Journal of Phonetics 46 (2014) 185–209

Contents lists available at ScienceDirect

Journal of Phonetics

journal homepage: www.elsevier.com/locate/phonetics

Research Article

The phonetic realization of focus in West Frisian, Low Saxon, High German, and three varieties of Dutch

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ARTICLE INFO

Article history:
Received 14 May 2013
Received in revised form
10 July 2014
Accepted 17 July 2014

Keywords:
Dutch
West Frisian
Low Saxon
German
Focus
Information structure
Intonation
Fundamental frequency
Segmental duration

ABSTRACT

This study examines the effects of different kinds of focus and of focus constituent size on the phonetic realization of accent peaks in declarative sentences in varieties of continental West Germanic. Speakers were drawn from six populations along the coastal line of the Netherlands, covering Zeelandic Dutch, Hollandic Dutch, West Frisian, Dutch Low Saxon, German Low Saxon, and Northern High German. Our findings suggest that focus structure has systematic effects on segmental durations, the scaling and timing of the accentual f_0 gesture, and on the alignment of f_0 targets relative to the beginning of the accented syllable. However, the difference between neutral focus and corrective focus has more systematic effects than variation of the size of the focused constituents in corrective focus. In addition, speakers from different places were found to adopt different strategies in signaling these focus structures. Speakers of Hollandic Dutch and West Frisian expanded the pitch span on the accented word, whereas speakers of Low and High German rescaled single targets of the accentual f_0 gesture, and speakers of Zeelandic Dutch mixed both strategies.

1. Introduction

Focus is one of the main triggers of intonational events in West Germanic. It determines the distribution or identity of pitch accents, and may additionally affect the phonetic realization of the intonation contour. Variation in the focus of the sentence has two dimensions. One is the size of the focus constituent. In *John bought eggs*, for example, the focus constituent may be the object *eggs*, the verb phrase *bought eggs*, or the whole sentence (cf. Ladd's (1980, chap. IV) 'broad focus' and 'narrow focus'). The other dimension concerns the specific focus meaning that applies to the focus constituent. The terms 'information focus' (Kiss, 1998), 'presentational focus' or 'discourse-new' (Katz & Selkirk, 2011; Selkirk, 2008) have been used for information provided by speakers either in response to the hearer's request or otherwise equivalently without the hearer's prompting (Baart, 1987). In addition, the focus may be contrastive. In our terminology, contrastive focus relates the focus constituent to a restricted set of alternatives that are accessible to the addressee (Katz & Selkirk, 2011; Rooth, 1985, 1992; Selkirk, 2008; cf. Chafe, 1976). If the contrastive focus is used to reject an alternative or a set of alternatives known to the addressee, this can be further classified as 'corrective' (Gussenhoven, 2005). The response in (1a) illustrates information focus for the whole sentence. The response in (1b) illustrates narrow information focus on *eggs*. It relates what is said to an unrestricted set of alternatives ('Of the things that John may have bought, he did buy eggs'). The response in (1c) illustrates narrow contrastive focus, and relates what is said to a restricted set of alternatives, ('John bought eggs, but not vegetables'). The response in (1d) represents narrow corrective focus, used to reject an alternative proposition stated in the preceding sentence. The size of the focus constituent, indicated by square brackets, and type of focus meaning are thus seen as orthogonal dimensions in the specification of focus.

(1) a. What happened? − [John bought eggs].
b. What did John buy? − John bought [eggs].
c. Did John buy eggs or vegetables? − John bought [eggs].
d. John bought vegetables. − John bought [eggs].

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http://dx.doi.org/10.1016/j.wocn.2014.07.004

Experimental studies have shown that focus structure may affect segmental durations and f_0 of focused or non-focused constituents (e.g., Chen, 2006; Chen & Gussenhoven, 2008; Xu, 1999 for Standard Chinese, and Xu & Xu, 2005 for American English). In addition, it has been shown that those effects may differ even among closely related languages, as illustrated by postfocal compression of the f_0 range in Beijing Mandarin, which is missing in both Taiwanese and Taiwanese Mandarin (Chen, Wang, & Xu, 2009).

The majority of experimental production studies on focus deal with single, standard varieties, such as Standard American English or Standard Mandarin Chinese. In the investigation reported here we deviate from this practice by investigating six non-standard varieties of Dutch and German spoken along the North Sea coast. Whereas there is a growing body of knowledge on the regional variation of prosodic features of semantically equivalent utterances even among closely related varieties of the same language (e.g., Grabe, Post, Nolan, & Farrar, 2000; Atterer & Ladd, 2004; Dalton & Ní Chasaide, 2005; Grabe, 2004; Gilles, 2005; Ladd, Schepman, White, Quarmby, & Stackhouse, 2009; van Leyden, 2004), little is known about regional variation in the phonetic realization of focus. A better understanding of the regional variation in the realization of focus may throw light on the variation that has been reported among speakers of standard languages and may indicate that the latter kind may in part reflect regional variation among the participants, for instance, when these are recruited from student populations of a single university.

The varieties we investigated fall within the German-Dutch-Frisian dialect continuum and are spoken in locations that form an arc along the North Sea coast. They belong to different dialectal subgroups and entertain heteronomy relations to different standard languages (cf. Chambers & Trudgill, 1998). Three dialects, one Zeelandic (Zuid-Beveland) and two Hollandic dialects (Rotterdam, a Southern Hollandic dialect, and Amsterdam, a Northern Hollandic dialect), belong to the Low Franconian language family and are spoken in the west of the Netherlands. Their speakers relate to Standard Dutch as the autonomous language. A West Frisian variety (Grou) intervenes between this group and two Low Saxon dialects, one spoken in the Netherlands, where Standard Dutch is the autonomous language (Winschoten) and one in Germany, where Northern Standard German is the autonomous language (Weener). There is thus a non-trivial relation between the geographical continuum and the variety continuum in that it cross-sects an area dominated by the three standard continental West Germanic languages German, Frisian and Dutch. Since West Germanic standard languages have very similar intonation systems (Bolinger, 1989: 43f; de Pijper, 1983) and dialectal variation in non-tonal Dutch intonation has been characterized as small ('t Hart, 1998: 108), we may expect to find phonetic gradience along the geographical arc along which the dialects are situated, despite their different language groupings.[1] In our study, we investigated a contour that all dialects have in common, a declarative rising-falling pitch accent on a non-final syllable of the intonational phrase and for which no regional variation has so far been reported.

Finally, we address the issue whether dialect speakers who also speak a local variety of the standard language for their area vary systematically in the way they realize their intonation contours between their standard and dialectal speech. We chose Weener as the location where speakers were recorded both in the indigenous variety, Weener Low German, and in the standard variety, Weener High German. It is conceivable that the Weener speakers use the same prosody in the two varieties, but equally that they adjust the realization of their intonation contours in the direction of the standard language. Because this is an exploratory question and also because a number of research findings on Standard German are available, we decided to forgo the recruitment of a Standard German control group. We know of no previous research that might provide a reference for this specific question. The details in the chronology and proportions of exposure to the two varieties will vary across families in Weener. A sociolinguistic perspective would suggest that speakers adapt their speech in different degrees to the phonetic features of the standard language, but we cannot predict with confidence that such adaptations are stronger in their dialectal speech than in their standard speech. A bilingualism perspective does not provide clear predictions either, but does allow for the expectation that no difference will be found. According to Flege's Speech Learning Model (2007), new phonetic categories are acquired if these are sufficiently different from categories in the L1, but that smaller phonetic differences are treated as belonging to a single phonetic category, whereby the degree to which the bilingual speaker's production is similar to either the L1 or the L2 is determined by the exposure balance between the two languages. It is reasonable to assume that the Weener speakers will equate the dialectal and standard categories, since both varieties have rising-falling pitch accents to express the kind of intonational meanings that our experiments were concerned with. If that is correct, the prediction is that no differences are to be found between the two varieties as spoken by these speakers.

The aim of our study is thus to examine the effects of dialect variation on the phonetic realization of focus, specifically the phonetic realization of pitch accents as used in sentences with corrective focus on constituents of different lengths, whereby a non-corrective wide focus is used as a baseline. In the remainder of this introduction, we will summarize findings on the prosodic effects of focus structure on segmental durations, the scaling and timing of the f_0 contour, and the synchronization of the f_0 contour with the segmental string in English, Dutch, and German.

1.1. Segmental lengthening effects

In American English, accented mono- and disyllabic words in declarative sentences are lengthened when occurring under narrow information focus (Cooper, Eady, & Mueller, 1985; Eady & Cooper, 1986; Eady, Cooper, Klouda, Mueller, & Lotts, 1986). Xu and Xu (2005) observed similar lengthening effects under narrow information focus on words containing up to three syllables. In addition, Eady and Cooper (1986) reported lengthening effects in questions, and Eady et al. (1986) in statements with dual focus. In all these studies, the degree of lengthening depended on the position of the focus constituent in the sentence. Lengthening effects on focused

[1] For tonal varieties, see e.g. Gussenhoven (2004).