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English Intonation in the British Isles

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Abstract

Large-scale research projects such as the Survey of English Dialects, together with studies of individual dialects, have yielded a great deal of information on how the dialects of the British Isles differ from one another on the segmental phonetic level. Although it is recognised that intonation is also important in characterising dialectal diversity, there have been no parallel systematic cross-dialect studies. One reason for this is the lack of a consensus on how to represent intonation patterns. No system which is comparable to the IPA in segmental phonetics is available for transcription. This paper discusses a new project funded by the ESRC, which will examine the intonational diversity in the British Isles. The main aim of the project is to develop a database of recordings from seven dialects of British English. This database will be available on CD-ROM, and will contain speech data, as well as files containing orthographic transcripts. Intonational transcriptions will also be provided, using a new transcription system for intonation, specifically developed with comparative intonation analysis in mind.

The findings of the project will therefore provide the first comparative description of intonational diversity in the British Isles and provide other researchers with a new methodology for further investigation. At the time of writing, work is in its early stages. This paper therefore concentrates on the methodology developed for the project.

1. Introduction

Large-scale research projects such as the Survey of English Dialects have yielded a great deal of information on how the dialects of the British Isles differ from one another on the segmental phonetic level. Although it is recognised that intonation is

also important in characterising dialectal diversity, there have been no parallel systematic **cross**-dialect studies.

For example, one of the most well-known studies of dialectal diversity in English, John Wells' *Accents of English*, concentrates primarily on segmental features of different dialects. Wells acknowledges that intonation is important in distinguishing dialects, but notes that 'our ignorance in this area is still very great' (1982: 91). It is the lack of any large body of work on intonation differences which precludes Wells from making any more detailed comments in his subsequent descriptions of individual dialects.

This is not to say that no work has been done on the intonation of different dialects of British English. Work by Pellowe and Jones (1978) and by Local (1986) has given some detail on intonation in Tyneside English for example. Cruttenden and Coward (1997) have looked at intonation patterns in Mancunian English, and recent work by Lowry (1997) focuses on the use of different patterns in Belfast English.

However, such studies have concentrated on particular dialects, and any comparisons that are drawn therein tend to be comparisons between those dialects and RP. A systematic cross-dialect study concentrating on intonation is still lacking.¹ Nor would it be easy to make comparisons between say Tyneside English and Mancunian, on the basis of work already done, since the studies I have mentioned used completely different approaches, employing different transcription methods for their data, and different methods and materials to elicit that data in the first place. Therefore, although their findings are interesting, and perhaps indicate areas of interest for us to look at, they do not facilitate comparative work, and we are still no closer to being able to describe the prosodic differences between dialects of British English.

In this paper I discuss a project which is designed to help fill this gap. I intend to concentrate here on the methodology that has been designed for the project, since it is clearly differences in methodology that go at least some of the way to explaining why existing studies do not allow interdialectal comparison. I hope to show how approaches to the study of intonation often demand a different methodological approach to those with which dialectologists may be more familiar, and how methodology and materials have been designed with these concerns in mind.

2. Methodology

The project is called *English Intonation in the British Isles*. It is ESRC funded for three years and began in October 1997.² Data will be collected from seven different

dialects of British English, and made available to other researchers on CD-ROM. The dialects in the corpus are General Southern British,³ Leeds, Belfast, Dublin, Newcastle, London Jamaican English, and London Gujarati English.⁴ On the CD-ROM, data will be labelled for intonation patterns, using a transcription system developed for the project (see Section 4).

Much of the work on the project so far has involved the development of a suitable methodology for the recordings. As I have already stressed, the aim of the project is to provide comparable data from the different dialects in order to facilitate the kind of comparative work that has so far largely been lacking in this field. In order to do this, the approach and materials have to be consistent across the different dialects. It is also the case that the focus on intonation patterns in particular presents certain difficulties that must be taken into account in the planning of the data collection.

Firstly the choice of which dialects to focus on has been made according to several different criteria. All of the recordings will be made in more or less urban areas. Since early diachronic dialectology necessarily focused on rural areas and traditional dialects, such study tended to ignore varieties spoken by the majority of the population who live in towns and cities. This is particularly true of a heavily urbanised country like England, for example, where some 90% of the population are urban dwellers.

Some of the dialects chosen have been selected because other work on them has indicated that there are interesting features of intonation there, which seem to contrast with patterns found elsewhere, even if no direct comparison has been possible thus far to test this. There are many comments in the literature about the tendency in northern urban areas to use rises in simple statements, for example, where in General Southern British (henceforth GSB) a fall would be expected. Cruttenden, for example, cites these rises as a feature of Urban Northern British, and prevalent therefore in cities such as Belfast, Tyneside, Glasgow, Birmingham and Liverpool (Cruttenden 1997: 133). Several different types of rise are found. In Glasgow, for example, there is a simple rising glide on the final pitch accent, as shown in Figure 1 for the sentence *Peter is here* (the capital letters show the location of the pitch accent).

*Glasgow:
rising glide*

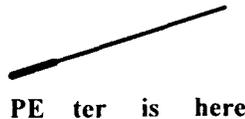


Figure 1

Data from Belfast English shows a different pattern however. Here there is a rise on the following unaccented syllable, and the maintenance of this pitch level on succeeding unaccented syllables (see, for example, Lowry 1997). This pattern is shown in Figure 2. The pattern is therefore usually described as a rise-plateau. Interestingly it is the mirror image of the default pattern on statements in RP, as can be seen in Figure 3. Cruttenden reports that the rise-plateau pattern is also characteristic of Tyneside speech (1997: 133).

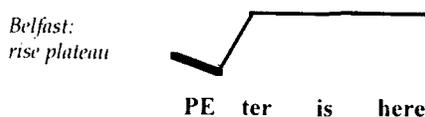


Figure 2

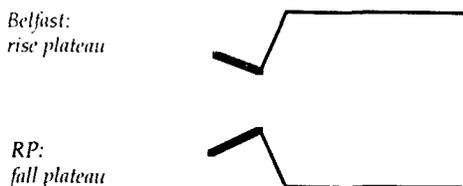


Figure 3

Belfast and Newcastle have therefore been chosen to form part of the new corpus. Using the data recorded, the patterns in these dialects will be described, and a close comparison of the rise patterns used in different dialects will be possible. One aim of the analysis will be to see whether the rise patterns found in the different dialects do indeed represent the same phenomenon.

3. *Materials for Data Collection*

A number of considerations have also been necessary in the development of materials. Firstly, a large number of possible intonation patterns needs to be represented in the data. There is no sense in having data that consists of statement patterns alone for example.

The recordings take the form of a structured interview in five stages. The first three are individual tasks.

3.1 Sentences

The subject is first required to read a series of sentences. Included are various types of questions for example, such as Wh-questions, questions marked by inversion, and questions without morphosyntactic markers. Also included of course are simple statements:

EXAMPLES: <i>Wh-Question</i>	Where is the manual?
<i>Inversion Question</i>	May I leave the meal early?
<i>Unmarked Question</i>	You remembered the lilies?
<i>Simple Statement</i>	We live in Ealing.

Additionally, we have a set of sentences which tests for phonetic differences in the realisation of particular patterns. Data from Swedish has shown that different dialects of Swedish differ in what happens when a particular pitch movement is produced on a word which is very short. On very short words, some Swedish dialects compress pitch movements – when there is little time for a particular movement, the movement is speeded up so it can be finished anyway. This is known as *compression* and is shown in Figure 4.

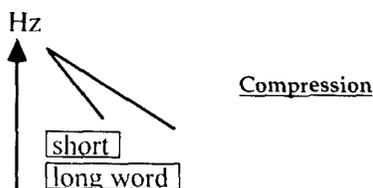


Figure 4

In other Swedish dialects, we find a different solution to this problem – when there is little time, the movement is simply not completed. This is referred to as *truncation*, as shown in Figure 5.

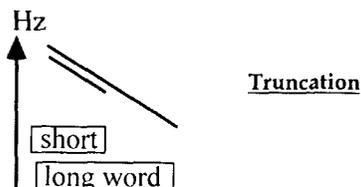


Figure 5

So far, nobody has tested whether similar effects are found in different dialects of English. Sections such as the following have therefore been included in the materials to test for this:

Anna and Peter were having dinner. Peter said: "Who do you think I met in the market today, Anna?"
"Mr. Sheaffer!" she replied.
"Mr. Sheaf!" she replied.
"Mr. Shift! " she replied.

Subjects read the first paragraph setting the scene, and then each of the possible replies in turn. A falling contour is expected on the surname, and the amount of material on which this fall can occur is varied. In the first example there are two syllables, in the second only one syllable with a long vowel, and in the third one syllable with a short vowel.

3.2 *Reading Passage*

The second individual task is to read a story. This is a version of the Cinderella story, an extract of which is given below:

Once upon a time there was a girl called Cinderella. But everyone called her Cinders. Cinders lived with her mother and two stepsisters called Lily and Rosa. Lily and Rosa were very unfriendly and they were lazy girls. They spent all their time buying new clothes and going to parties. Poor Cinders had to wear all their old hand-me-downs! And she had to do the cleaning!

A reading passage is a good starting point for intonation analysis, because the boundaries of intonation phrases can be determined with a higher degree of certainty than in spontaneous speech for example. Using a passage which is normally read to children is useful because such speech is often produced relatively slowly, and with an extended pitch range. This helps when it comes to identifying the inventory of intonational patterns in a particular dialect.

In the design of the passage and other materials, consideration has also been given to the type of patterns we **expect** to find in the different dialects, and the

materials have been designed to give scope for these. One such case concerns the possible deaccenting of old or given material. In GSB when a repeated item functions as old or given information, it does not generally receive a pitch accent when mentioned for the second time. This can be seen in the following example:

General Southern British:

I went to the shop to buy MARS BARS, but they'd totally run OUT of Mars Bars.

In GSB, the second use of *Mars Bars* does not receive a pitch accent, and the final pitch accent occurs earlier in the intonational phrase, here on *out* (shown by the use of capitals). Deaccenting is obligatory in GSB in this context, and appears to be so for most dialects of British English (Cruttenden, forthcoming). However, some varieties do not deaccent old information. One example is Singapore English, as recent work by Low (1998) has shown. Deaccenting in this context is also reported to be absent in Caribbean varieties of English. Therefore for speakers of Singapore English or Caribbean English, in the same example, the second mention of *Mars Bars* would receive a pitch accent:

Caribbean English:

I went to the shop to buy MARS BARS, but they'd totally run out of MARS BARS.

London West Indian varieties of English are heavily influenced by Caribbean English, and therefore we will be looking to see whether such failure to deaccent is evident in the data from London Jamaican English. In order to test this, sentences such as the following are included in the passage:

They were in a bad mood. They'd wanted to buy some new gowns, but their mother said that they had enough gowns.

3.3 *Retold Story*

The third individual task is the retold story: subjects have to retell the Cinderella story using only a series of pictures as a reminder. Since speakers are no longer simply reading aloud, a more spontaneous form of speech is to be expected here. The

need to concentrate on the task in hand also means that they are likely to be paying less attention to their speech.

3.4 Paired Subject Tasks

3.4.1 Map Task

The first task to be completed by subjects in pairs is a map task. In this, subjects are each given a map. One subject has a map as shown in Figure 6, with a route marked. The other has no such route marked. The speaker with the route must describe this route, such that the other speaker can draw it on to their map. This is an interactive task, and to ensure that it does not consist simply of a monologue from the speaker describing the route, there are several differences between the two maps. For example, whereas one speaker has a location named *John's Arms*, the other has *Ann's Arms*. When this point on the route is reached, the difference should motivate discussion. The maps are also designed with the elicitation of different prosodic phenomena in mind. For example, this particular feature of the map may elicit contrastive stress patterns, e.g. "I haven't got ANN'S Arms, I've got JOHN'S Arms".

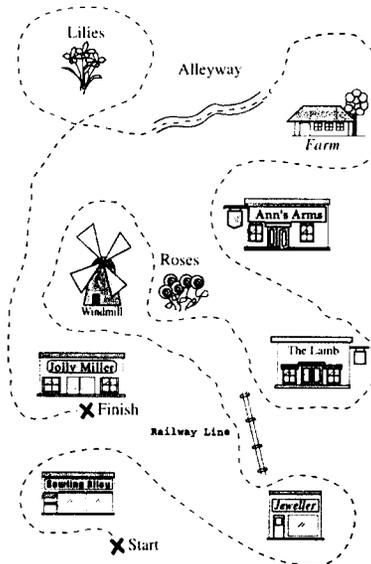


Figure 6: Example of a map used in map task

3.4.2 Free Conversation

Finally, in order to elicit spontaneous speech, there is a free conversation section. The speakers, still in pairs, are given a topic, namely the recent publicity on tobacco advertising and smoking, and are asked to discuss whether they feel it has affected them. We expect the lowest level of formality here, and as it follows the map task, and is with a friend, we hope that speakers are less intimidated by the situation so that less style-shifting will occur. We hope to supplement the information on intonation patterns that has been gathered in the rest of the interview here. One possible problem is the relative lack of control over the material: the bulk of the data may consist of simple statements for example. However, free conversation does offer interesting insights into the way in which intonational patterns vary in different speech styles, and will show whether there is any parallel to the kind of connected speech processes which affect segmental phenomena in less formal styles.

4. *Transcription System*

As already mentioned, previous studies of the intonation of individual dialects have also often employed different methods of transcribing the patterns found. This creates a further problem for those attempting comparative work. Until recently there was no widely accepted method of transcribing intonation. The development of the ToBI system in recent years has gone some way to filling this gap (see, for example, Silverman et al, 1992).

ToBI stands for 'Tones and Break Indices'. In this labelling system contours are described not in terms of pitch movements, as in the British tradition, with its rises and falls for example, but in terms of targets of H(igh) and L(ow) tones. These targets combine to form pitch accents. Intonational boundaries may also be marked by tones. ToBI was devised in the first instance for the description of American English, and it is acknowledged in the guidelines for labelling that modified variants will be necessary for the description of some other varieties. Modifications have indeed been suggested, such as Glasgow ToBI, in a paper by Mayo et al (1997). It is therefore recognised that some modification of the existing system will be necessary for the modelling of patterns in other varieties. For this project in particular, it is imperative that the system used be neutral enough to allow all the dialects to be transcribed in a way that is susceptible to common interpretation. Only then can comparative statements be made.

It appears, however, that the ToBI system is unlikely to fulfil this demand. As

Nolan and Grabe (1997) have pointed out, problems for cross-dialectal transcriptions arise particularly when it comes to the transcription of pitch movements at intonation phrase boundaries. In the ToBI system, every significant pitch event in English is transcribed with a tone, either high or low. This means that every intonation phrase boundary ends either high or low. Now, this notion is relatively unproblematic, as long as you stick to GSB, as can be seen in Figure 7.

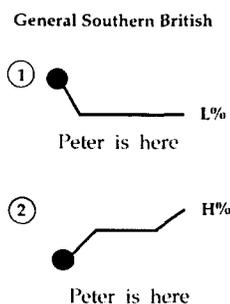


Figure 7

The two patterns in GSB can be transcribed, one with a L% boundary tone, and one with a H% boundary tone. However, as has already been noted, there is a pattern which occurs in Belfast English known as the rise plateau. This means that, in Belfast English, there are three boundary options: low, high and 'no change'. The ToBI system cannot capture the options in GSB and in Belfast English in any comparable way. Therefore in the system being used for the current project, which is based on work by Esther Grabe (1998), boundaries can be unspecified for tone. In other words, there is an extra option in our system, namely a 0% boundary, in order to cope with such patterns. The patterns found in Belfast, and the transcription of the boundary tones, are therefore as shown in Figure 8.

5. Conclusion

The project is in its early stages. So far data has been collected from GSB, Leeds and Belfast. Already it is clear that the materials have been successful in eliciting a variety of patterns. Figure 9 gives an example of what will be available on the forthcoming CD-ROM. At the top is a waveform, and at the bottom is a fundamental frequency trace (fundamental frequency is the acoustic measure which corresponds to

the changes in pitch which we hear). In the centre there is a labelling window, with several tiers. First there is an orthographic tier where the words spoken are labelled. The second tier is a rhythmic tier, marking stressed and accented syllables, the stressed syllable being enclosed by angled brackets. The next tier is the auditory phonetic tier, where the labels describe the perceived pitch level on the accented syllable (marked with capital letters H/M/L) relative to the immediately preceding syllable and the immediately following syllable (marked with small letters h/m/l). The IViE tier contains the transcription of the intonation, with IViE standing for *Intonational Variation in English*. Finally there is an extra tier for miscellaneous comments, such as here that the peak in the F₀ contour is relatively late within the accented syllable. This tier is also used for comments on features such as errors in the reading, or hesitations, laughter etc.

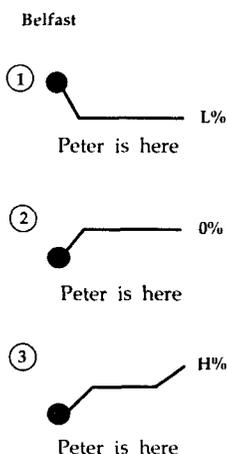


Figure 8

To sum up, this new project has several goals. The first is to provide corpus data from seven dialects of English. Since the same methodology and materials have been used for each dialect, the data will be directly comparable. Secondly, the data will be labelled for intonation patterns in the different dialects, giving both auditory phonetic information on the pitch contours and a phonological transcription of them. Thirdly, a CD-ROM of the labelled corpus will be produced and made available. This will be invaluable to researchers working on intonation and other aspects of dialectal diversity.

This paper has illustrated how the relative scarcity of work in the field so far is due to the previous lack of a suitable methodology on which to base comparative

studies. This is in part due to the particular difficulties posed by a study of intonation rather than segmental phenomena. However, such difficulties are not insurmountable. The approach developed for this project will hopefully serve as a model for future work in this interesting and underresearched field.

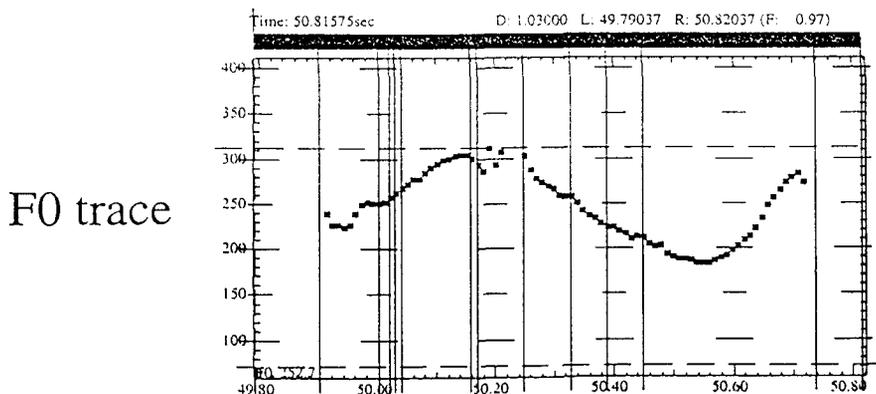
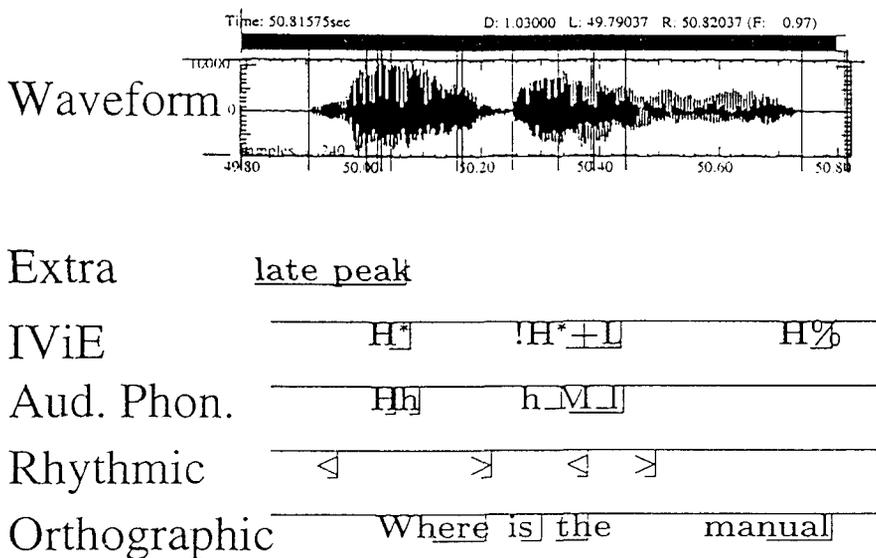


Figure 9: Example of database

NOTES

¹ One possible exception is Rohrer (1952). However, the scope of Rohrer's work is small: although seven dialects are investigated, very little data from each is examined, and the technology available was also limited.

² This project is supported by ESRC award R0002237145 to F. Nolan and E. Grabe.

³ The term *General Southern British* is used to describe the pronunciation which serves as a prestige norm in South East England, but which is not closely tied to upper class groups, unlike RP, as traditionally defined.

⁴ The last two terms are used for the native varieties of English spoken by second generation immigrants to Britain, whose parents are of Jamaican or Gujerati extraction.

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For further details of the IViE project, and regular updates on progress, please consult our website at: <http://www.mml.cam.ac.uk/ling/intoproj.HTM>

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