INTONATION IN SCOTLAND: FIFE ENGLISH

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ABSTRACT

In his taxonomy, Ladd [1] distinguishes between semantic, systemic, realisational and phonotactic intonational differences of languages. However, such differences not only apply to different languages but also to different varieties of one language. This paper illustrates this point with data from English as spoken in Glasgow (GF) and Fife (FE) and from Southern British English. Comparisons of data from map task corpora show that varieties differ both systemically in their inventory of phonologically distinct tone types, and realisationally in the phonetic implementation of tunes belonging to one phonological category. Firstly, in contexts where GE produces a characteristic rise-plateau-slump contour, FE speakers choose suspended falls. The FE tune inventory lacks the rise-plateau-fall. Secondly, the results show that the varieties differ in phonetic realisation: the GE rising pattern does exist in FE but differs in dip alignment: while rises in GE begin before the accented syllable, FE rises begin within or after the accented syllable.

1. INTRODUCTION

While intonational research has long regarded languages as monolithic and neglected the fact that individual varieties of one language differ in intonation, traditional dialectology in its turn has largely ignored intonational variability, limiting itself to observing segmental, lexical and morphosyntactical evidence. Prosodic differences between individual varieties have at best received marginal attention, intonational characteristics being described impressionistically rather than systematically. The present paper draws attention to the fact that a systematic account of intonational variability is possible, illustrating this point with directly comparable data from two varieties of British English: English as spoken in Glasgow (GF) and English as spoken in Fife, eastern central Scotland (FE). Evidence will also be taken from Southern British English, drawn from data of the current project 'Intonation in the British Isles' [2], a large-scale project which aims to provide systematic descriptions of a number of British English dialects.

Hardly any corpus-based work so far has been done on Scottish English intonation, although its prosodic distinctiveness is agreed on by both laymen and professional linguists alike. Mayo et al. [3] in their evaluation study of GlaToBI, a version of the ToBI prosodic transcription system [4] used to transcribe the intonation patterns of western Scottish (Glasgow) English, however name some features of that variety drawing on the HCRC Map Task Corpus on English as spoken in Glasgow [5]. [3] tie down their findings to two main features: the rise-plateau-slump pitch pattern as observed by Cruttenden [6] and the alignment of tones to accented syllables in rises, as shown by Ladd [1]. This paper compares these findings to English as spoken in Fife. Differences are described systematically by differentiating between variation in the phonological inventory of pitch patterns and variation in the way identical pitch patterns are realised phonetically.

2. GLASGOW ENGLISH INTONATION

[6] describes Glasgow English intonation, alongside with the intonation of other Urban North British dialects (UNB), as differing from Standard American and RP (Received Pronunciation) English in its frequent use of nuclear rises and a distinctive pitch pattern which he labels as 'rise-plateau-slump'. The latter applies to a contour where the pitch rises at the accented syllable, then remains high (or slightly declines) and does not fall until near the end of the phrase. Figure 1 illustrates this tune by a stylised pitch contour. The boxes mark the string of syllables with the accented syllable indicated by a filled box; the transcription of this contour following GlaToBI is given below.

[1] describes another feature which affects GE rises and the rise-plateau-slump pattern with them, concerning the alignment of pitch to the accented syllable: neither target of L and H aligns in time with the accented syllable (Fig. 1). GlaToBI [3] labels these rises as L*H, indicating that neither tone is starred by placing the '*' diacritic in between the two tones. In order to accommodate the plateau-slump pattern, [3] modify ToBI by eliminating up-step, which is triggered by the H-phase accent, from the tonal inventory, so that H-L% can represent a high-low sequence.

![Fig. 1: stylised rise-plateau-slump contour in GE with distinct peak alignment of rise (GlaToBI labels).](image)

3. FIFE ENGLISH INTONATION

When [6] gives his account of Urban North British dialects (UNB), he expressly leaves out Edinburgh. Although Edinburgh and Glasgow are only 50 miles or so apart and in that much closer to each other than other places which he includes in UNB, his findings appear to demand a dissociation of the two cities. In this, [6] agrees with the traditional dialectologists' division into dialect areas made on the basis of exclusively segmental, lexical and morphosyntactical evidence: the Scottish Central Belt is divided into West Central (Glasgow), East Central (Edinburgh and Fife) and South Central Scots, and the line that separates West and East runs straight between Glasgow and Edinburgh [7]. This study will look at in how far intonation contributes to this division from a more systematic angle by comparing GE and FE intonation.
3.1. Speech data and labelling

Subjects chosen for the present study were students from the local secondary school in Anstruther, Fife. Five female and five male speakers aged between 16 and 17 were recorded. The choice of the locality and of individual speakers was designed to achieve a reasonably homogeneous sample: Anstruther is a small fishing village on the east coast of Fife, forming a fairly stable speech community, and only such speakers were chosen whose families have been local residents for a considerable time longer than the speakers’ lifetimes. A local linguistically perceptive teacher helped to recruit only such subjects whom he identified as speaking a variety typical of English as spoken in Anstruther.

In order to provide data comparable to those used by [3] and [2], speakers were asked to perform a map task, which elicits task-oriented speech involving a limited control over the probable choice of intonation patterns. Recordings were made in a quiet room at the school on a DAT tape and digitised at 16 KHz in Praat 3.4., a software package for computerised phonetic research.

The data was labelled by IViE [8], a comparative prosodic labelling system developed specifically for linguistic research in British English varieties and applied by [2]. IViE provides a flexible system capable of accommodating intonational profiles of several varieties. It allows comparisons of rhythmical structure, phonological inventories and phonetic implementations. Note that IViE knows only one level of intonational phrasing, the intonation phrase (IP). Unlike numerous impressionistic descriptions found on dialectal variation, results attained by using IViE are comparable to both ToBI labellings (by sharing the autosegmental metrical approach) and to those of the British Tradition.

Note that evidence from rise-plateau-slump in GlaToBI shows that IViE is particularly suitable for the analysis of British varieties. If ToBI L*+H H-L% and GlaToBI L*H H-L% are held side-by-side and the reader does not know that one has up-step and the other does not, a rather major drawback becomes evident: very similar transcriptions represent completely different patterns. This ambiguity does not arise with IViE, where one transcription would be L*+H 0% and the other L*H 1%.

3.2. Results

3.2.1. Phonological choices. The rise-plateau-slump pattern of Glasgow English (GE), which [3] transcribe as L*H H-L% in GlaToBI, does not feature in Fife English (FE). This can be taken as evidence that GE and FE differ in their phonological inventories of tunes, i.e. GE produces contours which do not occur in FE. FE in comparable contexts produces a falling pattern H*+L which however differs from the neutral fall found in Southern British English (SBE) by the fact that the trailing tone L is shifted rightwards on the time axis beyond the postaccented syllables. Following Grabe [9], who introduces the term 'displacement' to account for this tonal alteration of moving the second target in a bitonal pitch accent to the right, IViE indicates this modification by the diacritic ‘-‘, so the characteristic fall in FE is best labelled as H*+ L 0%. Figure 3 illustrates this pattern by a stylised pitch contour as it occurred in the FE data on the word "bowling alley". The dotted line marks the contour as it would probably be produced by speakers of SBE [2]. Note that SBE does have instances of displacement, but these are restricted to prenuclear positions, whereas in FE, H*+ L can occur in nuclear positions as well. Figure 2 gives more evidence for this pattern in the original F0 contour on the word "windmill".

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Fig. 2: Fife intonation contour with IViE labels.

Fig. 3: H*+ L in Fife English (dotted line: SBE).

There is however a pattern in FE which comes very close to the GE rise-plateau-slump. This tune is best described as a rise which is followed by a deviation from the rising pitch direction: pitch lowering sets in immediately after the peak, describing a steady line downwards on the postaccented syllables and eventually arriving at an L% boundary tone at the end of the IP. Figure 4 gives the stylised pitch contour of a typical example for this pattern as it occurred in the data. The L*+H L% contour here was
produced on the word "railway line" in the question "Do you have a railway line [on your map]", other examples for this pattern include utterances such as "the jeweller's" and "a library", but also "bowling alley" and "railway line" in a context meaning "I don't have such a thing on my map", i.e. in interrogative contexts, asking for confirmation.

Fig. 4: L*+H 1.% in Fife English.

Although this tune resembles the rise-plateau-slump contour of GE (Fig. 1), there are two essential differences which give evidence that the two tunes are categorically distinct: firstly, although both contours can be described as L*+H L% in IViE, or L*+H H-L% in GlToBI respectively, the FE tune is very distinct in that it lacks both plateau and slump, so that the auditory impression is clearly different. Secondly, [1] points out that the GE pattern is the neutral statement intonation in UNB, whereas in FE it could so far only be found in interrogative contexts. Since the labelling conventions appear to be somewhat unfortunate by creating ambiguity here, I propose to introduce the diacritic "_" for the boundary tone here (L*+H _1.%) as it marks displacement in bitonal accents as described above. This time, however, displacement runs in the opposite direction, i.e. leftwards, the boundary tone dragging the pitch towards the L target. This notation will help to disambiguate the FE pattern from the rise-plateau-slump tune of GE.

The notion of displacement deserves further consideration as it appears to be a characteristic feature of FE as a whole. Instances of displacement can be shown on the majority of bitonal accents. Fig. 2 gives the original F0 contour of an utterance which contains displacement in both the rise on "left" (L*+H) as well as the fall on "windmill" (H*+ L). Strikingly, the rise here is performed on two unaccented syllables with highly reduced vowels. As part of this study, FE was shown to be compressing, i.e. squeezing tones rather than truncating them in instances where the segmental string only leaves very little segmental material to perform tones. In view of this, the L*+ H contour as depicted in Fig. 2 can be regarded as a full-scale pitch pattern. Subsequent experiments in the production and perception of displacement by FE speakers will shed more light on the phenomenon of displacement.

3.2.2. Phonetic implementation: Dip alignment of rises. Dip alignment in FE rises lacks the characteristic feature of GA, where the glides begin before and peak after the accented syllable, so that neither L nor H are aligned with the accented syllable (Fig. 1). Rather, the FE tendency to delay tonal targets is reflected in dip and peak alignments: a rise never starts before the left edge of the accented syllable. If L and H targets do not coincide with the syllable boundary, they are shifted to the right, i.e. they are delayed. Figure 5 illustrates this point by giving stylised pitch contours from FE data.

![Fig. 5: Dip- and peak alignment in Fife English rises.](image)

Evidently, FE intonation differs from GE in its phonetic realisation: both inventories of intonation contours include rises, i.e. L*+H, but these are realised in a different way as far as the alignment of dips is concerned. Further studies will show whether and to what extent this difference is perceived auditorily by listeners.

4. SUMMARY AND CONCLUSION

This study was intended to find out firstly, in which way varieties within one language differ intonationally and how these differences can be accounted for systematically and secondly, how the two dialect areas, West Central and East Central Scotland, differ prosodically. Evidence was taken from two corpora recorded in Glasgow (West Central, [4] and [2]) and Anstruther, Fife (East Central). Speakers were asked to perform map tasks eliciting goal-directed, spontaneous speech containing a limited repertoire of intonation patterns. Comparisons of the data reveal that both varieties appear to differ in their phonological inventory of pitch patterns as well as in the phonetic realisation of accents, following a taxonomy of phonological and phonetic differences postulated by [1].

Systemic differences between GE and FE could be shown in the fact that FE lacks the distinct rise-plateau-slump tune completely. This pattern is characterised by a pitch that rises on the accented syllable, then remains high or slightly declines and does not fall until near the end of the phrase and is labelled by GlToBI as L*+H H-L%. In contexts where GE produces this pattern, FE speakers choose a different pattern which IViE labels as H*+ L 0%. This divergence can be taken as evidence that GE and FE differ in their inventory of phonologically distinct tune types.

Realisational differences between the two varieties could be shown in incidents of varying dip alignment. In GE rises, neither target aligns in time with the accented syllable, so that L shows before and H after the left and right syllable boundaries. In FE however, no evidence was found where the dip of a rise was placed before the left edge of the accented syllable. This difference can be regarded as a phonetic detail of one and the same tune.

FE shows further tendencies the status of which still remains to be investigated. One of these tendencies is displacement which was found for the majority of FE bitonal accents, such as H*+L and L*+H.

FE can be concluded to differ from other varieties of British English firstly in its phonological inventory by including a pitch pattern which does not exist in other varieties. Secondly, in pitch patterns which do occur in other varieties, FE differs in the way these patterns are realized phonetically. In this, variation between different varieties of one language agrees with variation between
distinct languages.

The present study forms part of ongoing work on intonation in Scottish English varietics and its sociolinguistic relevance; the conclusions presented here are empirically based but will be further substantiated by subsequent research.

ACKNOWLEDGMENTS

I thank the following persons for their support and encouragement for my project: Esther Grabe in Cambridge, Roh Ladd, Catherine Mayo and Matthew Aylett in Edinburgh, Keith McCartney with the teachers and students at Waid Academy, Anstruther and Volker Mohr in Heidelberg.

REFERENCES