

# Prosodic Segmentation and Grammatical Relations: the Direct Object in Kabyle (Berber)

# Segmentação prosódica e relações gramaticais: o objeto direto em kabile (berbere)

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**Abstract:** The aim of the present paper is to provide evidence for the existence, in Kabyle (Berber), of the grammatical role 'Direct Object', and to define it using a non-aprioristic, empirical methodology. The definition, based on the analysis of corpus data, involves formal means pertaining to morphology, syntax and prosody. Prosodic segmentation is not only crucial for the definition of the category; it also serves as supporting evidence for the tightness of the relationship between verb and direct object. **Keywords**: direct object; prosody; segmentation; Kabyle; Berber; grammatical relations.

**Resumo:** O objetivo deste artigo é oferecer evidências para a existência da função gramatical "Objeto Direto" em kabile (berbere) e defini-lo utilizando uma metodologia empírica, não-apriorística. A definição, baseada na análise de dados de corpus, envolve meios formais pertinentes à morfologia, sintaxe e prosódia. A segmentação prosódica não é apenas crucial para a definição da categoria, mas também serve como evidência em favor da coesão da relação entre verbo e objeto direto.

**Palavras-chave:** objeto direto; prosódia; segmentação; kabile; berbere; relações gramaticais.

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## Introduction

It is not so usual to associate prosody, especially prosodic segmentation, with the analysis of grammatical relations, but as previous work has shown (METTOUCHI, 2013, 2015, 2018 [2011]), considering prosodic cues as formal means with as much structuring potential as linear ordering or morphological marking actually allows the discovery of constructions in the domain of grammatical relations (and other domains too, such as information structure).

Within an empirical, and corpus-based approach, my purpose in this paper is to provide evidence for the existence, in Kabyle, of the grammatical role 'Direct Object', different from the semantic role 'Referential undergoer', and to define the Direct Object function in a non-aprioristic and language-internal perspective. I show that prosodic boundaries are crucial for the definition of Direct Object function in Kabyle, and that prosodic disfluencies provide evidence for the fact that the verb and its direct object form a constituent.

The paper first provides background information about Kabyle, prosodic units, and grammatical relations. The encoding of grammatical and semantic relations on bound pronouns is then analyzed, and I show that so-called 'direct object pronouns' in fact code 'referential undergoer role', a function different from direct object. In a third part, noun phrases coreferent to those bound pronouns are characterized, taking into account prosodic boundaries, and I show that their function is within the domain of referent activation, not grammatical relations. In a fourth part, the only noun phrase not coreferent with a bound pronoun, the direct object, is formally defined using syntactic, morphological and prosodic criteria. In a fifth part, proof is given of the tight relationship between verb and direct object, through the analysis of disfluencies and F0 contour.

## 1. Preliminaries

# 1.1 Kabyle

Berber languages are spoken in northern Africa, in a zone delimited bythe Atlantic Ocean to the West, the Mediterranean to the North, the oasisof Siwa (Egypt) to the East, and the southern borders of Mali and Niger tothe South. Those languages constitute a family within the Afroasiaticphylum. Well-known members of the family are, among others, Kabyle (spoken innorthern Algeria), Tashelhiyt (Shilha) (spoken

in southern Morocco), and Tamashek and Tahaggart (also called Tuareg), spoken in southern Sahara.

Kabyle has about four million speakers in the north of Algeria. The variety investigated in this paper is a Western one, spoken in the village of Ait Ikhlef, close to the town of Bouzeguene. I collected all the data on fieldwork between 2007 and 2011.

In Kabyle, as in all Berber languages, a minimal predication consists either of a verb and its bound personal pronoun, or of a non-verbal predicate. In this paper I focus on verbal predicates. In addition to this core, the clause may contain noun phrases, and prepositional phrases, as well as adverbs. Within noun phrases, modifiers follow the modified constituent. The language has two genders and two numbers, marked on adjectives, on nouns, and on pronominal affixes and clitics hosted by verbs, nouns and prepositions. It also has two states, marked on nouns.

## 1.2 Prosodic units and corpus

The corpus on which the study is based comprises, but is not limited to, one hour¹ of transcribed, segmented, annotated and translated narratives and conversations, collected in the field in Kabylie (Algeria) between 2007 & 2011. Examples in this paper are taken from the one-hour corpus.

00:01:07.500 00:01:08.500 00:01:10.000 00:01:11.000 ref@SP1 00:01:07.500 00:01:08.000 00:01:08.500 sbbi abirehm rebb\*i // 00:01:09.000 tx@SP1 1@SP1 6@SP1 grandfath SB tak P HESIT ## ge@SP1 [1264] rx@SP1 ft@SP1 [238] /\_01\_SP2\_071 tx@SP2 b@SP2 Amina yes / ge@SP2 rx@SP2

FIGURE 1 – Layout of the Kabyle Corpus

<sup>&</sup>lt;sup>1</sup> The Kabyle corpus is accessible and searchable online, at <a href="http://dx.doi.org/10.1075/scl.68">http://dx.doi.org/10.1075/scl.68</a>. website>.

As shown in Figure 1, morphosyntactic annotation<sup>2</sup> is displayed on two tiers, "ge" and "rx", allowing the automatic retrieval of complex queries based on forms. In the case of grammatical relations, only one-to-one form-function mappings were annotated: distinct and dedicated pronominal paradigms were given the label corresponding to their function (see below for expanded discussion on pronouns), but since nouns are only marked for gender, number and state, and since state does not code grammatical role (see below and METTOUCHI, 2018 [2011]), no noun was annotated as subject, direct or indirect object. The question of whether grammatical relations are coded for nouns, through constructions, was left open for investigations, which have been conducted using a query language based on regular expressions.<sup>3</sup>

An intonation unit is a segment of speech that has a coherent intonation contour (CHAFE, 1994), and is delimited by its boundaries (CRUTTENDEN, 1997), which bear a 'boundary tone' (PIERREHUMBERT; HIRSCHBERG, 1990). In Kabyle, Intonation Units are marked by one or more of the following cues:<sup>4</sup>

## Main external cues

(1) final lengthening; (2) initial rush; (3) pitch reset; (4) pause; (5) creaky voice.

## Main internal cues

(1) declination; (2) tonal parallelism, or isotony.

<sup>&</sup>lt;sup>2</sup> The following abbreviations are used: ABS absolute state; ABSV absolutive pronominal paradigm; ANN annexed state; AOR aorist; ASSOC associative; CAUS causative; CNS shared reference demonstrative; COL collective; COM comitative; COP copula; DAT dative; EXNEG existential negative; F feminine; GEN genitive; HESIT hesitation; IDP independent pronoun; IPFV imperfective; KIN kinship pronominal paradigm; M masculine; NEG negation; PFV perfective; PL plural; POS positive; POSS possessive pronominal paradigm; PREP prepositional pronominal paradigm; PROX proximal; SBJ subject pronominal paradigm; REAL realis; REL relator; RELSBJ subject relativization circumfix; SG singular; VOC vocative. A list of glosses with definitions, explanations and references can be found on http://corpafroas.huma-num.fr/ Archives/KAB/PDF/KAB AM ALISTOFGLOSSES.PDF

<sup>&</sup>lt;sup>3</sup> For the syntax of queries using regular expressions, see http://llacan.vjf.cnrs.fr/fichiers/manuels/ELAN/ELAN-CorpA Search.pdf

<sup>&</sup>lt;sup>4</sup> See (IZRE'EL; METTOUCHI, 2015) for more information on the segmentation of the CorpAfroAs corpus of spoken Afroasiatic languages, of which the Kabyle corpus is a part.

The data were segmented into intonation units<sup>5</sup> on the basis of native speaker perception, and acoustic control with Praat.<sup>6</sup> Two native speakers were first made to understand that what was asked of them concerned the melodic and rhythmical contour of the unit, not its lexical, grammatical or pragmatic contents. Then the recording was played using Praat, and they were asked to tell where they would insert boundaries in the flow of speech; they indicated that by a beat of the hand on the table. For each beat, the annotator inserted a boundary marker in the Praat textgrid corresponding to the sound file. The units thus delimited were additionally controlled with Praat whenever there was disagreement between the two native speakers. Later, the annotator added units for silent pauses over 200 ms (the number inside indicates duration of the pause in milliseconds), and for breath intakes (coded as BI, followed by the duration of the intake in milliseconds). All examples used for this study were systematically re-controlled with Praat.

The total number of non-pausal intonation units for the whole one-hour corpus is 2671. With breath intakes and silent pauses, the total number of units<sup>7</sup> is 3974.

Intonation Units are usually considered as either linked to the domain of cognition (CHAFE, 1994) or pragmatics (CRESTI; MONEGLIA, 2005) in some approaches, or as the projection of clause structure (syntactic level) onto the prosodic level (SCHEER, 2011; SELKIRK, 2009; VOGEL, 2006), in other approaches.

In the first type of approaches, intonation units are seen as encapsulating an 'idea' (CHAFE, 1994), or a 'speech-act' (CRESTI; MONEGLIA, 2005). However, the existence of intonation units (formally defined by prosodic cues only) that are not pragmatically autonomous, such as in the following example, points to the fact that there is no necessary mapping between idea/speech-act and intonation unit.

<sup>&</sup>lt;sup>5</sup> Annotated as /: non-terminal boundary; //: terminal boundary.

<sup>&</sup>lt;sup>6</sup> http://www.fon.hum.uva.nl/praat/

<sup>&</sup>lt;sup>7</sup> Each unit has been numbered following a precise methodology: ISO code of the language, initials of the author, genre (NARR is for narrative, CONV for conversation), number of the file, number of the unit. Thus, all examples are easily found in the corpus.

```
(1) urdəzwid͡ʒəy / BI 363 / alamma θəkksədd / fat<sup>s</sup>ima θuħr<sup>s</sup>ifθ / 326 / ayrum əgðəkkwan //
   ur=dd
                        zwiğ-v /
                                                     BI-363/ alamma
                        marry\NEGPFV-SBJ.1SG /
   NEG=PROX
                                                     BI 363 / until
   PTCL=PTCL
                        V23-PRO /
                                                     BI 363 / CONJ
                                            fatima tuħriſt / 326 /
   t-əkks=dd /
                                            Fatima clever / 326 /
   SBJ.3SG.F-take away\PFV=PROX /
   PRO-V23=PTCL/
                                            NP
                                                     ADJ / 326 /
                               udəkk°an //
   ayrum
   bread\ABS.SG.M
                         LOC shelf\ANN.SG.M //
   NOV
                         PREP N.OV //
   I won't marry / ... / until she grabs / clever Fatima / ... / the bread on the shelf //
   (I won't marry until Clever Fatima grabs the bread on the shelf)
   (KAB AM NARR 01 0086-91)
```

As for the second type of approaches, as shown by Tao (1996) and Ross (2011) among others, there is no one-to-one mapping between clause and intonation unit: in Kayarldid and Dalabon (ROSS, 2011), intonation units are more commonly found to comprise part of a clause, and discourse factors override grammatical phrasing (there are multi-verb intonation units, as well as single NP intonation units). As for Mandarin, Tao (1996) notes the high number of NP units, as well as elliptical clausal intonation units.

However, the fact that intonation units are not projections of syntax onto prosody doesn't mean that there is no link between intonation unit and clausal structure. Indeed, all intonation units that contain a verb in Kabyle necessarily contain a minimal clause, since no verb can appear without its obligatory subject affix. A typology of such units has been proposed in Mettouchi (2013, 2015, 2018 [2011]), on the basis of the presence, ordering and morphology of noun phrases inside or at the periphery of the prosodic group containing the verb.

In that typology, the prosodic group containing the verb is defined as a unit whose left and right boundaries, marked by such cues as final lengthening, initial rush, pitch reset, pause, and/or creaky voice, enclose a verb. The types found in Kabyle spontaneous discourse (narratives and conversation) are the following (METTOUCHI, 2013, 2015, 2018 [2011]): 
\*\*[2011]\* (a) [V\*\*\_sbj\* (N\*\*\_ABS\*)]\*; (b) [V\*\*\_sbj\* (N\*\*\_ABS\*)]\*; (c) [N\*\_ABS\*\_Sbj\* (N)]\*; (d) N\*\_ABS\*\_ANN\* (N\*\_ABS\*\_ANN\*), where prosodic

 $<sup>^8</sup>$  V<sub>sbj</sub> represents the verb and its obligatory subject affix (other clitics may also attach to the verb), N<sub>ann</sub> represents a noun in the annexed state, and N<sub>abs</sub> a noun in the absolute state.

boundaries are represented by square brackets. Illustrative examples are given below, and the reader is referred to the abovementioned publications for contextualized examples taken from spontaneous corpora.

- (a) [j-fffa (ayr<sup>s</sup>um)]SBJ3.SG.M-eat\PFV (bread\ABS.SG.M) 'He ate (bread)'
- (b) [j-ffa wqfif (ayr $^{\varsigma}$ um)]SBJ3.SG.M-eat\PFV child\ANN.SG.M (bread\ABS.SG.M)] 
  'The boy ate (bread)'
- (c) [aqʃiʃ j-ʧfa ayrfum]child\ABS.SG.M SBJ3.SG.M-eat\PFV bread\ABS.SG.M 'The boy ate bread'
- (d) aqſiʃ [j-ʧfa (aɣr²um)]child\ABS.SG.M /SBJ3.SG.M-eat\PFV (bread\ABS.SG.M) 'The boy, he ate (bread)'
- (e) [j-fffa (ayr<sup>s</sup>um)] wqfĭf-nni [SBJ3.SG.M-eat\PFV (bread\ABS.SG.M)/ child\ANN. SG.M-CNS] 'He ate (bread), that boy'

Those types have information structure and referent activation functions, and the grammatical role of nouns is not systematically coded by the construction (METTOUCHI, 2018 [2011]). The information structure function of such constructions as (a) is (sub-) topic continuation: the protagonist is the same, and the narrative is carried forward; (b) introduces a new episode in a narrative or a new subtopic in a conversation; (c) builds a background for further developments, recapitulating a salient preceding situation, so that the listener grasps the whole situation and its importance for the current discourse; (d) marks a shift in perspective or contrast with previous expectations; and (e) reactivates a referent that had lost its active or semi-active status (METTOUCHI, 2015, 2018 [2011]).

As mentioned above, not all nouns are transparently coded (i.e. formally recognizable, vs. retrieved by inference only) for grammatical role in Kabyle. Detailed evidence is given in Mettouchi (2018 [2011]) in support of that claim.

## 1.3 Grammatical relations

My approach does not consider as a given the fact that in Kabyle, grammatical relations are encoded on all nominal/pronominals. Indeed, as shown in Mettouchi (2013, 2018 [2011]), unless preceded by a preposition, only some nominals, those inside the prosodic group of the verb, may be attributed a grammatical role. Nominals belonging to

the sentence, but situated before or after the prosodic boundaries of the prosodic group of the verb can be coreferent to a bound pronoun that has a given grammatical or semantic role, but they do not, either through morphology or construction, encode such roles. Their function is more centrally in the domain of information structure and referent activation, as mentioned in the preceding part (see METTOUCHI, 2015, 2018 [2011]) for extended and commented examples from my corpus).

In that respect, this study differs from works that take the existence of the category 'direct object' as not needing to be established within a specific language, nor defined in a more formal way than in Matthews (2007) for instance:

**direct object** (DO) An \*object traditionally seen as identifying someone or something directly involved in an action or process: e.g. *my books* in *I might leave my books to the library*, where it is distinguished from the \*indirect object *to the library*. Hence, in particular, the object typically next to the verb in English, one marked by the accusative case in German, and so on. (MATTHEWS, 2007, p. 106)

**object** (O) 1. An element in the basic sentence construction of a language such as English which characteristically represents someone or something, other than that represented by the \*subject (1), that is involved in an action, process, etc. referred to. E.g. him in I met him; both her and aflower (respectively the \*indirect object and the \*direct object) in I will give her aflower; also, on the assumption that it is syntactically the same element, that I did in I said that I did. 2. An element seen as standing in a similar relation to a preposition: e.g. Washington in from Washington. 3. Any element, in any type of language, which characteristically includes the semantic role of \*patient. Cf subject (3): thus, in typological studies, a language may be classified as an \*SVO language simply because that is the commonest order, in texts, of agent, verb, and patient. (MATTHEWS, 2007, p. 272)

**patient** (P) 1. Noun phrase or the equivalent that identifies an individual etc. undergoing some process or targeted by some action. E.g. the house is a patient in *I painted the house*; Mary in *I kissed Mary*. 2. Thence of a syntactic role which is characteristically that of a patient. E.g. a **direct object** in English tends to be a patient, especially a patient rather than an \*agent.

Therefore **direct objects** and elements in other languages which are in this respect equivalent to them may be called, in general, patients.

The sense is that of Latin *patiens*, 'suffering' or 'undergoing'. Abbreviated to P especially in cross-linguistic studies, where opp. A for \*agent (2); also opp. S (3). (MATTHEWS, 2007, p. 290)

My approach also differs from studies that, having taken the category 'direct object' for granted, and having either selected typical examples from corpora, or having created sentences for reading experiments, provide findings about 'the prosody of direct objects'.

While I acknowledge the importance and relevance of those studies, my perspective is different in that it includes prosodic forms in the very definition of the category in Kabyle: there is no 'prosody of direct objects', but rather, a construction involving syntactic, morphological and prosodic forms which (a) encodes the 'direct object' function, and (b) translated into an automatic query, allows the retrieval of all and only the direct objects in a spoken corpus of Kabyle, non-aprioristically annotated according to forms.

# 2. Bound pronouns and their roles

While nominals are most of the time absent, bound pronouns are noticeable and frequent in Kabyle. The language has several pronominal paradigms (METTOUCHI, 2017, p. 10-11). Among those, some are hosted by the verb: the subject affix, the absolutive clitic, and the dative (indirectly affected argument) clitic.

Subject pronouns are affixes (their position relative to the verb is fixed), and only appear with verbs; dative pronouns are clitics (they undergo climbing in contexts of negation, relativization, or irrealis mood). This is also true for absolutive pronouns, which, additionally, are also hosted by some non-verbal predicates (they are their sole argument).

# 2.1 Subject affixes and dative (indirectly affected argument) clitics

Subject affixes code various participant roles, among them sole argument of intransitive verbal constructions (2), affecting argument of active transitive constructions (3), and affected argument of passive transitive constructions (4).

```
(2) atsali arθkana /
   ad
                                       ar
                                                tkanna
   POT
             SBJ.3SG.F-go up\AOR
                                                attic\ANN SG F /
                                       to
   PTCL
             PRO-V14
                                       PREP
                                                N.OV
                                                           /
   'she would go up to the attic'
   (KAB AM NARR 01 0862)
(3) \thetassuli\thetaid /
   t-ssuli=t=dd /
   SBJ.3SG.F-go up\CAUS.PFV=ABSV.3SG.M=PROX /
   PRO-V14=PRO=PTCL/
   'she pulled him up'
   (KAB AM NARR 01 0968)
(4) aðtswətsənt /
   ad
             ţţwəčč-nt
   POT
             eat\PASS.AOR-SBJ.3PL.F/
   PTCL
             V13%-PRO
   '(the little girls were) to be eaten alive'
   (KAB AM NARR 01 0710)
     Dative clitics code the indirectly affected argument: addressee,
```

recipient as in (5), positively or negatively affected participant as in (6)...

```
(5) θəfkajasəntəts /
   t-fka=asnt=t
   SBJ.3SG.F-give\PFV=DAT.3PL.F=ABSV.3SG.M /
   PRO-V13%=PRO=PRO
   'she gave it to them (her sisters)'
   (KAB AM NARR 01 0537)
(6) < ça fait > \theta əmmu\thetaas \theta əq fif\theta iZahwa \thetaa flits //
   <ca fait>
                 t-mmut=as
                                                    təqſiſt
                                                                      i
   it is
                  SBJ.3SG.F-die\PFV=DAT.3SG
                                                    girl\ANN.SG.F
                                                                      DAT
   CSW.FRA
                  PRO-V24=PRO
                                                    N.OV
                                                                      DEMPRO
   Zahwa
              TaSlit
              daughter of Ali
   Zahwa
   NΡ
              N.P.
   'you were saying she lost a daughter (lit. 'a girl died on her'), Zahwa TaSlit, ?'
   θəmmuθas θmənzuθ //
    t-mmut=as
                                                      //
                                          tmənzut
    SBJ.3SG.F-die\PFV=DAT.3SG
                                          elder\ANN.SG.F //
    PRO-V24=PRO
                                          N.OV
                                                      //
   'Her eldest daughter died (on her)'
   (KAB AM CONV 01 SP3 31 & SP1 276)
```

## 2.2 Absolutive clitics

Absolutive clitics represent the undergoer argument of verbal active transitive constructions, as in (7), and the sole argument of some non-verbal constructions (locative question, negative locative, persistive, presentative, evaluative (METTOUCHI, 2017)), as in (8).

```
(7) ibbwint /
   i-wwi=tnt
   SBJ.3SG.M-bring\PFV=ABSV.3PL.F/
   PRO-V14=PRO
   'he took them'
   (KAB AM NARR 01 0727)
(8) ikkərd jufad jəssisulafiθənt /
   i-kkr = dd
                                      j-ufa=dd
                                                                jəssi-s
   SBJ.3SG.M-stand up\PFV=PROX SBJ.3SG.M-find\PFV=PROX
                                                                daughter\PL-
   KIN.3SG
   PRO-V24=PTCL
                                   PRO-V13%=PTCL
                                                            N.KIN.COV-PRO
   ulaf=tnt /
   NEG.EXS=ABSV.3PL.F /
   PRED=PRO
   'the father woke up and found that his daughters were no longer there'
   (KAB AM NARR 01 0902)
```

With verbal predicates, the absolutive pronoun is generally presented as a "direct object", or as an "object agreement marker". It refers to the patient of the state of affairs, and can be effected or affected. It is always cliticized to the verb or to a negative (as in (9)), potential, or relativization marker, itself directly preceding the verb, and not separable from it by a prosodic boundary.

```
(9) untitfara //
ur=tnt j-čči ara //
NEG=ABSV.3PL.F SBJ.3SG.M-eat\NEGPFV POSTNEG //
PTCL=PRO PRO-V13% N.INDF //
'he didn't eat them'
(KAB_AM_NARR_01_0851)
```

Given the fact that this pronoun also codes the sole argument of non-verbal predicates, it is non-eligible for the function of direct object, which implies transitivity, and a subject. I therefore consider that the absolutive pronoun does not encode a grammatical relation, but a semantic one: the undergoer participant, for any state of affairs.

Moreover, not any type of undergoer is thus encoded: the participant has to be referential, it cannot be non-referential or non-existent, as shown by (10) and (11).

```
(10) addənsəw / ulaf ipajasən / ulaf əlqa$a
     ad=dd
                                                       ipajasn /
                     n-səw
                                          ulaſ
     POT=PROX
                     SBJ.1PL-drink\AOR / NEG.EXS
                                                       mattress\ABS.PL.M /
     PTCL=PTCL
                     PRO-V23%
                                          PRED
                                                       NOV
     ulaſ
                     lgaSa
                              /
     NEG.EXS
                     ground\ABS.SG.F /
     PRED
                     N.COV
     'we would drink, there were no mattresses, there was no proper ground'
     (KAB AM NARR 03 0239-242)
```

Indeed, negative existential predication is coded by *ulaf*, without any pronoun, possibly followed by a noun in the absolute state, as in (10), whereas *ulaf* hosting an absolutive bound pronoun (as in (8)) cannot express absence of a referent, it necessarily means that the referent exists but not at that location.

Referentiality of the absolutive pronoun is also a property of verbal predications: an absolutive pronoun cannot co-refer with an abstract or non-referential noun, as shown by the ungrammaticality of examples (11') and (11"), constructed from the original formulation in (11).

```
(11) θəsŞa lħərşma /
     t- s\a
                                         lħərma
     SBJ.3SG.F-possess\PFV
                                         good reputation\ABS.SG.F /
     PRO-V13%
                                         N.COV
     'she had good reputation'
     (KAB AM NARR 03 0567)
(11') *lħəṛma,
                                t-s\a=tt
     good reputation\ABS.SG.F SBJ.3SG.F-possess\PFV=ABSV.3SG.F
                    PRO-V13%=PRO
     *good reputation, she had it.
(11") *t-s\(\sigma a = tt,
                                                  lħərma
     SBJ.3SG.F-possess\PFV=ABSV.3SG.F
                                                  good reputation\ANN.SG.F
     PRO-V13%=PRO
                                                  N.COV
     *she had it, good reputation.
```

Those characteristics lead me to define absolutive pronouns in Kabyle as coding the role of referential undergoer.

Pronominal paradigms hosted by verbs are therefore not homogeneous in terms of categories: whereas the subject affix clearly codes grammatical role, the absolutive and the dative bound pronouns code semantic roles in Kabyle.

## 3. Coreferent nominal

As is the case for all bound pronouns in Kabyle, the referent of absolutive pronouns can be expanded by a coreferent nominal. Whereas pronouns come in various paradigms, nouns must be either in the absolute or in the annexed state. This binary morphological marking, covert in the case of borrowings and for some classes of nouns with a special phonological structure, is marked differently depending on the gender and the number of the noun (table 1).

	Masculine		Feminine	
	Singular	Plural	Singular	Plural
Absolute	a-myar	i-myar-n	t-a-myar-t	t-i-myar-in
Annexed	w-myar	j-myar-n	t-myar-t	t-myar-in
(root myar, 'old person')				

TABLE 1 – Gender, Number and State in Kabyle

The state distinction plays a structural role in the language. It is the backbone of the whole grammatical system of Kabyle and is functional at the level of the phrase as well as at the level of the clause and the sentence (METTOUCHI; FRAJZYNGIER, 2013; METTOUCHI, 2014)

In Kabyle, the function of the annexed state is to "provide the value (in the logical sense) for the variable of the function grammaticalized in a preceding constituent" (METTOUCHI; FRAJZYNGIER, 2013, p. 2),

<sup>&</sup>lt;sup>9</sup> "A grammaticalized function is a function that is represented by a morpheme, which may be affixal (bound pronouns, gender-number markers) or non-affixal (prepositions, relational morphemes). A function is grammaticalized when it is coded by some grammatical marker." (METTOUCHI; FRAJZYNGIER, 2013, p. 2)

while the absolute state "is the default form of the noun and does not carry any specific function." (METTOUCHI; FRAJZYNGIER, 2013, p.2).

Nouns in the annexed state always follow the marker for whose function they are a variable. Therefore, a noun in the annexed state cannot be the first element of any structure in Kabyle. Nouns in the annexed state can be complement of prepositions, of relational nouns, they can be coreferent to a pronoun bound to a verb or a noun... Nouns in the absolute state are not constrained in position or function; in a binary system where nouns must be in either the annexed or the absolute state, their contexts of occurrence are in complementary distribution with the contexts of the annexed state, they are the default member of the opposition. This does not prevent them from being part of constructions which are themselves functional: 'verb followed by noun in the absolute state' is a construction with a function no less marked than 'verb followed by noun in the annexed state'.

# 3.1 Computing coreferentiality

Coreferent nouns are in the absolute state when they precede the functional element with which they are coreferent, here the subject pronoun (12), and in the annexed state when they follow it (13).

```
(12) argaz a \delta i r^{\varsigma} u \hbar a \delta j a w i \theta a j u j a a \delta i \varsigma r \text{$>$z$} /
                        ad
                                                     ad
                                                             i-awi
     man\ABS.SG.M POT SBJ.3SG.M-go\AOR POT
                                                             SBJ.3SG.M-bring\AOR
                                        PRO-V24
                                                                      PRO-V14
     N.OV
                               PTCL
                                                             PTCL
                                                   i-kərz
     tajuga
                                          ad
     pair of oxen\ABS.SG.F
                                 POT
                                          SBJ.3SG.M-plough\AOR /
     NOV
                                          PTCL
                                                   PRO-V23.LAB /
     The husband would go and bring a pair of oxen to plough,
     (KAB AM NARR 03 0096)
(13) nəγ ma issuθidd wərgazis /
     nəy ma i-ssutr=as=dd
                                                                  wərgaz-is
     or if SBJ.3SG.M-request\PFV.CAUS=DAT.3SG.M=PROX man\ANN.SG.M-
     POSS.3SG /
     CONJ CONJ
                       PRO-V24=PRO=PTCL
                                                                 N.OV-PRO
     or when her huband requests something,
     (KAB AM NARR 03 1125)
```

Coreference is computed on the basis of identity of gender and number between pronoun and noun. In some cases of ambiguity (e.g. same number and gender on the subject and absolutive bound pronouns), establishment of coreference also relies on probabilistic inferences.

## 3.2 Nouns coreferent to absolutive pronouns

No noun in the annexed state coreferent to an absolutive pronoun appears within the prosodic group of the verb in my data. Nouns in the annexed state within the prosodic group of the verb are all coreferent with subject affixes, as in example (13). And nouns in the annexed state coreferent with absolutive pronouns are outside the prosodic group of the verb, always after a prosodic boundary, as in (14) and (15):

```
(14) tufa ðamfifbuðrar // 423 iθizəðyən / wəxxamnni //
                                                                 // 423
                        amſiſ
                                                     wədrar
   SBJ.3SG.F-find\PFV
                       COP cat\ABS.SG.M
                                             GEN
                                                     mountain\ANN.SG.M //
   PRO-V13%
                       PRED N.OV
                                                     PREP
                                                             N.OV
                                                         wəxxam-nni //
                            i-zdəy-n
   REL.REAL=ABSV.3SG.M RELSBJ.POS-dwell\PFV-RELSBJ.POS/house\ANN.
   SG.M-CNS//
   DEMPRO=PRO
                            CIRC1-V23-CIRC2
                                                             N.OV-DEM //
   'she found it was the Mountain Cat who inhabited it.the house'
   (KAB AM NARR 01 0414-417)
(15) aytniddəfk sətstsi antnətftf / BI 404
                                       iħβuβənənni /
   ad=ay=tn=dd
                                      t-əfk
                                                          sətti
   POT=DAT.1PL=ABSV.3PL.M=PROX SBJ.3SG.F-give\AOR
                                                             grandmother\
 ANN.SG.F
   PTCL=PRO=PRO=PTCL
                                       PRO-V13%
                                                             N.KIN.COV
                                          jəħbubən-nni /
                            SBJ.1PL-eat\AOR /
   POT=ABSV.3PL.M
                                               dried figs\ANN.PL.M-CNS /
   PTCL=PRO
                            PRO-V13% /
                                                 N.OV-DEM /
   'my grandma would give them to us so that we would eat them, those dried figs'
   (KAB AM NARR 03 0353-0355)
```

Prosodic boundaries are therefore crucial in the interpretation of relations between the participants in a state of affairs.

It is not, however, true that any noun in the annexed state after the prosodic group of the verb necessarily corefers to an absolutive pronoun: such nouns can be coreferent to other types of bound pronouns, including those hosted by nouns. Here is an instance of coreference with the subject affix:

```
(16) d \ni m \ni dda S \# \# \#^{10} \theta a \# \theta a sumtanni its summu \theta akk \ni n / w \ni m fif \ni n n i / summu \theta akk \ni n / w \ni m fif \ni n n i / summu \theta akk \ni n / w \ni m fif \ni n n i / summu \theta akk \ni n / w \ni m fif \ni n n i / summu \theta akk \ni n / w \ni m fif \ni n n i / summu \theta akk \ni n / w \ni m fif \ni n n i / summu \theta akk \ni n / w \ni m fif \ni n n i / summu \theta akk \ni n / w \ni m fif \ni n n i / summu \theta akk \ni n / w \ni m fif \ni n n i / summu \theta akk \ni n / w \ni m fif \ni n n i / summu \theta akk \ni n / w \ni m fif \ni n n i / summu \theta akk \ni n / w \ni m fif \ni n n i / summu \theta akk \ni n / w \ni m fif \ni n n i / summu \theta akk \ni n / w \ni n n i / summu \theta akk \ni n / w \ni n n i / summu \theta akk \ni n / w \ni n n i / summu \theta akk \ni n / w \ni n n i / summu \theta akk \ni n / w \ni n n i / summu \theta akk \ni n / w \ni n n i / summu \theta akk \ni n / w \ni n n i / summu \theta akk \ni n / w \ni n n i / summu \theta akk \ni n / w \ni n n i / summu \theta akk \ni n / w \ni n n i / summu \theta akk \ni n / w \ni n n i / summu ha / w \ni n n i / summu ha / w \ni n n i / summu ha / w \ni n n i / summu ha / w \ni n n n i / summu ha / w \ni n n i / summu ha / w \ni n n i / summu ha / w \ni n n n i / summu ha / w i / summu ha / s
                                  t-ddəm=dd
                                                                                                                                                                                                                           a$# ##
                                  SBJ.3SG.F-grab\PFV=PROX FS# ##
                                  PRO-V23=PTCL
                                                                                                                                                                                                                          FS# ##
                                  ta#
                                                                    tasumta-nni
                                                                                                                                                                                                                                                                             i-tsummut
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                akk-ən /
                                  FS# pillow\ABS.SG.F-CNS SBJ.3SG.M-use as pillow\IPFV
                                                                                                                                                                                                                                                                                                                                                                                                                                    thus-DIST /
                                  FS# N.OV-DEM
                                                                                                                                                                                                                                                                     PRO-V24.PFX.APHO
                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADV-AFFX /
                                  wəm[if -nni /
                                  cat\ANN.SG.M-CNS /
                                  N OV-DEM /
                                    'she took the pillow on which he slept, the cat'
                                  (KAB AM NARR 01 0445-0448)
```

One cannot therefore consider that a noun in the annexed state following the prosodic group of the verb is a direct object (or more generally, that it has a grammatical role, given that it can corefer with several types of pronouns). As mentioned in part 1.2., its role is within the domain of referent activation – the noun is used to reactivate a referent that had lost its active or semi-active status (METTOUCHI, 2018 [2011], p. 273).

The same is true for nouns preceding the prosodic group of the verb, and co-referent with absolutive pronouns. They are in the absolute state (as are all nouns preceding the verb), and encode contrastive comments (METTOUCHI, 2018 [2011], p. 272), regardless of their coreferent pronoun (e.g. the subject affix in example (17)).

<sup>&</sup>lt;sup>10</sup> A single crosshatch # at the end of a sequence of syllables indicates a truncated word. A double crosshatch following a series of words indicates a truncated intonation unit (in general due to disfluencies, but also to interruptions in conversations). See (IZRE'EL; METTOUCHI, 2015) for the notion of abandoned intonation unit.

```
(17) asənduqagi / at'f'awið' ijəmmak //
asənduq-agi /
chest\ABS.SG.M-PROX1 /
N.OV-AFFX /
ad=t t-awi-d i jəmma-k //
POT=ABSV.3SG.M SBJ2-bring\AOR-SBJ.2SG DAT mother\ANN.SG.F-
KIN.2SG.M//
PTCL=PRO CIRC1-V14-CIRC2 DEMPRO N.KIN.COV-PRO //
'this box, you will take it to your mother'
(KAB_AM_NARR_02_783-784)
```

A noun may also appear before the verb within the prosodic group of the verb, and be coreferent to an absolutive pronoun as in (18) below. Grammatical and semantic relations are marked by the bound pronouns, nouns are referential expansions of those pronouns, and the structure recapitulates the preceding events and situation in a condensed way, as a synthetic explanatory comment on the preceding discourse (METTOUCHI, 2015, p. 130).

```
(18) azdduznni jtsawiθuβəhri /
azdduz-nni i-ttawi=t ubəhri /
big_stick\ABS.SG.M-CNS SBJ.3SG.M-bring\IPFV=ABSV.3SG.M wind\ANN.
SG.M /
N.OV-DEM PRO-V14.PFX=PRO N.OV /
'the wind moved the stick'
(KAB_AM_NARR_01_0756)
```

In sum, in Kabyle, grammatical and semantic relations are coded by pronouns, and coreferent nouns are involved at other levels of speech organization: reference, referent activation, information structure.

# 4. Direct objects

Only one noun can appear within the prosodic group of the verb without being coreferent to a bound pronoun. It is in the absolute state, it follows the verb (which itself necessarily bears a subject affix), either immediately, or separated from it by an adverb, a postverbal negator, and/or a noun in the annexed state. This characterization I consider to be the formal definition of direct objects in Kabyle.

(19) jəddməttatsəffaħt/ i-ddəm=dd tatəffaħt SBJ.3SG.M-grab\PFV=PROX apple\ABS.SG.F / PRO-V23=PTCL N.OV 'he took an apple' (KAB AM NARR 02 029) (20) θətslaSakka amfifənni // t-tlaSi akk-a amʃiʃ-nni // SBJ.3SG.F-address\IPFV cat\ABS.SG.M-CNS // thus-PROXa PRO V14.PFX ADV DEMPRO N.OV DEM // 'she addressed the cat' (KAB AM NARR 01 0597) (21) innajas  $z^{\varsigma}$ ran waj $\theta$ ma  $\theta$ a $z^{\varsigma}$ a $r^{\varsigma}$  $\beta$ i $\theta$  arj $\theta$ mmanu $\eta$ a / waitma zra-n tazərbit SBJ.3SG.M-say\PFV=DAT.3SG see\PFV-SBJ.3PL.M brother\ANN.PL.M carpet\ ABS.SG.F PRO-V13%=PRO V13%-AFFX N.OV N.KIN.OV ar jəmma Nu<sub>3</sub>a / to mother\ANN.SG.F Nu3a / PREP N KIN COV NP/ 'he told him that his brothers had seen a carpet at Jemma Nuja's place' (KAB AM NARR 02 505)

The noun refers to an undergoer, and can be abstract or concrete, referential or non-referential, effected or affected.

(22) unxəddəmarak<sup>o</sup> t<sup>ç</sup>umatifagi ttəbwat<sup>ç</sup> itfujt // n- xəddm ak° tumatif-agi ur SBJ.1PL-make\IPFV POSTNEG all NEG tomato\ABS.COL-PROXb PTCL PRO-V23 **N.INDF** ADV N.COV-DEM təbwat tfuit GEN can\ANN.SG.F LOC pot\ANN.SG.F // PREP NOV PREP N.OV // 'we didn't put tomato concentrate in the pot' (KAB AM NARR 03 0793) (23) θəssa lhərsma / t- s\a lħərma

t- s\$a | lhəṛma /
SBJ.3SG.F-possess\PFV | good\_reputation\ABS.SG.F /
PRO-V13% | N.COV /
'she had good reputation'
(KAB\_AM\_NARR\_03\_0567)

It is possible to automatically retrieve those nouns in the corpus by launching the query: 'inside the prosodic group of the verb, look for a noun in the absolute state immediately following the verb or following <the verb followed by a noun in the annexed state (ANN in ge)> or following <the verb followed by an adverb (ADV in rx)> or following <the verb followed by a postverbal negator (POSTNEG in ge)>'.

Adverbs belong to a closed class and therefore are computed as such by the speaker or listener. The same is true for the postverbal element of negation, *ara*, of nominal origin, but grammaticalized as NEG2: its grammatical status is clear to the speaker or listener. Their intercalation between the verb and the noun in the absolute state pose no threat to interpretation.

Through the delimitation of a unit (the prosodic group of the verb) inside which the grammatical role 'Direct Object' can be transparently computed using forms and not probabilistic inferences, prosody plays an important role in the treatment of grammatical information in Kabyle, and this is also shown by sequences that apparently constitute counterexamples to my claims, but are actually evidence supporting them.

# 5. Prosodic disfluencies and constituency

Sometimes indeed, a noun in the absolute state appears after the prosodic boundary of the prosodic group of the verb, and this generally signals that a new clause is beginning:

```
(24) qqimən a?amina qqimən / ajθmasnak° ylin /
                                  Amina
                                                qqim-n
     ggim -n
                                                          /
     stay\PFV-SBJ.3PL.M VOC
                                  Amina
                                                stav\PFV-SBJ.3PL.M /
     V24-PRO
                          PTCL
                                  NP
                                                V24-PRO
                                                ak°
                                                                 yli-n
     aitma-tsn
     brother\ABS.PL.M-KIN.3PL.M
                                       a11
                                                        fall\PFV SBJ.3PL.M /
                                                ADV
     N.KIN.OV-PRO
                                                                 V24-PRO
     'They stayed Amina, they stayed, and his brothers all fell asleep'
     (KAB AM NARR 02 Midget 340-341)
```

But in some cases, the noun clearly belongs to the current clause:

```
(25) a:::/ nakki ffiydd zicnni /θassaħfað'iii iammaſbb°að' / θassaħfað'iii ayrum /
     θəssəħfəð<sup>s</sup>iji ləsfənʒ / θəssəħfəð<sup>s</sup>iji ə::: / BI 412 a::: səksu /
     ə::: /
               nəkki
                         ffi-v=dd
                                                           zik-nni /
     HESIT /
               IDP 1SG
                          remember\PFV-SBJ.1SG=PROX
                                                           long ago-CNS /
     HESIT /
               PRO
                          V13%-PRO=PTCL
                                                                  ADV-DEM /
     t-ssəħfəd=iii
                                           iəmma
                                                               afwwad
     SBJ.3SG.F-learn\CAUS.PFV=DAT.1SG mother\ANN.SG.F
                                                              pancake soup\ABS.
     SG.M /
     PRO-V24=PRO
                                           N.KIN.COV
                                                           N.OV
     t-ssəħfəd=iii
                                                  avrum
     SBJ.3SG.F-learn\CAUS.PFV=DAT.1SG
                                                  bread\ABS.SG.M /
     PRO
             V24
                        PRO N.OV
     t-ssəħfəd=iji
                                                  lsfən3
     SBJ.3SG.F-learn\CAUS.PFV=DAT.1SG
                                                  doughnut\ABS.SG.M /
     PRO
             V24
                        PRO
                              N.COV
                                                  ə::: /
     t-ssəħfəd=iji
     SBJ.3SG.F-learn\CAUS.PFV=DAT.1SG
                                                  HESIT /
     PRO
             V24
                        PRO
                              HESIT /
     a∷∷
              səksu
     HESIT
              cuscus\ABS.SG.M /
     HESIT
              N COV
     'ehm, I remember in the past, my mother taught me (how to cook) pancakes, she
     taught me (how to cook) bread, (how to cook) doughnuts, she taught me (how to cook)
     ehm. cuscus'
     (KAB AM NARR 03 0192-0200)
```

It is important though, that this intuition be supported by formal criteria. Among the conditions listed in the preceding part, the fact that the noun is in the absolute state and the fact that there is no coreferent pronoun are met, but here the noun is not inside the prosodic group of the verb. Does that mean that one of the features of direct objects as I defined them is to be taken out of the definition? I argue that on the contrary, such examples in fact support my claim concerning the formal definition of the construction.

Indeed, we do not simply have a neat prosodic boundary separating the noun from the preceding verb. What we have, and that we can take into account thanks to a precise transcription of the spoken data, is a boundary that is so to say bridged by prosodic phenomena that are continuation cues: such nouns in the absolute state are systematically preceded, before the prosodic boundary, by:

```
(b) a false start resulting in an interrupted IU, followed by a restart (27)
      (c) a rising boundary tone (28)
                               ifr<sup>s</sup>axa //
(26) awnəfkəy a:::/
     ad =wən
                                          a::: /
                                                    ifrax-a //
                       əfk-y
     POT=DAT.2PL.M
                       give\AOR-SBJ.1SG
                                          HESIT /
                                                    bird\ABS.PL.M-PROXa //
                       V13%-PRO
                                          HESIT /
                                                    N.OV-AFFX //
     PTCL=PRO
     'and I'll give you ehm... those birds'
     (KAB AM NARR 02 176-177)
i-xdəm=as
                                       ta:::#
                                               ##
     SBJ.3SG.M-make\PFV=DAT.3SG
                                       FS:::#
                                               ##
     PRO-V23=PRO
                                       FS
                                           ##
     tabburt
                                       บรรลโ
                           d
                                       iron\ABS.M.SG /
     door\ABS.SG.F
                           COP
     N.OV
                           PRED
                                       N.OV
                                                 /
     'he put on it an iron door'
     (KAB AM NARR 02 708-710)
(28) asjini / ħaſama θəfkawθəddak° / θað ʿaðəſt tað ʿaðəſθ //
     ad=as
                      j-ini
     POT=DAT.3SG
                      SBJ.3SG.M-say\AOR /
     PTCL=PRO
                      PRO-V13% /
                                                                ak° /
     ħaſama
                      t- fka-wt=dd
     only when
                      SBJ2-give\PFV-SBJ.HORT.2PL=PROX
                                                                all /
     CONJ
                      CIRC1-V13%-CIRC2=PTCL
                                                                 ADV /
     tadadəst
                              tadadəſt
     finger\ABS.SG.F
                                       finger\ABS.SG.F //
     N.OV
                              NOV
                                         //
     'he would say, not until you each give me, one of your fingers'
```

(a) a hesitation marker (this is the most frequent situation) (26)

The first two phenomena are disfluencies, they might very well have ended up in an abandoned intonation unit, followed by a complete syntactic reformulation. But this never happens with direct objects in my data. On the contrary, disfluencies, some linked to planning issues and others to situational factors in the interaction, are systematically filled in by prosodic materials pertaining to continuation strategies, such as lengthening of a hesitation marker (itself a filler) or of a false start, and the sequence is immediately resumed in the form of the expected noun

(KAB AM NARR 02 171-173)

in the absolute, the direct object: *ifrax-a* in (26), *tabburt* in (27). This can also be seen in Figure 1 and example (16).

This shows that in terms of cognitive processing, there is a strong relationship between the prosodic group of the verb and its stranded object.

The third phenomenon involves a continuative boundary tone, as shown in the Praat picture below on  $ak^{\circ}$ , in example (28), with a value of 445 Hz:

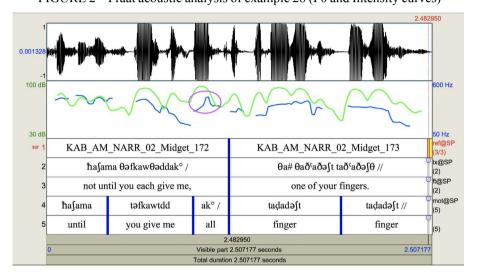


FIGURE 2 – Praat acoustic analysis of example 28 (F0 and Intensity curves)

Interestingly, in example (28), as elsewhere in my data for similar examples, the continuative tone is correlated to a focal prominence on the last word of the unit, here the adverb (93 dB), and a highlighting of the direct object (with high values ranging from 89 to 91 dB): in a display of suspense and disclosure, the storyteller plays on the listener's expectations in her rendition of the young hero's extravagant demand to his brothers: 'I won't give you the partridges I hunted, for you to show our father that you are good hunters, until you each give me... one of your fingers!'

Example (1), reproduced here as (29) can also be analyzed in those terms: the prosodic group of the verb is first separated from the postverbal nominal subject, and then, after a silent pause, the nominal direct object appears, immediately followed by a locative complement.

```
(29) urdəzwidʒəy / BI 363 / alamma θəkksədd / fat 'ima θuhr 'ifθ / 326 / ayrum əgðəkkwan //
     ur=dd
                                               BI-363/ alamma
                   zwiğ-v /
                   marry\NEGPFV-SBJ.1SG / BI 363 / until
     NEG=PROX
     PTCL=PTCL
                    V23-PRO /
                                               BI 363 / CONJ
     t-akks=dd /
                                          fatima tuħriſt / 326 /
     SBJ.3SG.F-take away\PFV=PROX /
                                          Fatima clever / 326 /
     PRO-V23=PTCL/
                                          NP
                                                   ADJ / 326 /
     ayrum
                                  udəkk°an //
     bread\ABS.SG.M
                           LOC
                                  shelf\ANN.SG.M //
     N.OV
                           PREP N.OV //
     I won't marry / ... / until she grabs / clever Fatima / ... / the bread on the shelf //
     (I won't marry until Clever Fatima grabs the bread on the shelf)
     (KAB AM NARR 01 0086-91)
```

There is a rising tome on *tuhṛift* (400 Hz), with a high intensity value (85 dB), then a silent pause which adds to the highlighting effect, and then again a high F0 value on *ayrum*(438 Hz) and high intensity as well (91 dB), as shown in Figure 3 below.

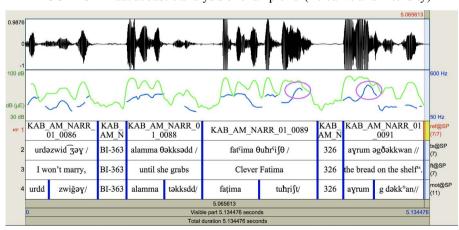


FIGURE 3 – Praat acoustic analysis of example 29 (F0 curve and Intensity)

On the contrary, when the direct object is within the prosodic group of the verb, the contour is smoother, in a rising-falling curve, as in figure 3 below, corresponding to example 30:

```
(30) asənjəkksak° amz<sup>ç</sup>z<sup>ç</sup>uyamz<sup>ç</sup>z<sup>ç</sup>uy/
     ad=asn
                                                                          ak°
                                   j-əkks
     POT=DAT.3PL.M
                                   SBJ.3SG.M-take away\AOR
                                                                          a11
     PTCL=PRO
                                   PRO-V23
                                                                          ADV
     amzzuy
                                   amzzuv
     ear\ABS.SG.M
                                   ear\ABS.SG.M /
     NOV
                                   N.OV
     He would take an ear from each of them,
     KAB AM NARR 02 Midget 212
```

The values for the adverb and the direct object are respectively 363 Hz/85 dB for  $ak^{\circ}$ , and 356 Hz/89 dB for the first amzzuy, and 292 Hz/89 dB for the second one.

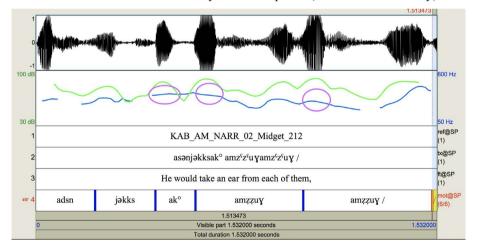


FIGURE 4 – Praat acoustic analysis of example 30 (F0 curve and Intensity)

The preceding example is a special distributive construction of the direct object, chosen for its parallelism with (28), and therefore might show slightly atypical values, but the following one is quite standard:

```
(31) innajas z^{\varsigma}ran waj\thetamaç \thetaaz^{\varsigma}ar^{\varsigma}\betai\theta arj\thetammanu\taua /
     i-nna=as
                                                                 waitma-k
     SBJ.3SG.M-sav\PFV=DAT.3SG see\PFV-SBJ.3PL.M
                                                                 brother\ANN.PL.M-
     KIN.2.SG.M
     PRO-V13%=PRO
                                        V13%-AFFX
                                                                 N.KIN.OV-PRO
                                   iəmma
                                                                 Nu3a/
     tazərbit
                         ar
                                             mother\ANN.SG.F
     carpet\ABS.SG.F
                                                                          Nu3a /
                                   to
                                                                          N.P /
     N.OV
                                   PREP
                                             N.KIN.COV
      'he told him that his brothers had seen a carpet at Jemma Nuja's place'
     (KAB AM NARR 02 505)
```

As shown in Figure 4 below, the F0 contour is smooth and slowly rising then falling, while Intensity rises slightly on the nominal subject (75 dB), then more markedly on the direct object, which is in focus (85 dB).

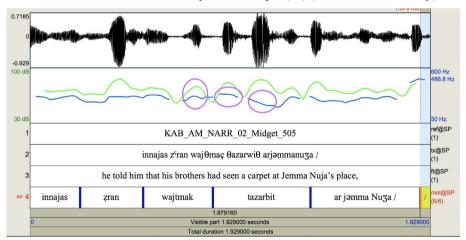


FIGURE 5 – Praat acoustic analysis of example (31) (F0 curve and Intensity)

Contrary to example (29), there is no peak on the element preceding the direct object, here the postverbal subject *wajtmak* (332 Hz). The value for the direct object *tazərbit* is 338 Hz on the first syllable and 239 Hz on the second one. In cases when the direct object is separated from the verb or the postverbal subject or adverb, the prosodic contour anticipates continuation, through high F0 values just before the stranded

direct object. They also show typical rhetorical features: focus is marked by high intensity values, both on the preceding element, and on the direct object itself, with sometimes anticipatory pauses as well, which increase suspense and rhetorical effect.

## 6. Conclusion and discussion

I have shown that the Direct Object role is marked by a dedicated construction involving a noun in the absolute, different from the semantic role of referential undergoer, which is coded by the use of an absolutive bound pronoun cliticized on a verb or verbal head.

I have given evidence for the crucial role of prosody in the formal definition of the construction, which involves prosodic boundaries: the Direct Object is a noun in the absolute state, immediately following the verb, or following <the verb followed by a noun in the annexed state> or following <the verb followed by an adverb> or following <the verb followed by a postverbal negator>, within the prosodic group of the verb.

I have shown that apparent counterexamples to that definition, namely occurrences where the noun in the absolute is detached from the prosodic group of the verb and appears in a separate Intonation Unit, in fact contain traces of a tight relationship between Verb and Direct Object: those are either disfluencies or stylistic devices, and in both cases, they contain evidence of integration between the prosodic group of the verb and the intonation unit containing the noun in the absolute: in the case of disfluencies, hesitation markers or false starts are lengthened and the sequence is immediately resumed. In the case of stylistic devices, such as anticipatory/delayed focus, a strong rising tone with continuative value informs the addressee that the prosodic group of the verb is not complete, and that the following sequence is highlighted.

In terms of method and background assumptions, the present study shows how important it is to uncover language-internal categories through the empirical study of spontaneous data, transcribed, segmented and annotated with as few aprioristic assumptions as possible. Without a notation of prosodic boundaries based on acoustic and perceptual cues rather than on syntactic or pragmatic or semantic assumptions, and without precise transcription of hesitations, false starts and pauses, it would not have been possible to conduct the investigation presented in this paper.

Moreover, the approach adopted in this study is also theoretically different from most treatments of the role of prosody in relation to grammar. I do not discard phenomena (disfluencies and stylistic devices) that are usually ascribed to 'other levels' of language analysis, only retaining the prosodic boundaries that are congruent with phrasal, clausal or sentential syntactic boundaries. I consider that prosodic cues are to be treated as elements of the fabric of language, just like morphological marks, linear ordering, and other formal coding means are. I do not view prosody as a separate module, and intonation units as a projection of other structural levels of grammar, or as a pragmatic unit with a single functional value (speech-act or other). My findings plead for an integrated view of prosody, closely interacting with syntax, semantics, phonology, information structure, and all levels of human communication and cognition, in a way that is best represented as a complex weaving of various threads, rather than a piling up of neatly stacked and hierarchically organized layers. I suggest that what linguists have first separated into different domains in order to be able to address problems in a structured. progressive and modular way, should not be reified into a representation of what language actually is. The various forms that we are able to isolate as elements contributing to the construction of meaning, are in fact part of a complex whole whose interrelations are still to be fully understood.

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