmatic possibilities of the sentence they are required to work with. The other big danger facing candidates is marked tonality: that of inadvertently breaking the material into several intonation phrases and failing to recognize this fact. There is nothing wrong with using more than one IP, but the pattern for each must then be properly described.

It is safer for the candidate to avoid theatrical, animated renditions of the test sentence (which are likely to have a complicated intonation pattern), and opt rather for an unemphatic, throwaway version — the unmarked pattern, in fact.

Other general points that candidates would do well to remember are that the head always starts with an accented syllable (the onset); the onset accent is easily mistaken for the nucleus; words are often split between the prehead and the head, or between the head and the nucleus; so in describing

the location of the nucleus or the onset the candidate may have to refer to "the second syllable of the word" and so on as necessary; in order to produce a plausible pattern involving a nucleus in the early part of the IP, the candidate will have to imagine an appropriate scenario (i.e. one in which the content of the later part of the IP is already 'given'). Candidates who fail to perform this mental feat will probably utter an intonation break and then a second nucleus in another IP. This is fine, but only for those who can recognize what they are doing. And the candidates investigated here were typically unable to do so.

REFERENCES

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SUMMARY

EXAMINING INTONATION

In this article Professor John Wells provides a first-hand, examiner's experience on how well native speakers of English score in an intonation test which is a part of the practical oral examination in phonetics at the University College London, as in many universities in Britain. The examinees' performance in the test is discussed in relation to their implementation of the tonality, tonicity and tone in the test sentence. Animated renditions of the test sentence are best avoided and examinees are advised to choose an unmarked intonation pattern in any particular case. The analysis of the examinees' scores has shown that the safest way to score well in an intonation test is to keep things simple and natural, as intonation in a real language functions this way.

KEYWORDS: intonation, examination, tonicity, English, nucleus.

BRIEF CV

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Born 11 March 1939; Fellow of the British Academy 1996; Professor of Phonetics (personal chair from 1988; established chair from 1989), University College London; Education: St John's School, Leatherhead; Trinity College Cambridge (BA Classical Tripos 1960; MA 1964); University College London (MA 1962 General Linguistics and Phonetics; PhD 1971 General Linguistics); Assistant Lecturer in Phonetics, UCL 1962-65, Lecturer 1965-82, Reader 1982-88, Head of Department of Phonetics and Linguistics 1990-2000. Member, Council of the International Phonetic Association 1970- (Secretary 1973-86; Editor, Journal of the International Phonetic Association 1971-87); Member, Council of the Philological Society 1989-1995. Member, Academy of Esperanto 1971-. President, World Esperanto Association 1989-95. President, British

Association of Academic Phoneticians, 1994-2006 . President, International Phonetic Association, 2003-. President, Simplified Spelling Society, 2003- . Professor Wells' interests centre on the phonetic and phonological description of languages but also extend to lexicography and language teaching. He directs UCL's annual Summer Course in English Phonetics. He is a frequent contributor to BBC radio (R2, R4, R5, BBC English). He has also published in and on Welsh and Esperanto. Based in Britain at UCL throughout his career, he has over the years given invited lectures in over forty countries around the world. Major publications: *English Intonation: an introduction* 2006; *Longman Pronunciation Dictionary* 1990, 2000; *Accents of English* (three volumes and cassette) 1982; *Lingvistikaj Aspektoj de Esperanto*, 1978, 1989; *Jamaican Pronunciation in London*, 1973; (with G. Colson) *Practical Phonetics* 1971; *Concise Esperanto and English Dictionary*, 1969. Dozens of articles, book chapters, encyclopedia articles in journals, congress proceedings and other collective publications.

LANGUAGES:

- English (native)
- Esperanto (excellent)
- French (good reading, fair spoken)
- German (fair reading, good spoken)
- Welsh (good reading, good spoken)
- Spanish (fair reading, elementary spoken)
- Italian (fair reading, elementary spoken)
- Modern Greek (fair reading, elementary spoken)
- Latin (to degree level)
- Classical Greek (to degree level)
- plus smatterings of Polish, Russian, Swedish, Danish, Norwegian, Japanese...

Professor Wells maintains an excellent website (www.phon.ucl.ac.uk/home/wells) providing much useful information on English and general phonetics, from which his personal data is extracted.