Broad and Narrow focus marking in Naija (Nigerian Pidgin): the role of prosody

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Abstract

This paper presents an investigation of the prosodic realisation of narrow and broad focus in Naija, a post-creole language of Nigeria spoken by 100 million people. As other West-African English lexifier pidgins, it has limited morphological complexity, flexible word order, and content words receive a +H pitch. Previous analyses of annotated spontaneous speech recordings identified two types of perceived prominences in Naija: a pitch peak (PPROM) and an extended duration (DPROM). This study identifies two focus conditions (narrow and broad) and seeks to establish whether they correlate with these perceived prominences. It was found that narrow focus uses any of two strategies: (1) the element in focus can occur anywhere in the IU, and coincides with the durational prominence, or (2) a *na* (copula) + focus element construction, which then receives the pitch prominence associated with first position in the IU. Broad focus, however, receives no prosodic marking.

Index Terms: prosody, focus, pitch, duration, creole language

1. INTRODUCTION

Naija (or Common Nigerian Pidjin) is a post-creole that has spread rapidly in Nigeria in the past fifty years. It is now spoken as a first language in parts of the Niger delta, and as a second language all over Nigeria and in the Nigerian diaspora by close to 100 million speakers. It now has considerable economic and cultural importance, but still has no official recognition. Recent studies show that it has developed into a language distinct from Nigerian English [1, 2, 3]; it is described as a good example of West-African English lexifier pidgins, with little morphological complexity, flexible word order [4], and a +H pitch assigned to content words (analysis of lexical prosody is ongoing, we refrain, at this stage, from describing Naija as a tone language).

This study investigates the prosodic realisation of focus in Naija, in broad and narrow focus conditions, seeking to establish how it correlates with perceived prominences. When communicating with other people, we highlight items that we want our audience to pay attention to, bringing them into 'focus'. Focus in linguistics is an information structural (IS) notion, that area concerned with the 'packaging' of information in sentences [5]. We follow [6] in defining focus as "the semantic component of a pragmatically structured proposition whereby the assertion differs from the presupposition." Several strategies are found cross-linguistically to signal focus, including (1) special positions in the linear order; (2) special focus markers; (3) constructions which intrinsically define a specific constituent as having the focus function; and (4) prosodic prominence. The latter is very frequent cross-linguistically, focused constituents are made more salient through increased articulatory effort, resulting in wider amplitude and pitch excursion size, or longer duration [7]. Our understanding of the relationship between IS and its realization in the speech signal still relies mainly on studies of West Germanic languages where a 'pitch accent' is expected, thus privileging pitch as a marker of focus. However, studies of languages such as French, Japanese and Korean, for instance, show that the very concept of a focal pitch accent is not clearly applicable for them [9, 10, 11]. In languages of Africa, recent studies [12, 13, 14] show that some may not use prosody at all to mark focus, preferring either focus markers or dedicated syntactic constructions.

We continue following [6bis], identifying domains of focus that vary from one phrasal constituent (narrow focus), to a predicate (broad focus), or to a complete sentence (thetic), all of which can receive different prosodic encodings.
This study relies on the annotation of perceived prominences in spontaneous texts by Naija speakers, reproducing a protocol established in the Rhapsodie project for French [15]. The analyses of the

annotations revealed two types of prominences: a pitch peak that occurs at the left edge of Intonation Units (IUs), synchronized with the first word bearing +High pitch (PPROM); and a prominence called 'heavy' by speakers that involves longer duration (DPROM), and sometimes higher pitch [16].

The major aim of this study is to establish whether and how the annotated perceived prominences (PPROM and DPROM) correlate with the IS category of focus, distinguishing Narrow (N) and Broad focus (B). It was hypothesized, that, as in other languages with lexical pitch contrasts, focus would be realized through the pitch cue, by expanding the pitch range of all or part of the constituent in focus [17], here corresponding with the PPROM.

2. METHODOLOGY

2.1. Data and participants

The data for this study were drawn from the corpus compiled in the ongoing NaijaSynCor project [18] that documents the development of Naija through the creation of a deeply annotated oral corpus.
Four (4) recordings (see Table 1) were selected for this study, representing speakers from both the Northern and the Southern parts of the country. We controlled for the sex of the speakers, selecting an equal number of male and female; however, age was not a controlled variable (ages vary from 15 to 45). Three of the participants have higher education (degree) and one has secondary education. The recordings are of two different genres: personal anecdotes and journalistic reporting.

2.2. Transcription, annotation of prominences, coding of Focus

The files were transcribed and semi-automatically syllabified with the tool SPASS [19] resulting in segmented and aligned Praat TextGrids [20]. The annotation of perceived prominences was verified by the native speaker co-author. Pitchtier files were generated and transferred to the software ANALOR [21] to correct manually pitch track errors; the files were also automatically segmented into 'intonational periods' (IPE), defined as the largest unit in which prosodic features interact, based on three measured acoustic parameters (pitch reset, final lowering, adjacent silent pause) which can be assigned different weight [21bis]; all the proposed IPEs were checked by one of the co-authors. The smaller prosodic units within IPs (intonation units (IUs), prosodic phrases (PP), and prosodic words (PrWd)) were coded manually (the instrumental analysis of the prosodic correlates encoding these units is ongoing). Here we make use of IUs, often described as the basic unit of spoken language, expressing one idea, often bounded by pauses (but not always) and characterized by a 'coherent pitch contour' [22]. The typical pitch contour of an IU in Naija is shown graphically in Figure 1. The second syllable of *grandmother* has a +High pitch, and is the locus of the pitch peak (PPROM).

Figure 1. Pitch track showing the contour of an IU in Naija, with a pitch peak (PPROM) at its left edge. The first tier shows the IU, the second show a segmentation by word, the third the syllable boundaries.
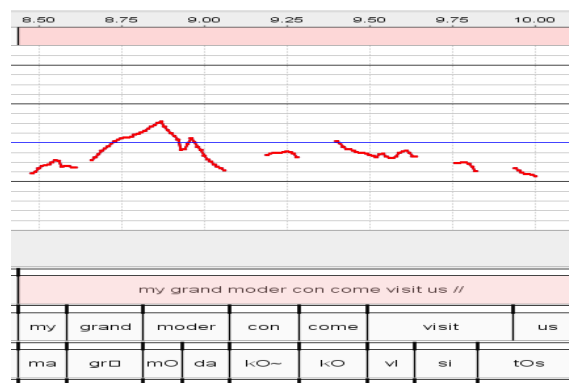
Narrow and broad focus elements were also identified and coded in a separate tier by the co-authors, taking the IUs as their domain. Operationally, narrow focus is identified as a single constituent that contains 'new' information, in answer to an (open or implicit) question, as Example 1 for *since*, which answers the question: how long have you been looking for my number?

1. aI   dO~   de   luk   jO   nO~mba   [si~ns]NF
   1SP   PST-M   AUX   look   POS   number   since
   I have been looking for your number since. [ABJ_GWA_03]

Broad focus is identified when the predicate could be an answer to the question 'what happened next?', when the topic of the sentence is already given, as in Example 2, *kO~n kO~n visit Os,* which continues the story of how it was that the speaker ended up living in the village with her, note that the grandmother has been mentioned before, making her the topic in the IU.

2. maI gra~nmOda kO~n kO~n visit Os
   POS grandmother come come visit us
   My grandmother then came to visit us. [ABJ_GWA_08]

As we used spontaneous data, these diagnostics to identify narrow or broad focus sometimes yielded inconclusive responses, or IUs were not Topic-Comment constructions. These IUs were coded as 'undecided'. The Information Structure, IU, and Prominence tiers were extracted and transferred to the SPSS software to conduct statistical tests.

2.3. Statistical tests

We counted the frequency of occurrences of narrow/broad focus elements within IUs for each text; and used the Chi-Square statistic to test the relationship between the two categorical variables: Focus, as Narrow (N), Broad (B) or undecided (0), and Prominence, as a pitch peak (PPROM) or extended duration (DPROM) with the. The null hypothesis is that there is no relationship between Focus types and Prominence types.

3. RESULTS

3.1. Focus types and Prominence types

We first report on the frequencies of narrow and broad focus identified in each text. The recordings vary slightly in length, as shown in Table 1, explaining the uneven distribution in the number of IUs in each recording. The ratio of narrow to broad focus varies according to genres, those of the journalistic reports contain mostly narrow focused elements, 80% to 13% in ID 3, and 58% to 14% in ID 4, while the spontaneous narratives displayed more broad focused elements, from 46% to 19% for ID1, and 51% to 29% in ID2. It is beyond the scope of this paper to examine the discrepancies according to genre further.

Table 1: Counts of IUs, narrow/broad focus and undecided elements.

ID	File Name	IUs	N	B	undecided
1	ABJ_GWA_08	382	73 *19%*	176 *46%*	142 *37%*
2	IBA_40_M	99	29 *29 %*	50 *51%*	20 *20%*
3	WAZA_08	133	107 *80%*	17 *13%*	9 *7%*
4	WAZA_09	221	128 *58%*	31 *14%*	42 *19%*

We then correlated the patterns observed in those IUs with narrow or broad focus (leaving out the undecided cases for further research) with the prominences PPROM and DPROM.

N corresponds with a DPROM in 93% of cases and a PPROM in only 7%. B are not associated with any kind of prominence. In IUs with B, a PPROM is often annotated, but this prominence does not coincide with the predicate in focus, but with the left IU boundary. In Figure 2, this was recoded as a 'no-PROM', for ease of reference. The Chi-square test confirms the significant correlation between Focus type and Prominence type ($X2$ (2, N = 514) =5.14, p <.001).

Figure 2. Bar chart showing the correlation between types of perceived prominences (PPROM and DPROM) and narrow and broad focus.
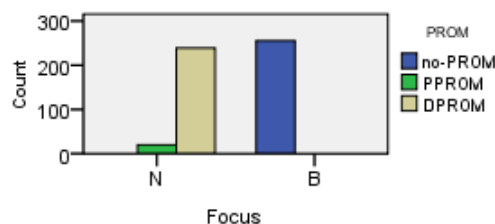

These results prompted us to examine the 20 examples of narrow focus that use a PPROM. We found that all these examples involved a *na* + focused element construction, resembling a cleft, as discussed below.

3.2. Prosodic encoding of narrow focus

There are two strategies to mark narrow focus in Naija. The first consists in using the construction *na* + focused element, in first position in the IU where it receives the PPROM, creating a construction similar to a cleft, conventionally viewed as a contrastive focusing device, but which are not necessarily contrastive in Naija. Example 3 illustrates this strategy, where 'five years' is not interpreted as contrasting with any other length of time, for example, but rather as an answer to an implicit question 'how long have you studied with this professor?'; its contour is shown in Figure 3. The focused element is *years*, which is also longer, but longer duration is not always present in this strategy for narrow focus marking.

3. na   faIv jEs   mja   go   de i~   han
   COP five years 1SPAN FUT COP POS hand
   It is five years that I will be learning under him
   [ABJ_GWA_08]

Figure 3 Pitch track of Example 2, illustrating the na + focused element construction.
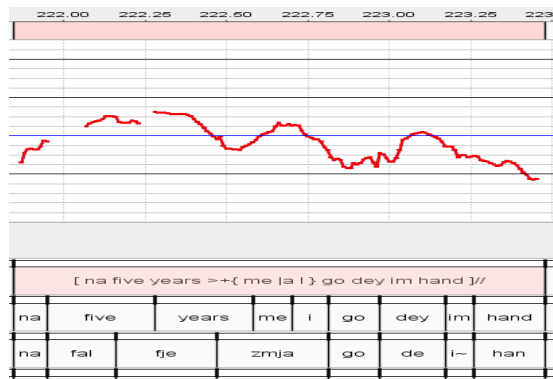
In the second strategy, the focused element can be anywhere in the IU, but its final syllable is lengthened, becoming 'heavy' as qualified by the speakers. This is shown in Example 4 with its pitch track in Figure 4. N is on the final word *strike*, which is marked by a DPROM, not a PPROM. In this example, the N is in IU final position, but the same association of N and DPROM also occurs where N is not IU final, hence the longer duration is not associated with final lengthening.

4. dE   fi   se   dE   de   [sr\aIk]
   3PP   MOD   say   3PP   AUX   strike
         they can declare industrial action. [IBA_21_M]

Figure 4. Pitch track of Example 4, illustrating the longer duration on the focused element, strike.
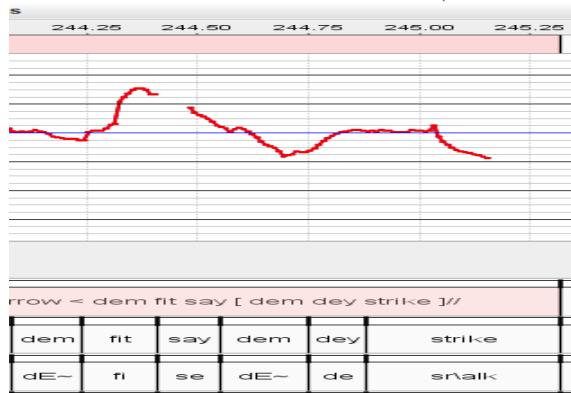
3.3. Prosodic encoding of Broad focus

Broad focus in Naija does not get any specific prosodic marking. This is illustrated in Example 2 and Figure 1 above, where the PPROM coincides with the constituent *grandmother,* which is the topic. The predicate start with *kO~n* which receives neither the PPROM nor the DPROM.

4. DISCUSSION

The relation between flexibility in word order and variability in the prosodic patterns to mark focus in the languages of the world is well-established: languages with a relatively rigid word order tend to use prosodic prominence marking, usually realized by pitch, whereas languages with a preference for a certain prosodic pattern tend to assign a position that bears prosodic prominence, moving the focused element to this position, a typological distinction captured by the terms *plastic/non-plastic languages* [22]. Naija does not seem to fit within this typology. In the marking of narrow focus, strategy 1, the *na +* focused element, suggests a non-plastic language. However, the PPROM (pitch peak) at the beginning of the IU does not mark focus, its function is purely demarcative: indicating the left boundary of an IU. The demarcative function of the PPROM is also evidenced in our finding no correlation between broad focus and PPROM. Naija seems *not* to adopt an alternative morphological or syntactic strategy to indicate broad focus; this will require further investigation. For narrow focus, the second strategy, using the DPROM, does not quite make Naija a plastic language, as this usually implies a pitch accent. The marking of narrow focus with the DPROM is, to our knowledge, a unique feature, at least amongst the languages of Nigeria, confirming the development of Naija as a discrete language.

5. CONCLUSION

This study presents preliminary results of the analysis of a selected corpus of spoken Naija, showing the realization of narrow and broad focus. The former uses any of two strategies, either the *na +* focused element construction, placed at the beginning of an IU, looking like a cleft, which then receives the pitch prominence associated with first position in an IU; or the focused constituent can occur anywhere in the IU and is then associated with a perceptual prominence realized as an extended duration. Broad focus, on the other hand, receives no prosodic marking. This use of a prominence cued by extended duration to indicate narrow focus is a feature so far unreported in other languages, to our knowledge. Further instrumental investigations will strengthen these findings.

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