Proceedings of the Third International Workshop on Information Structure of Austronesian Languages

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Research Institute for Languages and Cultures of Asia and Africa,
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Contents

Information structure analysis of spoken discourse: a short introduction

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1. Introduction

This paper sketches some aspects of a method for the analysis of corpus data in terms of discourse structure and information structure, demonstrated on the basis of (written transcripts of) a German radio news item and a section from a German radio interview. It is suggested that the method is transferrable to corpus data of other languages given that glosses and translations are provided. This claim will not be substantiated here, but see Riester (2015) for an application to Balinese.

By *information structure* I am referring to a division of clauses into a *focus* and a *background* (plus some optional material), largely following the paradigm of *Alternative Semantics,* established by Rooth (1985, 1992) and elaborated in Büring (2003, 2008), Beaver and Clark (2008) or Krifka (2008). In order to determine the information structure of a clause, it is usually necessary to consider the discourse context in which it is uttered, although some aspects of its information structure will be reflected – to a language-specific degree – in its morphosyntactic properties or, when spoken, in its prosodic realization. In line with assumptions made in Roberts (1996/2012) and Ginzburg (1995), I am assuming that discourse not only consists of the overt spoken or written material but, in addition, contains implicit *Questions under Discussion* that provide the background against which informative assertions are made. The *focus* of a clause uttered in its respective discourse context can, therefore, be defined as *the answer to the current Question under Discussion (QUD).* In the following section, I present a number of principles that will help us reconstruct the implicit Questions under Discussion of a text.

The term *discourse structure* is generally understood to explain the organization of a text into smaller sections and subsections, down to atomic assertions. A well-formed text can be represented in the form of a single discourse tree. In contrast to various established theories of discourse structure, the current proposal assumes that Questions under Discussion are crucial to determine the structure of any discourse and constitute an essential part of discourse trees.

2. Constraints on the construction of implicit Questions under Discussion and discourse trees

A fundamental, and probably uncontroversial, constraint on the formulation of any QUD is that a QUD that immediately dominates some assertion must be congruent with it.

FIRST QUD CONSTRAINT (Q-A-CONGRUENCE)
QUDs must be answerable by the assertion(s) that they immediately dominate.

For instance, in the absence of context, sentence (3)[1] can be the answer to any of the

[1] The full set of data is found in the appendix.

questions in (1a-c) but not to question (2).

(1) a. Q: {What happened?}
b. Q: {What about him?}
c. Q: {Who literally suffocated?}
(2) Q: {Who owns a bicycle?} (Q-A-CONGRUENCE violated)

(3) A_{10}: Der ist richtig erstickt.
that_one is really suffocated
'He literally suffocated.'

If more context is introduced, as in (4), it becomes clear that the questions in (1a-c) are not all equally good.

(4) A_9: Und ich kann nur sagen, das war schlimm in den
and I can only say that was really_bad in the
letzten Jahren, wie es dem ging.
last years how it him went
And all I can say is that his [the speaker's grandfather's] condition was extremely bad during the last years of his life.
A_{10}: He literally suffocated.

It seems intuitively clear that question (1c) does not fit in between assertions A_9 and A_{10}. The reason for this is that, in the context of A_9, (1c) would introduce the phrase *literally suffocated* as new information, which, apparently, is not what implicit Questions under Discussion should do. This is formulated in the second QUD constraint below.

SECOND QUD CONSTRAINT (Q-GIVENNESS)
Implicit QUDs can only consist of given (or, at least, highly salient) material.

The principle of Q-GIVENNESS follows from the GIVENNESS PRINCIPLE discussed in Schwarzschild (1999), which, in effect, says that discourse-new information is necessarily focused. Since, in a question-answer pair, the focus of the answer typically corresponds to a *wh*-pronoun in the question while only the background occurs in both of them, we conclude that implicit QUDs cannot contain discourse-new material. (In this, they differ from explicitly asked questions.) This explains why the sequences (5-6a-7) or (5-6b-7) are better than (5-6c-7).[2]

(5) A_9: And all I can say is that his condition was extremely bad during the last years of his life.
(6) a. Q: {What happened?}
b. Q: {What about him?}
c. #Q: {Who literally suffocated?} (Q-GIVENNESS violated)
(7) A_{10}: He literally suffocated.

But should we prefer question (6a) or (6b)? (6a) evokes a broad sentence focus while

[2] Note that we assume that function words (determiners, pronouns, prepositions etc.), as well as very general concepts like *to happen* are always salient, even if they are not literally given in the discourse context.

(6b) contains an anaphoric pronoun and asks for a predicate in focus. The question that contains the anaphoric pronoun creates a higher degree of textual cohesion (cf. Halliday and Hasan 1976) and is, therefore, preferable. This is expressed in various principles in the literature which all demand in some sense that sentences should be maximally anaphoric or given – and, therefore, have a minimal focus; for instance, the principles MAXIMIZEPRESUPPOSITION (Heim 1991), AVOIDF (Schwarzschild) or MAXIMIZEANAPHORICITY (Büring 2008). Applying this idea to QUDs, we define a third constraint.

THIRD QUD CONSTRAINT (MAXIMIZE-Q-ANAPHORICITY)
Implicit QUDs should contain as much given (or salient) material as possible.

Now, since (6a) violates MAXIMIZE-Q-ANAPHORICITY, (6b) is chosen as the actual QUD Q_{10}, in the respective context (indicating question-answer congruence by means of identical subscripts.)

Concerning the discourse structure of the example, I assume that answers must be subordinated to their question, which will be indicated by use of indentation marks (>). Furthermore, questions which refer to previously mentioned material must be subordinated to the clause containing the antecedent material. However, for the sake of easier textual representation (in order to keep the textual trees as compact as possible), such questions will be represented as sibling nodes of the antecedent material, i.e. using the same number of indentations as the antecedent assertion. This is demonstrated in (8), where the question Q_{10}, containing the anaphoric pronoun, occurs at the same level as A_9.

(8) Q_9: {...}
> A_9: And all I can say is that his condition was extremely bad during the last years of his life.
> Q_{10}: {What about him?}
> > A_{10}: He literally suffocated.

3. Information-structural categories

With the principles defined in the previous Section, we are now able to account for the information structure of our discourse. Definitions are provided in Table 1.

Focus (F)	The part of an assertion that answers the current QUD
Focus Domain (~) (Rooth 1992, Büring 2008)	A piece of discourse, consisting of an obligatory focus and an optional background, which matches the current QUD, except for the focus part. If the focus domain recurs elsewhere in the discourse (with a different focus), the two focus domains are contrastive.
Background	The non-focal part of a focus domain (that which is already mentioned in the current QUD). Backgrounds are typically given in the previous discourse but need not, e.g. in parallelisms.
Aboutness Topic (T)	Referential entity in the background, ideally part of a co-reference chain
Contrastive Topic (CT) (Büring 2003)	A focused topic. Contrastive topics are the sortal keys in a complex question-answering strategy.
Not-at-issue content (Potts 2006)	Optional material. An expression X is not-at-issue with respect to the current question Q iff deleting X has no influence on the truth conditions of the main assertion (appositions, evidentials, expressives etc.)

Table 1 Definitions of information-structural categories

As noted above, the QUD determines the focus-background divide of its answer. The information structure of A_{10} is, therefore, as shown in (9).

(9) > Q_{10}: {What about him?}
> > A_{10}: [He_T [literally suffocated]$_F$]~

Following Rooth (1992) and Büring (2008), I adopt a holistic approach here, i.e., I am not only interested in the position of the focus itself but in the entire combination of focus and background taken together, called a *focus domain* (~). Additionally, I suggest an optional definition of *aboutness topics* as backgrounded referring expressions. This means that aboutness topics are necessarily in the background but not all backgrounded information qualifies as a topic. Another example is shown in (10).

(10) Q_9: {How was grandpa's health condition?}
> A_9: And all I can say is that [[his condition]$_T$ [was extremely bad in the last years of his life]$_F$]~

Again, we see a background-focus (here: topic-focus) divide but, in addition, there is an optional comment on behalf of the speaker, marked in grey, which expresses epistemic modality or evidentiality. Evidentials, as well as appositions, speaker-oriented adverbs, honorifics, expressives, amongst others, form what Potts (2005) or Simons et al. (2010) have discussed under the notions of *conventional implicature* or *not-at-issue content*. Not-at-issue content can be characterized as optional with respect to the current QUD. It has no influence on the truth conditions of the current assertion and it does not take part in the latter's focus-background divide. In the information-structural analysis, we can ignore this information for the time being.[3]

[3] But see Riester and Baumann (2013) for a suggestion how to analyse the information

The last issue I will discuss is the one of parallelism. Again, focus domains will play a crucial role. I discuss two types of parallelism, a simple one with only one focus per assertion, and a complex one that contains pairs consisting of a focus and a contrastive topic. Simple parallelisms, like the one in (11),[4] are rare in natural discourse, since they will typically fall prey to ellipsis and be rendered as simple co-ordinations. In (12), the elided material has been recovered, which is indicated by means of strikethrough text.

(11) Q_{50}: {Whom can you wire-tap?}
> $A_{50'}$: [You$_T$ can wire-tap [the President of the United States]$_F$]~,
> $A_{50''}$: [You$_T$ can wire-tap [a Federal Judge]$_F$]~.

(12) Q_1: {What will the bill prescribe?}
> $A_{1'}$: [Da$_T$ sollen [Fenster in Teeküchen]$_F$ vorgeschrieben
there shall windowsin staff kitchens prescribed
werden]~
be
> $A_{1''}$: oder auch [[die Helligkeit am Heimarbeitsplatz]$_F$ ~~soll~~
or also the brightness at the home workplace ~~*shall*~~
~~vorgeschrieben~~ ~~werden~~]~.
~~*prescribed*~~ ~~*be*~~
The bill will prescribe having windows in staff kitchens and also ~~*prescribe*~~ *the brightness of the home workplace.*

It seems reasonable to assume that, indeed, most co-ordinations be analyzed as remnants of elided parallel assertions. In information-structural terms, the coordinated elements are (contrastive) foci. The two parallel assertions, whether overtly present in the text or partly reconstructed, function as two partial answers to a common QUD, with whom they share the same background (and, therefore, a structurally identical focus domain). I indicate this by using subscripts like in $A_{1'}$, $A_{1''}$. Examples (11) and (12) show that parallelisms provide us with a second way of identifying Questions under Discussion. QUDs can simply be determined by collecting the parallel material of two (or more) subsequent clauses, and by replacing the variable, i.e. focal, material by a *wh*-pronoun. This method will sometimes collide with the principle of Q-GIVENNESS defined above, since the parallel, backgrounded material need not always be given. This means that a parallelism may sometimes force the interpreter to accommodate a more specific question than would be licensed from the previous discourse alone.

Finally, we turn to the issue of complex parallelisms, i.e. two subsequent assertions which differ with respect to two syntactic positions. Like in the case of simple parallelisms, it is again possible to define a common QUD, albeit one containing two *wh*-pronouns (or, at least, a question that expresses variability in two positions). Among the two variable – i.e. focal – positions, one must take precedence over the other. Following Büring (2003), I will call this primary position a *contrastive topic.* Furthermore, each contrastive topic introduces a more specific *subquestion.* An example is given in (13), in which the subquestion of a main question Q_{302} is indicated as $Q_{302.1}$.

structure of not-at-issue content.
[4] Quote: Edward Snowden in an interview with ARD TV, Jan. 26, 2014.

(13) Q_{302}: {How many soldiers have been affected by the airstrike and how?}
> $Q_{302.1}$: {How many soldiers have been killed?}
> > $A_{302.1}$: [Dabei$_T$ wurden nach Regierungsangaben
there were according to government statements
drei$_F$ Soldaten getötet$_{CT}$]~
three soldiers killed
According to the government, three soldiers have been killed
> $Q_{302.2}$: {How many soldiers have been wounded?}
> > $A_{301.2}$: und [[17 weitere]$_F$ verletzt$_{CT}$]~.
and 17 others injured
and another 17 have been wounded.

4. Summary

I have sketched a procedure for the information-structural and discourse-structural analysis of corpus data which is based on principles derived from the theoretical-semantic literature, and I have briefly demonstrated the method on the basis of examples taken from spoken German discourse. The main purpose of this method is to provide a means for the cross-linguistic study of morphosyntactic as well as prosodic correlates of information structure. The full data (an interview section as well as a news feature) can be found below in the appendix. More comprehensive annotation guidelines, a semantic formalization as well as analyses of data from other languages are currently in preparation.

Appendix:

A. German radio interview (spontaneous speech), English translation below

SÜDWESTRUNDFUNK – SWR2 Interview of the week
Guest: Andrea Nahles (Social Democrats),
German Federal Minister of Labour and Social Affairs
Date/Time: Feb 28, 2015, 6:30 p.m.

Journalist:

Q_0: {Bei welchen Projekten wird Nahles Bürokratisierung vorgeworfen?}

> A_0: [[Ein anderes$_F$ Projekt, bei dem die Arbeitgeber Sie mit dem Bürokratievorwurf überziehen,]$_{CT}$ ist [die Arbeitsstättenverordnung]$_F$.]~

> Q_1: {Was soll da verordnet werden?}

> > $A_{1'}$: [Da$_T$ sollen [Fenster in Teeküchen]$_F$ vorgeschrieben werden,]~

> > $A_{1''}$: oder auch [[die Helligkeit am Heimarbeitsplatz]$_F$]~.

> Q_2: {Wie ist der Status der Verordnung?}

> > A_2: Jetzt heißt es, [[das Kanzleramt hat]$_F$ [diese Verordnung]$_T$ [gestoppt]$_F$]~.

> > Q_3: Können Sie das bestätigen?

> Q_4: Sind Sie da gescheitert?

Nahles:

> Q_5: Also zunächst muss man vielleicht mal sagen worum es da eigentlich geht. {= Worum geht es bei der Verordnung eigentlich?}

Q_6: {Wie war die Situation früher und in den letzten Jahren?}

> $Q_{6.1}$: {Wie war die Situation früher?}

> > $A_{6.1}$: [[Mein Opa hat eine Staublunge gehabt]$_F$,]~

> > $Q_{7:}$ {Warum hatte Opa eine Staublunge?}

> > > $Q_{7.1}$: {Was hatte er gemacht?}

> > > > $A_{7.1}$: [[der$_T$ [war im Schieferbergwerk]$_{F(7.1)}$ nach dem Krieg]~]$_{F(7)}$

> > > > Q_8: {Wo war das Schieferbergwerk?}

> > > > > Q_8: [[in Mayen]$_F$]~.

> > Q_9: {Wie ging es dem Opa?}

> > > A_9: Und ich kann nur sagen, [das [war schlimm in den letzten Jahren]$_F$ wie es dem ging]~.

> > > Q_{10}: {Wie schlimm war es für ihn?}

> > > > A_{10}: [Der$_T$ [ist richtig erstickt]$_F$.]~

> $Q_{6.2}$: {Wie hat sich die Situation in den letzten Jahren entwickelt?}

> > $A_{6.2}$: Und [es ist [durch viele Maßnahmen in den letzten 40 Jahren, die man unter dem Stichwort „Arbeitsschutz und Arbeitsstättenverordnung“, so heißt das Ding nun

mal, firmiert,]$_{CT}$ [sind Gott sei Dank die Anzahl der Toten, der Kranken, der Unfälle massiv zurückgegangen]$_{F.}$]~

> A_5: Und deswegen [ist das$_T$ schon [etwas sehr Wertvolles,]$_F$ [diese Arbeitsschutzpolitik und auch diese Arbeitsstättenverordnung]$_T$]~.

> Q_{11}: {Was ist Nahles‘ Reaktion zu unterschiedlichen Haltungen gegenüber der Verordnung?}

> > $Q_{11.1}$: {Was tut sie, wenn jemand sich über Kleinigkeiten aufregt?}

> > > $A_{11.1}$: [Wenn man da$_T$ jetzt [sich aufregt wegen einem abschließbaren Spind,]$_{CT}$ na Gott, dann wäre ich$_T$ [der Letzte der sagt, da kann man nicht über einzelne Punkte reden]$_{F.}$]~

> > $Q_{11.2}$: {Was tut sie, wenn jemand die ganze Verordnung in Frage stellt?}

> > > $A_{11.2}$: [Aber wenn man das$_T$ [grundsätzlich in Frage stellt,]$_{CT}$ dann werde ich$_T$ [allerdings doch ernst,]$_F$]~ ja

English translation:

Journalist:

Q_0: {For which projects is Nahles accused of bureaucratisation?}

> *A_0: [[Another$_F$ project for which employers are accusing you of bureaucratisation]$_{CT}$ is [the workplace regulation bill]$_{F.}$~*

> *Q_1: {What will the bill prescribe?}*

> > *$A_{1'}$: [[The bill]$_T$ will prescribe [having windows in staff kitchens]$_F$]~*

> > *$A_{1''}$: and also [[the brightness of home workplaces]$_F$]~*

> *Q_2: {What is the current status of the bill?}*

> > *A_2: Now they are saying that [[the Chancellery has stopped]$_F$ [the bill]$_T$]~.*

> > *Q_3: Can you confirm this?*

> *Q_4: Have you failed there?*

Nahles:

> *Q_5: All right, first I need to say what this is all about. {= What about this bill?}*

Q_6: {What was the situation in earlier times and in recent years?}

> *$Q_{6.1}$: {What was the situation in earlier times?}*

> > *A_6: [[My grandpa suffered from silicosis]$_F$]~*

> > *Q_7: {Why did grandpa suffer from silicosis?}*

> > > *$Q_{7.1}$: {What did he do?}*

> > > > *A_7: [[After the war he$_T$ [was working in a slate mine]$_F$]~]$_F$*

> > > > *Q_8: {Where was the slate mine?}*

> > > > > *A_8: [[in Mayen]$_F$]~.*

> > Q_9: {How was grandpa's health condition?}

> > > A_9: And all I can say is that [[his condition]$_T$ [was extremely bad in the last years of his life]$_F$]~.

> > > Q_{10}: {What about him?}

> > > > A_{10}: [He$_T$ [literally suffocated]$_F$.]~

> $Q_{6.2}$: {How has the situation developed in recent years?}

> > $A_{6.2}$: and [it is [due to the numerous measures in the past 40 years called workplace protection measures and workplace regulations]$_{CT}$ – that's indeed how they are called – that, Thank God, [the numbers of deaths, injuries and accidents has decreased massively]$_F$.]~

> A_5: And, therefore, [[the workplace bill]$_T$ is [something very valuable]$_F$]~.

> Q_{11}: {What is N.'s reaction to different attitudes with regard to the bill?}

> > $Q_{11.1}$: {What does she do if someone is angry about minor issues?}

> > > $A_{11.1}$: [If someone is [getting angry because of some lockers]$_{CT}$, then I$_T$ would be [the last person unwilling to discuss a compromise]$_F$.]~

> > $Q_{11.2}$: {What does she do if someone is in fundamental opposition?}

> > > $A_{11.2}$: But [if someone is [fundamentally opposed]$_{CT}$ to it$_T$, then I$_T$ [am going to get seriously angry]$_F$].~

B. German radio news (read speech), translation below

DIRNDL corpus (Eckart et al. 2012)
Deutschlandfunk news
Mar 26, 2007, 12 p.m.

Q_{300}: {Was war los?}

> A_{300}': Nach dem Angriff tamilischer Rebellen auf eine Luftwaffenbasis in der srilankischen Hauptstadt Colombo [[ist die Situation nach Angaben der Regierung wieder unter Kontrolle]$_F$]~.

> A_{300}'': [[Die Armee habe die Sicherheitsmaßnahmen verschärft,]$_F$]~

> Q_{301}: {Wer sagt das?}

> > A_{301}: [teilte [das Verteidigungsministerium]$_F$ mit.]~

> A_{300}''': [[Die wegen der Unruhen umgeleiteten internationalen Flüge – unter anderem aus Frankfurt am Main – kämen in diesen Stunden in Colombo an.]$_F$]~

> A_{300}'''': [[Die tamilischen Rebellen hatten die Armee erstmals aus der Luft angegriffen.]$_F$]~

> Q_{302}: {Was war das Ergebnis des Luftangriffs?}

> > $Q_{302.1}$: {Wieviele Soldaten wurden dabei getötet?}

> > > $A_{302.1}$: [[Dabei]$_T$ wurden nach Regierungsangaben [drei]$_F$ Soldaten [getötet]$_{CT}$]~

> > $Q_{302.1}$: {Wieviele Soldaten wurden dabei verletzt?}

> > > $A_{302.2}$: und [[17 weitere]$_F$ [verletzt]$_{CT}$.]~

English translation:

Q_{300}: {What happened?}

> A_{300}: After an attack by Tamil rebels on an airforce base in the Sri Lankan capital Colombo [[the situation, according to the government, is under control again]$_F$]~.

> A_{300}‘: [[The army has strengthened security measures.]$_F$]~

> Q_{301}: {Who said that?}

> > A_{301}: [[said [the Ministry of Defence]$_F$]~

> A_{300}‘‘: [[The flights that had to be diverted because of the unrest – for instance, the ones from Frankfurt am Main – are currently arriving at Colombo.]$_F$]~

> A_{300}‘‘‘: [[It is the first time that Tamil rebels have attacked from the air.]$_F$]~

> Q_{302}: {What was the result of the attack?}

> > $Q_{302.1}$: {How many soldiers have been killed?}

> > > $A_{302.1}$: According to the government, [three$_F$ soldiers have been killed$_{CT}$ during [the attack]$_T$]]~

> > $Q_{302.2}$: {How many soldiers have been wounded?}

> > > $A_{302.1}$: and [[another 17]$_F$ have been wounded$_{CT}$]]~.

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Prosodic cues to information structure

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1. Introduction

The aim of the present paper is to give an overview of some of the linguistic functions fulfilled by prosody – in particular the marking information structure – and of the phonetic parameters and (some) phonological categories involved. West Germanic languages, in particular German, serve as a starting point and testbed for empirical studies but it can be claimed that many of the parameters presented here are used universally. Thus, some of the parameters will be found in Austronesian languages as well, even if the functions they serve may differ.

2. Prosody in West Germanic languages: Tasks and parameters

In West Germanic languages, there are two basic tasks of prosody that determine the meaning of utterances: *highlighting*, i.e. marking prominences, and *phrasing*, i.e. marking the division of speech into chunks. However, languages differ in the extent to which they modulate the parameters involved.

2.1 Highlighting

West Germanic languages (also called *stress accent languages* by Beckman 1986) differentiate between three levels of suprasegmental prominence: lexical stress, postlexical stress and (pitch) accent.

Lexical stress is an abstract property of words which describes a *potential* for concrete prominence at utterance level. In *Ber ‘lin*, e.g., the second syllable is stressed, i.e. metrically strong, but it is not (yet) associated with actual phonetic cues expressing its (relative) prominence. A longer word such as *‚Mas sa ‘chu setts* illustrates that we can differentiate between primary or main stress (on *chu*) and secondary stress (on *Mas*), the former indicating what may also be called the word's *ictus*.

Postlexical stress is a concrete prominence in an utterance. It is marked (in West Germanic languages) by increased duration and/or intensity of a syllable in relation to neighbouring syllables.
Huss (1978) conducted a production study in order to find out how speakers actually mark words prosodically which are ambiguous as to their lexical stress pattern, such as the verb-noun pair *increase* (verb) and *increase* (noun). For this reason he placed the respective words in the postnuclear position of an utterance, i.e. a position that guarantees the absence of a pitch accent. Examples are given in (1) and (2), with capital letters indicating (contrastive) pitch accents and underlining indicating the relevant postlexical stresses.

(1) Whereas formerly the GOvernment used to increase benefits,
now the emPLOyers increase benefits. *increase* = verb

(2) Whereas formerly the WORkers‘ increase in deductions used to benefit from inflation, now the emPLOyers‘ increase benefits. *increase* = noun

Speakers produced the ambiguous word pairs by increasing the articulatory strength on the lexically stressed syllables – especially by longer duration and higher intensity – in order to mark the morpho-syntactic meaning differences between the words. Thus, by actually producing the words, their abstract (lexical) stress pattern becomes concrete and thus *post*lexical.
(NB: In citation forms, there is a complete correspondence between the positions of lexical and postlexical stress. Sometimes, however, e.g. in cases of stress clash, the actual (postlexical) stress may shift to a syllable that does *not* carry lexical stress in the word's citation form. For a discussion see Shattuck-Hufnagel et al. 1994.)

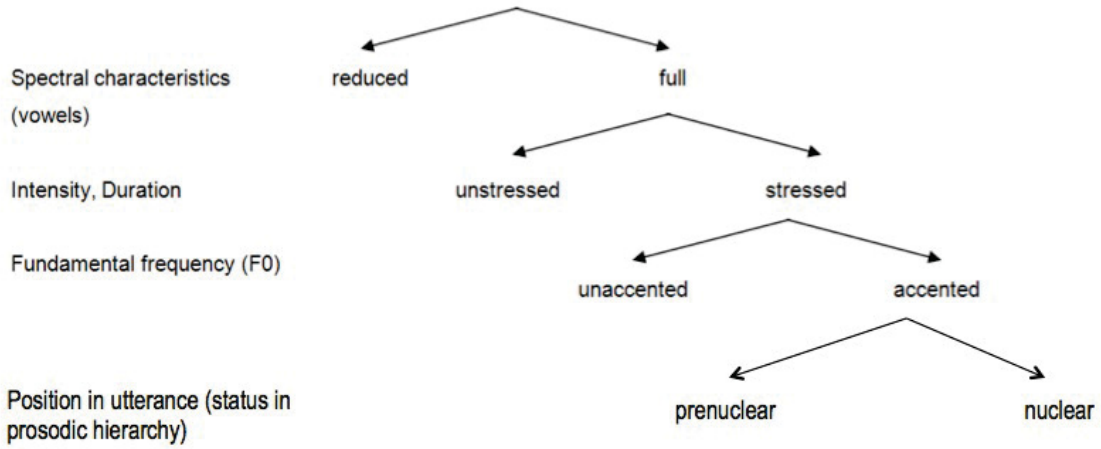
(Pitch) Accents operate at utterance level as well. They are characterized by a pitch movement in the vicinity of a (postlexically) stressed syllable, as in (3) below.

(3)

I bought a HOUSE.

The hierarchical overview of the (concrete) levels of stress and accent in an utterance are given in (4) (adapted from Terken & Hermes 2000). This hierarchy implies different degrees of prominence (right branches having more prominence) on a syllable, brought about incrementally from top to bottom by various phonetic parameters (given here in the acoustic dimension). The position of an accent in an utterance is added, indicating that the *nuclear* pitch accent as the last one in an utterance is often (but not necessarily) perceived as the most prominent one.

(4)



However, not just the presence or absence of a pitch accent in a specific position but also the *type* of accent makes a difference in the degree of perceived prominence.
A rating experiment on accent types in German (Baumann & Röhr 2015) illustrates this

claim. The authors tested whether nuclear pitch accent types (following GToBI (see Grice et al. 2005) plus deaccentuation) differed with respect to their perceived prominence. The subjects' task was to judge how 'highlighted' the target name (carrying a specific accent type) in an utterance sounded. An example of a target utterance is *Sie hat mit der Lana telefoniert* ('She was on the phone with Lana'), with the target word underlined.

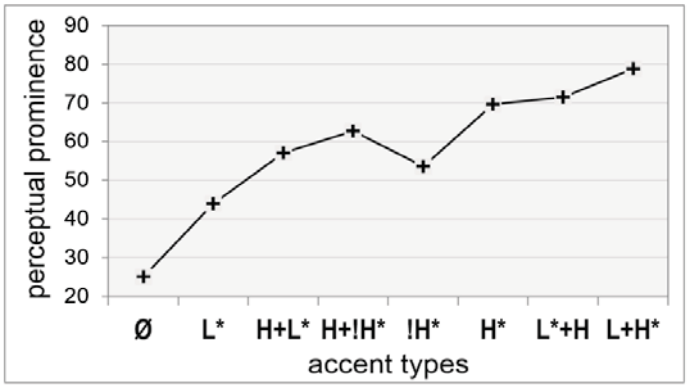


Figure 1: Results of a prominence rating task of German nuclear pitch accent types (Baumann & Röhr 2015)

Figure 1 shows the results, with the hypothesized order given on the x-axis. A mixed effects analysis revealed that perceptual prominence is significantly affected by different accent types, largely confirming the hypothesis.[1] Three tonal dimensions turned out to be relevant, in decreasing order:

1. Direction of pitch movement (rises > falls)[2]
2. Degree of pitch excursion (steep > shallow)
3. Height of the starred tone (H > !H > L)

2.2 Phrasing

Prosodic phrasing influences the meaning of utterances. The two sentences in (5), for example, are composed of the same lexical material but their meanings differ: (5a), which can be paraphrased as "the car that you see is mine", consists of a single phrase, while (5b), which can be rephrased as "the car is mine, you know", is made up of three phrases (boundaries indicated by square brackets).

(5)
a. [The car you see is mine]
b. [The car] [you see] [is mine]

[1] The only unexpected result was the relatively low prominence rating for !H* accents. This may be explained by the lack of pitch excursion of this accent type in relation to the early peak accents which were judged as more prominent.
[2] That is, rising vs. falling onglide to the accented syllable.

There are a number phonetic cues that lead to the perception of a phrase break, such as:

- Pauses
- Boundary tones (pitch movement associated with unaccented syllables at phrase boundaries)
- Tonal reset (jump in pitch either up or down at beginning of new phrase)
- Domain-final lengthening (pre-boundary segments are significantly longer (but not louder and more strongly articulated, i.e. they are not stressed; see e.g. Turk & Shattuck-Hufnagel 2007)
- Decrease of intensity at the end of an intonation phrase
- Domain-initial strengthening (often consonants are hyperarticulated (e.g. aspiration of plosives) to indicate the beginning of higher prosodic domains (e.g. Keating et al. 2003)
- Voice quality (creaky voice and glottalisation at beginning and/or end of a domain)
- Abrupt change in rhythm/ tempo (e.g. anacrusis: fast sequence of syllables at the beginning of a phrase)

2.3 Typological aside: Highlighting by phrasing

In some languages, the effect of highlighting can be achieved by phrasing, e.g. in Korean, as shown in (6) below.

(6)
A: [satšun-enni] [irimi] [mweni]
(lit. cousin name what)

B: [satšun-enni irimi] [suni-dži] (Jun 1993, Ladd 2008)
(lit. cousin name Suni)

In the question (6A), *name* is the most important – or focused – part and is thus realised as a phrase of its own. In the answer (6B), on the other hand, *name* is contextually given or background information. As a consequence, it does not constitute its own prosodic phrase, in contrast to the focused element of the answer, i.e. *Suni*. In analogy to the "deaccenting" of known or less important information in Germanic languages, this process in Korean has been referred to as "dephrasing" (Jun 1993, Ladd 2008).

2.4 Summary

We showed that prosodic cues to highlighting and phrasing can be gradient and phonetic (pitch height and movement, loudness, segmental length and quality, pauses), as well as discrete and phonological (accent vs. no accent, accent type and position, boundary tone type).

3. Central function of prosody: Marking levels of information structure

Information structure can be regarded as a semantic-pragmatic level of linguistic description. As Figure 2 suggests, it can be marked by both categorical and gradient prosodic means, e.g. by discrete pitch accent types as well as by gradient durational or tonal differences.

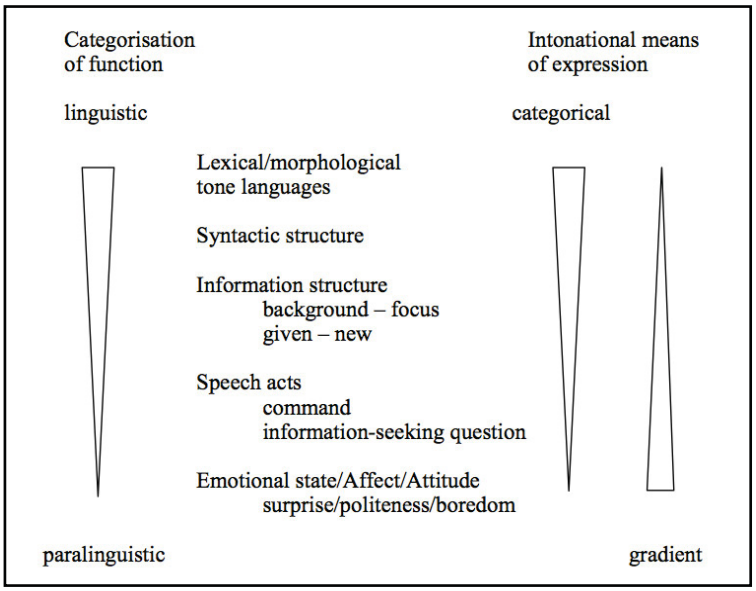


Figure 2: Functions of prosody (from Grice & Baumann 2007)

The levels of information structure that are marked by prosody comprise at least the focus-background structure (partly overlapping with the dichotomy of comment and topic) and information status or degree of activation of referring and non-referring expressions.

Let us take the assumed default prosody of declarative sentences in West Germanic languages as a point of departure and discuss some relevant deviations from this default. It has been claimed for both English and German that (internal) **arguments** are more likely to receive the nuclear pitch accent than **predicates** (if they occur in the same focus domain), irrespective of possible differences in surface word order between the two languages (cf. (7) and (8)).

(7) I bought a HOUSE.
predicate argument

(8) Ich habe ein HAUS gekauft.
predicate argument predicate

However, the final argument is not always accented in English and German (broad focus structures assumed). In fact, there are three different kinds of givenness which may trigger **deaccentuation** of the final argument (the argument in question is underlined, the position of the nuclear accent is indicated by capital letters):

1. Givenness of a discourse referent (coreference or referential givenness)

(9) John has an old cottage.
a. Last summer he reconSTRUCted the shed.
(shed = cottage) given information = coreference
b. Last summer he reconstructed the SHED.
(shed ≠ cottage) new information = no coreference

2. Givenness of a lexical item (no coreference, lexical givenness)

(10) After the holidays, John arrived in a new car, and also HARry had a new car.

Note that deaccentuation of given concepts is language-specific. There is no or at least less deaccentuation e.g. in Indian English, Singapore English, and in Romance languages.

3. Concept-givenness (inferential relation between an antecedent and a lexically superordinate anaphor) (cf. van Deemter 1994, 1999)

(11) Do you like dogs? I like ALL animals. (hyponym – hypernym)

Schwarzschild (1999) refers to this type of givenness as 'entailment'. In (11), the hypernym *animals* is entailed in the hyponym *dogs.* A closely related case is meronymy, as shown in (12).

(12) Why do you spend so much time in Naples?
It's my favourite CIty in Italy. (part – whole)

However, the prosodic realisation of superordinate and subordinate items crucially depends on the order of occurrence. If the anaphor denotes a subordinate concept, it will receive an accent, as in (13) and (14). This is due to the fact that a subordinate term is less activated (i.e. only 'accessible', cf. Chafe 1994) than a superordinate term (which is 'given') in the structures presented here.

(13) Do you like animals? I like all DOGS. (hypernym – hyponym)

(14) Why do you spend so much time in Italy?
I have a friend in NAples. (whole – part)

Contrastive focus has the opposite effect as givenness. It triggers the **accentuation** of a referent, even if it is referentially and lexically given (cf. (15)).

(15) A: Was it Mary or John who invited you to the party?
B: It was [JOHN]$_F$.
referentially given
lexically given
contrastive focus

Information structural meaning differences are not exclusively indicated by the **position** of a pitch accent in West Germanic languages, but also by the **type of accent** used.

The first study that proposed consistent meaning differences for accent types in American English was Pierrehumbert & Hirschberg (1990). The authors claimed that different types of starred tones (in an autosegmental-metrical approach) mark differences in information status, as shown in (16).

(16) new → accessible → given
H* !H* L*

The proposal implies an inverse relation between the degree of a referent's activation (or givenness) and the degree of prosodic prominence used for marking the referential expression: the newer an expression the more prominent the accent.

The following chapter discusses some empirical studies on this proposed relation for German, addressing different levels of information structure, namely information status and focus-background.

4. Empirical evidence: Studies on the relation between prosody and information structure

4.1 Information status

An analysis of the prosody of referring expressions in a German corpus of read speech largely matches Pierrehumbert & Hirschberg's (1990) proposal for English (see Fig.3). It revealed a probabilistic distribution of accent types indicating that new information is more often marked by high accents (H*), accessible information by 'early peak' (EP, e.g. H+L*) accents with a falling onglide to the accented syllable, and given information is typically marked by deaccentuation.

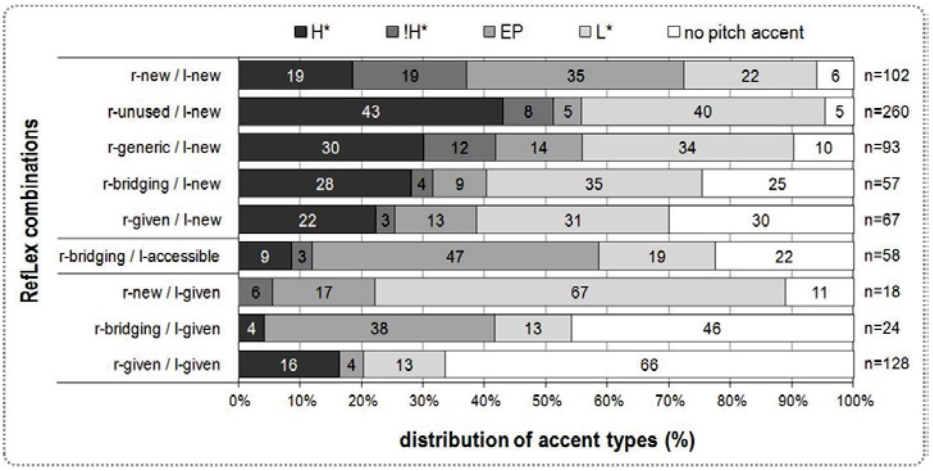


Figure 3: Distribution of accent types and levels of information status (RefLex combinations) in a read corpus of German (Baumann & Riester 2013)

This result is supported by a perception study on German, in which subjects had to judge a target item's degree of givenness exclusively on the basis of its prosodic realisation (i.e. no context was presented). Again, high (H*) and also downstepped accents (!H*) make a test word sound 'newer' than low accents (L*) and early-peak accents (H+L*/H+!H*) (see Fig.4). We assume that the perceptually relevant distinction lies in the rising versus falling main component of the pitch accent.

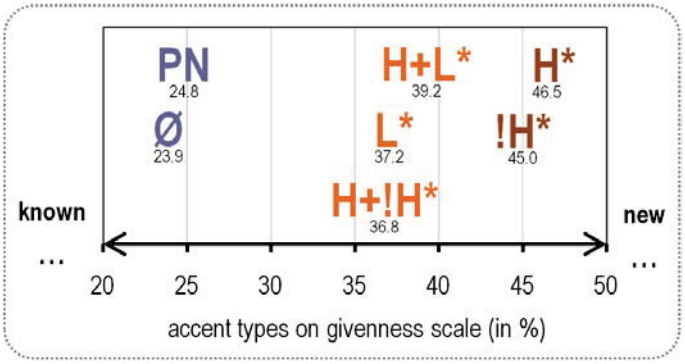


Figure 4: Results of a perception study on the relation between information status and accent types in German (Röhr & Baumann 2011)

4.2 Focus

In order to investigate the distribution of accent types in different focus structures, a production study was conducted using different context questions (see Fig.5). Thus, the target word (Dr. Bahber) either occurred in the background or in broad, narrow or contrastive (in fact, corrective) focus.

	Questions:	
1.	Will Norbert Dr. Bahber treffen? *Does Norbert want to meet Dr. Bahber?*	
2.	Was gibt's Neues? *What's new?*	
3.	Wen will Melanie treffen? *Whom does Melanie want to meet?*	
4.	Will Melanie Dr. Werner treffen? *Does Melanie want to meet Dr. Werner?*	
	Answers:	**target word in:**
	Melanie will Dr. Bahber treffen.	
1.	[ ]$_{focus}$	background
2.	[ ]$_{focus}$	broad focus
3.	[ ]$_{focus}$	narrow focus
4.	[ ]$_{focus}$	contrastive focus
	(lit.: *Melanie wants Dr. Bahber to-meet*)	

Figure 5: Setup of production study eliciting different focus structures in German (Mücke & Grice 2014)

Figure 6 shows that contrastive focus is mostly marked by rising accents (the most prominent pitch accent type in German, cf. Baumann & Röhr 2015 and Fig.1), while broad focus is often marked by falling accents and background by deaccentuation.

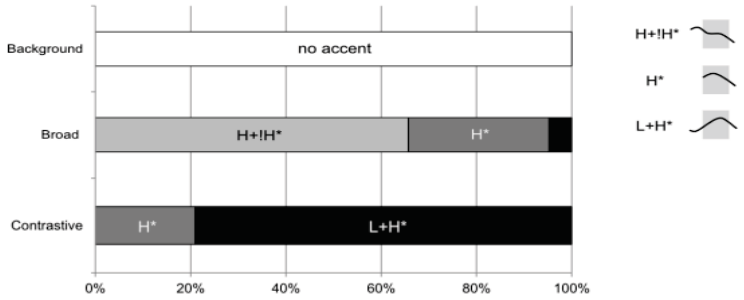


Figure 6: Probabilistic distribution of accent types as a function of focus structure in German read speech (Krüger 2009, Ritter & Grice 2015)

In a follow-up perception study (Krüger 2009) the author used the produced stimuli and asked the subjects how well an answer (*Melanie will Dr. BAHber treffen*) matches a particular context question (e.g. *Will Melanie Dr. Bieber treffen?*). The results are given in Figure 7, with the perception scores on the y-axis, separated in broad focus (left, blue graph) and contrastive focus (right, red graph). The graphs show higher scores (indicating a better match) for falling onglides (negative values on x-axis) in the broad focus context and higher scores for rising onglides in the contrastive focus context. Thus, the results of the production and perception studies are compatible.

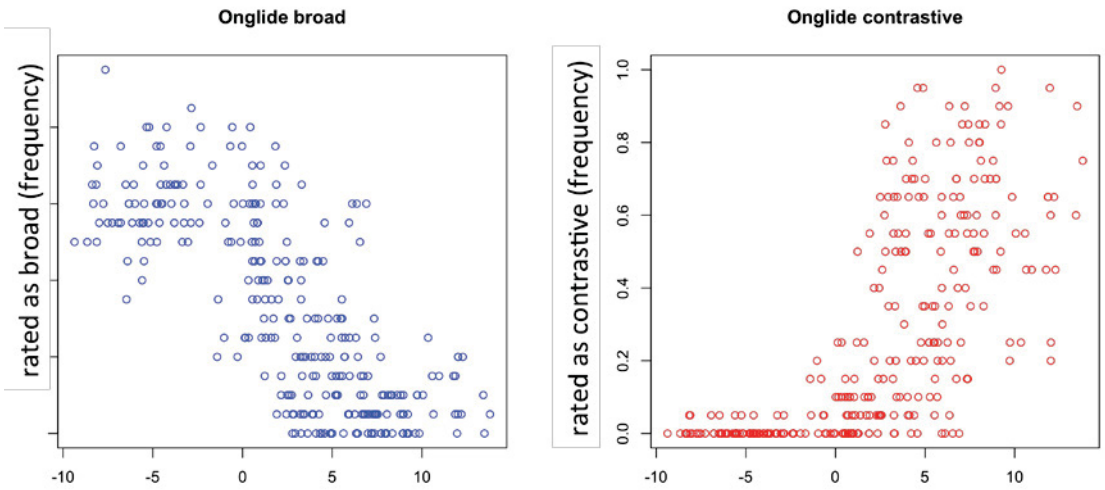


Figure 7: Results of a matching study on accent types and focus structures in German (Krüger 2009)

5. Conclusions

The empirical studies on German have shown that differences in information status and focus structures are to some extent marked tonally (in this language). This is done both by discrete phonological categories (pitch accent position and type) and/or by phonetic detail (e.g. increase in the rise of an accentual onglide). Furthermore, the distribution of accent types has been shown to be probabilistic in nature and speaker-dependent. Finally, the meaning differences triggered by accent types seem to be mediated via differences in prosodic prominence.

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Speech report construction in Seediq

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0. Introduction

Speech report construction is used to quote direct speech.This paper will show what speech report construction in Seediq is like and how its use is extended.

1. Basic facts about Seediq

Seediq is spoken by the Seediq, one of the Formosan indigenous peoples. This language belongs to the Austronesian family. There are about thirty thousand Seediq people, only some of whom can speak the language, which is endangered as young people and children cannot speak it. The dialects of Seediq are: Teruku, Tekudaya and Te'uda. This research is based on the Teruku dialect. About two thirds of Seediq speakers speak this dialect.

1.1 Seediq phonology and morphology

There are nineteen consonants and four vowels: p, t, k, q, '(glottal stop), b, d, s, x, h, g (velar fricative), c, l (voiced lateral fricative), r, m, n, ng (velar nasal), w, y, a, i, u, and e (schwa). Syllable structure of Seediq is CV(C). Most stems consist of two syllables, but some are trisyllabic, as well. The accent is on penultimate syllable.

Seediq verb morphology is agglutinating in most cases, employing prefixes, infixes, and suffixes. There exists reduplication of one or two word initial syllables. In addition to zero-derivation, affixation and reduplication are employed both to inflect and derive words.

The vowels of the syllables before penultimate position are usually weakened to *e*. When the stem is suffixed, the stem vowel that becomes penultimate on affixation gets weakened also. Vowels in prefixes are usually *e*.

1.2 Seediq cases

Seediq distinguish three cases for independent pronoun (Neutral, Nominative and Oblique) and two cases for clitic pronouns (Genitive and Nominative). Nominative case is marked by case marker *ka*, and Oblique case is marked by suffix *-an*. As for nouns, Neutral and Nominative are distinguished allover, and Oblique case is distinguished for person names and some nouns that express human (with suffix *-an*). This marks Nominative throughout, regardless of whether the subject is pronominal, a common noun or a proper name. For nouns, functional equivalent to the Genitive pronoun is the Neutral form. The Seediq case system is shown in table 1.

Table 1 Seediq case

	1st and 2nd Pronoun ex. 1s	3rd Pronoun ex. 3s	Person name and some nouns that express human ex. laqi 'child'	Common nouns that express animals and inanimate things ex. babuy 'pig'
Independent				
Neutral	yaku	hiya	laqi	babuy
Nominative	ka yaku	ka hiya	ka laqi	ka babuy
Oblique	kenan	hiya-'an	leqi-'an	babuy
Clitic				
Genitive	=mu	=na	(laqi)	(babuy)
Nominative	=ku	=zero	----	----

1.3 Seediq word order

The basic word order of Seediq is strictly predicate initial and subject final, as exemplified in (1).

(1) Malu ka hiyi=su?
AV[1].good NOM body=2s.GEN
'Are you fine?' (Lit. 'Is your body good?')

In example (1), *malu* is the predicate. When adjectives function as predicates, they are encoded in the same way as verbs are. The subject in (1) *ka hiyi=su* is marked by the nominative marker *ka*. *=su* after *hiyi* is a genitive enclitic pronoun. A genitive enclitic form is used when the possessor is expressed by a pronoun.

In a noun phrase, modifiers follow the head noun except for quantity expressions (example (2)).

(2) deha huling kumu gaga.
two dog Kumu that
'Those two dogs of Kumu's'

The head noun is *huling* 'dog', *Kumu* is the possessor, *deha* is the quantity, *gaga* is the demonstrative. The demonstrative appears juxtaposed in the last position in an NP. They are just juxtaposed. Neither a genitive marker nor a ligature is observed. Adjectives usually appear after the modified noun.

Seediq has prepositions, but no postpositions, as may be expected in a generally head-initial language.

1.4 Seediq voices

Seediq has three voices, Agent Voice (AV), Goal Voice (GV) and Conveyance Voice (CV). What becomes subject in each voice is shown in Table 2, with example of each voice form.

[1]The abbreviations used in this presentation are: AV=Agent Voice, CAUS=Causative, CNJ=Conjunctive, CV=Conveyance Voice, EXCLAM=Exclamation, FUT=Future, GEN Genitive, GV1=Goal Voice 1, GV2=Goal Voice 2, NEG=negative, NFIN=Non-Finite, NOM=Nominative, OBL=Oblique, ONO=Onomatopoeia, PN=Proper Name, PRF=Perfect, PROG=Progressive, PST=Past, RDP=Redpulication, Q=Question, s=singular, STAT=State, TOP=Topic,1=first person, 2=second person, 3=third person.

Table 2 Voice-subject alignment of the verb *kerut* 'cut'

Verb form	Voice	Semantic role of the subject
kerut	AV	Agent
keret-an	GV	Patient, Locative
se-kerut	CV	Beneficiary, Instrument

2. Speech report construction

There is a verb *m-esa* which means "AV-say, call". This verb inflects, as *m-en-sa* "AV-PRF-say", *(ke)s-un* "say-GV1", etc. First we will see its use to mean "to call" and then its use to quote a direct speech.

2.1 Use of *m-esa* to mean "to call"

In examples (3) and (4), this verb means to "to call". GV form is used in both examples, but in (3) it is *kes-un* and in (4) it is *s-un*. The expression used for calling is followed by *(ke)s-un*.

(3) Kari Hiburu 'u, Gabata kes-un.
language Hebrew TOP Gabbatha call-GV1
In Hebrew language, it is called Gabbatha. (John 19:13)

(4) Helay-an=deha ka Tiwang 'Iwal
find-GV2=3p.GEN NOM PN PN
m-eniq Pupuk s-un 'alang Kelemukan.
AV-live PN call-GV1 village Taiwanese
They found Ciwang Iwal who lived in a Taiwanese village called Pupuk.

Kes-un is used to mean "so-called", and in that case, it precedes the expression, as in (5) and (6).

(5) Kari=su 'u, ki ka kes-un balay=bi.
word=2s.GEN TOP so NOM call-GV1 really=really
Your word, so-called the truth is it (=your word).(John 17:17)

(6) Ki ka kes-un ungat peseteq-an kene'udus.
so NOM call-GV1 not.exist cut-GV2 life
So-called the eternal life (lit. life which will not be cut) is it. (John 17:3)

m-esa may be accompanied by a verb meaning "to name". This is an infinitive construction.

(7) Kari=deha de'u Akirudama s-un=deha tengahan.
language=3p.GEN TOP Akeldama call-GV1=3p.GEN <AV>name
In their language, they named it Akeldama. (Acts 1:19)

2.2 Use of *m-esa* to quote a direct speech

It is used to quote a direct speech. AV form *m-esa* is used in example (8), GV form *s-un* is used in example (9), GV form *kes-un* is used in example (10).

(8) "Meha=ku m-angal patas=mu" m-esa.
will.go=1s.NOM AV-take book=1s.GEN AV-say
"I wll go to bring my book." he said.

(9) "Qeta-'i=nami!" s-un=na.
see-GV.NFIN=1pi.NOM say-GV1=3s.GEN
"Look at us!" he said. (Acts 3:4)

(10) Tehawlang, "Qehedu peseqama ka se'diq niyi"
God AV.NFIN.finish AV.burn NOM people this
kes-un=nami ka tahut baraw 'u
say-GV1=1pe.GEN NOM fire heaven CNJ
kuxul=su hug?
GV.like=2s.GEN Q
God, if we tell fire of heaven to finish these people by burning, do you like it? (Luke 9:54)

It seems that *s-un* is used for realis and that *kes-un* is used for irrealis.

It is often accompanied by a supporting another verb, generally a verb of speaking or reporting. Such verbs include the following

rengaw "to speak"

siling "to ask"(ex. (11)).

tegesa "to teach"

Example:

(11) "Huya?" s-un siling Lebak ka Yudaw.
<AV>do.what say-GV1 <AV>ask PN NOM PN
"What are you going to do?" asked Lebak to Yudaw.

It is this verb *m-esa* which carries the voice of the clause, not the supporting verb (*siling* in example (11)). The latter clause of sentence (11) is in Goal voice, which is indicated by the verb form *s-un*, and *Yudaw*, recipient, the one who was asked a question, is the subject.

There are two ways of saying, as follows. The supporting verb may appear first, as in (12b). *M-esa* always follows the quoted part.

(12) a. "Ma'ah=su kenuwan?" m-esa siling ka 'Ipay.
AV.FUT.come=2s.NOM when AV-call <AV>ask NOM PN
"When will you come?" asked Ipay.

b. Siling ka 'Ipay, "ma'ah=su kenuwan?" m-esa.
<AV>ask NOM PN AV.FUT.come=2s.NOM when AV-say
Ipay asked, saying "When will you come?"

Mesa or *(ke)s-un* may follow an interrogative *manu* "what" to ask "say what" (example (13)).

(13) "Manu m-esa 'uyas tama=su?" s-un=na.
what AV-say song father=2s.GEN say-GV1=3s.GEN
"What does the song of your Father say?" he said.

3. Extended use of *m-esa*

m-esa is used not only with verbs of speech, but also with verbs of thinking. It is used as a marker of reported evidential.

3.1 Hearsay

m-esa may function as the marker of reported evidential when following a statement.

(14) Taying Umaw 'u, m-en-ebahang kari Tiwang 'Iwal m-esa.
PN PN TOP AV-PRF-hear story PN PN AV-say
As for Taying Umaw, he has listened to the story of Ciwang Iwal, they say.

The difference between sentence such as (7) and (14) seems that the part preceding *m-esa* is shown as quoted or not. For sentences such as (14), the meaning of quotation seems to be somewhat bleached. The person who said that or the time when he said that is unclear.

3.2 Verbs of thinking and Verbs of expecting

M-esa is accompanied by supporting verb, as shown above. The supporting verb may be not only verbs of speaking, but also verbs of thinking, then the part preceding *m-esa* expresses the content of hope, thought and fear (ex. (15) and (16)).

(15) "Ma=na se-kesa'ang ka me-'uyas 'uyas niyi hu-wa?"
why=3s.GEN CV-be.angry CNJ AV-sing song this Q-EXCLAM
m-esa lengelung ka Sikat.
AV-say <AV>think NOM PN
"Why does he get angry when singing this song?" thought Sikat.

(16) Balay=bi senehiyi=ku Kiristu-'an ka yaku
really=really AV.believe=1s.NOM Christ-OBL NOM 1s
kes-un=ku=namu lengelung 'u,
say-GV1=1sg.NOM=2p.GEN <AV>think CNJ
temay sapah=mu ni 'eniq hiya.
AV.NFIN.enter house=1s.GEN and AV.NFIN.stay there
If you think about me that I really believe Christ, enter my house and stay there. (Acts 16:15)

As for example (14), whether or not it presupposes actual utterance is unclear. Sikat may have uttered the clause, talking to herself. As for example (15), an actual utterance is not presupposed.

Following is the list of verbs that may accompany *m-esa*.

lengelung "to think"
tegehekesaw "to pretend"
me-sepi "to dream"
senehiyi "to believe"
senuhur "to doubt"
sedehug"to promise"
senaqih kuxul"to regret"

3.3 Manner

m-esa is used to express manner also. There are several patterns.

3.3.1 *m-esa haya*

m-esa or *(ke)s-un* followed by *haya* "such a way" and mean "to do in such a way "(ex. (17)).

(17) Nasi=deha kes-un haya ka mi-'iluq qehuni 'u,
if=3p.GEN say-GV1 such.a.way NOM AV-fresh tree CNJ
mpe-huya m-esa ka me-dengu qehuni hug?
AV.FUT-do.what AV-say NOM AV-dry tree Q
If they do in such a way to fresh tree, how will they do to dry tree? (Luke23:31)

m-esa haya or *(ke)s-un haya* may be accompanied by a supporting verb, which describe to do what in that way.

(18) Wada m-esa haya rengaw ka Yisu.
PST AV-say such.a.way <AV>speak NOM Jesus
Jesus said in such a way. (John 2:22)

(19) Penle'alay munan ka de-mpewe'la kari 'u,
first 2p.OBL NOM PL-profits word CNJ
wada=deha s-un haya teraqil 'uri.
PST=3p.GEN say-GV1 such.a.way <AV>persecute also
Those profits who preceded you, they also were persecuted in that way. (Matt 5:12)

(20) 'Ida=namu=deha kes-un haya ke'pah.
surely=2p.NOM=3p.GEN say-GV such.a.way <AV>work
Ya'asa 'ini kela Tema-'an ni kenan 'uri.
because NEG AV.NFIN.know Father-OBL and 1s.OBL also
They will work in such a way to you. It is because they do not know Father and me. (John 16:3)

m-esa haya or *(ke)s-un haya* may further followed by an expression that describes the way. In (21), for example, *haya* is followed by *me-deka quyu* "same as snake", and means "to do in such a way as they do to snake".

(21) Wada=deha s-un haya [me-deka quyu]
PST=3p.GEN say-GV1 such.a.way AV-same snake
me-seru ka Yudaw.
AV-hit NOM PN
They hit Yudaw like that, same as (hitting) a snake.

3.3.2 *huya m-esa/(ke)s-un*

To ask how to do something, Seediq use *huya m-esa* or *huya (ke)s-un*. A supporting verb, which in fact denote the concrete action, follows this. This is an infinitive construction. As a general rule *huya m-esa* is used when that verb is intransitive (ex. (22)), and *huya (ke)s-un* is used when the verb is transitive(ex. (23)).

(22) Huya=su m-esa me-taqi?
do:what=2s.NOM AV-say AV-sleep
How do you sleep? (e.g. With your face up, or down, or side?)

(23) Huya=su s-un pehuqil ka rudux?
do.what=2s.GEN say-GV1 AV.kill NOM chicken
How do you slaughter chicken?

It is usually *huya s-un* which is used as the GV form. *Huya kes-un* is used with a nuance of surprise or doubt.

Huya is a verb stem meaning "to do what", and can inflect for voice and tense/ aspect: *huya* <AV>do.what, *mpe-huya* AV.FUT-do.what, *heya-'un* do.what-GV1, *'inihuya* NEG do.what, etc. Example:

(24) Ga=su huya?
PROG=2s.NOM <AV>do.what
What are you doing?

3.3.3 Onomatopoeia + *m-esa/(ke)s-un*

Seediq has several onomatopoeia. *Mesa* or *(ke)s-un* may follow an onomatopoeia.

(25) "Pas" m-esa pa'ah tunux=na ka dara.
ONO AV-say AV.come.from head=3s.GEN NOM blood
Blood came from his head suddenly.

(26) "Bat, bat" s-un=na me-seru.
ONO ONO say-GV1=3s.GEN AV-hit
They hit him hardly.

Japanese also use *-to*, the particle which is used for quotation, for using onomatopoeia adverbially.

3.4 Limiting topic

A noun phrase (ex (27d)) or a nominalized clause (ex (28c)) is often followed by *kes-un* when left-dislocated. It functions to limit the topic. The clause which follows the left-dislocated phrase or clause explains the reason why or the situation where the event described by the left-dislocated phrase or clause.

(27) a. Deragun 'u, kese'ng-un=na ka kuyuh deni,
Dragon TOP angry-GV1=3s.GEN NOM woman then
As for Dragon, he got angry with the woman and

b. mensengari=na hi ka leqe-laqi kuyuh 'u,
remainder=3s.GEN there NOM RDP-child woman TOP
as for the remaining children of the woman,

c. sa-'an=na tegediyal.
go-GV2=3s.GEN <AV>fight
he went to fight with them.

d. Leqe-laqi kes-un 'u, ki ka ga me-nduwa m-urug
RDP-child say-GV1 TOP so NOM STAT AV-properly AV-follow
kari Utux Baraw ni senhiyi kenbalay penegekela Yisu.
word god heaven and AV.beleive really teaching Jesus
As for those children, they really believed the teaching of Jesus. (Rev 12:17)

(28) a. Berah=na niyi ka dehiya niyi 'u,
before=3s.GEN this NOM 3p this CNJ
Before this, they

b. m-usa me-seseli sapah Hagay Tapang,
AV-go AV-gather house PN PN
they went to gather at the house of Hagay Tapang.

c. ma m-usa me-seseli hiya kes-un 'u
why AV-go AV-gather there say-GV1 TOP
To say why they went there to gather,

d. ya'asa payi Tiwang ga,
because old.woman PN TOP
because Aunt Ciwang,

e. kuxul=na balay ka Rubiq 'Ubing ni
like.GV=3s.GEN really NOM PN PN and
she really liked Rubiq Ubing and

f. tegesa sapah=na hiya.
AV-teach house=3s.GEN there
she taught there at her house.

Japanese also use a particle *-toiuto* to focus on something. *-toiu* which is included in this particle, is used for quotation in Japanese.

3.5 Purpose and possible consequence

Dixon (2009) and Aikhenvald (2009: 387-390) argues polysemous patterns in speech report constructions. There are languages where speech report construction is used to indicate purpose or possible consequence (Dixon 2009:7, 20, Aikhenvald 2009:387-390), but such cases are not observed in Seediq.

4. Summary

This presentation showed speech report construction of Seediq and its extended use.

In Seediq speech report construction, verb *m-esa* "to call, to say" is used. It may be accompanied by verbs of speaking, asking, teaching, etc. We also saw the use of this verb to mean "to call".

This verb is used in several ways other than direct quote. It is used as a marker of reported evidential. It is used to quote a content of thought. It is used to denote manner, used with *haya* "in such a way", *huya* "to do what" or onomatopoeia. It is used to limit the topic.

Reference

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Complement-taking strategies in Kapampangan

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1. Introduction

Kapampangan is a Philippine language spoken mainly in the province of Pampanga and Southern Tarlac, as well as in some parts of Bataan, Bulacan and Nueva Ecija. This paper aims to be a preliminary descriptive study on Kapampangan complementation. I also intend to contribute to a typology of complementation by providing Kapampangan data and analyses.

The scope of my paper is to describe two types of constructions, shown in (1).

(1a) complements of a predicate (i.e., verb complements, complement clauses)
(1b) complements of a noun (i.e., noun complements, appositive clauses, adnominal clauses)

Following Noonan 2007, by complementation I mean "the syntactic situation that arises when a notional sentence or predication is an argument of a predicate." However, I deal with, not just complements of a predicate (1a), but complements of a noun (1b). I use the terms 'complement clauses' and 'adnominal clauses' in this paper. In the following two sections, I will present an overview of Kapampangan complement clauses first, and then on adnominal clauses.

2. Complement clauses

In this section, I will discuss various strategies for complement clause formation in Kapampangan.

2.1. Typology of complementation

In order to collect data of complements in our research, I am using Noonan's semantic classification of predicates that take complements. These are the classes of complement-taking predicates (Noonan 2007).

(2) Utterance predicates
Propositional attitude predicates
Pretence predicates
Commentative predicates (factive)
Predicates of knowledge and acquisition of knowledge
Predicates of fearing
Desiderative predicates
Manipulative predicates
Modal predicates
Achievement predicates
Phasal predicates (aspectuals)

Since this paper is a report of work in progress, I am still not ready to give a comprehensive overview of these various predicates in Kapampangan. I will briefly discuss the first class, utterance predicates (typically, such predicates as 'say', 'tell', 'report' and 'ask') in Kapampangan, which are frequently used in daily conversation.

2.2. Utterance predicates

In this section, we will observe how speakers quote utterances, employing utterance predicates. Let us examine the following text. It is a casual written narrative, taken from a Facebook post. It is not a spoken narrative, but very close to how Kapampangan speakers actually talk, where code-switching, or code-mixing (Kapampangan, Tagalog, and English) is common. [1]

(3) *Having dinner last night at a Korean restaurant, I notice a Korean customer smoking a cigarette.* ***I ask the waitress****, Malyaring manigarilyu kene? Opu,* ***ngana****, kua da ko pung ashtray?* ***Sabi ku****, ali uari atin ordinance na bawal ing manigarilyu kilub restauran.* ***Pakibat na****, opu.* ***Ngaku*** *naman, O't ita paburen yeng sisindi?* ***Ing sabi na****, Koreanu ya pu kasi.*

The utterance predicates and their complements in this text are summarized below.

(4)

Utterance predicates	**Complements (Quotes)**
I ask the waitress,	*Malyaring manigarilyu kene?* 'Is it possible to smoke here?'
ngana, 'she said'	*Opu, kua da ko pung ashtray?* 'Yes sir, shall I get you an ashtray sir?'
Sabi ku, 'I say'	*ali uari atin ordinance na bawal ing manigarilyu kilub restauran.* 'no, it seems there is an ordinance that prohibits smoking inside the restaurant.'
Pakibat na, 'she answers'	*opu.* 'yes sir.'
Ngaku naman, 'I said also'	*O't ita paburen yeng sisindi?* 'Why do you permit that (person) to smoke?'
Ing sabi na, 'what she says (is)'	*Koreanu ya pu kasi.* 'Because he is Korean, sir.'

There are many constructions and markers of quotation. *Nga* is a hearsay or quotation particle, combined with a pronoun; *ngana* is 's/he said', and *ngaku* is 'I said' (note the particle and the pronoun are written as one word). *Sabi* means 'to say'. *Sabi ku* is 'I say', *sabi na* is 's/he says'. *Pakibat* is 'to answer'. *Ing sabi na* is marked by *ing*, the 'specific' deteminer, constituting a noun phrase, meaning 'what s/he says'.

In the above text, we saw typical examples of direct quotation. In casual talk, most quotations are direct ones. Note that no complementizer is used. Even an invented example of utterance predicates would take the following form, where there is no complementizer (no overt marking of complementation). [2]

1 I am grateful to Ronnie Tayag for his permission to quote his post on Facebook, with minor modification. Phrases in boldface are utterance predicates.

2 In this paper, the following abbreviations are employed: ABS-absolutive, COMP-complementizer, DET-determiner, ERG-ergative, LK-linker, NEG-negative, OBL-oblique, PL-plural, SG-singular, SPEC-specific, 1-first person, 2-second person, 3-third person

(5) *Sinabi=mu [danupan=ka].*
said=ERG.2SG hungry=ABS.2SG
'You said you were hungry.'

2.3. Complementizers

Nevertheless, Kapampangan has some formal complement-taking strategies, employing a couple of complementizers. I have identified four complementizers so far:

(6) *nung* ('if, whether') + WH phrase
linker *a / =ng*
oblique determiner *king*
'specific' determiner *ing*

I will discuss each complementizer below.

2.3.1. *Nung* + WH phrase

Let us examine the first subordinator, the *nung* + WH phrases. *Nung* corresponds to the English conditional subordinator, 'if, whether'. *Nung* is combined with an interrogative pronouns or adverbs, *nanu,* ('what') or *nukarin* ('when'), and the *nung* + WH phrase is actually realized as in the following. *No* and *na* are considered the reduced forms of *nanu* and *nukarin*, respectively.

(7) *nung* ('if') + *nanu, na* ('what')
nung ('if') + *nukarin, no* ('where')

In the examples below, these two complementizers, *nung na* and *nung no*, function to mean 'what' and 'where', respectively. The manipulative predicate 'ask' is combined with *nung na*, forming 'ask what' in (8), and the predicate of knowledge 'know' is combined with *nung no*, forming 'know where' in (9). In the examples to follow, complementizers are in boldface.

(8) *kitang=na* ***nung*** ***na****[=ng* *oras* *keng* *Sabado]*
asked=ERG.3SG if what=LK hour OBL.SG Saturday
'they asked (me) what time on Saturday'

(9) *tabalu* ***nung*** ***no****[=ne* *kebit],*
not.know if where=ERG.3SG+ABS.3SG put
'I don't know where she put it,'

Note that *tabalu* is a phrase meaning 'don't know', where the subject of 'know' is generally inferrable, but usually 'I'. It is composed of the prefix *ta-*, whose etymology is not well understood, and *balu* ('know').

2.3.2. Linker *a / =ng*

The linker is a small particle that connects two or more constituents. It appears *a* or *=ng* depending on phonological environments; after a consonant, it will be *a*, and after /n/, /ʔ/ or a vowel it will be *=ng*. Consider typical examples of the linker.

(10a) *malinis* *a* *danum*
clean LK water
'clean water'

(10b) *matwa=ng* *lalaki*
old=LK man
'old man'

Here are more examples of the linker below. In the second example (11b), the linker connects a noun ('the children') and a verb ('grew up'), therefore it is functioning like a relative clause marker, or relativizer (see section 3.2 below).

(11a) *ing* *damulag* *a* *ini*
DET.SPEC.SG water.buffalo LK this.ABS
'this water buffalo'

(11b) *deng* *anak* *a* *meragul* *keti*
DET.SPEC.PL child LK grew.up here
'the children that grew up here'

Let us examine an example where the linker is used as a complementizer. This use of the linker is quite common.

(12) *E=ku* *balu=**ng*** *[dinatang=ka* *keti]*.
NEG=ERG.1SG know=LK came=ABS.2SG here
'I didn't know that you came here.'

2.3.3. Oblique determiner *king*

Kapampangan dinstinguishes three cases, and there are various names for each of them. One case is called 'nominative', or 'absolutive'. Another is called 'genitive', or 'ergative'. And the third one is called 'locative', or 'oblique'. In this paper, I employ the terms for the ergative-absolutive system, and therefore the three cases are called absolutive - ergative - oblique.

Basically, the oblique functions like the English prepositions such as 'in' and 'to'. Note that the oblique determiners appear in different forms, according to the singular/plural and non-personal/personal name oppositions (the same is true for absolutive and ergative determiners), but here I will only deal with the oblique determiner for singular and common nouns (glossed DET.OBL.SG).

Here are some basic uses of oblique determiners.

(13) *ding* *tau* *king* *Arayat*
DET.SPEC.PL person DET.OBL.SG Arayat
'the people in Arayat'

(14) *Dela=ra=la* *king* *hospital.*
brought=ERG.3PL=ABS.3PL DET.OBL.SG hospital
'They brought them in the hospital.'

Below is an example where the oblique determiner is used as a complementizer. It seems to be a rather artificial sentence.

(15) *Sinábi=na* *kanáku* ***king*** *[íya* *magáral=ya=ng* *máyap].*
said=ERG.3SG OBL.1SG DET.OBL.SG ABS.3SG study=ABS.3SG=LK well
'He told me that he would study well.'

2.3.4. 'Specific' determiner *ing*

In this section, we will examine the 'specific' determiner *ing*. It is used with a word in absolutive case, but its function is not case-marking, but is considered to mark specificity, therefore it is glossed DET.SPEC.SG. These are examples of its basic use.

(16a) *ing* *kotse=na*
DET.SPEC.SG car=ERG.3SG
'his/her car'

(16b) *ing* *marinat* *a* *imalan*
DET.SPEC.SG dirty LK clothes
'the dirty clothes'

The complementizer use of the determiner *ing* is shown below, examples from the previous research.

(17) *Mayap* ***ing*** *[lalakad=ya* *i* *Pedru].*
good DET.SPEC.SG walking=ABS.3SG DET.SPEC.SG Pedro
'It is good that Pedro is walking.' (Gonzalez 1981: 288)

(18) *Apansinan=na* ***ing*** *[mapagal=ne].*
noticed=ERG.3SG DET.SPEC.SG tired=already+ABS.3SG
'He noticed that he was already tired.' (Mithun 1994: 254)

2.3.5. Complementizer uses of *a / =ng*, *king* and *ing*

Now the question then arises as to how Kapampangan speakers use and distinguish these complementizers *a / =ng*, *king* and *ing* (*nung* + WH is somewhat different, closely related to the predicates in the matrix clauses). Suppose *mayap* ('it is good') is a matrix clause.

(19) *Máyap* ***{a / king / ing}*** *[áganaka=ne* *ing*
good COMP remember=ERG.3SG+ABS.3SG DET.SPEC.SG
útang=na *kéka].*
debt=ERG.3SG OBL.2SG
'It is good that he remembered his debt to you.'

Likewise, here is an example where *ábálû=na* ('s/he discovered') is a matrix clause.

(20) *Ábálû=na* ***{=ng / king / ing}*** *[é=ya* *mípasar*
discover=ERG.3SG COMP NEG=ABS.3SG passed
king *test.]*
DET.OBL.SG test
'He discovered that he did not passed the test.'

Generally, all of the determiners, linker *a*, determiners *king* and *ing*, can be put in the

complementizer position. However, native speakers make different judgements of these complementizers. One consultant rejects *ing* in these examples above. But other consultants generally agree that all of these complememtizers are acceptable, although it is suggested that there are differences in the nuance of the determiners when they are used. There may be regional (dialectal) factors, as well as idiolectal variations (Mike Pangilinan, personal communication).

There is some peculiarity about the complementizer use of *ing*, but the linker and *king* are generally interchangeable when they are used as a complementizer. Observe these pairs of the examples below.

(21a) *Méngáku=ya=**ng*** *[é=ne* *minum*
swore=ABS.3SG=LK NEG=already+ABS.3SG drink
kapilan *man]*.
when ever
'He swore that he will never drink again.'

(21b) *Méngáku=ya* ***king*** *[é=ne* *minum*
swore=ABS.3SG DET.OBL.SG NEG=already+ABS.3SG drink
kapilan *man]*.
when ever
'He swore that he will never drink again.'

(22a) *Mániuálâ=ya=**ng*** *[alâ=ng* *diós]*.
believe=ABS.3S=LK none=LK god
'He believes that there is no god.'

(22b) *Mániuálâ=ya* ***king*** *[alâ=ng* *diós]*.
believe=ABS.3SG DET.OBL.SG none=LK god
'He believes that there is no god.'

2.3.6. Appositive/paratactic *at* ('and')

There is another strategy comparable to complementation; it is an appositive, or paratactic (as opposed to hypotactic) construction (cf. paratactic conmplement, Noonan 2007).

(23) *Máyap **at*** *[áganaka=ne* *ing* *útang=na*
good and remember=ERG.3SG+ABS.3SG DET.SPEC.SG debt=ERG.3SG
kéka].
OBL.2SG
'It is good and [he remembered his debt to you].'

It is suggested that *at* is widely used when the predicate is an adjective, such as 'pitiful', 'odd', 'significant', and 'important' (although there are some exceptions such as 'bad', which is not preferred), and there seem some variations among individual speakers, as well as regional differences (Mike Pangilinan, personal communication).

Here is another example, where both *at* and *king* can be used.

(24) *Sáyang* *naman* ***{at / king}*** *[e=ya* *dintang]*.
pitiful even {and / DET.OBL.SG} NEG=ABS.3SG came
'Too bad she didn't come.'

2.4. Interim summary

Kapampangan has various complement-taking strategies (including a quasi-complement-taking strategy) as summarized here.

(25) (zero complementizer)
nung + WH phrases
linker *a / =ng*
oblique determiner *king*
specific determiner *ing*
appositive / paratactic *at*

Furthermore, there are constructions, which are formally not complementation, but whose functions are similar to complementaion. One such construction type is nominalization. The following example is a nominalization with the specific determiner *ing*.

(26) *E=ku akalingwan [ing milyari neng aldo=ng ita].*
NEG=ERG.1SG forget DET.SPEC.SG happened when day=LK that.ABS
'I'll never forget what happened that day.'

There are different types of nominalization. One can employ the prefix *pamag-* (meaning 'act of'). In the following example, taken from conversational data, the nominalized phrase is headed by the plural determiner *ring*, the act of driving being pluralized, suggesting that the driving was very long.

(27) *Susundu=na pa [ring pamag-manewu].*
continuing=ERG.3SG still DET.SPEC.PL act.of-drive
'He continued to drive for long hours.'

2.5. Action nominals

Finally, it would be necessary to compare complement clauses with another construction type, i.e. action nominals. These two constructions look quite similar. Consider the following examples. The only difference lies in the pronoun being present or not.

(28) Complement clause
Mayap ing sumaup karela.
good DET.SPEC.SG help OBL.3SG
'It is good [to help them].' (The helping of them is good)

(29) Action nominal
Mayap=ya ing sumaup karela.
good=ABS.3SG DET.SPEC.SG help OBL.3SG
'[The one who will help them] is good.' (The helper of them is a good one.)

In (28), the determiner *ing* is the complementizer, and *sumaup karela* is the complement clause (cf. section 2.3.4). In (29), because there is a personal pronoun *ya* (3rd person singular), the whole sentence is interpreted as mentioning about a person, so the phrase *ing sumaup karela* signifies a person.

Native speakers agree that these two constructions are completely different. One consultant, who rejects the *ing* complementation, claims that although (28) is awkward, but still the difference between (28) and (29) is clear.

Noonan's study of versatile nominalization (1997) is helpful here, which reports the wide range of uses of nominalizations in Tibeto-Burman languages. Similar phenomena can be seen in Kapampangan. The determiner *ing* is used for various functions, as we have seen so far. We will see in the next section, that Kapampangan has some morphemes that are used to make up both complement clauses and adnominal clauses.

3. Adnominal clauses

This section deals with adnominal clauses in Kapampangan. The structure of the adnominal clause is shown in (30). There is a linking element between the head noun and complement clause, called the 'adnominalizer' in this paper.

(30) Kapampangan adnominal clauses
[head noun] ADNM [complement clause] (ADNM = adnominalizer)

I still do not have clear ideas about what nouns can be a head (and what nouns cannot) of the adnominal clause in Kapampangan. Here are some of what I think typical candidates for a head noun. A further comprehensive research is needed on this point.

(31) statement, report, rumor, complaint, telephone call, question, suggestion, thought, hope, conclusion, decision, smell, taste, sound, picture, experience, etc.

3.1. Various adnominalizers

This section focusses on kinds of adnominalizers used in Kapampangan. The most common adnominalizer is the linker ***a / =ng***. The determiners *ing* and *king*, which are used as complementizers, are NOT used as adnominalizers.

Here is an example of adnominal clauses, where the head noun is 'fact'.

(32)

ing	*katutwan*		***a***	*[dékap=ne*
DET.SPEC.SG	fact		LK	caught=ERG.3SG+ABS.3SG
ning	*pulis*	*ing*		*abugádu]*
DET.ERG.SG	police	DET.SPEC.SG		attorney

'the fact that the police arrested the attorney'

There are still other adnominalizers, less common than the linker. When the head noun is *kutáng* 'question', ***nung*** ('if / whether') is used for the adnominalizer.

(33)

ing	*kutáng*	***nung***	*[adiskubre=ne*	*tagana*	*iti]*
DET.SPEC.SG	question	if	discover=ERG.3SG+ABS.3SG	really	this.ABS

'the question whether he really discovered this.'

One type of the *nung* + WH phrases, ***nung nukarin*** ('if / whether' + 'where') is an adnominalizer in the following example.

(34)

ing	*obra*	***nung***	***nukarin***	*[makakilala=ka=ng*
DET.SPEC.SG	job	if	where	can.meet=ABS.2SG=LK
dakal	*a*	*kostumer]*		
many	LK	customer		

'the job in which you can meet a lot of customers'

Another adnominalizer is ***kábang*** ('while'), which is used when the head noun is *tónu* ('sound').

(35) *ing* *tónu* ***kábang*** *[i* *Ariéla*
DET.SPEC.SG sound while DET.SPEC.SG Ariela
ya=ng *títigtig king* *piánu]*
ABS.3SG=LK play DET.OBL.SG piano
'the sound of Ariela's playing the piano'

This type of examples would be familiar to linguists working on Japanese, since the Japanese counterparts of constructions such as 'the sound that someone plays the piano' or 'the smell that someone grills the fish' (both ungrammatical in English) are well-known in introductory linguistic textbooks (see section 4 for more discussion).

So far, I have shown that (a) the linker *a / =ng* is the most common adnominalizer, and that (b) other adnominalizers, *nung, nung nukarin, kábang* are also used depending on the head noun. There may be more adnominalizers, and therefore it is necessary to work with native speakers for more data.

3.2. A note on the so-called "relative clauses"

It would be necessary to touch on the so-called "relative clauses" in Kapampangan, and the distinction between adnominal clauses and relative clauses. Let us examine the following constructions.

(36) *ing* *kayabe=ra**=ng*** *[minta Las Vegas]*
DET.SPEC.SG companion=ERG.3PL=LK went Las Vegas
'their companion who went to Las Vegas'

(37a) *ing* *balita**=ng*** *[tinggap=ku]*
DET.SPEC.SG news=LK received=ERG.1SG
'the news that I received'

This is a translation equivalent of English relative clauses. It is composed of two constituents (e.g. *kayabe=ra* and *minta Las Vegas*) connected by the linker. Structurally, the relative clause and the adnominal clause are identical. In fact, they are not.

It is important to note that the two constituents in so-called "relative clauses" can be reversed. Compare (37a) and (37b), both of which are grammatical.

(37b) *ing* *tinggap=ku=ng* *balita*
DET.SPEC.SG received=ERG.1SG=LK news
'the news that I received'

The next example is an adnominal clauses (so-called 'fact-S' constructions), with the head noun *ing balita* 'the news'. Unlike the "relative clause" that begins with *ing balita* (37a), the order of the two constituents cannot be reversed. Compare (38a) and (38b).

(38a) *ing* *balita=ng* *mag-resign=ne* *ing* *Presidenti*
DET.SPEC.SG news=LK resign=now+ABS.3SG DET.SPEC.SG president
'the news that the president will resign'

(38b)* *ing* *mag-resign=ne* *ing* *Presidenti=ng* *balita*
DET.SPEC.SG resign=now+ABS.3SG DET.SPEC.SG president=LK news

What appears to be a relative clause is a construction with two coordinated constituents; for example, *ing balita=ng tinggap=ku* would be 'the news, the one I received'.

As a further piece of evidence, in making "relative clauses", one can combine more than two coordinated constituents, as in the example below, whereas in adnominal clauses, it is conceptually impossible. In (39), there are three coordinate constituents ('the good one', 'the news', and 'the one I received').

(39) *ing* *masanting* *a* *balita=ng* *tinggap=ku*
DET.SPEC.SG good LK news=LK received=ERG.1SG
'the good news that I received'

In conclusion, in Kapampangan, the adnominal clause is distinct from the so-called "relative clauses".

4. Concluding remarks

In this final section, I touch on Bernard Comrie's typological works (Comrie 1996, 1998a, 1998b, 2006). Comrie (1996) writes about two broad types of noun-modifying clauses in a wide variety of languages, which are named 'Asian type' and 'European type'. By Asian type languages he means languages that make no syntactic distinction between relative clauses and fact-S constructions. In European type languages, relative clauses and fact-S constructions are distinct.

(40) Terms used in the literature

Asian type	European type
noun-modifying clauses (Matsumoto 1988); attributive clauses (Comrie)	relative clauses
	fact-S constructions (Comrie); noun complementation (Noonan 2007)

The Asian type languages Comrie calls do not include Philippine languages; he examined languages such as Japanese, Korean, Ainu, Turkic languages, and mainland Southeast Asian languages.

It is impossible to characterize Kapampangan (or Philippine languages) either as Asian type or as European type. As we have seen, Kapampangan "relative clause" is structurally very different from European type relative clause. On the other hand, the linker is employed for both "relative clauses" and adnominal clauses, therefore the two types of constructions share some property. There are, however, adnominalizers other than the linker, e.g. *nung*, *nung nukarin*, and *kábang*, which are not used for "relative clauses".

In this paper, I have tried to describe two types of constructions, complement clauses and adnominal clauses, in Kapampangan. Since it is a report of my ongoing research, I could provide only a partial picture of complementation. It is necessary to

work on various other complement clauses, and carry out careful analysis of corpus and elicited data.

Acknowledgments

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The intonation of interrogatives and focused elements in Bantik

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1. Overview of Bantik and its phonology

Bantik is an Austronesian language spoken in the North Sulawesi Province of Indonesia. It is said to belong to the Sangiric subgroup within the Philippine language group, West Malayo-Polynesian (Sneddon 1984, Noorduyn 1991). It is spoken by approximately 10,000 people, who live in nine villages in the vicinity of Manado, the capital of the North Sulawesi Province, and two more villages roughly 100 kilometers away from Manado (Noorduyn 1991).

Bantik has five vowels, /i, e, a, o, u/ and fourteen consonants, /p, b, t, d, k, g, s, h, ʔ, m, n, ŋ, ɾ, j/. It has phonemic pitch accent,[1] unlike its neighboring languages.[2] The syllable structure is (C)(C)V(C), where only nasals and the glottal stop are allowed as codas. Bantik has word bases to which various affixes are attached. Most of the syllables are composed of one of the following structures: CVC, CV, VC, or V. A few exceptional bases begin with a consonant cluster and have the syllable structure CCV(C). Consonant clusters in these cases consist of a nasal (one of /m, n, ŋ/) and a homo-organic stop (one of /p, b, t, d, k, g/) or a nasal and an alveolar fricative (/s/).[3] A glottal stop occurs only at the end of a base, except in *kiʔaŋ* "to lift" and *eʔe* "there (distal)." A vowel sequence is regarded as two separate syllables. For example, *sakei* has three syllables, /sa.ke.i/. Lexical stress is also important in Bantik. Stress location will be indicated by /'/ after the vowel of the stressed syllable in the following description.

2. Lexical phonemic stress and sentential intonation

Historically speaking, proto-Sangiric languages had penultimate stress except in words wherein a schwa appeared in the penultimate syllable, in which case the stress fell on the ultimate syllable.[4] Bantik later underwent an innovation in which the schwa disappeared and assimilated with the vowel next to it (Sneddon 1984). For example, the proto-Sangiric *səha'ŋ* "kind of ant" changed into *sahaŋ*. Stress placement, however, is assumed to have stayed on in the same syllable. In the case of *səha'ŋ*, the stress fell on the ultimate syllable, and after the schwa in the first syllable changed to /a/, the stress placement did not change. As a result, the minimal pair *sa'haŋ* "palm leaf" (proto-form *sa'haŋ*) and *saha'ŋ* "kind of ant" (proto-form *səha'ŋ*) appeared.

[1] For example, *pa'higi* "well" and *pahi'gi* "knife" form a minimal pair. (The pitch accent nucleus is indicated by an apostrophe at the beginning of the syllable.)
[2] Three of the languages that belong to the Sangiric micro-group, Sangil, Sangir, and Talaud, do not have phonemic stress. Neither do Minahasan languages spoken in the vicinity of the Bantik area.
[3] For example, *ŋkedeʔ* "to stop" and *nsao* "over there (more or less the same height)".
[4] Sneddon 1984 writes about Bantik as follows: "Stress is unpredictable and phonemic. It usually falls on the penultimate syllable, but in a large number of words it falls on the ultimate syllable. Stress contrast is found in many pairs." In my observation, however, many words have stress falling on the antepenultimate syllable, too.

Another historical innovation that Bantik underwent was the addition of a vowel after the coda of the final syllable. The added vowel is usually the same vowel as in the previous syllable, and sometimes a glottal stop follows it. When disyllabic words with penultimate stress placement underwent this innovation, stress placement did not change. For example, proto-Sangiric *ti'muR* "south," which was supposed to have penultimate stress placement so that the first syllable had the stress, underwent the vowel addition (and change of the consonant *R* into *h*) and became *ti'muhuʔ* in Bantik. Similarly, *da'tehеʔ* "river bank" and *ka'para* "boat" are supposed to have antepenultimate stress placement as a result of the vowel addition.

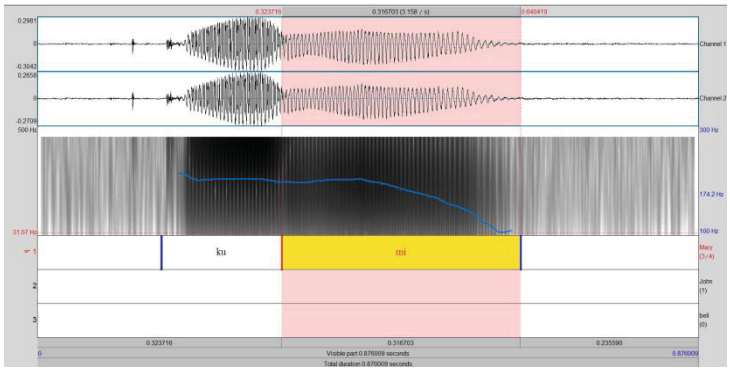
In Bantik, a word can exhibit different pitch patterns depending on the environment. When pronounced alone, a word exhibits a falling pitch at the end. However, it is to be noted that this is because the sentential intonation pattern overwrites the lexical pitch pattern as seen in some Austronesian languages (see Himmelmann 2010 for Austronesian languages and Stoel 2005 for Mando Malay).

It is necessary to introduce the notion of a unit of utterance when describing the intonation pattern in Bantik. The unit will be referred to as an illocutionary unit (IU) in the description below. An IU consists of at least one word, such as a vocative, interjection, negation, or a clause. A final IU in a declarative sentence has a falling pitch in Bantik, whereas a non-final IU has a rising pitch. Under the influence of these sentential intonations, a Bantik speaker reads a wordlist aloud with the rising intonation at the end of each word except for the last one. Both lexical stress placement and sentential intonation should be taken into consideration for the correct understanding of the prosody of Bantik. In the following examples, the velar nasal is transcribed as /ng/, the glottal stop as /7/, the flap as /L/, and /ʒ/ in the borrowed word as /j/.

3. Examples of sentential intonation on an IU consisting of one word

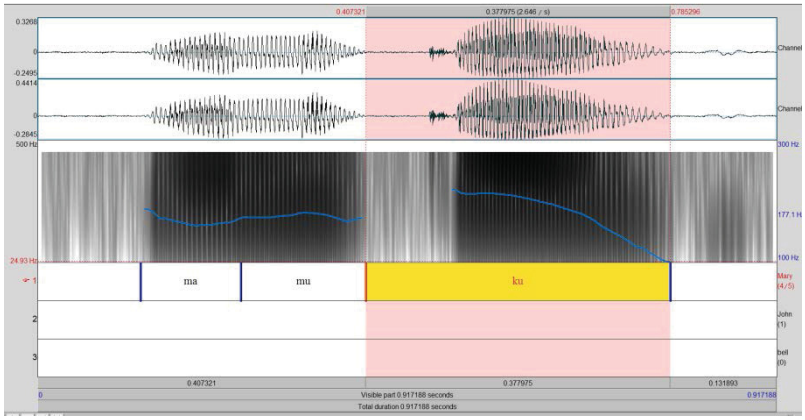
The smallest IU is a word. When it is pronounced by itself, the falling intonation occurs. The influence of sentential falling intonation does not obviously appear in the case of a word that has lexical stress on a non-final syllable, as in the example of *ku'mi* in Figure 1, which has stress on the first syllable.

Figure 1: *Kumi* "mustache," with penultimate stress (the stress falls on the first syllable)



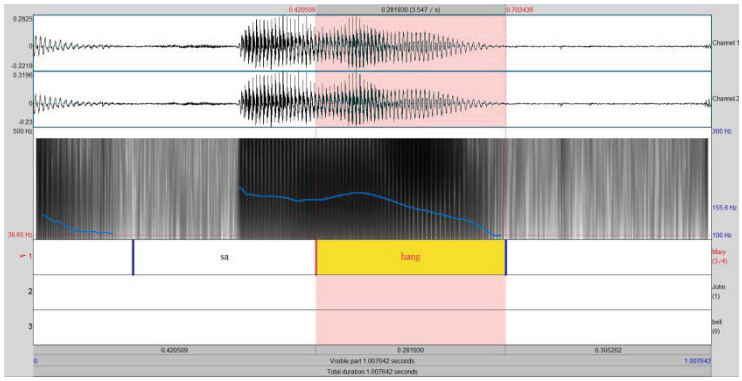
In the cases of words that have a stress on the last syllable, the pitch rises toward the end of the word. When such a word is pronounced by itself, the sentential falling intonation also appears, and the pitch fall at the end of the syllable can be detected. It is most clearly detected in cases where the word has no coda. In Figure 2, the vowel of the last syllable, /ku/, has a contour beginning with higher pitch and falling toward the end.

Figure 2: *Mamuku'* "knee" (the stress falls on the last syllable, /ku/)



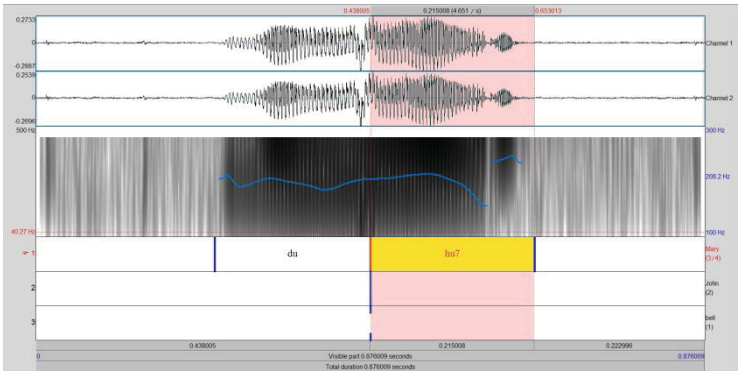
In cases where the coda of the stressed final syllable is a nasal, the pitch falls when the nasal is pronounced, as shown in Figure 3.

Figure 3: *Saha'ng* "kind of ant" (the stress falls on the last syllable that ends with a velar nasal)



The sentential falling intonation is not very obvious in cases where the coda is a glottal stop. Nevertheless, there is a very slight fall at the end, as shown by *duhu7* "face" in Figure 4 below.

Figure 4: *Duhu7* “face” (the stress falls on the last syllable, which ends with a glottal stop)



In summary, a final IU in a sentence always shows a falling pitch, even if the last syllable of the IU is stressed and has a high pitch. If it has no coda, the falling pitch appears on the final vowel after the rise occurs, and if the coda is a nasal, it bears the low pitch. Even when the coda is a glottal stop, a slight fall in pitch appears. The following sections will discuss sentences with more than one IU.

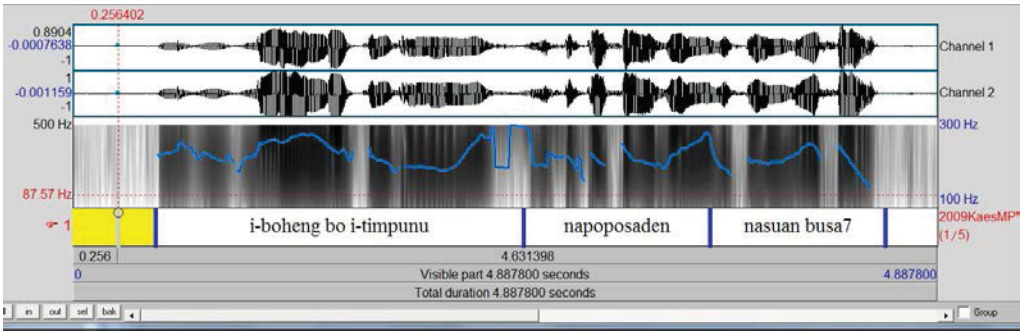
4. Prosodic pattern of declarative sentences

Non-final IUs have a rising tone at the end, except for topic-containing IUs. Example (1), whose pitch contour is shown in Figure 5, has three IUs. The first IU is *i-boheng bo i-timupnu’* “the monkey and the turtle,” which is the topic of the sentence. The stressed final vowel, /nu/, which has lexical high pitch, shows a falling contour at the end. It is a topic-containing IU, so the pitch does not fall but rises, and a pause follows it. The second IU, *napoposa’den* “work together,” does have a rising pitch because it is non-final and does not contain a topic. The final IU, *nasu’an bu’sa7* “plant bananas” is a sentence-final IU with a falling pitch contour. It is to be noted that clitics like *=ken* “cotinuative aspect marker,” *=te* “completive aspect marker,” and bound form pronouns do not bear a stress.

Topic-containing declarative sentence

(1) *i-boheng* *bo* *i-timupnu’,* *na-poposa’den,* *na-su’an* *bu’sa7.*
SUBJ-monkey and SUBJ-turtle AV.PST-work.together, AV.PST-plant banana
“The monkey and the turtle worked together planting bananas.”

Figure 5: The pitch contour of example (1)



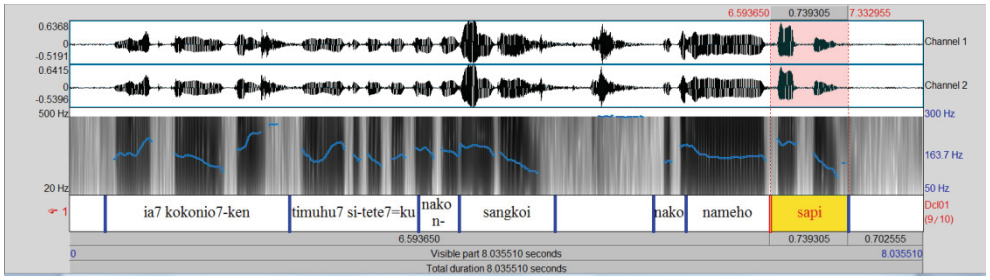
Example (2) shows a similar pitch contour. The first IU, *i'a7 kokoni'o7=ken* "(when) I was small," and the second IU, *t-imu-hu'7 si-te'te7=ku* "followed the grandfather," show a rise in pitch at the end. In contrast, the final IU, *na'-ko n-sa'ngkoi* falls at the end, as does the single IU sentence that follows it, *na'-ko na-me'ho sa'pi* "went there to pasture cows."

(2)	*i'a7*	*kokoni'o7=ken,*	*t-imu-hu'7*	*si-te'te7=ku.*
	SUBJ.1sg	small=not.yet	AV.PST-follow	OBJ-grandfather=GEN.1sg
	na'-ko	*n-sa'ngkoi.*		
	AV.PST-go	NU-field		
	na'-ko	*na-me'ho*	*sa'pi.*	
	AV.PST-go	AV.PST-pasture	cow	

"(When) I was still small, I follwed my grandfather to the field. (We) went there to pasture cows."

Declarative sentences

Figure 6: The pitch contour of example (2)

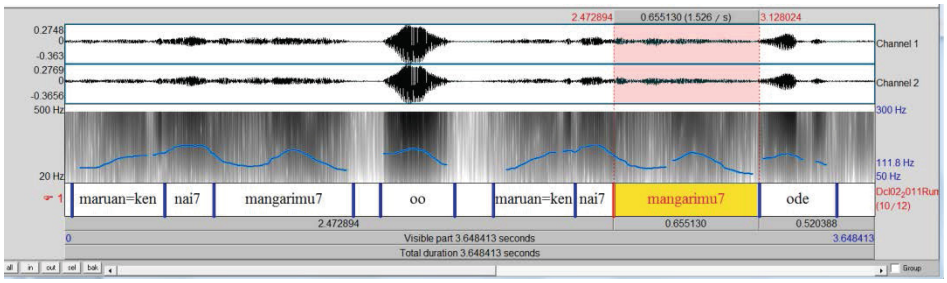


Example (3) and Figure 7 also show this feature. The non-final IU *ma-ru'an=ken na'i7* "buy (and come) upwards" has a rising pitch contour, whereas the final IU *ma-ngari'mu7* "make" and the minimal sentences uttered by another speaker, *oo* "oh" and *ode* "yes," have falling pitch.

Declarative sentences

(3) A:	*ma-ru'an=ken*	*na'i7*	*ma-ngari'mu7.*
	AV.NPST=yet	upwards	AV.NPST-make
	"Buy first and then make"		
B:	*o'o*		
	"Oh"		
A:	*ma-ru'an=ken*	*na'i7*	*ma-ngari'mu7.*
	AV.NPST=yet	upwards	AV.NPST-make
	"Buy first and make (the house)."		
B:	*o'de*		
	"Yes"		

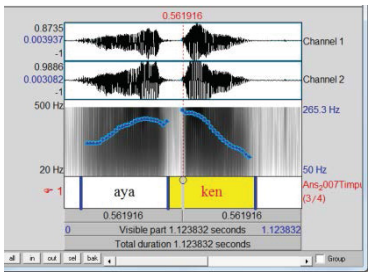
Figure 7: The pitch contour of example (3)



Answer sentences also exhibit a falling pitch contour, as shown in examples (4) and (5), whose pitch contours are shown in Figures 8 and 9, respectively.

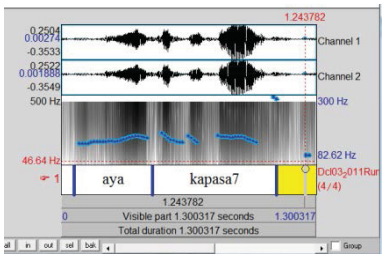
(4) *a'ya ken*
not yet
"not yet"

Figure 8: The pitch contour of example (4)



(5) *a'ya kapasa'7*
not once
"not once"

Figure 9: The pitch contour of example (5)



5. Prosodic pattern of interrogative sentences

As shown above, declarative sentences show a pitch fall at the end. Now, what is the pitch pattern for interrogatives in Bantik? In some languages, interrogative sentences show a pitch rise at the end, in contrast to the pitch fall observed in declarative sentences. For example, ordinary

interrogative sentences in Japanese show a pitch rise at the end, the position that is predominantly occupied with the interrogative particle *no* or *ka.* There are, however, many languages that do not have this feature. It might not be a feature shared by all the dialects within one language: for example, both polar and content questions in the Kagoshima dialect of Japanese have a falling pitch contour (Kibe, 2013).

The pitch pattern of Bantik interrogatives will be described and exemplified in this section.

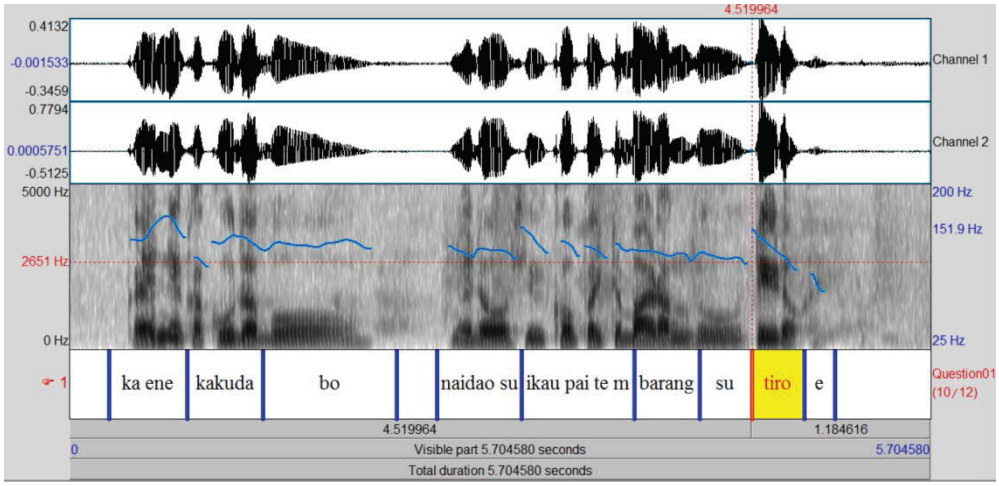
5.1 Prosodic pattern of content question sentences in Bantik

Content question sentences contain an interrogative, a clear indication that they are question sentences. A lexical marker is supposed to be sufficient for an indication that a sentence is a "question." In Bantik, the prosodic pattern of question sentences is not different from that of declarative sentences. The pitch falls at the end of the final IU in example (6), *na-ida'o ika'u pa'i=te ba'rang* "reached (the situation) to get the scar on (your) leg." The preceding IUs, *ka.e'ne kaku'da* "then how" and *bo'* "and" do not fall, but they do not rise either, which is a different feature from non-final IUs in declarative sentences. This difference should be examined more intensively in the future.

First prosodic pattern of question sentences: Content question with a falling intonation

(6) *ka.e'ne*		*kaku'da*	*bo'*	*na-ida'o*	*ika'u*	*pa'i=te* *ba'rang*
then		how	and	AV.PST-reach	SUBJ.2sg	exist=COMP scar
su	*ti'ro*	*e*				
LOC	leg	DP				

Figure 10: The pitch contour of example (6), a content question sentence



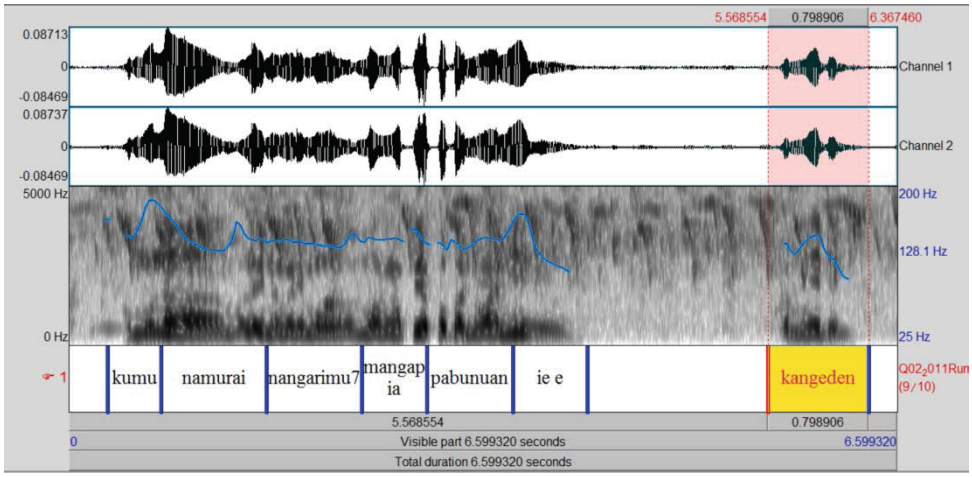
Example (7) consists of two sentences. The first one contains three IUs: *kumu* "2pl," *na-mu'rai* "began to," and *na-ngari'mu7 ma-ngapi'a pabanu'an i'e e* "to reconstruct this house." The first two IUs show a rise in pitch, but the third has a pitch fall at the end. The second sentence consists of only one IU, *kange'den* "when," which is an utterance added after the first sentence, and it also

shows a fall in pitch.

First prosodic pattern of question sentences: Content question with a falling intonation

(7) *ku'mu*	*na-mu'rai*		*na-ngari'mu7*	*ma-ngapi'a*
SUBJ.2pl	AV.PST-begin		AV.PST-make	AV.NPST-reconstruct
pabanu'an	*i'e*	*e.*	*kange'den.*	
house	this	DP	when	

Figure 11: The pitch contour of example (7)



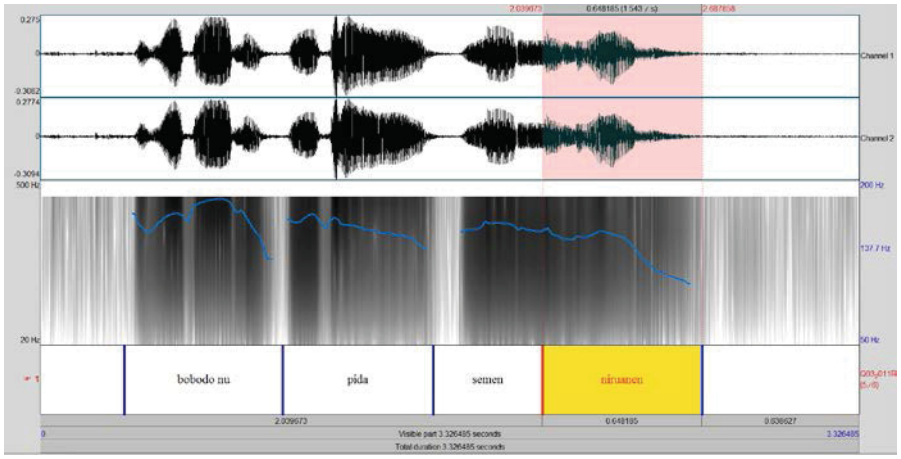
Example (8) consists of only one IU that contains the content quesiton word *pida* "how much." The pitch falls towards the end of the utterance, as shown in Figure 12.

First prosodic pattern of question sentences: Content question with a falling intonation

(8) *bobodo.nu*	*pida*	*semen*	*ni-ruan-en*
approximately	how.much	cement	PST-buy-V

"How much cement was bought, approximately?"

Figure 12: The pitch contour of example (8)



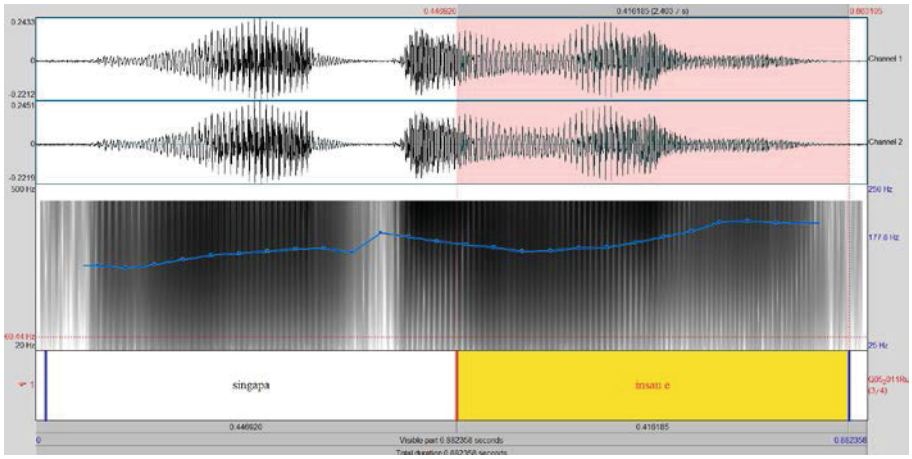
It is, however, not always the case that an interrogative sentence shows a falling pitch contour;

example (9) is one example. Although there are two elements, *singapa* "how much for one" and *e* (a question marker), which indicates it is a question sentence, the pitch rises, as shown in Figure 13.

Second prosodic pattern of question sentences: Content question with a <u>rising</u> intonation

(9) *singapa* *insau7* *e*
one.what one QM
"How much was one (unit)?"

Figure 13: The pitch contour of example (9)



The condition for the pitch rise in content questions is not yet known. It is a rare phenomenon that should be investigated in the future.

5.2 Prosodic pattern of polar question sentences in Bantik

5.2.1 Polar questions with the question marker *yo7o*

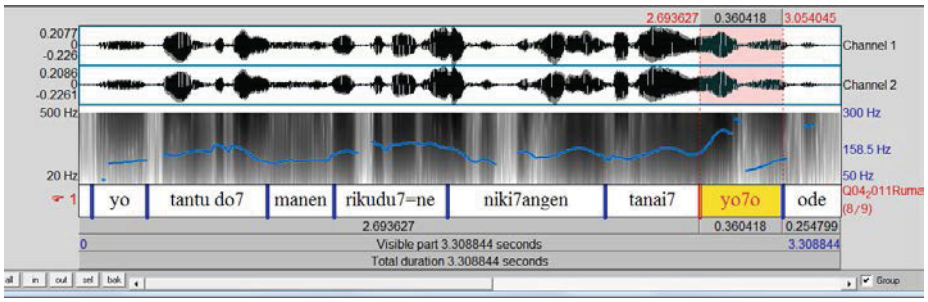
The question marker *yo7o* is often used in polar questions in Bantik. It is placed at the end of the sentence, and it always forms an IU by itself in my corpus. Two examples are given in (10) and (11), whose pitch contours are shown in Figures 14 and 15, respectively. When *yo7o* is pronounced, a sharp rise before the falling pitch is observed, as shown in Figure 14.

Third prosodic pattern of question sentences: Polar question with the question marker *yo7o*

(10) A: *yo* *tantu* *do7* *manen* *rikudu7=ne* *ni-ki7ang-en*
then of.course INTJ although back=GEN.3sg PST-lift-GV
tanai7 *yo7o?*
upwards QM
"Then although it is like that, was the back of the house lifted upwards?"

B: *ode*
"Yes"

Figure 14: The pitch contour of example (10)

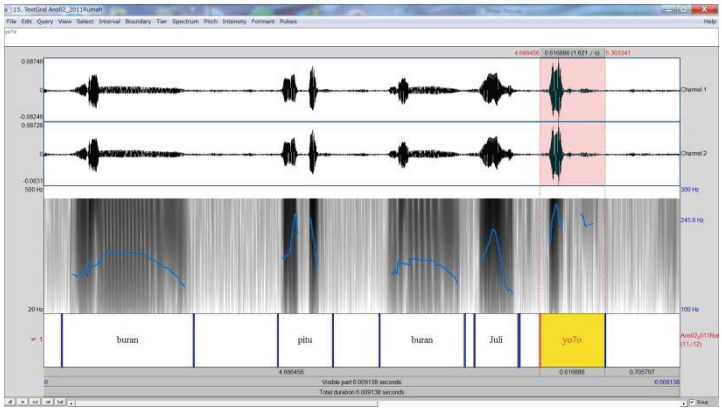


It is often the case that *yo7o* is pronounced after a short pause to show that the speaker is asking for a confirmation, as shown in example (11) and Figure 15. This sentence is an answer to the question "When did you start (to build the house)?", and *pitu* "seven" in the first IU and *juli* in the second IU show a sharp rise and fall. They are focused elements, which serve as the answer to the content question. The question marker *yo7o* is an IU added after the second IU, and it shows even higher pitch at first, then a slight fall. This usage of *yo7o* indicates that the speaker is asking for confirmation.

Third prosodic pattern of question sentences: Polar question (asking for confirmation) with the question marker *yo7o*

(11) *bu'ran* *pi'tu,* *bu'ran* *ju'li* *yo'7o?*
month seven month July QM
"It was the seventh month, July, wasn't it?"

Figure 15: The pitch contour of example (11)



The question marker *yo7o* has a distinct pitch pattern: a sharp rise and fall.

5.2.2 Polar questions without any question markers

Polar questions can be uttered without any question markers in Bantik, but even so, the pitch contour apparently does not differ much from declarative sentences: it does not show a rise in intonation. Instead, the final IU shows the rise and fall in the last element. In example (12), the

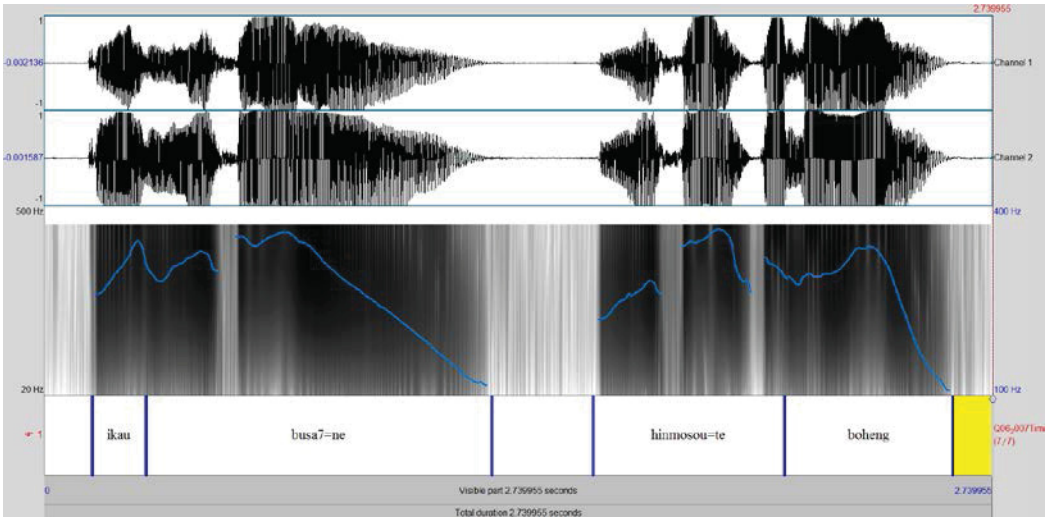
first IU, *ikau busa7=ne* "you, the bananas", serves as the topic of the sentence, and the pitch falls at the end of it, followed by a pause. The pitch goes up again in the final element of the following sentence-final IU, *boheng* "monkey," which is a vocative. Examples (12) and (13) are taken from the folktale of the monkey and the turtle, and they are supposed to be uttered by the turtle, who is asking the monkey about a banana tree.

Prosodic pattern of polar questions containing a topic

(12)	*ikau*	*busa7=ne*	*h-im-osou=te*	*boheng*
	SUBJ.2sg	banana=GEN.3sg	AV.PST=already	monkey

"You, the bananas, have they grown, monkey?"

Figure 16: The pitch contour of example (12)



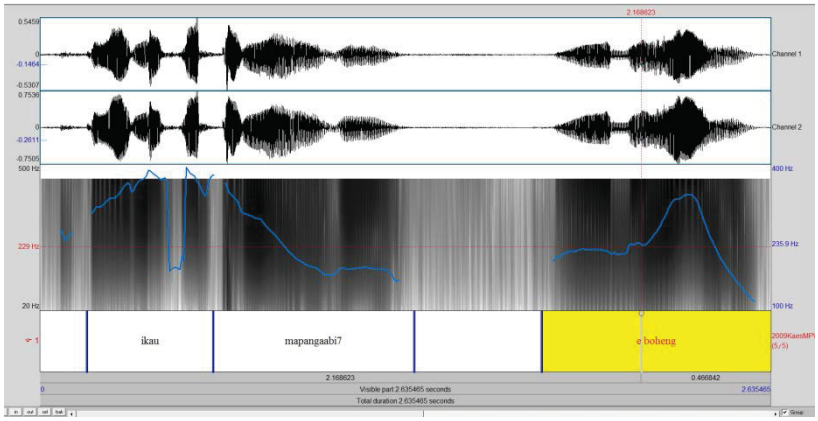
Example (13) below has two IUs. The first IU has a falling pitch towards the end, indicating it is a sentence-final IU. The second IU, which consists of the discourse particle *e* (whose function is not known) and the vocative *boheng* "monkey," has a sharp rise and fall. This particular pitch contour of the vocative is supposed to indicate that the previous IU is a question.

Prosodic pattern of a polar question with a vocative juxtaposed

(13)	*ikau*	*makapangabi7,*	*e*	*boheng?*
	SUBJ.2sg	can.climb	DP	monkey

"Can you climb, monkey?"

Figure 17: The pitch contour of example (13)

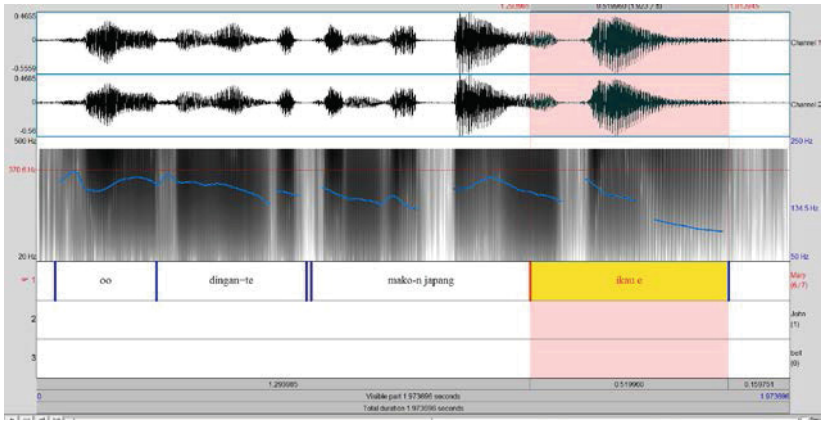


Example (14) shows a similar pattern with example (13). It is a polar question, and the second person pronoun *ikau*, which is used as a vocative, is juxtaposed after the first IU. The pitch goes up and down within this element, as shown in Figure 18.

(14) *oo,*	*dingan=te*	*ko*	*n-japang*	*ikau*	*e?*
oh	take=COMP	go	NU-Japan	SUBJ.2sg	DP

"Oh, are you going to be taken to Japan?"

Figure 18: The pitch contour of example (14)



In summary, the pitch contour of the vocative, which shows a rise and then a fall, as in examples (12), (13), and (14), is considered to indicate that the sentence is a polar question.

6. Conclusion

In this paper, I discussed the prosodic pattern of Bantik, particularly focusing on interrogative sentences. The predominant sentential prosody in Bantik is a falling intonation. Declarative sentences show a pitch fall in the sentence-final IU. This pattern applies to minimal sentences as

well. A word that is pronounced by itself should show a pitch fall at the end of the pronunciation even if it has an ultimate stress.

Interrogative sentences should have features to differentiate them from their declarative counterparts, but apparently they show the same prosodic pattern as declarative sentences, i.e., the pitch falls and does not rise at the end of the interrogative sentence. Since content questions can be identified by interrogative words such as *kangeden* "when" and *pida* "how much," their prosodic pattern does not necessarily differ from that of declarative sentences. Polar questions, in contrast, should have an indication that the speaker intends to question the addressee.

The question marker *yo7o* indicates that the sentence to which it is added is a question. This marker usually forms an IU by itself and contains a pitch rise and fall. When *yo7o* is not added, a pronoun or proper name is used as a vocative, which is juxtaposed at the end of the sentence. This vocative element needs to have a pitch rise and fall, as with *yo7o*.

In conclusion, although polar questions also show a pitch fall at the end, they are indicated to be question sentences by either the question marker *yo7o* or a vocative element. Both depict a unique pitch contour, which rises and falls within one word.

Abbreviations

1sg	first person singular
2sg	second person singular
2pl	second person plural
3sg	third person singular
3pl	third person plural
AV.NPST-	prefix *ma-, maN-* or infix *-um-* that is attached to verb base, indicating non-past tense and Actor Voice
AV.PST-	prefix *na-, naN-* or *-im-* that is attached to verb base, indicating past tense and Actor Voice
CONT	enclitic *=te* that indicates continuative aspect
COMP	enclitic *=ken* that indicates completive aspect
DP	discourse particle
GEN	genitive case marker
-GV	suffix *-an* which is attached to verb bases, which indicates goal voice
SUBJ-	subject marker attached to subject nominals
INT	interjection
LK-	noun marker *ni-/nu-* that denotes genitive or actor in undergoer voice sentences, or linker that connects two NPs
OBJ-	object marker attached to object nominals
PRO	pronoun *tou* that forms an NP with a noun, and that functions as an antecedent
PST-	prefix *ni-* which indicates the past tense that attached to undergoer voice verbs
REL	relativiser *nu*

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Information structure in Javanese conversational sequences

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1. Introduction

This paper will examine how information giving, given information, and its response, is realized in Javanese dialogues. Based on data from ad-lib scenes in an artistic performance called *wayang kulit* shadow puppet play' in which the puppeteer conducts spontaneous dialogues with his accompanying musicians as well as his audience, I will argue that stress or intonation is not significantly related to the understanding of information structure, but pause, delay, or haste, i.e. the manipulation of time is relevant to the understanding of information structure of the Javanese dialogues,

In languages of which the colloquial styles do not necessarily have rigid grammatical structure such as Javanese, its focused information can be just uttered in a sentence sequence like (1):

(at a *warung* 'stall')

(1) A: 1. *Kowe*?
you
'You?' (What are **you** going to order?)

B: 2. *Soto ayam*.
soup chicken
'Chicken soup. (I am going to have chicken soup.)

C: 3. *Aku* *gudheg*.
I gudheg
'I (take) gudheg.' (As for me, I will have *gudheg*.)

In this kind of conversation sequence, intonation and pause may play a crucial role. I will show how Javanese dialogues actually convey topic and focus, using this prosodic device, especially managing pause, intonation, and delayed response.

Given information is "knowledge which the speaker assumes to be in the consciousness of the addressee at the time of the utterance." New information is "what the speaker assumes s/he is introducing into the addressee's consciousness by what s/he says (Chafe 1976)."

Information structure is about the 'structure' of sentence, so in general, information structure of a written form or formal text has been studied.

Then, how can we look at the conversation sequences from information structure

point of views? We will discuss a certain syntactic, grammatical features, as well as prosodic features of conversations. Our data comes from scenes, particularly ad-lib joking scenes in a *Wayang Kulit* 'lit. leather shadow puppet play' performance which was videotaped.

Javanese is a major language of Indonesia. Everyday conversation is conducted in Javanese. Many local TV shows, Javanese traditional performance as well as modern talk shows/comedy shows are in Javanese, too. On the other hand, Javanese is taught only once a week for one year in elementary school. As a result, except for those who are engaged in traditional dramas such as *wayang kulit*, or school teachers of Javanese, many Javanese are scared of making mistakes in speaking Javanese which has three speech levels, i.e. krama inggil (lit. high order), krama (lit.order), and ngoko, They

The *wayang kulit* play used as our data for this paper was performed on August 16-17th, 2015 as the final and highlight performance of Festival Lima Gunung (lit. Festival of Five Mountains), on Mount Andong, Central Java.

The story of the performance was Banyu Perwitosari 'Lit. the water of Perwitosari' (a derivative story from Dewa Ruci from Mahabharata Epic, in which Wrekdara, a Pandhawa man experiences Sufism in the Indian Ocean). It was performed only for 4 hours, (half the normal time, from about 10 pm through about 2:00am. *Dhalang*, the puppeteer, was *Mas*[1] *Sih*, a young (in his early 30s) school teacher, who has been performing *wayang kulit* whenever requested. The narration and the acting of all the puppets are conducted by the *dhalang*. *Dhalang* is also the conductor of the gamelan orchestra, which accompanied the entire performance.

At this performance, there were *Pesindhen* (female singers accompanying gamelan). Among the five *pesindhen*s, one was an American woman named Megan. Megan has been a *pesindhen* as well as a popular music singer/composer who sings in a club in Surakarta. On this day, she sang with her band in the afternoon before the *wayang kulit* performance.

In the joking scene, the prescribed story-telling is dissolved and shifts to the plain speech level (i.e. natural conversation). In the current situation, *dhalang* often code-switches between Javanese and Indonesian. Here clown servants talk about current news, politics, and gossip. He also makes linguistic jokes.

During this performance, the joking scenes were not performed by male-clown servants, but by comical female-clown servants Limbuk and Cangeh. These were conducted in two different ways: Between female-clown servants, who sometimes made jokes with the core characters such as the hero Pandawa brothers and their rival Korawa brothers, all of whose roles are played only by the *dhalang.* The other way of conducting the joke scenes was Megan having direct joke conversations with the *dhalang*

[1] 'Mas' (lit. older brother) is an addressing form for man.

himself. However, the *dhalang* was still moving the hands of the female clown servant, Limbuk, as though he were Limbuk herself. The majority of the dialogue which caused laughter was conducted by the two interlocutors.

It should be noted, however, that many times both speakers conducted code-switching between Javanese and Indonesian. It was obvious that both of the speakers prefer Indonesian to Javanese which tended to define the social status or power difference between the interlocutors[2]. The only Javanese lexicon constantly used by Megan was the second person pronoun for *dhalang*, *jenengan*, a short form for *panjenengan*, a *krama inggil* (High Javanese) second person pronoun, showing her respect for her addressee.

2. Stress and pitch in Javanese

From phonological point of view, Javanese has penultimate stress. On the other hand, in the *Wayang Kulit* performance, stress and high pitch is on the final syllable, with few exceptions. As a result, interesting phonological features are observed, that is, where the transitive markers *ke*, *ken*, as well as the definite marker suffixes *e*, *ne*, *ipun*, *nipun*, (elements not so crucial in terms of the topic and focus) are stressed. In the following example sentence taken from the beginning scene, (not a joking scene), syllables in bold letters were stressed and where high-pitched by the speaker.

(1) Video #9843, 10:36

Kurawa:

yen	*wis*	*tek**an***	*wanci**n=e,***	*jejiba**n=e***	*Duryuda**na***
if	already	reach	time=DEF	status=DEF	Duryudana

Negara	*Ngasti**na***	*balea**ke***		*ma**rang*** *para*	*Pandha**wa.***
nation	Ngastina	return	to	PL.	Pandhawa

The above means:

'When the time comes, Duryudaya's status as the king of Ngastina will return to (the king of)the Pandhawa (brothers).'

[2] In this study, I treat this code-switching as something quite common so code-switching is not considered as a significantly influential element for the information structure of the conversation sequence here.

As shown above, the focus point and new information is equally stressed. It seems that stress, or high-pitch, does not play a crucial role in the information structure in Javanese dialogue sequences. Instead, based on Birner and Ward 1998, Chafe 1976, Lambrecht 2001, I argue that the following sentence structures play significant roles. I will explain each one of the seven features by giving examples from the data.

Information structure and sentence

1. Cleft
2. Fronting
3. Inversion
4. Dislocation
5. Passive
6. Discourse marker
7. Adverbial clause/phrase

3. Sentence structure and focus

3.1. Cleft

Cleft *sing (ngoko)* or *ingkang* (*krama*) is prominent in shifting between old information and new information. For example, in the beginning of the narrative, the clown court maids introduce those who appear in the performance one by one. In this example, the focus of the questioner is in the cleft form.

(2)

Court maid 1: 1. ***sing para sowan*** *sapa?*
that PL. come to see (DEFER) who
'Who are those who came?'

Court maid 2: 2. *nyi iki abdi,*
lady this servant
'This lady is a courtmaid.'

CM2 3. *nyi* ***sing pojok kono-***
lady who corner there
'The lady who is at the corner (is)

4. *nyi Rul*
Ms. Rul

5. *Ruliyah*
'(Her complete name is) Ruliyah.

CM2 6. ***sing sebelah=e***
who side-DEF
'One on her side (is)

7. *nyi Darti*,
Ms. Darti

8. *Sudarti*
Sudarti.

(……)

9. *saka*
from
(…….)

10. *Grabak, Magelang.*
Grabak, Magelang
'The one sitting next to Ms. Rul is Ms. Darti, Sudarti, from (…)
Grabak, Magelang.'

11. ***sing*** ***nyi*** ***Ruliyah mau***
that Ms. Ruliyah before

12. *saka Australi*
from Australia
'That (previously introduced) Ms..Ruliyah is from Australia.'

3.2. Fronting

In (3) a phrase *wong kene* 'people here', is fronted. By fronting, the speaker

(3)

D. ***wong*** ***kene,*** *kuku=ne* *di=tekeki* *kabeh.*
people here nail=DEF PASSIVE=polishall
'People here, their nails are all polished.'

Compare with the following non-fronting sentence.

(4) *kukune* *wong* *kene* *di-tekeki* *kabeh*.

nail-DEF people here PASSIVE-polish all
'The nail of people here are all polished'.

3.3. Inversion

In (5), the verb is fronted. Subject-verb is reversed in (5)-2 and (5)-3.

(5) CS2 1. *bayangke* *kuwi.*
imagin IMP. this
'Imagine this.'

2. ***larang*** ***pangan.***
expensive food
'Food is expensive.'

3. ***kekeringan*** ***ngarep*** ***nandur.***
dried up will plant
'(The soil is) too dry to plant in.'

3.4. Dislocation

In the following sentence (6), a subject phrase *wong kene* and a verb phrase *nggak pernah mandi* are reversed.

Being asked if the residents in the village take hot or cold showers:

(6) *O,* ***nggak*** ***pernah*** ***mandi,*** ***wong*** ***kene****.*
oh, NEG ever take.showers people here
'Oh, (**they)** never take showers, **people here**.'

3.5. Passive

In the example (7), the focus is fronted, yielding passive forms

(The vegetables that sell at the price they are willing to pay are all sold out (so they have lots of money to buy anything they want.)

(7) 1. *wes* *apa-apa* ***dituku*****.**
already whetever PASSIVE-buy
'Everything is already bought'.

2. *gelang, rentengan, (..)* *nanging karet* *kabeh*
bracelet necklace but rubber all
'Bracelet, necklaces, (..) but they are all made of rubber'.

3. *singn* *gangg* *jilbab* *papat* ***dianggo*** *kabeh*
who wear head.cover four PASSIVE-wear all
'Those who are wearing head cover, all of four (head covers) are being worn.'

4. *denkul* *bareng* ***dianggoni*** *jilbab*
Knee together PASSIVE-wear Muslim head-cover
'Knees are also covered with headcover.'

3.6. Discourse marker

Discourse particles, *iya* and *inggih* used as punctuation markers, link topic with focus as shown in example (8).

(8) 1. *karo* *dumugi* *adhem* *bunyi-ne* ***iya*** *beda.*
with up.to cold sound=DEF DM differ
'With coldness, its sound will be different.'

2. *nek* *panas, iya* *creng*.
when hot, '*creng*'. '
'When it is hot, its sound is '*creng*.'

3. *nek* *adhem,*
when cold

4. *iya***,** '*ngeb*',
Iya, (it sounds) ngeb.
when cold like that
(…)

5. *ngono*
that way
'When it is cold, its sound is *ngeb'*, (PAUSE) like that.'

3.7. Adverbial phrase or clause

In the joking scenes, adverbial phrases or clauses uttered at the end of each of the dialogues play significant roles, soliciting laughter.

(9)

D. 1. *boten saged sowan*
not can come to meet-HUMBLE
'(She) cannot meet.'

(------)

2. *amargi* *sampun* *ompong*
   because already old
   '(PAUSE) Because (she already) has no more teeth as she is old.'

(10)

1. *sing* *nyi Ruliyah mau*
   that Ms. Ruliyah before
   (----)
2. *saka* *Australi*
   from Australia
   (…....)
3. ***bagian*** ***angong*** ***sapi.***
   division take care cow

'That Ms. Ruliyah is (PAUSE) from Australia. (PAUSE) , from the division of herding cows**.'**

In the following dialogue, the adverbial clause provides another condition.
(Talking about *sega-jago*, corn meal, a country food, Megan asked)

(11)

M. 1. *jenengan* *suka?*
   You (DEFER) like
   'Do you like (that)?'

D. 2. *suka* ---
   like
   (----)
   3. *kalau* *mateng*
   if cooked
   'I like it, (PAUSE) if it is cooked.'

In the next dialogue, too, the added adverbial phrase, (12) - *seminggu sekali* 'once a week' changes the condition of its answer, causing laughter among audience. Doing *mandi* 'taking showers' morning and evening, is one of Javanese/Indonesian's everyday life style, so when the *dhalang* said that he takes showers only once a week is funny.

Being asked if the *dhalang* does not take showers at all, either,

(12) D. 1. *saya* *bukan* *orang* *sini.*
   I NEG. person included here
   'I do not belong here.'

2. ***saya harus mandi …***
I *must take showers*
'I have to take showers,'
(------)

3. *seminggu sekali.*
a week one.time
'(PAUSE) once a week.'

In the preceding sections I have shown that in Javanese conversation sequences, topic and focus as well as new and old information manifest themselves in cleft, fronting, inversion, dislocation, and adverbial clauses and phrases.

In Section 4, I will show how the puppeteer manipulates sentence structure in order to get laughter from the audience. In conversation sequences in joking scenes, pause/delay/haste play key roles for question and answer sequences.

4. Pause and Delay

4.1. Haste

In (13), the answer is given immediately after the question is uttered. when the question sentence was uttered.

(13)

M. 1. *mandi air panas atau dingin?*
Take showers water hot or cold
'Do people here take hot - or cold-water showers?'

D. 2. *nggak pernah mandi, wong kene.*
NEG ever take showers people here
'Never take showers, people here.'

Also, in (14), the *dhalang* immediately responds to Megan in (14)-3.

(14)

1. D. di Amerika, *bensin eceran* nggak ada?
in America gasoline in small glass bottle not exist
'In America, don't you have *bensin eceran*?'

2. M. *tidak* *ada.*
not exist
'No, we don't have.'

3. D. *wah, ndesa!*
'Wow, rural!'

4.2. Delay

On the other hand, the *dhalang* uses an opposite strategy, that is, delay, before adding an adverbial phrase or clause, to change the condition of his previously mentioned sentence. It seems that the *dhalang* intentionally delays.

(15)

D. 1. *saya* *harus* *mandi.*
I must take showers
(---)
2. *seminggu* *sekali*
a week one time
'I have to take showers (PAUSE) once a week.'

4.3. Combination of delay and haste

In conversation sequences, the *dhalang* sometimes manipulates a combination of haste and delay.

(16)

D. 1. *Amerika=nya* *dimana?*
America=DEF where
M.2. *Los Angeles.*
Jenengan ***pernah?***
You (DEFER) have
'Have you been there?'
D. 3. ***iya,*** ***pernah.***
yes, have
(-------)
cari *rosok*
look for garbage
'Yes, I have, (PAUSE),collecting garbage.'

What is obvious here is that when the *dhalang s*ays something which is obviously not true, and that all the audience knows that it is not true, such as 'people in this village never take showers', or 'he has been to Los Angeles', the *dhalang* does not wait, even for a second, before telling those lies, causing laughter.

On the other hand, when the *dhalang* intends to add a surprising adverbial phrase or clause to change the condition of the previously mentioned sentence, he waits for a while, such as one or two seconds, manipulating the effect of pause or delay. The audience laughs loud hearing the statement uttered after one second. It should also be noted that lemas 'weak' and kaku 'stiff' are lengthened, stressed, and high-pitched, as transcribed in double vowels (underlined).

(17) (being asked whether the *dhalang* is tired and so weak)

D. 1. *dang* ***iya*** *iso* *lemaas*
sometimes iya can be weak

2. *dang* ***iya iso*** *ora* *pathi* *lemaas*
sometimes can be not so weak
'Sometimes I could be weak, other times I could be not that weak'.

(…)

3. *dang* ***ya*** ***iso*** *kakuu.*
Sometimes iya can be stiff
' Sometimes I can be stiff.'
(.)

4. *ngene.*
Like that

5. Conclusion

In Javanese conversation sequences, information structure manifests itself in the following seven sentence features

1. Cleft
2. Fronting
3. Inversion
4. Dislocation
5. Passive
6. Discourse marker +parallelism

7. Adverbial Clause +pause /delay or a combination of pause and delay

In Javanese conversations, information structure manifests itself in the seven sentence structures. Among them, 7. Adverbial Clause, is prominent in the joking scenes of Javanese conversational sequence.

Finally, it should be added that in the joking scenes, there are other factor. One of them is incoherence. See the following dialogue again.

M. Q. Do people here take cold or hot *mandi*?
D. A. They never take *mandi,* people here.

To this *yes no* question, the *dhalang* does not answer coherently, but he says that people in the village never take *mandi*, an obviously false statement. This incoherent answer, in fact, causes big laughter because of the following two factors.

1. Cultural Knowledge

   For Javanese or Indonesians in general, *mandi*, taking showers, is the central part of their everyday life. Nobody fails in taking *mandi every morning and afternoon.*

2. Knowledge of Experiences

   Every Javanese or Indonesian takes *mandi* twice a day, so when the *dhalang* says that the people in the village never take *mandi*, the audience laughs (cf. Lakoff 1987).

Although the Information Structure of Javanese language may be irrelevant to the knowledges above, on a discourse level, the information structure is interwoven with the cultural knowledge and the knowledge of experience. In this way, the information structure is not only about the static structure of the language, but also is about the dynamic verbal interaction.

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Chafe, Wallace L. 1976. “Givenness, contrastiveness, definiteness, subjects,

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Information structure and its morphosyntactic resources in Marori

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1 Introduction [*]

This paper will discuss information structure in Marori (also known as Morori/Moraori; ISO 639-3: mok; a subgroup-level isolate, TNG/Papuan, highly endangered, with 16 fluent speakers), focusing on alternative realisations of clausal dependants, which correlate with their pragmatic functions, and the morphosyntactic resources so employed.

Findings from natural texts confirm that the head-final structure (S-V/A-P-V) is the unmarked structure in Marori, and that different nominal types have different pragmatic distributions. Overt pronominal and non-pronominal NPs serve as primary/reintroduced topics (TOP) and as secondary as well as contrastive TOP/FOC(us). Continuing TOP is, however, expressed by verbal agreement with elided NPs. Generic reference must be expressed overtly by a non-pronominal NP and shows rigid word order.

The paper is organised as follows. An overview of information structure in section 2 is followed in section 3 by an outline of Marori clausal morphosyntax to give the reader some understanding of the resources made available for information structure (i-str) in this language. Discourse functions in Marori are described in detail in section 4, with concluding remarks in section 5.

2 Information structure and the framework: preliminaries

Discussion of information structure revolves around the formal mechanisms (i.e. morphosyntactic, prosodic and lexical resources and related constraints) by which meanings are packaged to accommodate speaker-hearer needs for effective communication in a given discourse context (cf. the definition of i-str in Lambrecht's (1994:5) Vallduví and Engdahl (1996:460), among others). The same proposition, such as 'kill(agent:John, patient:robber)', is expressed in different ways in different contexts (e.g., *John killed the robber, the robber was killed by John, it's John who killed the robber*), depending on specific information such as shared knowledge, whether the patient is known to both speaker and hearer, and the speaker's intent to give emphasis to the patient.

The precise mechanism underpinning the various ways in which information is packaged within and across languages has been subject to intense study (Vallduví and Engdahl 1996, Erteschick-Shir 2007, Dalrymple and Nikolaeva 2011, among others). Issues relating to information structure include the nature of identified units (e.g. TOP(IC) and FOC(US)) and how, precisely, they relate to other grammatical

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components (i.e. their morphosyntactic interface). I will show that, in Marori, different kinds of TOP should be distinguished; that TOP is distinguishable from FOC; and that i-str resources include word order/linear precedence, ellipsis, parallelism and emphatic particles.[1]

To make sense of i-str facts in Marori, I assume an LFG-like framework, which separates different layers of structure, distinguishing linear order (i.e. constituent structure, or c-str) from grammatical and discourse functions or relations in the grammar (A/subject vs. U/object, TOP vs. FOC). Across layers, and specifically in relation to i-str, the idea of newness of the information communicated in a given context is central to the notion of relative prominence. These prominence and newness features form the i-str space shown in Figure 1 (cf. Choi (1999:133)). Although represented by a binary value (+/-), each feature should be thought of as a gradient—for instance, a Topic can be old information that is given new emphasis by the speaker, giving rise to the sub-type of contrastive TOP.

TOPIC (roughly, what is being talked about) is a broad category encompassing at least four subtypes: Primary Topic, Secondary Topic, Reintroduced Topic and Contrastive Topic. TOP is classified as prominent, as its referent is already shared, known or stands out in participants' memory. FOCUS is also a broad category, encompassing information packaging that reflects the speaker's communicative intent to highlight certain new information. Newness can be thought of as having two important sub-types (Dik 1997, Choi 1999): the gap (i.e. new in the addressee's knowledge) and contrast or emphasis (i.e. old knowledge lent new or additional pragmatic salience by contrast or emphasis). Following Erteschick-Shir (2007), I adopt the analysis that FOCUS and TOPIC are not mutually exclusive—that is, TOPIC can be given salience/contrast; hence the existence of Contrastive TOP.

<table>
<tr><td></td><td></td><td colspan="2">Prominence/Salience:</td></tr>
<tr><td></td><td></td><td colspan="2">+ ⟷ −</td></tr>
<tr><td rowspan="2">Newness:</td><td rowspan="2">+ ↕ −</td><td>Contrastive Focus</td><td>Completive/gap Focus</td></tr>
<tr><td>Contrastive Topic
Reintroduced Topic
Primary Topic
Secondary Topic
Afterthought Topic</td><td>Tail</td></tr>
</table>

Figure 1: i-str space.

3 Morphosyntactic resources

3.1 Structural resources

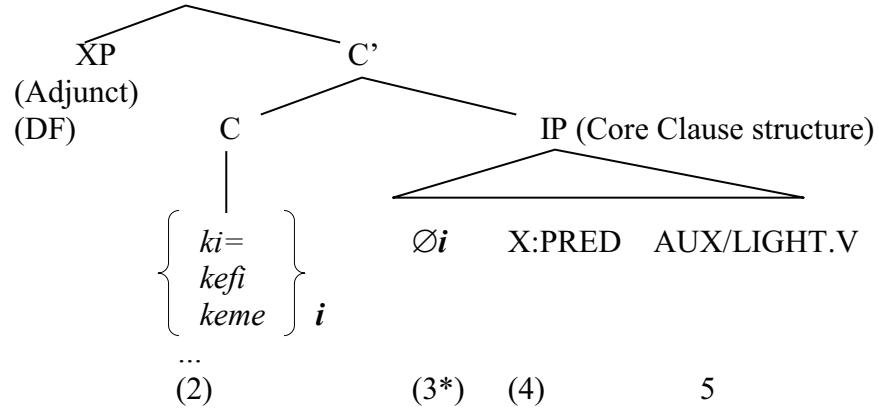
Marori is a verb-final language (X* V), with core arguments (A/S/P) and obliques coming freely, typically preverbally. While Marori has no VP in its clause-internal

[1] Prosody appears to be important, but its role in i-str in Marori has not been investigated. It is not discussed in this paper.

structure (having a flat S/IP), there is good evidence from relative clauses and pragmatically marked sentences that the maximal structure of a sentence, known as the extended clause structure, is configurational, which is why Marori is a discourse-configurational language, as shown in example (1a) below. An example of a canonical structure with all syntactic dependants appearing internally in the sentence (IP) is shown in example (1b).

As shown, there are at least six important positions that should be noted, two of which (positions 1 and 2) are clause-initial for discourse purposes. In real language use, only the inflected verb (in position 5) is obligatory, indicated by the absence of bracketing for this position. Position 1 is the outermost sentence-initial position, typically occupied by the most prominent XP (any unit, argument or adjunct), including the topicalized XP/FOCUS item, such as a QP (question phrase/word). Position 2 is the relativizer C position (if the clause is a REL clause), indexed by a focused NP or otherwise unoccupied. In Position 3*, the star (*) indicates that more than one unit (including none), freely ordered subject to the i-str constraint, may be associated with the dependants of the clause. Positions 4-5 are occupied by the lexical predicate and light verb (copula or auxiliary). Position 6* is an adjunct position, possibly adjoined to the left (or right to IP/C'/CP). If adjoined to the left, the adjunct appears preverbally, before IP or CP.

1 a.



b.

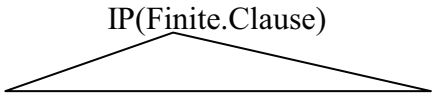
na=i	*patar*	*yu-nggo-f*
1SG=U	cold	1SG-AUX-NrPST

'I suffered from cold'

Example 2 shows a finite clause in which two dependants appear in position 3, filled by the A and U arguments (*na* and *Thomas*). The adverbial particle *pa=* can be analysed as appearing in [Spec, CP] (not shown here).[2]

[2] Abbreviations, alphabetically ordered: 1,2,3 (first, second and third person), A (Actor), AUX (auxiliary), DET (determiner), DU (dual), DUR (durative), EMPH (emphatic), F (feminine), FUT (future), Gen (genitive), IMP (imperative), LOC (locative), IRR (irrealis), NEG (negator), NPL (nonplural), M (masculine), NrPST (near past), P (Patient), PART (particle), PL (plural), POSS (possessive), PRES (present), Q (question marker), PERF (perfective), REAL (realis), REL (relativiser), RmPST (Remote Past), S (intransitive subject), STAT (stative), SG (singular), TOP (topic), U (undergoer).

2



(3)	(3)	(4) (5)
Pa=na=i	*Thomas*	*ter=i-mo*
soon=1SG=U	Thomas	hit=1SG-AUX.3SG.FUT

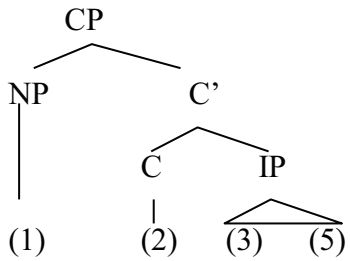
'Thomas will hit me.'

The structure in (3) shows a complex sentence with a relative clause (RC) embedded in the matrix clause of 'the table is already broken'. (For simplicity, the tree structure of the matrix clause is not shown.) Note that the adverbial 'yesterday' is part of the embedded RC, as it modifies the RC as seen in the translation. The relativised NP ('bench') is actually indexed by the relativizer *keme*, which bears the FOC function not shown in the tree but forming part of the information structure; see Arka (2016) for a formal account.

3.2 Morpholexical resources

Morpholexical resources for information structure in Marori are summarised in Table 1. As shown, the resources make use of lexical categories (i.e. different types of nominal), particles and verbal agreement morphology. Brief comments on important properties of these are in order here, with more examples to follow later.

3



Efi	***njaj***	[*fis*	***keme***=*na*	*kufa-mon*]	*tamba*	*rafonngi-n*
DET	bench	yesterday	REL=1SG	sleep-1SG.NrPST	PERF	broken-PERF

'The table on which I slept yesterday is already broken.'

	Lexical NP	**Pron. NP**	**Elided**	**Verbal AGR**	**PART *=ndu***
Primary/switch/ reintroduced TOP	✔	✔	–	✔	–
Secondary TOP	✔	✔	✔	✔	
Continuing TOP	–	–	✔	✔	
New/gap FOC	✔	✔	–	✔	–
Contrastive FOC/TOP	✔	✔	–	✔	✔
Generic reference	✔	–	–	✔	–

Table 1: Nominal types and their pragmatic functions

Common nouns in Marori are not inflected for number or gender. Certain nouns are lexically specified for this NUM and GEND information, which then triggers the relevant agreement on the finite verb. Nouns such as *meninggon* ('children') and *kofepurpur* ('adults') are lexically plural (i.e. more than two; see Arka and Dalrymple (to appear)) and must therefore have plural verbal agreement. Free pronouns entail a singular (SG)/non-singular (NSG) distinction across all person categories (e.g. *na(wa)* '1SG' vs. *nie* 'NSG').

Pronominal affixes on the verb reflect agreement with free A and U NPs. They are themselves referential (i.e. they can refer to entities in the absence of their corresponding NPs), with a three-way distinction (SG vs. DU vs. PL) for the first and second persons and a two-way (NPL vs. PL) distinction for the third person form. These affixes are grammatically required and therefore obligatorily present as indicated by the tick (✔) mark in Table 1, although their discourse function is as continuing topics. The typical division of labour among verbal affixes (including zero pronouns/elided NPs) is shown in example 4. Further details are given below.

4	old/presupposed	--------	new/being asked/contrasted/emphasized
	TOP		FOC
	zero/verbal.agreement		free/lexical NPs/Question Words

The discourse particle *=ndu* is used to give emphatic contrast, as further discussed in subsection 4.8. Here are some examples.

5 a. naam nggafi nuron te
1SG.POSS DET wife 3BE.NPL.PRES
'That is my wife.'

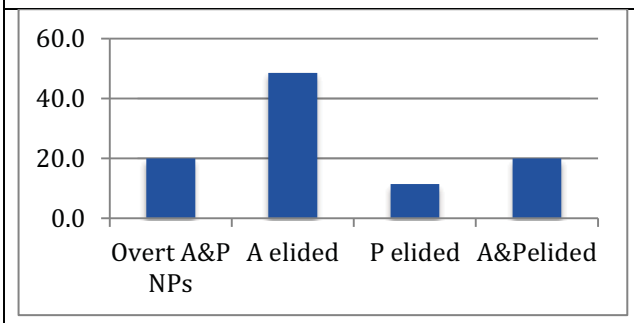
b. naam=ndu nggafi nuron te
1SG.POSS=FOC DET wife 3BE.NPL.PRES
'That is MY wife (not somebody else's wife).'

4 Information structure properties in Marori

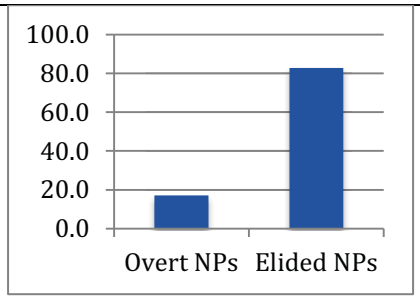
This main section examines properties of i-str in Marori in detail, including evidence and examples of the analysis that SOV is indeed the default clausal order in Marori, and that there are different kinds of TOPICs and FOCUS (as shown in Figure 1). While grammatically syntactic dependants are freely ordered, semantic-discourse constraints such as new information in question-answer pairs and generic referents render word order fixed in Marori.

4.1 Textual evidence

Examination of natural texts in Marori reveals the following patterns. First, A/P arguments are elided in most cases (80%; 48.6% of A elided, 11.4% of P elided and 20% of A and P elided). This pattern is shown in **Figure 2**a and 2b. This statistical evidence tends to confirm that there is, in most cases, at least one NP that serves as a (continuing) TOP whose referent needs minimal coding in the clause—that is, no explicit NP is required. This minimal coding is achieved through verbal agreement morphology, which is a grammatical requirement.



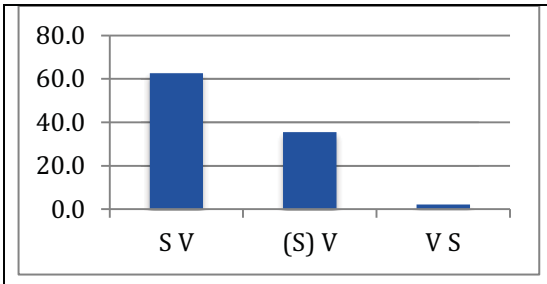
(a)



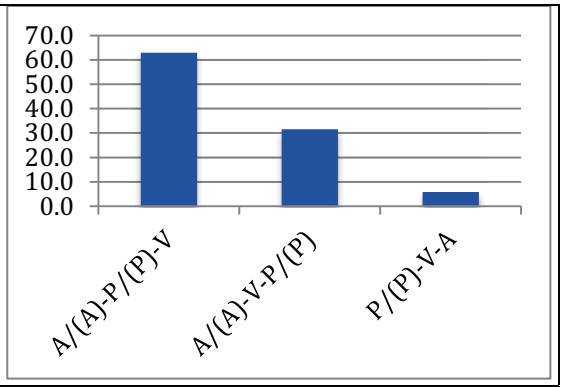
(b)

Figure 2: Overt and elided A and P NPs in Marori

Consider the following statistics (Figure 3a and 3b), which show the linear order of arguments in the clause. When overtly expressed, the intransitive subject (S) almost always comes preverbally (97%). Likewise, when overtly expressed, the transitive A and P more often come preverbally (70% and 72%, respectively). This justifies the analysis of unexpressed A and P arguments as preverbal zero/elided NPs, giving rise to patterns in which intransitive structures are predominantly S-V and transitive structures are A-P-V. In other words, the textual evidence supports the view that Marori is a verb final language with default/unmarked order S/A-P-V. If word order reflects prominence (the earlier unit being the more prominent), this pattern confirms that A is by default more prominent than P.



(a)



(b)

Figure 3: Linear order of the verb and its core arguments

4.2 MBE construction: sentential focus—a new episode

The *mbe* construction comes with an overt NP, marked by the particle *mbe*, and introduces a new line or episode, typically with a new referent. The NP comes preverbally, giving rise to the NP(S/A/P)−VERB structure. Consider the following *mbe* construction (example 6), in which two participants are both old referents as they are already mentioned in the preceding lines. What is new here is the grandmother's trick in the line introduced by *mbe*.

6 [previous context from a different topic/episode: daily activity of the grandfather and grandmother]
sokodu sajer pandrew nuafa, mbe maswag yoropur=i sewer pende-fi
one day afternoon while exist grandma grandpa=U lie AUX-RPST
'One afternoon, the grandma tricked the grandpa.'
(tete dan nene10-11: 00:01:04.930-00:01:06.680)

Consider now the following example 7, in which a series of new happenings in the story all come with *mbe*:

7 [Context: an old husband-wife couple went into a forest.]
Mbe kembe nuarya-fi=a
MBE this.way go.out.PL-NPL.RmPST=part
'They (two) went out of that jungle.'
(tete dan nene.024: 00:01:43.070-00:01:44.100)

mbe eku timbenii tefye-fi ngga urew
MBE there unfamilar.object=U find -RPST like bow
'There they found an unfamiliar object, like a bow.'
(tete dan nene.025: 00:01:46.660-00:01:48.350)

mbe tanamba sira=nggu-fi
MBE now fear=BE.3SGM-RmPST
'Grandfather became scared.'

"ndote maswag" "ka di=swo"
no.worries grandmother 2SG soon=go

'Grandpa became scared; "No worries". "Grandma, you go!"'
(tete dan nene.027: 00:01:51.120-00:01:54.570)

mbe maswag efrew ngguofi efe sejale efrew
MBE grandmother near over.there this thing near
'Grandmother approached the thing.'
(tete dan nene.028: 00:01:55.830-00:01:58.590)

mbe sajale efi lib ere=nggu-fi
MBE thing this visible change=AUX-RPST

mbe purfam nggu-fi mbarumen wonnggo malimpuanem
MBE person AUX-RPST young.adult good young.adult.SG

'The thing emerged as a young handsome man.'
(tete dan nene.029: 00:01:59.310-00:02:02.070)

8 [Context: an old husband-wife couple had an adventure in the jungle and encountered a strange-looking object.]
mbe maswag efrew=nggwo-fi efe sejale efrew
MBE grandmother approach-AUX-3NPL.RmPST that thing approach
'Grandmother approached the thing.'
(tete dan nene.028: 00:01:55.830-00:01:58.590)

9 Efe alau rowa=ngge mbe tok mbe nuarya-fi
that hole inside=from MBE frog MBE come.out-3NPL.RmPST
'From inside the hole, there was a frog coming out.'
(FrogStory_Paskalis.038: 00:02:54.000-00:02:56.870)

4.3 Different kinds of Topics

A TOP is a definite NP whose referent is already known in the discourse (typically, after first mention). When it is a reintroduced TOP, it can be overtly expressed, possibly with some emphasis/contrast or, to avoid ambiguity, when there is more than one competing referent in the discourse. However, a continuing TOP is often an elided NP, in which case the referent is identified by the pronominal agreement on the verb.

In the following text fragment, for instance, the two referents (grandmother and grandfather) are definite (i.e. already mentioned) in the discourse and are therefore equally potential Topics in each clause. However, one should become the primary TOP (e.g. *yoropur* in (a)) where it must be expressed overtly as the Topic NP. The NP *mei* ('meat') becomes a TOP in (b) after being mentioned in the second clause in (a). This P NP is also topicalised/fronted, appearing before the negator *mar*. Note that *yoropur*, mentioned only in the first clause in (a), was elided in the second clause in (a) and in the subsequent clauses in (b) and (c) as a continuing topic in these sentences. In (b), it can also be thought of as the secondary TOP, the primary TOP being 'meat'.

10 [Context: grandfather and grandmother's daily activities, going to the garden and forest; the following is an occasion of some significance in the story]

a. yoropur kunonjo-n mei keine-f. [S is reintroduced]
grandfather come-3PST meat bring-3SG.PST [A is elided TOP; P:NEW]
'The grandfather came back, bringing meat.'

b. *efi meii madi maswagi njomo* [A is elided, cont TOP]
efi mei=i mar=di maswag=i njomo [T is DEF, primaryTOP]
this meat =U NEG=FUT grandmother =U give.3FUT R is DEF, contr. FOC)

c. *mbedi koroi maya* [A is elided, cont TOP]
mbe=di koro=i maya [R:NEW]
MBE=FUT dog =U feed.3FUT [T: DEF, Cont TOP, elided]

'The meat he would not give it to the grandma
but to the dog.'
(tete dan nene.007-8: 00:00:56.940-00:01:02.150)

4.4 New FOC information

Completive FOC (i.e. new information) in the discourse is, by definition, always overtly expressed. It is typically expressed by indefinite NPs that come later than the definite NPs in clauses, in either the preverbal or postverbal position. For example, the noun *mei* ('meat') in example 10 (a) is indefinite and first mentioned; as a P argument,

it comes in its canonical preverbal position and later than the TOP NP, which is *yoropur* ('grandfather').

Clear cases come from imperative structures in which the addressee is the subject (always definite) and the other argument is often new:

11 ka=tanamba meninggon kamin=naramnda
2SG=now children make=AUX.2DU

usin pa=mein sokodu kier pende-men
many soon=so.that one kampong make-1PL.FUT

'Now (you're married already) you make a lot of children
so we'll open a village.'
(tete dan nene.056: 00:03:27.860-00:03:32.190)

In natural texts, new information is often part of a narrative in which the NPs expressing old/known information are elided. Consider the fragment in example 12 below, in which the dog was looking for the frog around the house, lifting shoes and so on. Lifting his head is something new in the series of events; the flow makes use of parallelism and ellipsis: A-P-Verb and (A)-P-(Verb).

12 *koro* *nangga* *morow* *tur=ngge-fi* *morow* *rerwo=rowa*
dog lift head put.into=AUX -RPST head jar=inside
'The dog lifted (its) head and put its head into the jar …'
(FrogStory_Paskalis.016: 00:01:39.550-00:01:44.580)

4.5 Generic NPs

An argument with generic reference is expressed by use of an overt NP. In this structure, certain referential features are neutralized (e.g. NUM does not matter). For example, although they have different number values (singular, dual or plural), all of the three sentences in example 13 have the same meaning—that is, the NPs all make the same generic reference to the salient nature of the tail of the bird of paradise.

13 a. Yag ninam=ndu njimbu kri-wen te (sg)
bird.of.paradise POSS=INT tail.feather long-SG BE.3NPL.PRES
'The tail feather of a bird of paradise is a long one.'

b. Yag ninam=ndu njimbu kri-nde te (dual)
bird.of.paradise POSS=INT tail long-NSG BE.3NPL.PRES
'The tail feathers of a bird of paradise are long ones.'

c. Yag ninam=ndu njimbu kri-nde tere (plural)
bird.of.paradise POSS=INT tail long-NSG BE.3PL.PRES
'The tail feathers of a bird of paradise are long ones.'

The following is an example from the Marori corpus.

14 *Nggaje=ke* *awe* *nggie* *enni=nggo-ro*
like.that=LOC fish often play=AUX-3PL.DUR
'In places like that, fish often come and swim around.'
(ProfilKampungWasur.106: 00:06:26.570-00:06:29.610)

One important structural property of NPs with generic reference is that their word order is fixed; when they are transitive, the order must be A-P-Verb, as in the (a) sentences below. Reversing the order (as in the (b) sentences) is not acceptable. This

provides additional evidence that the basic word order of the clause in Marori is A-P-Verb.

15 a. Awo paya kafra
kangaroo grass eat.PRES
'Kangaroos eat grass.'

b.?* Paya awo kafra
grass kangaroo eat.PRES
For 'Kangaroos eat grass.'
#'Grass eat kangaroos.'

16 a. Ujif kwi uyowe pyafangg-ra
bird tree on.top.of live-DUR.PRES
'Birds sleep on trees.'

b.?* kwi uyowe pyafangg-ra ujif
tree on.top.of live-DUR.PRES bird
'Birds sleep on trees.'

4.6 Question-answer pairs

A Q-A (question-answer) pair provides a good window on the information structure. A QW (question word) can come preverbally within the core clause structure, or in the clause-external position (i.e. sentence-initially; cf. position 1 in example 1). The following is an example of the QW in the internal core clause position.

17 Koro pafi fis ina=i imbrim?
dog that yesterday who=U bite-PST
'Who did the dog bite yesterday?'

When the QW appears sentence-initially, there is evidence that it is in clause-external position, as it precedes the subject (if overtly present). For instance, *iye* precedes *ka=* in (a); a postverbal question word is ungrammatical, as in (b) and (c).

18 a Iye=di ka=swo? b. * ka=swo iye=di?
when=FUT 2SG=go c. * di=ka=swo iye?
'When are you going to leave?'

Additionally, Q-A pairs show parallelism where the answer/gap FOC appears to be in the same structural position as the question FOC. The question in example 19 (a) can therefore be answered by a short reply, as in (b.A1), or by a long complete answer, as in (b.A2). The structures in (a) and A2 are parallel, where the FOC *iye* and *tanamba* must be in the sentence-initial position. Note that the answer in which tanamba=ndu appears sentence-finally is not acceptable. It should be noted as well that postverbal adjunct is common in other contexts, as shown in example 20.

19 a. Q: Iye=di ka=swo?
when=FUT 2SG=go
'When are you going to leave?'

b. A1: Tanamba=ndu (a short reply)
now=FOC
'now'

A2: Tanamba=ndu (na) swo-ru (paya-ku)
now=FOC 1SG go-1SG.FUT forest-LOC
'(I'm) leaving now (for the forest).'

A3:#(na) swo-ru tanamba=ndu (paya-ku)
1SG go-1SG.FUT now=FOC forest-LOC
'(I'm) leaving now (for the forest).'

20 (na) swo-ru tanamba, maar pamnggu
1SG go-1SG.FUT now=FOC NEG tomorrow
'I'm going to the forest now, not tomorrow.'

The following is a further example of a Q-A pair in which the QW is questioning the A argument, and the answer comes sentence-initially:

21 Q: John, mbeni ka=i kimbra-f?
John, what 2SG=U 2.bite-3NPL.PST
'John what bit you?'

A: kaf yambra-f / # yambraf kaf
snake 1U.bite-3NPL.PST
'A snake bit me.'

A topicalised NP (or a sentential adjunct, if any) can precede the QW. Examples (a) and (b) are considered better than (c); while the QW in (a) is in situ inside the core clause structure, that in (b) is fronted. That the definite topicalised NP *koro pafi* 'the dog' appearing before this fronted QW as in (b) is considered better than (c) suggests that TOP precedes FOC in clause-external positions.

22 a. Koro pafi fis ina=i imbrim?
dog that yesterday who=U bite-PST
[TOP [FOC PRED]$_{\text{CORECLAUSE}}$]]
'Who did the dog bite yesterday?'

b. Koro pafi ina=i fis imbrim?
dog that who=U yesterday bite-PST
[TOP [FOC [PRED]$_{\text{CORECLAUSE}}$]]
'Who did the dog bite yesterday?'

c. Ina=i koro pafi fis imbrim?
who=U dog that yesterday bite-PST
'Who did the dog bite yesterday?'

4.7 Imperatives

Imperative structures are of interest for the investigation of information structure because verbs are also focused in this kind of structure. The imperative construction consists of the IMP marker *ka* and IRR/FUT verb. The order requires that *ka* precedes the verb. The reverse (i.e. putting the verb in FOC [Spec, CP] position) is ungrammatical, as shown in (c). Fronting a verbal element is highly constrained (see section 4.8 below).

23 a. ka=kufu koku!
IMP=sleep here
'You sleep here!'

b. ka=koku kufu!
IMP=here sleep
'You sleep here!'

c. *kufu ka=koku!
sleep IMP=here
'You sleep here!'

The imperative marker *ka* is actually also the second person singular pronoun, which has been grammaticalized to become an imperative marker. The evidence for this grammaticalization is that it can appear with a free pronoun in the same clause: *kie* '2NSG' or *ka* '2SG', as in example 24.

24 a. kie koku=ka norufu!
2NSG here=IMP 2PLsleep
'YOU (PL) sleep here!'

b. ka sour=ke ka=kuye kanamndu kier=ke
2SG house=LOC IMP=stay 2POSS.EMPH place=LOC
'YOU stay in your OWN house'

In example 24, the free pronoun is in the DF position clause-externally, with contrastive emphasis (TOP) indicated in the translation by the upper case. Politeness is achieved by adding the politeness particle *sa,* translatable as 'please':

25 Ka=kufu=sa
IMP=sleep=PART
'Please sleep!'

4.8 Contrastive and emphatic focus

Contrastive focus can be explicit or implicit. Structures showing explicit contrastive focus contain elements being contrasted—for example, in English sentences such as (*it is*) *John, not Mary,* (*who*) *was lying*, John and Mary acquire contrastive FOC by negation. In Marori, this is achieved by using ellipsis, with the contrasting element assigned to the second clause. Consider the following sentences where the P argument (*na*) is given contrastive focus.

26 a. Na=i koro yambra-f; maar Johni=i
1SG=U dog 1SG-bite-3NPL.PST NEG John=U
'The dog bit me, not John.'
'I, not John, was bitten by the dog.'

b. Koro na=i yambra-f; maar Johni=i
dog 1SG=U 1SG-bite-3NPL.PST NEG John=U
'The dog bit me, not John.'/
'I, not John, was bitten by the dog.'

c. * Koro, maar kaf, na=i yambraf
FOR: 'It is a dog, not a snake, that bit me.'

As seen, the flagging of P with =*i* is important for identification of the contrastive element. Reversing the order of A (*koro* 'dog') and P (*na* '1SG') in the first clause does not affect the contrastive FOC assignment to the element in the first clause, as seen from the translation in (a) and (b). In other words, the negation of the argument marked by =*i* in the second clause is enough to encode that the NP flagged with =i (i.e. *na*, the P argument) is contrasted with John.

Implicit emphatic contrast is expressed by the EMP particle =*ndu*. When the emphasis is applied to an argument, =*ndu* shows up in an emphatic reflexive form:

27 *John ninafondu swo-f nggambe*
John 3.self.EMPH go-PST there
'Only John (or John alone, nobody else) went there.'

A dependent element can be fronted and marked by *=ndu* for emphatic focus:

28 a. Keke=ndu ka di=ka fyu kufa! (adjunct)
here=EMP 2SG FUT=IMP sleep lie
'You sleep HERE!'

b. sokodu=ndu twoloi awoi Johni werngge-f (quantifier)
one=EMP male kangaroo=U John 3SGM.U.catch-PST
'Only one male kangaroo was caught by John.'

c. awon=ndu wernggef sokodu (P argument)
kangaroo=EMPH 3SGM.U.catch-PST one
'Only kangaroo was caught, and it's one.'

Strong emphasis can be achieved by having *mbya* together with *=ndu* in clause-initial position. Placing the marked unit clause-finally is not acceptable:

29 a. mbya John=ndu di=umam
only John=EMPH FUT-come
'Only John will be coming.'

b. *di=umam mbya John=ndu

A verb can be placed in this construction for emphasis, and it appears that it should be in the infinitive form:

30 a. mbya fya=ndu di=umam
only walk=EMPH FUT=come.3PST
'He came briefly [i.e. immediately went away again].'

b. mbya fyu=ndu umondu
only sleep=EMPH come.1SG
'I came and only slept.'

c. mbya nama=ndu siramon
only cry-EMPH sad.1SG.PST
'I was sad/scared and crying only.'

d. mbya sira=ndu umon-du
only scared=EMPH come.1SG
'I came and was very scared.'

4.9 Relative clauses

The structure of relative clauses also provides a good way of looking at i-str because the relativized argument is given pragmatic (and syntactic) prominence; i.e. under focus. It is known across languages that relativization results in nominalization. RCs in Marori can come with or without a relativizer. The RC markers are the same forms used as proximal demonstratives: *kefi* (abbreviated as *kei/ki/k=), kemnde, keme:*

31

SG	NSG
kefi/ kei/ki	*kemnde*
keme	

Given that a relativized unit is FOC, it must come clause-initially, possibly preceded by a topicalised NP (cf. the extended clause structure in (1)). The relative clause structure is often used for emphasis in equational sentences.

32 a. kemnde keme kakak tanambadu ruma-m
DET.PL REL elder.sibling just.now plant-3NrPST
'These are the ones that your elder sister just planted.'
(PaskalisBerkebun16122011.024: 00:03:51.270-00:03:55.860)

b. efe iwag-on keme irin njime-fi
DET girl-PST REL father give.3SG.M.O-RmPST
'That was the girl that the father gave to him.'
(Tete dan nene.072: 00:04:17.680-00:04:20.030)

The contrastive focus with relativization is often accompanied by pointing. This is seen in example 33; in the context of a feast where different groups are present, the relative clause is used to describe while pointing to certain individuals.

33 a. kemde=sa kemde yeufara
REL.NSG=EMPH REL.NSG dance.PL.3PRES
'They are the ones who are dancing.'
(Kunjungan ke PNG: 00:23:54.165-00:23:58.128)

b. kemde sa tanamba minggri Bas nuron Thomas
REL.NPL EMPH now sit.3PLRES Bas wife Thomas
'The ones who are now sitting are Bas and Thomas' wife.'

nuron Sota-on namik sa keme refi
wife Sota-ON brother EMPH REL stand.3NPL.PRES

'The wife of the brother from Sota is the one who is standing.'
(KunjunganKePNG.067: 00:05:20.400-00:05:27.310)

Relativization in Marori is complex and beyond the scope of the present paper; see Arka (2016) for a detailed account of externally and internally headed relative clauses in Marori, and their constraints.

4.10 Postverbal elements

Marori is a head-final language. We have seen that more pragmatically prominent elements come earlier in the structure while less prominent or non-prominent elements come later, although they all typically come before the verbal predicate. However, certain elements can come postverbally, raising the question of what i-str properties of postverbal units are found in a verb-final language like Marori.

Postverbal units can be arguments and adjuncts; topical arguments, classified here as after-thought topics, can occupy this position. Consider the postverbal actor (A) argument Thomas and koro ('dog') in example 34.

34 mbe tanamba tok=i eyew=nda-fi [Thomas=fi=a koro=fi]A
MBE now frog=U see=AUX-RPST Thomas=and=PART dog=and
'Now Thomas and the dog were looking for the frog.'
(FrogStory_Paskalis.022: 00:02:03.630-00:02:07.320)

The contextual story in the previous lines (including the line in example 34) is that Thomas and the dog are topical—that is, the story is about the two of them. In particular, the story is about the dog falling onto the ground from the window with its head inside the jar. This line in example 34 describes a new or different episode (hence, FOC

introduced by *mbe*) about the search for the missing frog conducted by the dog and Thomas. Consider now the following fragment.

35 [Context: as the grandfather and grandmother walked through the forest, the grandmother told him about something strange in the forest.]

a. eku yorapur sira=nggu-fi
there grandfather fear=AUX-RPST

b. eku pondo-fi **meswag=i**
there tell-RPST grandmother=U

c. 'ike tere emnde sejale?'
where BE.3PLPRES 3PL thing

'In that place, the grandfather was scared;
(he) asked the grandmother
"Where are the (strange) things?"'
(Tete dan nene.021: 00:01:32.850- 00:01:37.090)

In the above fragment, both the *yorapur* ('grandfather') and *meswag* ('grandmother') are topical. However, they serve different discourse functions; *yorapur* is the primary TOP in (a) and the continuing TOP in (b). The postverbal argument *meswag* in (35b) is semantically patient (P), serving as after-thought TOP.

We can also have an after-thought (new) FOC (i.e. additional specific new information) provided by the speaker about a referent of a preverbal unit. In example 36 (a), the preverbal P is unfamiliar to the speaker and is given the additional specification 'like a bow'. Additional specification can also be quantification, as seen in example 36 (b).

36 a. mbe eku timbeni=i tefie-fi **ngga** **urew**
MBE there unfamilar.object=U find-RPST like bow
'There they found an unfamiliar object, like a bow.'
(Tete dan nene.025: 00:01:46.660-00:01:48.350)

b. ka=tanamba meninggon kamin naramnda **usin**
2SG=now children make 2NSG.AUX.NPL many
'Now you make many children.'
(Tete dan nene.056: 00:03:27.860-00:03:32.190)

In the following example, the after-thought FOC is associated with the lexical predicate *purfam* 'person'.

37 mbe sajale efi lib ere=nggu-fi
MBE thing this visible change=AUX-3RPST

mbe purfam nggu-fi **mbarumen**
MBE person AUX-3RPST young.man.SG

'The thing emerged as a young handsome man.'
(Tete dan nene.029: 00:01:59.310-00:02:02.070)

The postverbal unit can simply be a new FOC, as seen in the following examples featuring the dative beneficiary dependant (a) and second goal object (b).

38 a. kefe=ngge ka tanamba kawi **nduafara** **nan**
this=with 2SG now hunt always 1SG.DAT

‘With this bow now you always hunt for me.’
(Tete dan nene.036: 00:02:18.880-00:02:20.640)

b. mbe mbeni=i fi-fi **eme** **swon=i**
MBE something=U say-3RPST that son =U

‘tukerte kefi kanam nuron=te’
already 3SG 2SG.POSS wife=BE.3PL.PRES

‘(the grandpa) said something to his son:
“Okay, this is your wife.”’
(Tete dan nene.036: 00:03:24.300-00:03:27.190)

5 Conclusion

In this discussion of i-str properties and resources in Marori, the investigation into the linear order constraint, using natural texts and (elicited) data associated with certain meanings such as generic expressions, confirms the S/A-P-V pattern as the default order. While the core clause structure is flat without a VP (i.e. the object and subject can be freely ordered in preverbal positions), there is good evidence from relativization and pragmatically marked structure that Marori has an extended configurational clause structure, represented as CP with a DF phrasal position in [Spec, CP]. Marori is therefore a discourse-configurational language.

Discourse functions identified in Marori include varieties of TOP and FOC; as seen in in Figure 1, the left-most position is taken by a highly prominent TOP, possibly emphatic/ contrastive, or primary TOP. A secondary TOP is an overt NP coming later in the clause, and a continuing TOP is an elided NP, typically identified only by pronominal agreement on the verb. FOCs can be of various types; a contrastive/emphatic FOC comes earlier, typically outside the core clause structure, whereas the completive/gap FOC comes in situ inside the core clause structure. Unlike TOP, all units including the predicate can be focused.

Of particular interest is the unit that comes postverbally. This is typically a unit that provides more specific information to a unit already mentioned in the preverbal element (and therefore classified as FOC) or that reintroduces known elements in the discourse. Because its presence simply reiterates the TOP, it is known as ‘after-thought TOP’.

Based on this description of the different discourse functions of a clausal unit and the structural positions available, an argument can, in theory, appear anywhere in the described positions. In practice, as far as information structure is concerned, different units do not have the same salience in the mind of the speaker, as at least one of them is salient for some reason. This asymmetry in discourse salience or prominence then regulates which units appear in which positions. In short, information structure plays an important role in determining the alternative realisation of a syntactic unit.

On a theoretical note, the patterns exhibited by Marori data are consistent with the general pattern found in other languages. In particular, Marori exhibits harmonious alignment of units across layers of structures. I assume an LFG-like framework (Dalrymple 2001, Bresnan 2001), in which the grammar of the language is organised in different layers of structure (e.g. discourse/information structure comprising TOP and FOC; grammatical relation structure comprising SUBJ and OBJ; semantic structure comprising roles such as agent and patient; and syntactically relevant meanings and

classes such as states and actions), each with its own constraints, properties and prominence.

It is known that prominence plays an important role in grammar, and this is also observed in Marori. For example, at the grammatical level, A/subject outranks P/object; at the structural linear-order level, earlier positions are more prominent than later ones. We have observed the (statistical) tendency of A > P, where A comes before P.

Given the i-str space (Figure 1), TOP outranks new/gap FOC, and we see a prevalence of patterns in which a new FOC, typically P (or lower end dependants), comes later in the clause. When two arguments are non-referential or generic, there is no clear difference in discourse salience between the two. It is expected that only sematic salience applies (with A outranking P), and that the ordering of A and P is fixed—an expectation confirmed in section 4.5.

The distribution of postverbal units, though possibly deemed part of the information structure in keeping with the TOP vs. FOC distinction, is presumably also motivated by cognitive processing load. In SOV languages, processing of a long and complex modifier of an object/subject NP before a verb is known to be constrained. For ease of processing, heavy units or specific details associated with preverbal units are forcibly placed after the verb. This is consistent with the finding that the reduction of preverbal arguments in SOV languages is a compensatory strategy to reduce heavy production and comprehension costs (Hawkins 2004, Ueno and Polinsky 2009, and the references therein).

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Native speakers' perception of prosodic prominence and its implications for information structure in Papuan Malay - a preliminary report -

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This paper reports preliminary results of a prosodic perception experiment with speakers of Papuan Malay, the lingua franca of Indonesian Papua. The procedure followed the Rapid Prosody Transcription (RPT) method as sketched in Cole et al. 2010. Inter-rater agreement between the participants of the experiment could be shown to be much lower than between raters of similar experiments on English and German. Our results thus confirm from the perception point of view what has been claimed from a production view point for other varieties of Malay, namely that Papuan Malay, like other local varieties of Malay, lacks post-lexical stress.

1. Introduction

Papuan Malay is a local variety of Indonesian/Malay, spoken in the two eastern most provinces of Indonesia – Papua Barat and Papua – by approximately 1.200.000 speakers (Kluge 2014). It is mostly spoken in the coastal areas and less so in the mountainous inland. However, this area, with its more than 270 indigenous languages, is linguistically highly diverse, and most speakers are at least bilingual, speaking Papuan Malay in addition to one or more local languages.

This paper reports on a perception experiment that investigates how native speakers of Papuan Malay perceive prosodic prominences in natural spoken speech. It thus stands in line with a growing number of recent papers that discuss (the absence of) prosodic features in different varieties of Indonesian, including a study by Goedemans and van Zanten (2007) on Javanese and Toba Batak Indonesian, and most recently by Maskikit-Essed and Gussenhoven (to appear) on Ambonese Malay.

For a long time, the standard assumption has been that (standard) Indonesian displays lexical stress on the penultimate syllable, unless this syllable contains a schwa, in which case stress falls on the final syllable (cf. Alieva et. al 1991; Cohn 1989). Secondary stress has been claimed to fall on the first syllable and every odd syllable thereafter, but never on the one adjacent to the syllable that carries the main stress (Cohn & McCarthy 1994). Other authors, however, have pointed out that schwa can be stressed just as well as any other vowel (Halim 1974; Laksman 1994).

For Papuan Malay, Kluge (2014) recorded 1072 words in two different carrier sentences, one in which the target word occurs clause finally, one in which it appears in the middle of the phrase.[1] She used the program *Phonology Assistant* to analyse her data and she concludes that 964 (90%) of all words have penultimate stress and only 108 (10%) show stress on the final syllable. Of these latter 108 words that displayed ultimate stress, 105 (97%) contained the front open-near vowel /ɛ/ (the equivalent to Indonesian schwa) in the penultimate syllable. Yet, Kluge notes that /ɛ/ does not condition ultimate stress, as for 65 of those words with penultimate stress, the stressed

[1] The two carrier sentences Kluge used are: *Sa blum taw ko pu kata itu, kata xxx.* 'I don't yet know that word of yours, the word xxx' and '*Ko pu kata xxx itu, sa blum taw.* 'Your word xxx, I don't know yet.'

syllable contained a /ɛ/. Also, three words with ultimate stress did not contain /ɛ/ but rather front /i/ and back /u/ in the penultimate syllable (Kluge 2014: 89).

Yet, in a growing number of works, the claim that Indonesian displays lexical stress on the penultimate syllable has been challenged. While some authors found that there is a preference for stress to occur on the penultimate syllable, but free variation – especially in longer words – is possible (cf. van Zanten 1994; van Zanten & van Heuven 2004), other authors came to the conclusion that there is no lexical stress at all (Zubkova 1966; Odé 1994). Especially in more recent publications it has been pointed out that the above mentioned disagreement as to whether or not Indonesian possesses lexical stress is probably due to the fact that "Indonesian" as a reasonably homogeneous language does not exist. There are 701 indigenous languages spoken in the Republic of Indonesia (Ethnologue 2015), the great majority of people are at least bilingual, speaking a local language in addition to Indonesian. Often, Indonesian is learned as a second language, usually from the age of six or seven, when children enter primary school and are exposed to Indonesian as the language of education. Furthermore, in addition to standard Indonesian and the indigenous languages, local varieties of Malay are spoken in many regions of Indonesia (e.g. Ambonese Malay, Jambi Malay, Kupang Malay, Manado Malay, Papuan Malay, etc.). Often, these local varieties of Malay take the place of standard Indonesian and are the major means of everyday communication. It is thus very likely that different studies on stress in "Indonesian" are based on data from speakers with different substrate dialects and languages, and it is likely that different prosodic properties of these substrates have had their impact on the contradictory results of earlier studies on lexical stress in "Indonesian". More recent studies therefore carefully control for the linguistic background of the participants of their studies.

Goedemans and Van Zanten (2007), for example, conducted a carefully designed perception experiment with two groups of participants with different linguistic profiles: one group consisted of speakers of Indonesian with Javanese as their substrate language, the other group consisted of speakers of Indonesian that were also native speakers of Toba Batak. These two languages were chosen, because Toba Batak supposedly exhibits clearly defined stress while Javanese is said to possess only weak stress, the location of which is not agreed on in the literature (Geodemans & van Zanten 2007: 40). As stimuli, the authors recorded material from one Toba Batak Indonesian speaker and one Javanese Indonesian speaker. This material was manipulated such that the prominence lending cues would occur on different syllables. It was then judged for acceptability by listeners of the two different groups. The Javanese listeners did not show any preference for stress on either the penultimate nor the ultimate syllable for both the Javanese Indonesian and the Toba Batak Indonesian stimuli. The Toba Batak listeners, on the other hand, clearly preferred penultimate stress in the Toba Batak speech data, but showed no clear preferences for the Javanese data. Goedemans and van Zanten interpret these results as evidence that there is no lexical stress in Javanese Indonesian. Though their experiment was explicitly not designed to investigate stress above the word level, they do observe that phrasal stress always occurs close to the boundary and they come to conclude that 'the distinction between accent lending and boundary marking intonation movements is very difficult to make' (Goedemans & van Zanten 2007: 57).

One of the few studies that address the issue of phrasal accent in more detail is the work by Maskikit-Essed and Gussenhoven (to appear) on Ambonese Malay (but see also Himmelmann 2010 and Clynes & Deterding 2011). Maskikit-Essed and Gussenhoven conducted a production experiment with four native speakers of

Ambonese Malay. They recorded 80 mini-dialogs consisting of read question-answer pairs, which contained 8 target nouns in different positions (phrase and IP final and medial) and were controlled for different focus conditions. In these 8 target words, no evidence for lexical stress in the putative stressed syllables (ultimate or penultimate, depending on the word) was found. Furthermore, the phrase final pitch movement which is a typical feature of declarative mood in many languages in the area (Himmelmann 2010: 67) is not tied to the final syllable. Rather, it is sensitive to the available space and tends to be timed earlier when the word is longer. Finally, Maskikit-Essed and Gussenhoven tested two focus conditions, one in which the phrase final target word was in focus, and one in which it occurred in post-focal position, i.e. a focal element preceded the phrase final target word. In the latter condition, the authors could not find any signs of reduction of the post-focal target words, neither in duration, nor in pitch height. Furthermore, the pitch contours were similar, not only in the target words but also over the whole sentences (Maskikit-Essed & Gussenhoven to appear: 28). Taken these results together, Maskikit-Essed and Gussenhoven come to the conclusion that information focus in Ambonese Malay is not expressed by means of prosody.

2. THE EXPERIMENT: METHODS AND PARTICIPANTS

Given the growing evidence in the literature that different varieties of Malay exhibit neither lexical nor post-lexical stress, we wanted to address the question how native speakers of one of these varieties – Papuan Malay – perceive prosodic prominences. We therefore conducted a perception experiment using the Rapid Prosody Transcription (RPT) method, as introduced in different papers by Jennifer Cole and colleagues (cf. Mo, Cole & Lee 2008; Cole, Mo & Hasegawa-Johnson 2010a; Cole, Mo, Baek 2010b). In the RPT method ordinary listeners that are naïve with respect to prosodic analysis listen to excerpts of audio recordings. They are given minimal instructions and are allowed to play the audio recordings only twice. On a printed transcript of the recording excerpts, in which punctuation and capitalization were removed, the participants were then asked to underline those words which they perceived as prominent.

The raters of our perception experiment were 16 native speakers of Papuan Malay (10 female, 6 male), 9 of which were monolingual. The other 7 participants were bilingual in Papuan Malay and another local language. However, all of them stated that Papuan Malay was (one of) their first language(es).[2] All 16 participants were students at the Universitas Papua (UNIPA) in Manokwari, aged between 18 and 27 years old. Papuan Malay is their first language of communication at university, with friends and at home. None of them had any experience in prosodic analysis.

The material the participants annotated for prosodic prominence were 56 excerpts of audio recordings of different length, ranging from 1 to 15 seconds. All were taken from a corpus of natural spoken speech, including 28 different native speakers of Papuan Malay (17 female, 11 male). They consisted of speakers re-telling Chafe's Pear Movie (Chafe 1980) and playing the Tangram Task. The latter is an elicitation tool that

[2] 4 further participants that also took part in the experiment were not included in the results because they had learned Papuan Malay only at a later age when they entered primary school. They were therefore not considered native speakers, even if they have lived for several years in Manokwari and their dominant language was now Papuan Malay.

involves two speakers that negotiate whether the picture that speaker one describes is the same as the one that speaker two has in front of her. The audio material in our experiment thus included both, excerpts of a monologue (the pear movie recordings) and of a dialogue (the tangram recordings).

The instructions for the participants, as stated above, were minimal. They only included the written instruction in (1a) (English translation in (1b)). They were also shown how to underline words in the printed transcript, and, if necessary, how to correct their choice. It was explicitly stated that underlying more than one word per excerpt was allowed. No audio examples were given.

(1) a. Tugas Anda adalah menggarisbawahi **semua** kata yang nadanya Anda anggap lebih menonjol (mis. lebih tinggi) dibandingkan dengan kata-kata lain pada setiap rekaman kalimat yang Anda dengarkan.

b. Your task is to underline **all** words which you perceive to be sticking out (e.g. because they are higher/louder[3]) in comparison with the other words for all the recorded sentences that you will hear.

The data in (2)a. and b. show an example of one of the excerpts and how it was presented to the participants of the experiment. (2)c. shows the choices made by one of the participants (RW, female, 23 years).

(2) a. *Yang tiga orang ini pegang topi satu.*
REL three person DEM carry hat one
'The three people are carrying a hat.'

b. yang tiga orang ini pegang topi satu

c. yang tiga orang ini pegang topi satu

3. RESULTS

3.1 Multi-rater/inter-rater agreement

To evaluate the RPT-data, we used both Fleiss' kappa coefficient (plus its z-normalised score) and Cohen's kappa.[4] Fleiss' kappa provides a single coefficient as a measure of agreement across all sixteen raters. Cohen's kappa calculates agreement between individual pairs of raters. We compared the Papuan Malay scores with those of two comparable studies on American English (Mo, Cole & Lee 2008; Cole, Mo & Hasegawa-Johnson 2010) and German (Baumann & Winter in prep.) The study by Cole and colleagues used spontaneous, conversational speech from the Buckeye corpus. This corpus consists of interviews with adult speakers of American English from Columbus (Pitt et al., 2007). Baumann and Winter's study, on the other hand, used read sentences that displayed different focus structures and information status categories.

The Fleiss' kappa scores for all three studies are summarized in Table 1, which clearly shows that inter-rater agreement is much lower among speakers of Papuan Malay than

[3] Note that the word *tinggi* in Indonesian is ambiguous in this context and can mean both 'loud' and 'high'.
[4] We are grateful to Jan Strunk for helping with the statistical analysis.

it is between German and American English speakers. The slightly higher agreement of German raters compared to English raters is probably due to the different data types used in the respective experiments, i.e. spontaneous conversational data versus read speech. Considering that the naturalness of the stimuli might have an effect on how much raters agree in their perception of prominences, the Papuan Malay results are best to be compared with the English data. Yet, also the difference between English raters, with a Fleiss' kappa score of 0.42, and Papuan Malay, with a kappa score of only 0.08 is more than striking.

	German	English	Papuan Malay
Fleiss' Kappa	0.53	0.42	0.08
z	244	20.4	25

Table 1: *Fleiss' kappa scores and z-normalized scores*

To guarantee that the low score of the Papuan Malay rater was not just due to a very low agreement between some participants, we calculated Cohen's kappa scores for every single rater pair. The highest score achieved between two raters amounted to 0.50, while the lowest one was -0.06. Among German inter-rater pairs, on the other hand, the highest achieved score was 0.72, the lowest one 0.28. Tables 2 and 3 summarize the Cohen's kappa scores of Papuan Malay (PM) and German inter-rater pairs respectively, using the labels 'none', 'slight', 'fair', 'moderate', 'substantial' and '(almost) perfect' as defined by the agreement scale by Landis and Koch (1977). The difference, again, is striking: While the majority of Papuan Malay rater pairs show only slight or fair agreement (41,67% and 36,67% respectively), the vast majority of German rater pairs showed at least moderate agreement. More than 25% even agreed substantially. Note that the minimal and maximal Cohen's kappa scores in in the study by Cole and her colleagues (-0.03 and 0.644 respectively) are not that different from those calculated for Papuan Malay. Yet the mean for the English data lies by approximately 0.58, which would be labelled as 'moderate' in the agreement scale by Landis and Koch (1977).

	pairs	percentage
none	8	3,33%
slight	100	41,67%
fair	88	36,67%
moderate	44	18,33%
substantial	0	0,00%
(almost) perfect	0	0,00%
	220	100,00%

Table 2: *Summary of Cohen's kappa PM German*

	pairs	percentage
none	0	0,00%
slight	0	0,00%
fair	86	11,38%
moderate	474	62,70%
substantial	196	25,93%
(almost) perfect	0	0,00%
	756	100,00%

Table 3: *Summary of Cohen's kappa*

3.2 Possible factors determining perceived prominence

For data analysis, the prominence-score (p-score) was calculated in a first step, which serves as a relative measure, representing the ratio of subjects that underlined a word, i.e. that perceived a word as prominent, with respect to the total number of participants. As

already indicated by the low kappa values above, we observed a high degree of variability in the listeners' judgements, leading to a majority of low p-scores. In fact, the modal value in our data was a p-score of 19 %, as shown in Figure 1.

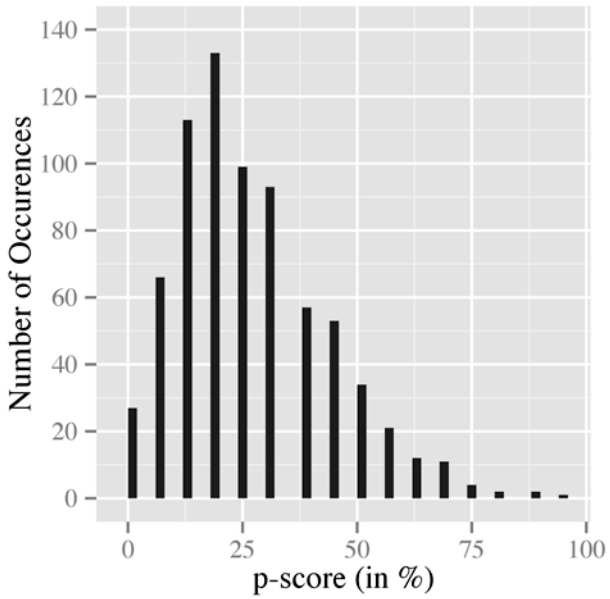

Figure 1: *Distribution of p-scores in the Papuan Malay data*.

In a second step we correlated the p-score with several linguistic and phonetic factors in order to evaluate which factors might have influenced the raters' perception of prominence. On the one hand we examined *lexical word length* (i.e. the number of lexically underlying syllables) as well as information structural cues such as *part of speech*, i.e. whether the underlined word was a content or a function word, and also *last argument*. Both information structural factors were chosen from a European point of view, since West-Germanic Languages such as German or English are known to differ with respect to these parameters: part of speech is important as function words are usually less prominent than content words (Büring 2012:31), while the last verbal argument is of importance when it comes to focus projection, i.e. in the default intonation of a broad focus sentence, the last verbal argument receives the nuclear accent (Uhmann 1988:66).

On the other hand, we examined phonetic cues such as *word duration* (in ms), *phonetic word length* (i.e. the number of post-lexically articulated syllables), the *absolute pitch range* (in semitones), *maximum pitch* (in Hz), the presence of *tonal movement*, and the presence of a *prosodic boundary* following the word. All phonetic measures operated on the word level.

For all these factors the so-called Pearson's r was calculated, which gives a correlation coefficient between –1 (perfect negative correlation) and 1 (perfect positive correlation), with values around 0 indicating no correlation. As there was much variability in the participants' judgements, we received in general quite small correlation coefficients for our parameters, indicating that there was no or only very slight influence on the perception of prominence. For seven out of the examined nine parameters the correlation coefficients calculated ranged from about 0.2 to 0.3, suggesting no considerable effect of lexical word length ($r = 0.20$), last argument ($r = 0.17$), phonetic

word length (r = 0.29), pitch range (r = 0.26), maximum pitch (r = 0.05; exemplarily displayed in Figure 2), tonal movement (r = 0.31) or prosodic boundary (r = 0.35). The most promising results were gained for the parameters of part of speech (r = 0.42) and word duration (r = 0.49; see Figure 3), although these coefficients still indicate only a mediocre effect.

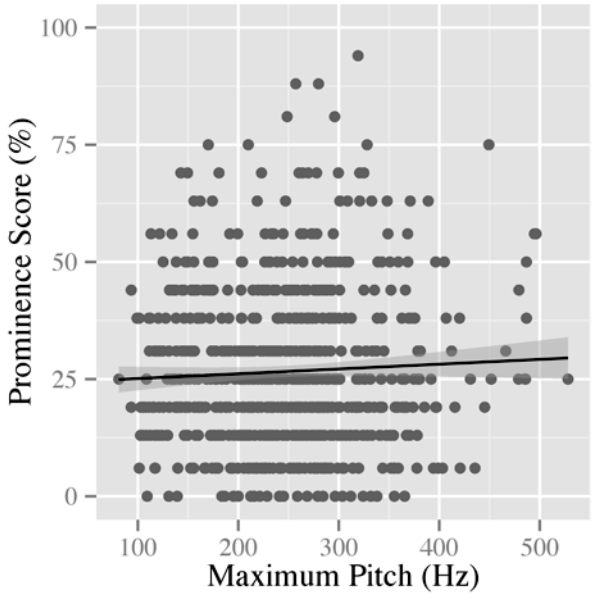

Figure 2: *Correlation of maximum pitch (in Hz) within a word and its p-score. The solid line displays the regression line, the shaded area its confidence interval.*

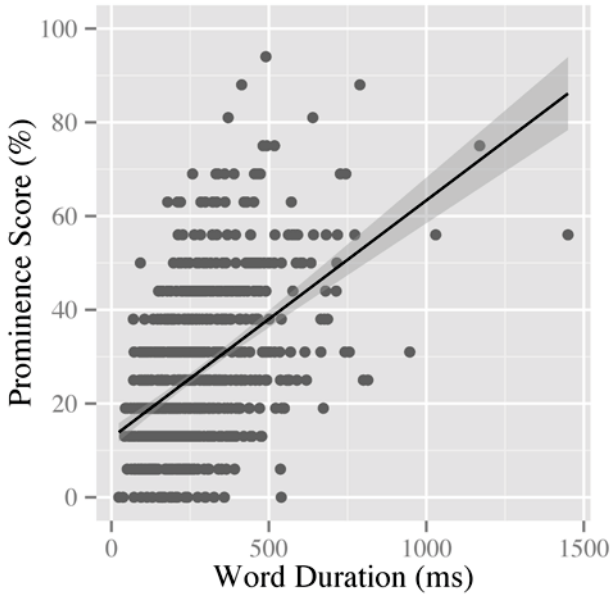

Figure 3: *Correlation of word duration (in ms) and the p-score. The solid line displays the regression line, the shaded area its confidence interval.*

Note, however, that the multi-rater agreement is generally too weak to draw any further conclusions on the correlation of possible factors and the perception of prominence in Papuan listeners. Rather, the vast variability in the scores points towards the assumption that Papuan Malay lacks word stress and consequently post-lexical stress. In fact, it

seems that prominence in Papuan Malay is only associated with prosodic boundaries, since content words that were produced in phrase final position received the highest scores (see Figure 4). Also, these content words showed longer durations than their phrase medial and phrase initial counterparts (Figure 5).

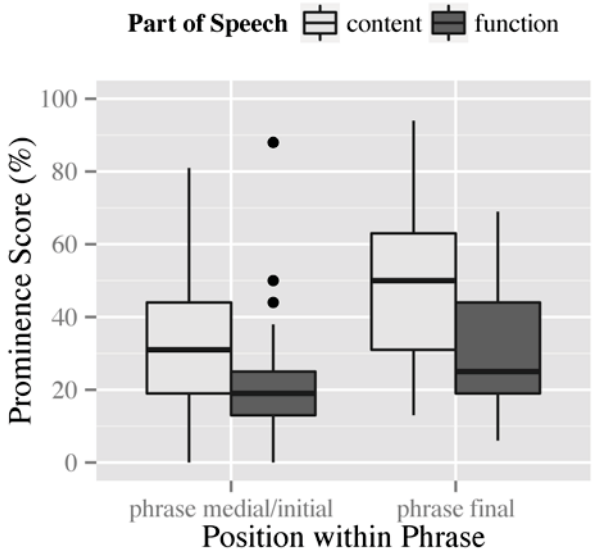

Figure 4: *P-score for phrase final and phrase medial/initial content and function words.*

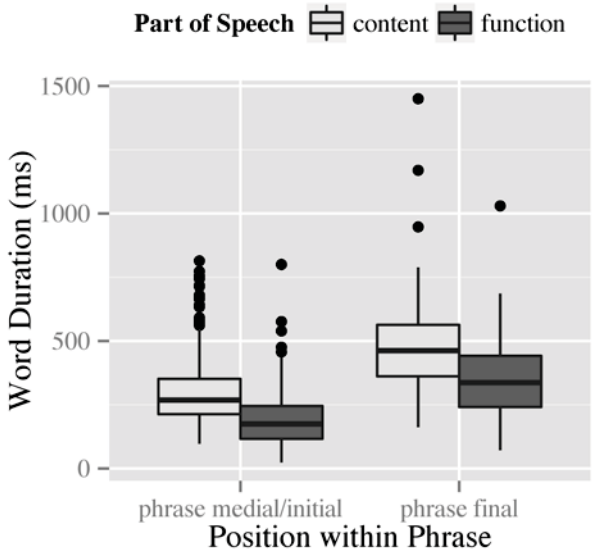

Figure 5: *Word duration for phrase final and phrase medial/initial content and function words.*

These tentative results suggest an interplay of part of speech, word duration and perceived prominence, i.e. an interaction of information structure and prosody.

4. SUMMARY

The experiment reported on in this paper is the first study that investigates listeners' perception of prosodic prominences in one of the many varieties of Malay. Yet, it joins the ranks of a growing number of papers on lexical and post-lexical stress in Indonesian and its local varieties, and it confirms the general picture that many languages of Indonesia as well as many of the local varieties of Malay do neither possess word stress nor post-lexical stress.

The extremely low inter-rater agreement scores showed that prosodic prominences are not (uniformly) perceived by Papuan Malay listeners. This suggests that Papuan Malay lacks post-lexical stress, which, in turn, suggests that prosodic prominence is not used to encode information structural categories in Papuan Malay. These findings are in line with the Ambonese Malay production data discussed in Maskikit-Essed and Gussenhoven (forthcoming).

Our data suggests no correlation between the listeners' perception of prominence (i.e. the p-score) and various linguistic and phonetic factors, such as lexical and phonetic word length, pitch range, maximum pitch and tonal movement. Neither did it have an effect whether or not a given word was the last argument of the predicate. Highest effects could be seen for the factors part of speech, word duration and prosodic boundary, with longer content words in phrase-final position being judged as most prominent. This pattern suggests a possible interaction of semantics and prosody, which is rather a means of marking prosodic boundaries than of marking post-lexical stress.

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