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THE INTONATION OF TOPIC AND FOCUS IN ZAAR (CHADIC, SBW)

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Capitalizing on my recent work on Zaar corpus and intonation (CorpAfroas 2007-2012), I have decided to study the part of intonation in the workings of one of my pet subjects: topic and focus, using a corpus-based analysis.

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¹ Llacan : UMR 8135 : Langage, Langues et Cultures d’Afrique Noire.
1. DEFINITIONS & METHODOLOGY

1.1. RESTRICTED TOPIC & FOCUS

I start with a typological division of utterances into: thetic, topical and focal. Topical and focal utterances are based on a dichotomy between two elements: topic and comment on the one hand; focus and preconstruct on the other hand. Thetic utterances are not based on such a dichotomy, and correspond to one single unit, expressing logically simple judgements.

<table>
<thead>
<tr>
<th>Caron s.p. (b)</th>
<th>Lambrecht 1994</th>
</tr>
</thead>
<tbody>
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<td>Topical utterance</td>
<td>Predicate-focus structure</td>
</tr>
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<td>Focal utterance</td>
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<td>Sentence-focus structure</td>
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**Topic**: A minimal topical utterance is characterized by a division into two intonation units: `< Topic / Comment >`. I use the word “topic” for what (Lambrecht 1994) defines as the 'Topic Expression':

"A constituent is a topic expression if the proposition expressed by the clause with which it is associated is pragmatically construed as being about the referent of this constituent" (p. 131).

In this study, I further restrict the use of the word ‘topic’ as a short-cut for Argument-topic, i.e. the “disjoint lexical support” of the utterance (Morel & Danon-Boileau 1998). The Argument Topic, or Topic proper, is to be differentiated from left-dislocated circumstantials which include Time and Place adverbials, conditions, etc. These merely set the circumstantial frame for the following predication. In this study, I use the term “Frame” (as a short-hand for Frame-setting Topic) to set them apart from the Topic (as a short-hand for Argument Topic).

**Focus**: A focal utterance is a complex syntactic construction where a predication is given as a backgrounded preconstruct falling outside the scope of the assertion. Out of this predication, an element is selected and identified as the relevant element that fills the gap created by the extraction out of the predication. As a result we have two predications that are syntactically linked: a qualitative identification of the focus expression; and a ‘classical’ predication which is preconstructed (Caron 2000; Robert 1993). The assertion of the utterance bears on the identification of the focus expression, e.g. `John came. (HAU : AUDO NÉ yá zó.), < John > (< Audù >) is asserted ; `<(x) came > (< yá zó >) is the backgrounded preconstruct.

1.2. INTONATION

Intonation concerns the use of melody, rhythm and intensity for the expression of assertive modalities (declarative, interrogative and negative utterances), information structure (topic, focus, parenthesis, afterthought, etc.) and paralinguistic phenoma such as emphasis.

1.3. CORPUS AND PHONETICS : TOOLS

1.3.1. CORPAFROAS

This work is a development from our contribution of a Zaar corpus and grammatical sketch to the CorpAfroAs project financed by the CNRS and directed by Amina Mettouchi.²

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² CorpAfroAs is an integrated pilot project realized by field linguists for field linguists and typologists, which proposes:
- A methodology for the treatment of fieldwork textual data in underdescribed languages, from data gathering to automatic searches on the corpus,
- A free, open-source and user-friendly new software, ELAN-CorpA, developed within our project from Elan (Max Planck Institute Nijmegen),
1.3.2. Praat


I worked some time with Prosogramme, a module of Praat developed by P. Mertens to convert Hz to semitones in the representation of melodies. I had to abandon it as it was not adapted to the study of tone languages and Sp. Zaar;

1.3.3. ELAN

1.4. Exponents of intonation

Elan, and more precisely the version developed for CorpAfroas at Llacan (http://corpafroas.tge-adonis.fr/elan/461/install.htm). ELAN is a professional tool developed by the Max Plank Institute (Nijmegen) for the creation of complex annotations on video and audio resources. (http://tla.mpi.nl/tools/tla-tools/elan/)

1.4.1. Declination

For both tone and non-tone languages, declination has been presented as a universal tendency due to physiological constraints3, linked to the energy used to expel pulmonic air through the vocal organs. This creates the background for a “neutral” intonation against which variations of pitch by the speaker can be interpreted as meaningful patterns of deviations.

This is noticeable sp. in High tones. The highest tone in an IU is the first High tone of this unit. Each following High tone is pronounced lower than the preceding one. In example (1), the first three High tones read at 251 (á), 249 (mí) and 243 (ŋá) respectively, with the last High tone of the utterance (í) reading at 172. The same declination is observed in the final Low tones reading at 175 (má) and 169 (jè). Utterance-final Falls are added to declination, e.g. the lexically Mid tone of the last syllable of the paratone (ó:) which bears the utterance-final Fall from 161 (lower than the preceding Low tone) to 140 Hz.4

(1.) á lâːrmí ŋá:wôs mándi mà jèlǐː //
á  lâːrmí ŋá:wôs mándi mà jèlǐː //
3SG.AOR.SBJ bring =1PL.OBJ son =3SG.POS
màn  -dí  mà  jèl -í  -oː
BEN  -DIR  1PLAOR.SBJ  see -SPCF  FCT

He has brought his son for us to see. (SAY_BC_CONV_Ͳʹ_SPʹ_Ͳʹͻ)

3 The phenomenon of declination has to be distinguished from downstep. Downstep occurs in some tone languages and is set off by a succession of High and Low tones. It results in the automatic lowering of a High tone following a Low tone. As a consequence, in a succession of High-Low-High tones, the second High is pronounced with a lower pitch than the first one, resulting in what has been called terraced-level tone languages (Clements 1979). On the other hand, declination is a gradual, progressive lowering of F0 occurring over an utterance, whatever the succession of tones, and can be observed even in utterances with both all-High or all-Low tones. As stated by (Ladd 1996), “(...) F0 tends to decline over the course of phrases and utterances, both in tone languages and in languages like English or Dutch.” (p. 73ff.), and “[... even when nothing is ‘happening’ phonologically in the contour, F0 continues to go down slightly [...]” (p. 18)

4 This final lowering explains why the assertive particle ó: has been transcribed with a Low tone by the language assistant.
This is representative of the canonical declarative intonation of Zaar. The same intonation pattern is found in WH-Questions, as in example (2):

\[(2.) \ tò: \ zagi \ tʃi \ gös \ dzàn \ gjò: \ // \]

\(tò: \ zagi \ tʃi \ gös \ dzàn \ gjò: \ //\)

Well, Ziggy, 3SG.SBJ.be 3SG.POS day which //

Well, Ziggy, his own, which day (was it)? (SAY_BC_CONV_03_SP1_703)

To compensate for declination, each IU starts with an initial pitch reset, also called 'declination reset' (Ladd 1996:2792.2)

Apart from those exceptions, declination helps identify the limit of speech units through pitch reset. Against this general background, intonemes operate both at the initial of IUs (affecting the whole of the unit) and at the end of paratones, in what Bearth (1998) calls 'peripheral intonation'.

1.4.2. **intonemes**

Intonemes are defined as the minimal units of distinctive intonation contours associated with particular functions.

1.4.2.1. **Initial: Step-up and Step-down**

Initial lowering (Step-down, noted !) or raising (Step-up, noted ¡) consist in a noticeable change in the register of an intonation unit compared to the preceding one. This initial pitch adjustment creates a break in the gradual lowering of the pitch induced by declination. Both Step-up and Step-down are associated with specific functions: Step-up is associated with topicalisation, emphasis of adverbials and emotional statements. Step-down is associated with parenthesis and comments following a (stepped-up) topic.\(^6\)

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\(^5\) The terms Step-up and Step-down are borrowed from (Crystal 1969:143-52) to avoid any confusion with downstep, as characterised in (note 11) above.

\(^6\) Lowering and raising of register linked to informational factors such as emphasis or parenthesis, here described as Step-down and and Step-up are associated with and may be described as compression and expansion of register. Level and span are intimately linked, insofar as raising the voice, involves expanding the pitch span from the bottom up while the bottom of the speaking range remains more or less constant. "[...] broadly speaking, the higher the level the wider the span." (Ladd 1996: 260).
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In example (3), a Step-down separates the temporal frame (‘since I started’) from the assertion (I haven’t been here). The two IUs average at 101 and 87.75 Hz respectively, with their respective nuclei measuring at 111 and 89 Hz.

(3.) tündan ma ngúp / ñba: má: ło te: dünd / since 1SG.AOR start / NEG 1SG.PFV go at there NEG2 /

Since I started, I haven’t been there. (SAY_BC_CONV_TRUNC_SP1_135)

In example (4), after an initial IU corresponding to the introduction of a new topic (a new example to prove the speaker’s case), a Step-down on the second topic accompanies some backgrounded elements where the speaker reminds her audience of the theme of the conversation (women keep running about, overworking themselves, whereas men stay idle in the compound, chatting with their friends). This long paratone is characterized by ample declination and clear pitch reset at the beginning of the last two IUs.

(4.) má:m má:mi kúmá:: / lùmá: gósdi:: / tľâ: fini gós / < koyarwa makaranta /

mā:m kō mó:mi kúmá − − / lām a -di gós -di − − / mum posl Momi also -length / return -ctp 3sg.pos -ctp-length /

As for Momi’s mum, the place where she goes, what she does, is to teach children in school. (SAY_BC_CONV_TRUNC_SP1_023-26)

1.4.2.2. Terminal: Fall, Rise, Level, High-Rise

These terminal intonemes are the Fall, the Rise, the Level, and the High Rise.

3.2.1 Fall

The Fall intoneme (transcribed with the sign “Ɂ” in the annotation) consists in a distinctive lowering of the pitch at the end of the paratone. It characterises canonical assertions and Wh-questions. In Zaar, contrary to what avails e.g. in French and other Afro-Asiatic languages e.g.
Hausa (Newman 2000: 613) and Bole (Schuh, Gimba & Ritchart 2012:236), it is found at the end of Y/N-Questions as well.

(5.) ṭā: ṭā git ma:rī yā makaranta ↓// ṭā: ṭā git ma:rī kā makaranta // 
3SG.IPVF go show child.PL at school //
She goes to teach children in the school. (SAY_BC_CONV_02_SP1_028)

3.2.2 Rise
This final intoneme (transcribed ↑) is mostly associated with exclamation, such as can be seen on example (6) and here in example (11), where the final high tone on mā: is measured at 255.5 Hz while the second syllable of soséj, the paratone nucleus, peaks 12 Hz below at 243.6 Hz only:

(6.) à: sō:séj mā: ↑//
à: sō:séj mā: //
ah quite even //
Ah quite so!

3.2.3 Level
This final intoneme (transcribed →) cancels declination. It is often associated with lengthening and induces the only (rare) cases of plateau realization of flat tones. This intoneme can be observed twice in example (4), at the end of the first two IU’s. The intonation of this example can now be transcribed as follows: mā:m mō:mi kāmā::→/ !ğāmdī gōsā::→/ tfā: finī gōs / < koyarwa > makaranta ↓//. As is the case here with the first two IU’s, the Level intoneme often identifies the limit and relationship between a topic and a comment. It is also associated with hesitation, e.g. in example (14) at the end of the paper.

3.2.4 High Rise
High Rise (transcribed ⌧) is characterised by a sharp rise of F₀ to a level beyond the speaker's usual range of high tones. It is associated with e.g. emphasis on negation, ideophones and assertion particles. It can be followed by a Fall when occurring at the end of a paratone. In Example (7), we have two occurrences of this intoneme. The first High Rise occurs at the end of
an intonation unit, but paratone-externally. It is borne by the last syllable of the word kimsá. The second High Rise occurs at the end of the paratone, and is followed by a Fall.

(7.) […] mjáːnaː tuːl gįp kimsá tː↑/ (816) káwāj mąːʃin /
(314) fi mąːkőp tː↑↑//

mjáːnaː tuːl gįp kį =ma ‐sa /
1SG.CONC arrive inside 2PL.SBJ =1SG.OBJ ‐PL /

káwāj mąːʃin / fi mąːkőp //
merely motorbike / do stop //

[... ] we had just entered Kimseh when the motorcycle stopped.
(SAY_BC_CONV_03_SP1_400-4)

2. FOCUS

Focus is expressed in Zaar through a cleft construction involving left-dislocation, and indentification of the focus with either of the two ‘be’ copulas: the independent particle na (Foc1), or the enclitic particle =kan or one of its allomorphs (=kandi, =kandá) (Foc2), or both (Foc3). The relativizer dan can optionally be associated with the Foc1 construction. This gives four different syntactic structures:

• 1. Foc1a : < na NP> Predication
• 2. Foc1b : < na NP dan > Predication (ex. 8)
• 3. Foc2 : < NP=kan > Predication (ex. 9)

The two structures can be combined:

• 4. Foc3 : < na NP=kan > Predication (ex. 10)

These structures have a negative counterpart when combined with the sentence-final negative particle hôŋ, which can be completed by the optional loanword bàː, borrowed from Hausa, preceding the particle na. The result is the structure (bàː) na ... hôŋ, as can be seen in (ex. 10).

The resulting focal utterances are realized as a single intonation unit, with the standard pattern characterised by declination and final Fall. There is no intensity stress on the focus, or pause between the left-dislocated focus and the predication.
(8.) na mjá:ní da:ṇ̄ fu sámwò́píjo: //

na mjá:ní dán á: fu sám =wō̤̣m -i: -o: //
COP1 1PL REL2 3SG.PFV say name =1PL.POS -RES -FCT //

We are the ones whose name he called. (SAY_BC_CONV_02_SP2_221)

(9.) tákwâ:ràs ñátá mán tum /

tákwâ:ràs =kən átâ man tu =mə /
Takwaras =COP2 3SG.REM come meet =1SG.OBJ /

[…] it's Takwaras who came to meet me […] (SAY_BC_CONV_03_SP1_695)

(10.) bà: nə malá:ri gòpí:ɣəndá tòtā wul vi: gi: həŋ //

bà: nə malá:r -i gòpm -i: =kən
NEG1 COP1 Malar -INDF 1PL.POS -RES =COP2
tòtā wul vi: gi: həŋ //
1PL.REM say mouth DIST NEG2 //

[…] it's not our people of Malar who are speaking like this. (SAY_BC_CONV_03_SP1_705)
3. Topic
Two types of topics exist in Zaar: specified topics which are followed by a topic particle (called modal particle in Chadic linguistic tradition), and unspecified topics.

3.1.1. Unspecified Topics
Unspecified topics are left-dislocated, and correspond to an intonational unit characterized by various exponents separating the topic from the comment:

- suspension of declination;
- pause;
- lengthening of the last segment of the topic;
- pitch reset and/or change of register.

In (ex. 11), the second and third topics, ḫambi gòsdiː ‘the place where she goes’ and ḥāː fìnì gòs ‘what she does’ are unspecified topics, separated by a change in register. The third topic is followed by a pitch reset. The first topic mǎːm mòːmi kúmá ‘as for Momi’s mother’ is a topic specified by the discourse particle kuma ‘as for’.

(11.) mǎːm mòːmi kúmáːː / ḫambi gòsdiːː / ḥāː fìnì gòs / < koyarwa > makaranta //

mǎm ká móːmi kúmáːː / ḫambi -dì gòs -dì -ːːː /
mum posl Momi also -length / return -ctp 3sg,pos -ctp-length /

ḥāːː fìnì gòs / < koyarwa makaranta > //

3sg,ipfv do -inch 3sg,pos / < teaching school > //

As for Momi’s mum, the place where she goes, what she does, is to teach children in school. (SAY_BC_CONV_02_SP1_023-26)

In Ex. (12), the first two topics are only limited by a pause. There is no lengthening or level intoneme, but there is on the contrary a final fall. As for the third topic, the pause has disappeared and the limit between the topic and the comment is given by an emphatic rise on the first word of the comment: burúk, ‘all (of it)’.

SAY_BC_CONV_02_SP2_270-1
(12.) tó layá dåni / tó layá námtsi / gút zâ:rwɔpm / ɓurúk mjá: fi ti: //

with work PosL house -INDF / with work PosL bush -INDF /

219 gudi za:r ko -wɔpm / ɓurúk mjá: fi -to -i: //
woman.PL human 2SG.AOR -1PL.POS / all 1PL.IPFV do -3S.OBJ -RES //

The work of the house and the work of the bush we Zaar women, all of it, we do it.

3.1.2. *Specified Topics*

When topics are followed by a modal particle, e.g. kàm, ‘indeed’; má:, ‘even’, kúma, ‘too, as for’, all the various elements characterizing unspecified topics, except for the change in register, can be omitted. This is the case in (ex. 13) where the topic kótá là: mòmmonfì ‘all the men’s work’ is specified by the discourse particle má: ‘even’:

(13.) kótá là: mòmmonfì má: mjá: fiyâni bát //

kótá là: kó mòmmonfì má: miká fi -kãni bát //
all work POS man.PL even 1PL.CONT do -NMLZ all //

All the men’s work even, we do it all. (SAY_BC_CONV_02_SP2_289-90)

However: difference in register.

<table>
<thead>
<tr>
<th></th>
<th>Low</th>
<th>High</th>
<th>Mean</th>
<th>Span (val)</th>
<th>Span (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>kótá là: mòmmonfì má: (Spec.Top)</td>
<td>179,6</td>
<td>469,5</td>
<td>359,2</td>
<td>289,9</td>
<td>80,7</td>
</tr>
<tr>
<td>mjá: fiyâni bát // (Comm.)</td>
<td>114,75</td>
<td>328,7</td>
<td>235</td>
<td>214,2</td>
<td>91,2</td>
</tr>
</tbody>
</table>
4. **FOCUS AND TOPIC IN CONTEXT**

Young girls they are the ones who will... who will cook food. Yes, a young girl will cook, she will fetch water and cook the food. Mm. She will cook the food, and then give it to me and her father, then we eat. Then I rest. But if I do not have a young girl who cooks the food, I am the one who will cook myself before I eat. Mm.
4.1. **INTONATIONAL FOCUS OR EMPHASIS?**
The answer is in the analysis of the informational structure, not in the acoustic cues or intonation exponents.
4.2. **TOPIC AND FRAME: SAME INTONATION**

The theoretical distinction does not correspond to a change in intonation.

(16.) tóː /mjåːːnıː/ láp jáː / tóː máː ʃiːː ná̆mtsoː nátkáːnı̆ //

The work of the house and the work of the bush we Zaar women, all of it, we do it.

4.3. **SPECIFIED TOPIC AND FOCUS**

Again, a theoretical problem. Apart from change in register, when ScT has no pause, lengthening or level tone, e.g. (Ex. 13) not much difference between specified topic and focus. The modal particle could be analysed as a focus marker (cf. Manfredi on zatu in Juba Arabic in Caron & al. s.p.). Information structure is what matters: see what is asserted and what is backgrounded. In the case of focus, the left-dislocated element is asserted, and the rest is backgrounded; in the case of Topic, the left-dislocated element has a neutral value: neither asserted, nor backgrounded. It is merely stated. The Comment is asserted.

5. **CONCLUSION**

The more morphology is present, the less intonation is used. (cf: Specified vs. Unspecified topics; Focus & Y/N Questions in Zaar: no specific intonation structure).

Register is most important: higher register: foreground (topic, emphasis); lower register: background (afterthought, comment, parenthesis). Can this be quantified? Difference between High Rise and Rise?

Boundary for final intonemes: syllable or phrase?

Importance of genres: conversation ≠ narration ≠ tale telling ≠ interview.
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