Chapter 12

Focus and prosody in Tagalog

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In this paper, we look into the interaction between focus and prosody in Tagalog. In this language, for most focus conditions regular correspondences between syntax and information structure are observed: canonical constructions are used for sentence focus and predicate focus conditions, while pseudocleft constructions are used for argument focus conditions. However, some wh-questions, in particular targeting non-agent arguments, can be answered by means of canonical constructions as well as pseudocleft constructions. In this experimental study, we examine production data in order to test how Tagalog speakers prosodically distinguish canonical sentences associated with different focus structures. The results reveal that F0 cues and intensity consistently differentiate focused conditions from all-old utterances throughout the entire sentence. However, the distinct focus conditions are not prosodically differentiated. As for the argument focus condition, there may be durational effects applying to the phrase in narrow focus, but this needs further confirmation.

1 Mismatch between syntactic and focus structure

Tagalog, an Austronesian language of the Philippines, has VSO word order, displaying VO word order correlates in a relatively consistent manner. Thus, in typical transitive clauses as in (1) a predicative verb appears in the clause-initial position, followed by arguments and adjuncts. Arguments and adjuncts are marked by either determiner-like case-markers or prepositions. In this paper, we refer to this type of verb-predicate clause as the canonical construction.

(1) *Kumain si Mama ng mami sa kusina.*
K<um>ain si=Mama nang=mami[1] *sa= kusina.*
eat<AV> P.NOM=Mama GEN=noodles LOC= kitchen
'Mama ate noodles in the kitchen.'

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Tagalog also has another construction type, where one of the arguments appears in the clause-initial position. We call this construction type a pseudocleft construction in the sense that it involves an equational clause structure with a *wh*-relative clause-like structure.[2] To illustrate, consider (2) and (3).

(2) *Si Mama ang kumain ng mami.*
Si= Mama ang=[k<um>ain nang= mami].
P.NOM= Mama NOM=eat<AV> GEN= noodles
'The one who ate noodles is Mama.'
'Mama is the one who ate noodles.'

(3) *Ang mami ang kinain ni Mama.*
(Ang=)mami ang=[k<in>ain ni= Mama].
NOM=noodles NOM=eat<PV.PFV> P.GEN= Mama
'What Mama ate is noodles.'

As seen in these examples, canonical and pseudocleft constructions share the same propositional content. A contrast between the two construction types lies in the focus assignment patterns with which they are associated (Kaufman 2005, Nagaya 2007; see Lambrecht 1994 for the notion of focus structure used here). On the one hand, canonical constructions are employed for either sentence focus or predicate focus structures, see (4) and (5), respectively.

(4) Q: *Anong nangyari?*
Ano ='ng nang-yari?
what =NOM AV:PFV-happen
'What happened?'
A: *Kumain si Mama ng mami.*
K<um>ain si=Mama nang= mami.
eat<AV> P.NOM=Mama GEN= noodles
'Mama ate noodles.'

(5) Q: *Anong ginawa ni Mama?*
Ano ='ng g<in>awa ni= Mama?
what =NOM do<PV:PFV> P.GEN= Mama
'What did Mama do?'
A: *Kumain siya ng mami.*
K<um>ain=siya nang=mami.
eat<AV>=3SG.NOM GEN=noodles
'She ate noodles.'

[1]In the commonly-used Tagalog orthography, the diagraph *ng* represents a velar nasal /ŋ/. An exception is the genitive case-marker for common nouns, which is pronounced as [naŋ] but spelled as *ng*. In this paper, however, it is presented as *nang* instead of *ng* for the sake of convenience.
[2]See Kaufman (2009; 2018 [this volume]) for another view of this construction type.

On the other hand, pseudocleft constructions are employed for narrow focus or argument focus, where the initial constituent of a clause is exclusively focused. In particular, this construction type is the only option in contrastive focus contexts. Example (6) illustrates an explicit contrast.

(6) A: *K<um>ain=daw si=Maria nang= mami.*
eat<AV>=hearsay P.NOM=Maria GEN= noodles
'(They say) Maria ate noodles.'
B: *Hindi. Si=Mama ang=[k<um>ain nang= mami].*
NEG P.NOM=Mama NOM=eat<AV> GEN= noodles
'No. It is Mama (not Maria) who ate noodles.'

Not surprisingly, *wh*-questions must take the form of pseudocleft constructions, as in (7) and (8). Attention should be paid to the structural parallelism between (2)/(3) and (7)/(8).

(7) *Sino ang=[k<um>ain nang= mami]*? [*cf.* (*2*)]
who.NOM NOM=eat<AV> GEN= noodles
'Who is the one who ate noodles?'
'Who ate noodles?'

(8) *Ano ang=[k<in>ain ni= Mama]*? [*cf.* (*3*)]
what NOM=eat<PV:PFV> P.GEN= Mama
'What is it that Mama ate?'
'What did Mama eat?'

To summarize, in Tagalog, canonical constructions are used for predicate focus (henceforth PF) and sentence focus (henceforth SF), while pseudocleft constructions are employed for argument focus (henceforth AF). See Table 1 for a summary of these observations.

Table 1: Construction types and focus structures in Tagalog

Construction type	**Focus structure**	**Contexts**
Canonical construction	Predicate Focus (PF)	'What happened to X?' 'What did X do?'
Pseudocleft construction	Sentence Focus (SF)	'What happened?'
	Argument Focus (AF)	'only' focus of negation/correction *wh*-question

However, the summary in Table 1 slightly overstates the regularity of the correspondence between syntactic and focus structure because questions targeting an argument do not

require a pseudocleft construction as the answer. Rather, a question such as 'What did Mama eat?' allows for three types of answers, as seen in (9).

(9) Q: *Ano ang kinain ni Mama?* [=(8)]
Ano ang=[k<in>ain ni= Mama]?
what NOM=eat<PV:PFV> P.GEN= Mama
'What is it that Mama ate?'
'What did Mama eat?'

A0: *Mami.*
noodles
'Noodles.'

A1: *Kumain siya ng mami.* [Canonical]
K<um>ain=siya nang= mami.
eat<AV>=3SG.NOM GEN= noodles
'She ate noodles.'

A2: *Mami ang kinain niya.* [Pseudocleft]
Mami ang=k<in>ain=niya.
noodles NOM=eat<PV:PFV>=3SG.GEN
'What she ate is noodles.'

That is, the question *Ano ang kinain ni Mama?* 'What did Mama eat?' can be answered with a pseudocleft construction in (9A2) as well as with a canonical construction in (9A1), despite the fact that here only one argument is in focus. In (9A1), then, we see a mismatch between syntactic and focus structure deviating from the regularities stated in Table 1.

Note that such a mismatch is not possible when the agent NP is the target of a wh-question. Consider (10).

(10) Q: *Sino ang bumili ng mami?*
Sino ang= b<um>ili nang= mami?
who NOM= buy<AV> GEN= noodles
'Who bought noodles?'

A1: *Si Mama.*

A2: ??*Bumili si Mama ng mami.* [canonical]
B<um>ili si= Mama nang= mami.
buy<AV> P.NOM= Mama GEN= noodles
'Mama bought noodles.'

A3: *Si Mama ang bumili.* [pseudocleft]
Si= Mama ang= b<um>ili.
P.NOM Mama NOM= buy<AV>
'It is Mama who bought noodles.'

To answer a question targeting the agent, one can employ an agent NP by itself as in (10A1) or a pseudocleft construction as in (10A3). However, the use of a canonical construction in (10A2) is not felicitous. So, canonical constructions are only legitimate answers to argument questions if the argument asked for does not bear the agent role.

With regard to the constructions where syntactic and focus structure do not properly match the generalizations captured in Table 1, the question arises whether in such constructions the narrowly focused constituents differ prosodically from non-focused constituents. That is, do Tagalog speakers prosodically distinguish argument focus (9A1) from predicate focus (5A) in the canonical construction?

In order to answer this question, we carried out a phonetic experiment. Our working hypothesis is that canonical constructions with different focus structures display the same syntax but with different prosodic cues, such as MaxF0 and duration. To the best of our knowledge, the interaction between focus and prosody in Tagalog has not been well explored in experimental studies (cp. Kaufman 2005). Our study will be the first experimental research on this matter.

The rest of this paper is organized as follows: in §2, we give a detailed description of the method employed for this experimental study. In §3, the results of the experiment and analyses of them are provided. §4 concludes this paper.

2 Method

In this experimental study, we look into the question of whether Tagalog speakers prosodically distinguish canonical sentences associated with different focus structures. To investigate this question, we make an acoustic comparison of the target sentence *Bumili siya nang mami* 'She bought noodles' in four different focus contexts: SF, PF, AF, and All-Old contexts (henceforth AO). See (11), (12), (13), and (14), respectively.

(11) Q: *Ano ='ng nang-yari*?
what =NOM AV:PFV-happen
'What happened?'
A: *B<um>ili =siya nang= mami.*
buy<AV> =3SG.NOM GEN= noodles
'She bought noodles.'

(12) Q: *Ano ='ng g<in>awa ni= Mama*?
what =NOM do<PV:PFV> P.GEN= Mama
'What did Mama do?'
A: *B<um>ili =siya nang= mami.*
buy<AV> =3SG.NOM GEN= noodles
'She bought noodles.'

(13) Q: *Ano ='ng [b<in>ili ni= Mama*]?
what =NOM buy<PV:PFV> P.GEN= Mama
'What did Mama buy?'
A: *B<um>ili=siya nang= mami.*
buy<AV>=3SG.NOM GEN= noodles
'She bought noodles.'

(14) Q: *B<um>ili =ba si= Mama nang= mami*?
buy<AV> =Q P.NOM= Mama GEN= noodles
'Did Mama buy noodles?'
A: *Oo, b<um>ili =siya nang= mami.*
yes buy<AV> =3SG.NOM GEN= noodles
'Yes, she bought noodles.'

For this experiment, five male participants were recorded. See Table 2. All of them are college students in their twenties. They are native speakers of Tagalog but from different dialectal backgrounds: Quezon City (3), Rizal (1), Laguna (1). They also speak English as a second language. The recordings were made at the University of the Philippines, Diliman. All recording sessions were organized and supervised by the first author. A portable recorder (Zoom H5) with a head-mounted microphone (Shure Beta 54) was employed for the recordings.

Table 2: List of participants

Participant	Hometown	Gender	Age
Speaker 1	Laguna	male	21
Speaker 2	Quezon City	male	20
Speaker 3	Quezon City	male	21
Speaker 4	Rizal	male	23
Speaker 5	Quezon City	male	25

During the recording sessions, participants were asked to read the answers in a list of question-answer pairs. The four target pairs (SF, PF, AF and AO contexts) were randomly dispersed together with nine dummy pairs. See the Appendix for the complete list of question-answer pairs used for this experiment. Each participant repeated the whole list ten times.

At the recording, each participant was instructed to exchange a conversation with another participant. More precisely, one participant asked the questions, and another

participant answered them.[3] Speaker 1 was paired with Speakers 2 and 3. Speakers 4 and 5 were paired. Only answers were recorded. Before the actual recording session, participants were asked to practice by reading the two sets of sentences.

3 Results and discussion

3.1 Impressionistic comparison of pitch contours

A total of 200 utterances (4 information status x 5 speakers x 10 repetitions) were analyzed. In analyzing the data, prosodic word boundaries were manually marked on each utterance. The target sentence *Bumili siya nang mami* 'She bought noodles' was divided into three prosodic words[4]:

- *bumili* 'bought' (P)
- *siya* 'she' (N)
- *nang mami* 'noodles' (A)

For impressionistic comparison of the pitch contours as a function of information status, time-normalized pitch tracks in semitone are plotted in Figure 1, averaging across all renditions by each speaker. Overall, the AO condition yielded lower F0s compared to all focused conditions across all speakers. In comparing different focus types, however, speakers exhibited slightly distinct patterns. As shown in the top-left panel of Figure 1, Speaker 1 produced the SF condition (dark solid line) with a slightly higher pitch than the other focus conditions, but no substantial difference was observed between PF (dotted line) and AF (dashed line) in terms of F0. On the other hand, Speaker 2 (top-right panel) exhibited somewhat higher F0 peaks of P and A in the PF condition (dotted line) than in the other focus conditions. The prosodic manifestation of information status of this particular speaker seems to be different from the other speakers in that the overall shapes of contours are quite distinct. Specifically, the contours of Speaker 2 in the PF and AO conditions show a different overall pattern from the ones found for AF or SF whereas those of the other speakers exhibit more or less similar overall contour shapes in all information conditions. Speaker 3 (mid-left panel) seems to be quite sensitive to the presence or absence of focus, but does not distinguish different types of focus; PF, SF and AF yielded nearly the same F0 contours. Speaker 4 (mid-right panel) and Speaker 5 (bottom panel) produced SF and PF with a somewhat higher F0 than AF but no remarkable difference was found between information conditions.

[3] We thank one of the reviewers who hinted at possible effects of convergence between two speakers (see Garrod & Pickering 2009; Kim et al. 2012; Gorisch et al. 2012) in this setting. However, it seems that such effects were not seriously large in our data because two speakers who exchanged conversations in the recording session exhibited quite different prosodic patterns.

[4] "P", "N", and "A" are labels for prosodic words. They are abbreviations of "predicate", "nominative", and "accusative". But this does not imply that Tagalog has a nominative-accusative case system.

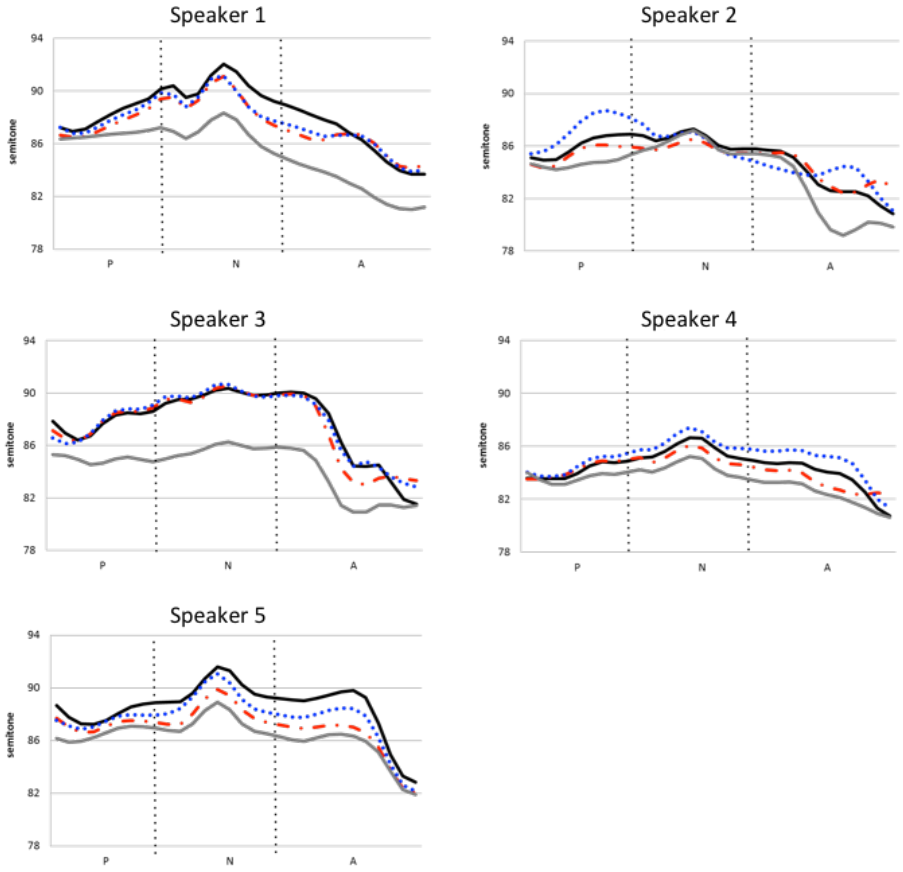

Figure 1: F0 contours of each speaker in semitone: SF, AF, PF and AO are represented by dark solid lines, dashed lines, dotted lines and light solid lines, respectively.

3.2 Statistical analyses

In order to compare prosodic characteristics of different information conditions, maximum F0 (MaxF0), minimum F0 (MinF0), mean F0, mean intensity, and duration values of each prosodic word were extracted using the Praat script ProsodyPro (Xu 2013).

For statistical analysis, linear mixed-effects analyses were conducted using JMP 9, with the speaker as random effects and information status as fixed effects. MaxF0, MinF0, meanF0, mean intensity, and duration were used as dependent measures. The analyses were performed separately for each phrase. All reported effects were significant at the $p < 0.05$ level. The results of our analyses are summarized in Table 3.

Table 3: Results of statistical analyses

	P (*bumili*)	N (*siya*)	A (*nang mami*)
MaxF0	PF=SF=AF>AO	SF=PF=AF>AO	SF=PF=AF>AO
MinF0	AF=PF=SF>AO	SF=PF=AF>AO	AF=PF=SF>AO
mean F0	PF=SF=AF>AO	SF=PF=AF>AO	SF=PF=AF>AO
intensity	PF=AF=SF>AO	PF=AF=SF>AO	PF=AF=SF>AO
duration	PF=AF=AO=SF	AF=PF=AO=SF	AF=PF=SF>AO

Prosodically, all the conditions show the same patterns for P (*bumili*) and N (*siya*); in these parts of the sentence, all the focus conditions were realized with significantly higher F0 and greater intensity than the AO condition while different types of focus were not prosodically differentiated. Interestingly, duration was not significantly different among the four information conditions.

Similar results are observed in the A phrase (*nang mami*). Focus conditions yielded highest F0, greater intensity, and longer duration compared to the AO condition. However, the four conditions did not differ significantly with respect to the acoustic measurements. Unlike the P phrase (*bumili*) and the N phrase (*siya*), this phrase was realized with longer duration when it received focus. It is conceivable this is an effect of narrow focus. Yet, further investigation involving more speakers and material would be necessary to confirm this effect.

3.3 Discussion

The results of our analyses reveal two important facts about the interaction between focus and prosody in Tagalog. First, it was observed that F0 and intensity consistently differentiated focused conditions from AO. This observation was also confirmed by the statistical analyses. Second, no significant prosodic differences were observed between the distinct focus constructions.

A general problem for these conclusions, however, pertains to the fact that the intonational contours of the target sentences vary from speaker to speaker to an extent that needs further explanation. The five speakers did utter the same sentence but with quite different contours, as demonstrated in Figure 1. The pitch contours of Speaker 4 may appear to be reasonably similar to that of Speaker 5 to be considered minor variants of the same overall pattern. But the similarities between the remaining contours are less easily amenable to a single underlying melody. It is not clear yet how to account for this variation among Tagalog speakers. Dialectal differences could be one factor to consider. However, the prosodic characteristics of different dialects in Tagalog are next to unknown, so this has to remain a speculation at this point. Further, Speakers 2, 3, and 5 produced noticeably different patterns though they are from the same region. Thus, it seems that this large between-speaker variation cannot be attributed solely to dialectal differences.

4 Conclusion

In this paper, we presented a preliminary experimental phonetic analysis of the interaction between focus and prosody in Tagalog. In particular, we highlighted mismatching patterns between syntax and information structure found in question-answer pairs. Some *wh*-questions, specifically ones targeting non-agent arguments, can be answered by means of canonical constructions as well as pseudocleft constructions, despite the fact that for most focus conditions Tagalog displays regular correspondences between syntax and information structure: canonical constructions are used for SF and PF conditions, while pseudocleft constructions are used for AF conditions.

Our working hypothesis was that there might be prosodic cues to distinguish canonical constructions associated with different focus structures. The results of our production study reveal that F0 cues and intensity consistently differentiate focused conditions from all-old utterances throughout the entire sentence. As for the argument focus condition, there may be durational effects applying to the phrase in narrow focus, but this needs further confirmation.

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Abbreviations

AV	actor voice	PFV	perfective
CV	circumstantial voice	PROS	prospective
DUP	reduplication	PV	patient voice
GEN	genitive	SG	singular
GER	gerund	PL	plural
IPFV	imperfective	1	first person
LK	linker	2	second person
LOC	locative	3	third person
LV	locative voice	“<>”	infix
NEG	negator	“=”	cliticization
NOM	nominative	“~”	reduplication
P	personal name		

Appendix: Target sentences

Four target sentences and nine dummy sentences were employed in this experiment. Below is the list of the target and filler sentences: sentences (16), (21), (23), and (27) are targets (highlighted in bold so that they can be spotted more easily), while the others function as fillers. In the recording sessions, the entire list was repeated ten times. The participants were asked to read these sentences in this order. Only the parts in italics were presented to the participants (i.e., no morphological analyses, interlinear glossing, or translations).

(15) Q: *Saan ka pupunta?*
Saan =ka pu~punta?
where =2SG.NOM AV:PROS:go
'Where are you going?'

A: *Sa Ministop ako pupunta.*
Sa= Ministop =ako pu~punta.
LOC= Ministop =1SG.NOM AV:PROS:go
'I am going to a Ministop.'

(16) **Q**: ***Anong binili ni Mama?***
Ano ='ng b<in>ili ni= Mama?
what =NOM PV:PFV:buy P.GEN= Mama
'What did Mama buy?'

A: ***Bumili siya ng mami.***
B<um>ili =siya nang= mami.
AV:buy =3SG.NOM GEN= noodles
'She bought noodles.'

(17) Q: *Sino ang bumili ng mami?*
Sino ang= b<um>ili nang= mami?
who NOM= AV:buy GEN= noodles
'Who bought noodles?'

A: *Si Mama ang bumili.*
Si= Mama ang= b<um>ili.
P.NOM Mama NOM= AV:buy
'It is Mama who bought noodles.'

(18) Q: *Ano pa binili ni Mama?*
Ano =pa (=ang) b<in>ili ni= Mama?
what =else =NOM PV:PFV:buy P.GEN= Mama
'What else did Mama buy?'

A: *Mami lang ang binili niya.*
Mami =lang ang= b<in>ili =niya.
noodles =only NOM= PV:PFV:buy =3SG.GEN
'She bought only noodles.'

(19) Q: *Saan ka pumunta?*
Saan =ka p<um>unta?
where =2SG.NOM AV:go
'Where did you go?'

A: *Pumunta ako sa Ministop.*
P<um>unta =ako sa= Ministop
AV:PFV:go =1SG.NOM LOC= Ministop
'I went to Ministop.'

(20) Q: *Mani ba ang kinain niya?*
Mani =ba ang= k<in>ain =niya?
peanuts =Q NOM= PV:PFV:eat =3SG.GEN
'Did she eat peanuts?'

A: *Hindi. Mami ang kinain niya.*
Hindi. Mami ang= k<in>ain =niya.
NEG noodles NOM= PV:PFV:eat =3SG.GEN
'No. She ate noodles.'

(21) **Q**: ***Anong ginawa ni Mama doon?***
Ano ='ng g<in>awa ni= Mama doon?
what =NOM PV:PFV:do P.GEN Mama there
'What did Mama do there?'

A: ***Bumili siya ng mami.***
B<um>ili =siya nang= mami.
AV:buy =3SG.NOM GEN= noodles
'She bought noodles.'

(22) Q: *Anong paborito mong pagkain?*
Ano =ng paborito mo=ng pagkian?
what =NOM favorite 2SG.GEN=LK food
'What is your favorite food?'

A: *Paborito ko ang mami.*
Paborito =ko ang= mami
favorite =1SG.GEN NOM= noodles
'Noodles are my favorite.'

(23) **Q**: ***Anong nangyari?***
Ano ='ng nang-yari?
what =NOM AV:PFV:happen
'What happened?'

A: ***Bumili siya ng mami.***
B<um>ili =siya nang= mami.
AV:buy =3SG.NOM GEN= noodles
'She bought noodles.'

(24) Q: *Sino ang bumili ng mami?*
Sino ang= b<um>ili nang= mami?
who NOM= AV:buy GEN= noodles
'Who bought noodles?'

A: *Bumili si Mama ng mami.*
B<um>ili si= Mama nang= mami?
AV:buy P.NOM= Mama GEN= noodles
'Mama bought noodles.'

(25) Q: *Anong binili ni Mama?*
Ano ='ng b<in>ili ni= Mama?
what =NOM PV:PFV:buy P.GEN= Mama
'What did Mama buy?'

A: *Mami ang binili niya.*
Mami ang= b<in>ili =niya.
noodles NOM= PV:PFV:buy =3SG.GEN
'She bought noodles.'

(26) Q: *Masarap ba ang mami nila?*
Ma-sarap =ba ang= mami =nila?
ADJ-delicious =Q NOM= noodles =3PL.GEN
'Are their noodles delicious?'

A: *Oo. Masarap ang mami nila.*
Oo Ma-sarap ang= mami =nila.
yes ADJ-delicous NOM= noodles =3PL.GEN
'Yes, their noodles are delicious.'

(27) **Q**: ***Bumili ba si Mama ng mami?***
B<um>ili =ba si= Mama nang= mami?
AV:buy =Q P.NOM= Mama GEN= noodles
'Did Mama buy noodles?'

A: ***Oo, bumili siya ng mami.***
Oo, b<um>ili =siya nang= mami.
yes AV:buy =3SG.NOM GEN= noodles
'Yes, she bought noodles.'

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