

Prosodic transfer in Black South African English

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Abstract

This article reports on a perception study that was carried out with Zulu-English bilinguals in order to investigate how suprasegmental aspects differ in Black South African English compared to White English-speaking South African English. Two prosodic phenomena were investigated: prosodic focus marking on noun phrases (NPs) and prosodic boundary marking. The results support existing claims in the literature that Black South African English falls into at least two distinct groups (van Rooy 2004): L2 English spoken by non-native speakers and “L1 speakers of English whose dialects have developed from non-native varieties” (Da Silva 2008: 96), the speech of the former showing L1 influence in not marking focus prosodically. In contrast, prosodic means are used for boundary marking by all speakers.

Index Terms: second language prosody, prosodic focus marking, prosodic boundary marking

1. Introduction

In line with what has been reported for second language (L2) acquisition in general (e.g. Flege 1995), various studies have shown that transfer or interference from the first language (L1) is an important factor in the production of intonation in a second language (L2) (Chun 2002, Gut 2000, 2005, McGory 1997, Mennen 2004, Nguyễn *et al.* 2008, Ploquin 2009, Raiser & Hiligsmann 2007 Ueyama & Jun 1998 and articles in Trouvain & Gut 2007). An example from word-level prosody is the incorrect use of word stress: for instance, when someone speaks English and refers to Michael Jackson, Cliff Richard or John McEnroe with a prominent word-final stress in the family name, chances are high that that speaker has a French background. Similar effects may also manifest themselves at other levels of prosodic structure, given that languages can be different regarding a whole range of prosodic characteristics.

When discussing cases of prosodic transfer, it is important to note that languages can differ from each other both in terms of their repertoire of phonologically and phonetically distinct prosodic forms (Mennen 2004, 2007), and in terms of the way these forms are linked to specific communicative functions. The current article concentrates on prosodic transfers that are functional in nature, where we look at the way prosodic expressions are exploited for marking prominence and utterance boundaries. More specifically, we will focus on transfer of such prosodic functions in L2 English, as spoken by people who have Zulu as their home language. Before we embark on the specific research questions, we briefly discuss the two prosodic functions, taking English as a point of departure.

1.1 Prominence marking

It has been widely reported that information structure in English is marked by accent distribution. It has been argued

that a pitch accent of the form H*L has linguistic meaning in English as it is associated with the highlighting of discourse-new information and might even change the truth value of a sentence. Simultaneously, discourse-old information tends to be deaccented in English. However, this overall pattern that has been reported for languages such as English and Dutch is by no means a language universal (cf. Cruttenden 2006). Other languages can use different phonological means, such as the suspension of downstep in focused constituents in Japanese (Pierrehumbert & Beckman 1988), extension of the pitch range in focused constituents in Mandarin Chinese (Xu 1999), or they might even leave focus prosodically unmarked (e.g. Romanian, Swerts 2007; Northern Sotho, Zerbian 2006). Arabic and the Romance languages do not deaccent given information (Hellmuth 2005, Cruttenden 2006).

1.2 Boundary marking

In addition to marking the information status of words, English, as well as many other languages, uses intonational means to signal whether a speech unit (from a phrase to a major discourse unit) has been completed or not. The use of such tones as cues to signal continuation or finality appears to be widely used in different languages. Prototypically, a boundary tone of the shape H% has paralinguistic meaning in English as it is associated with continuation. The so-called continuation rise H% has been found in a variety of partly unrelated languages (cf. Chen 2007: 108) and its widespread presence has been attributed to the grammaticalization of the paralinguistic use of high pitch (Gussenhoven 2002: 51) as indicating continuation. Conversely, low boundary tones (L%) are typically used to indicate that a speech unit has been completed. There will remain language-specific differences in the phonetic implementation, however, (see e.g. Delattre 1965, Grover *et al.* 1987) which exert an influence on L2 English varieties. Note that despite such resemblances in the marking of continuation, languages can differ in their use of boundary tones for marking differences between declaratives and questions (Ladd 1996).

2. Intonation in Zulu

The claims above are mostly based on analyses of English and related languages, whereas descriptions of sentence intonation in Zulu are rare. In his comparative work on the phonology of the Nguni languages (to which Zulu belongs) Lanham (1960) provides a description on how tone and length are affected by syntactic and prosodic constituency. Intonational features such as extra length of the penultimate vowel or a noticeably lower pitch of the final downstep can be used to reinforce the perceptual prominence of the phonological boundary. Lanham cites important passages in church sermons as one instance in which an increase in phonological phrase boundaries beyond syntactically conditioned ones can be observed (*ibid.* 133). However, pragmatic focus is not listed as a conditioning factor for the insertion of phonological boundaries.

Lanham states that prosody is also used for signaling some other functions, such as expressiveness, related to emotions of nearness, farness, badness, goodness, strong assent or dissent. Again, length and pitch is used to convey these meaning, most notably perhaps in the case of ideophones, but also in other examples, such as /kúǀdè kàkhúǀú kàǀǀ/ - ‘very far off’ where the speaker’s attitude towards the great distance can be further enhanced by the raising of the whole phrase’s pitch level and additional lengthening in one or more constituent (ibid. 172). Thus, there seems to be no evidence for prosodic marking of focus in Zulu, although the language modulates prosody in a variety of linguistic and paralinguistic ways. A detailed study on prosodic focus marking in Northern Sotho, the northern neighbor of Zulu has shown that this language does not mark focus prosodically (Zerbian 2006, 2007).

However, regarding continuation, the reported observations appear to be parallel to what has been claimed for English. Lanham (1960: 169) states that in the Nguni languages, in order to signal continuity, the final tones of an utterance are uttered in a higher region. If an utterance ends on a high pitch due to it being a question or indicating continuation, the speaker will anticipate this rise and will produce preceding tones in a slightly adopted way so that there is “no strongly marked ascent in tonal steps” noticeable.

3. The Study

3.1 Goals

Section 1 showed that English uses intonation for marking prominence and boundary marking, whereas preliminary evidence suggests that Zulu only uses it for the latter kind of function. The current project has two goals: First, it presents a comparative study of English and Zulu to seek further evidence for the alleged differences in prosodic functions. Second, it explores to what extent differences in the prosodic patterns between those languages are reflected in the prosody of L2 English of speakers who have Zulu as their first language. Moreover, Zulu English can be classified as a New English (Bhatt & Mesthrie 2008) which might show divergent prosodic features depending on the level of proficiency of the speaker.

To this end, it investigates for speakers with different linguistic backgrounds if focus is indicated prosodically in modified noun phrases in a way that corresponds with perceived prominence. Variables are the focus type (weak contrastive focus, strong contrastive focus and correction focus) as well as the focus constituent (noun versus adjective). The study further investigates if Zulu English speakers indicate prosodically if a constituent occurs in the middle or at the end of a list in a way that corresponds with raising intonation, the cue to continuation used in native varieties of English.

The current study differs from previous studies on prosodic focus marking in L2 (see above) in that the L1, i.e. Zulu, does not use prosodic means for focus marking. The learner thus first has to acquire a linguistic category, namely semantic focus marking through prosodic means, before s/he has to acquire the target language’s phonological representation, form, function and eventually the phonetic implementation of a tune.

3.2 Elicitation procedure

Controlled speech data were recorded from 10 native speakers of White English speaking South African English (WESSAE) and 10 speakers of South African English who have Zulu as

their mother tongue (Zulu English). The WESSAE speakers did the task in English, thus serving as a control group for prosodic focus marking in the native variety of South African English. The speakers of Zulu repeated the elicitation paradigm both in their home language and in English.

The paradigm is a simplified version of the descriptive tasks used in Swerts *et al.* (2002) and Swerts (2007). It parallels Krahmer & Swerts (2001), Swerts *et al.* (2002), and Swerts (2007) in that noun-adjective combinations are elicited and no syntactic structure is included. However, it is even more simplified than these previous two studies as no dialogue between two participants is involved.

Participants described a row of pictures which was presented to them in a PowerPoint presentation and which differed in the object they displayed (flower, house, tree, cow, star) and/or the colour of these objects (red, yellow, white, black, blue). An example with contrastive focus on “red cow” is provided in figure 1.



Figure 1: *Differently coloured objects (to be described from left to right) used as stimulus materials for the production experiment (more explanations in the text)*

The target utterances appeared either as the third object or the fifth and last object (figure 1 showing the target as the last object). Also, the target utterances were preceded by pictures showing either differing object in differing colours, or by differing object of the same colour or by the same object of different colours (see figure 1). A third focus type was correctional focus in which the target picture and a wrong description of the picture was given either in terms of colour or in terms of the object. The target sentences differed as to the constituent that was focused, varying between adjective and noun.

The data were collected from volunteer native speakers of the respective languages. All participants were students at the University of the Witwatersrand, Johannesburg, and thus between 19-29 years old. The data were recorded in a quiet office. The participants were recorded onto an M-Audio Microtrack 24/96 while describing the pictures. Speech data were digitized with a sampling rate of 44.1 kHz. The recording was later saved to the computer where the target sentences were cut out of the original recording and stored as separate files.

All participants took an English Proficiency Test (Quick Placement Test by Oxford University Press) before describing the pictures. The level of English proficiency served as a variable in the experiment. The QPT is a computer-adaptive test which assesses students’ level of English by using multiple-choice questions testing listening, reading and grammar/vocabulary skills. Previous research has shown that proficiency is one of the determining factors for the influence of L1 on L2 in the language acquisition process (cf. Flege 1995). Whereas the WESSAE speakers formed a homogeneous group, scoring the highest level, namely 5 (100%-80%) on the ALTE scale, the Zulu English speakers fell into two distinct groups based on the ALTE scores obtained: 7 speakers scored a 5 on the ALTE scale (corresponding to an Upper Advanced, or C2 Council of Europe Level), whereas 3 speakers scored a 3 (60%-70%; Upper Intermediate or B2 Council of Europe Level).

3.3 Data

For the investigation of across- and between speakers variation concerning prosodic focus marking and prosodic boundary marking, only the target utterances “blue star” and “red cow” were subjected to further analysis. The target phrases in Zulu are given below.

English	Zulu	Glossing
red cow	inkomo e bomvu	cow AGR red
blue star	inkanyezi e luhlaza	star AGR blue/green

All in all, there were 198 target utterances from 20 speakers varying in focused constituent, focus condition, and position in the utterance. A very small sample of utterances could not be used to bad recording quality.

The two-word target phrases were evaluated perceptually by a forced-choice paradigm. The target structures were first evaluated as to which word was more prominent (1st word, 2nd word, or neither of the two) in order to address the question of prosodic focus marking. The same set was then evaluated as to how the sentence melody changed (or not) at the end of the utterance, either going up, down or staying level, in order to address the question of prosodic boundary marking. Three judges evaluated the target sentences perceptually: for the English target phrases these were the authors of the study as well as a student assistant. For the Zulu target phrases, three of the participants who were impressionistically judged to be most sensitive to pronunciation issues acted as judges. Each judge (blind for condition) got a different random order of all the utterances during the labeling task. Results below are determined by a majority vote procedure.

4. Results

The results section consists of 2 subsections: we first compare prosodic patterns for English versus Zulu, to see how aspects of prominence and boundary tones are signaled in these 2 languages. We then concentrate on L2 English to see whether a speakers’ level of fluency has an effect on the marking of these 2 prosodic functions in English.

4.1 English versus Zulu

Table I: Distribution of accents on 1st, 2nd word or neither of the two, as a function of focus on 1st or 2nd word for English (E) and Zulu (Z).

Focus (E)	Accent on		
	First word	Second word	Neither
1 st word	22	8	10
2 nd word	11	21	8
Focus (Z)			
1 st word	19	6	14
2 nd word	19	1	20

Tables I and II present the distributions of accent patterns and boundary tones for speakers of English and Zulu, as a function of various discourse settings. Table I reveals that speakers of English clearly use accent patterns as markers of focus. Speakers prefer to highlight either the 1st or 2nd word by means of a pitch accent on that word ($\chi^2=9.716$, $df=2$, $p < .01$). On the contrary, for Zulu speakers such a relation does not hold ($\chi^2=4.618$, $df=2$, not significant), as they predominantly highlight the first word in an NP, irrespective of context. Note that this overall pattern appears to be true for the various prominence contexts, where there is no fundamental difference

between weak, strong and corrective accents. In comparison, table II shows that the patterns for boundary marking are quite similar for both languages, as it appears to be true for English and Zulu that low boundary tones tend to be associated more with finality, and high boundary tones with continuity (English: $\chi^2=18.156$, $df=4$, $p < .01$; Zulu: $\chi^2=16.026$, $df=4$, $p < .01$).

Table II: Distribution of boundary tones as a function of utterance position for speakers of English (E) and Zulu (Z)

Position (E)	Boundary tone		
	Low tone	High tone	Neither
Final	55	18	8
Non-final	34	20	24
Position (Z)			
Final	35	20	25
Non-final	18	37	24

4.2 Fluent versus less fluent L2 English

Table III: Distribution of accents on 1st, 2nd word or neither of the two, as a function of focus on 1st or 2nd word for proficient (P) and less proficient (L) speakers of English.

Focus (P)	Accent on		
	First word	Second word	Neither
1 st word	19	3	5
2 nd word	7	16	4
Focus (L)			
1 st word	4	5	3
2 nd word	4	6	2

Tables III and IV present the distributions of accent patterns and boundary tones for speakers who differ with respect of their level of fluency of English, as a function of various discourse settings. Table III reveals that the two types of speakers differ in their use of accent patterns to mark focus. Proficient L2 speakers prefer to highlight either the 1st or 2nd word by means of a pitch accent on that word ($\chi^2=14.544$, $df=2$, $p < .01$). On the contrary, for the less proficient speakers such a relation does not hold ($\chi^2=.291$, $df=2$, not significant). In comparison, table IV shows that the patterns for boundary marking are quite similar for proficient and less proficient speakers of L2 English, as it appears to be true for both varieties that low boundary tones tend to be associated more with finality, and high boundary tones with continuity (Proficient speakers: $\chi^2=35.538$, $df=4$, $p < .01$; Less proficient speakers: $\chi^2=71.389$, $df=4$, $p < .01$).

Table IV: Distribution of boundary tones as a function of utterance position for proficient (P) and less proficient (L) speakers of English.

Position (P)	Boundary tone		
	Low tone	High tone	Neither
Final	47	2	5
Non-final	9	26	21
Position (L)			
Final	18	0	6
Non-final	3	12	9

5. Discussion

The current study has revealed some interesting cases of prosodic transfer in Black South-African English. In general, we found, in line with previous claims made in the literature,

that the degree of prosodic transfer is related to the level of English: L2 speakers who are proficient display fewer traces of their home language in the way they produce prosody, than L2 speakers who are less proficient. More specifically, the patterns of transfer are different for different functions: whereas the use of boundary tones for signaling finality or continuity appears to be similar across different language varieties, the use of prominence patterns as markers of focus is very different. This difference is likely to be related to the fact that the home language of the L2 speakers does not systematically exploit intonational features as markers of discourse information as is the case in English.

Of course, the current research could be extended in a number of ways. One important addition would be to try and gain more insight into the formal characteristics of the prosodic patterns in the different language varieties. So far, we have limited our analyses to a perceptual evaluation of utterances that were elicited in different contexts, which gave us a first indication of the resemblances and differences in the use of intonational features. Obviously, it would make sense to see whether similar usages of functions have different formal correlates, and whether there could be other traces of the L2 languages which are not discernible through the perceptual tests we have conducted now.

And finally, it is important to reflect on the wider repercussions of the prosodic findings we have reported here. Traditionally, cases of prosodic transfer have received far less scholarly attention than other aspects of linguistic transfer, like use of word order, morphemic marking, and so on. This is intriguing in view of the fact that most linguists would agree that prosody and intonation are an important and integral component of language. Often, when we recognize a speaker who is talking English as being Italian, German or French because of a certain speaking style with peculiar prosodic characteristics, then we tend to find this strange or funny. For the linguistic community in South-Africa with its complex language situation, the degree to which speakers know English or the extent to which language varieties are accepted in their own right is a sensitive issue. The extent to which speakers know the right prosody could become part of a debate on South-African language politics. The results support existing claims in the literature that Black South African English falls into at least two distinct groups (van Rooy 2004): L2 English spoken by non-native speakers and “L1 speakers of English whose dialects have developed from non-native varieties” (Da Silva 2008: 96), the speech of the former showing L1 influence in not marking focus prosodically.

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