

Tagalog general number and incorporation

Nova Starr – novastarr@uottawa.ca

University of Ottawa

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1 Background

- Tagalog's voice system has numerous semantic consequences which make classifying its alignment challenging. There is well known argumentation that it is ergative (Aldridge 2004, 2012) but it has also been treated as accusative (Rackowski 2002, Richards 2000, Schachter and Otanes 1972).
- Examining the semantics is a right step towards resolving this controversy.
- General number (GN) is a nominal form that is interpreted as entailing '*one or more x*' (Corbett 2000). GN is often characteristic of noun incorporation (NI) (Carlson 2006, Dayal 2011, Farkas and de Swart 2003, Mithun 1984).
- NI: "A grammatical construction where a nominal that would canonically be expressed as an independent argument or adjunct is instead, in some way, incorporated into the verbal element of the sentence, forming part of the predicate." (Massam 2009:1078)

2 Punchline

- Tagalog general number (TGN) has been described before (Corbett 2000) but my contribution to the existing literature is that it is voice dependent.
- TGN shares the semantic properties of noun incorporation but not the syntactic properties (RE: free post verbal word order).
- Tagalog has pseudo noun incorporation (PNI). (Disclaimer: Term borrowed from Massam (2001) but Tagalog PNI is not the same as Niuean PNI.)

3 Data

- (1) a. B⟨um⟩ili [ang babae] [ng libro].
AV.buy ANG woman NG book
The woman bought one or more books. Agent V[S][O] - GN
- b. B⟨um⟩ili [ng libro] [ang babae].
AV.buy NG book ANG woman
The woman bought one or more books. Agent V[O][S] - GN

- (2) a. B⟨in⟩ili [ng babae] [ang libro].
PV.buy NG woman ANG book
The woman bought the book.
b. B⟨in⟩ili [ang libro] [ng babae].
PV.buy ANG book NG woman
The woman bought the book.
- (3) a. B⟨um⟩ili [ang babae] [ng pulang libro].
AV.buy ANG woman NG red.LK book
The woman bought a red book.
b. B⟨um⟩ili [ng pulang libro] [ang babae].
AV.buy NG red.LK book ANG woman
The woman bought a red book.

Patient V[S][O] - no GN

Patient V[O][S] - no GN

Agent V[S][XO] - no GN

Agent V[XO][S] - no GN

4 Tagalog general number

- Only unmodified objects in agent voice (AV) sentences have GN, see (1). Objects in patient voice (PV) sentences do not have GN, see (2). Modified objects in AV sentences also do not have GN, see (3). Subjects are always specified for number. In other words, unmodified NG objects are incorporated have GN. Everything else does not.
- Some characteristics of TGN are indicative of noun incorporation:
 - Only objects may have GN interpretations (Baker 1996:18).
 - Only bare nominals may have GN (Baker 1988).
- Tagalog has free post-verbal word order (VSO and VOS) which has no semantic reflexes. A sentence with incorporation maintains its semantics regardless of VOS or VSO word order. Ditto for a sentence without incorporation. This fact goes against the traditional description of NI where a structural relationship is maintained between the verb and the IN.
- The semantics of ANG and NG are somewhat tricky. In many ways, ANG is definite and NG is indefinite but this is not always the case (Paul et al. ress). For the purposes of this presentation, I assume ANG is definite but treat NG as semantically vacuous.
- Instead of word order, incorporation in Tagalog is dependent on voice. This indicates that the structural facts about TGN do not align with the traditional definition of noun incorporation.
- **Tagalog has pseudo noun incorporation (PNI). Some objects in agent voice are available for incorporation but no objects in patient voice can be incorporated.**
- Niuean and Hindi are described as PNI languages because they can incorporate NPs, not only N^Øs (Massam 2001, Dayal 2011). This differs

from Tagalog which can only incorporate N heads. I borrow the term PNI because it is references a phenomenon that is like incorporation in many respects but not all. Semantic incorporation is another possible label that may, in your opinion, more accurately fit with the description of Tagalog.

5 Semantics

- There are several semantic approaches to incorporation; type-shifting (Dayal 2011), semantic type (Van Geenhoven 1998), discourse representation theory (Farkas and de Swart 2003), and mode of composition (Chung and Ladusaw 2004) to name a few well known ones.
- Each approach has its own merits; they all describe the incorporated nominal (IN) as property denoting. The best fit for a Tagalog analysis is Chung and Ladusaw (2004). The treatment of Chamorro incorporation aligns with the Tagalog data.
- *Restriction and Saturation* (Chung and Ladusaw 2004):
 - The semantic differences between predicates with incorporation and those without it rests in their composition.
 - Two operations make this distinction: RESTRICT and SPECIFY
 - SPECIFY: Arguments saturate the verb by one degree.
 - RESTRICT: Does not saturate the verb, instead, it modifies it by lessening its degree of unsaturation by one.
 - INs are composed with the verb via RESTRICT and unincorporated nominals saturate the verb via SPECIFY.
 - Even though Tagalog is a PNI language, it shares the semantic features of incorporation so an analysis based on Restriction and Saturation is still well founded.
- RESTRICT simply ‘restricts’ the possible arguments in which a statement can be true. For instance, ‘Paul dessert-ate [blank]’ limits the possible things that Paul could have eaten in order for the statement to be true. It would be grammatical if the thing Paul ate was birthday cake and it would be ungrammatical if it were asparagus.
- Chamorro

- Chamorro has two possession verbs, *gäi* ‘have’ and *täi* ‘not have’, that are composed differently.
- The latter stipulates its internal argument must be composed via RESTRICT while the former does not.

– In addition to incorporated objects, Chamorro can optionally include an extra object which is not considered a syntactic argument but an adjunct. If an extra object is present, it must be composed after the incorporated nominal.

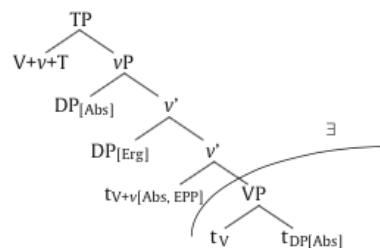
$$(4) \quad \text{Restrict}(\lambda y \lambda x. [\text{not have}'(y)(x)], \text{book}') \\ = \lambda y \lambda x. [\text{not have}'(y)(x) \& \text{book}'(y)]$$

$$(5) \quad \text{FA}(\lambda y \lambda x. [\text{have}'(y)(x)], \text{book}') \\ = \lambda x. [\text{have}'(\text{book})(x)]$$

- The composition of a verb with an IN via RESTRICT is given in (4) where it is left available for further composition with an extra object however if there is none, it undergoes existential closure (EC). The composition of a regular transitive verb with an object via SPECIFY is given in (5). This type of composition only leaves room for one more argument, presumably the subject.

6 Application to Tagalog

- My semantic analysis is primarily interested in NG and so I make some assumptions about ANG to clear the way.
- Assumption: ANG is treated as definite and of semantic type $\langle\langle e, t \rangle, e \rangle$. Using the *iota operator* to encode uniqueness, ANG has the following denotation $\lambda P_{\langle e, t \rangle} \lambda x. P(x)$. ANG arguments are not available for incorporation because they denote individuals and are of type e . They enter the derivation via function application (FA).
- NG has no semantic value and cannot license nominals. NG arguments are property denoting and are of type $\langle e, t \rangle$. In object position, nominals of this type are incomplete, so they can only enter the derivation via RESTRICT. INs are bound via EC. (Chung and Ladusaw 2004).



EC over nuclear scope). (Aldridge 2012:197)

$$(6) \quad \text{Derivation of the verb and IN in (1) (Incorporation)} \\ \text{EC}(\text{Restrict}(\lambda y \lambda x. [\text{buy}'(y)(x)], \text{book}')) \\ = \text{EC}(\lambda y \lambda x. [\text{buy}'(y)(x)] \& \text{book}'(y)) \\ = \lambda x \exists y [\text{buy}'(y)(x) \& \text{book}'(y)] \langle e, t \rangle$$

$$(7) \quad \text{Derivation of the verb and object in (2) (Non-incorporating)}$$

$$\begin{aligned} \text{FA}((\lambda y \lambda x. [buy'(y)(x)]), book') \\ = \lambda x. [buy'(b)(x)] \end{aligned} \quad \langle e, t \rangle$$

- Modified NG objects are not incorporated because they do not have GN. These arguments undergo *licensing by modification* following Dayal (2004) and Mathieu (2012). The modifier acts as a generalized quantifier and when merged with a nominal, yields semantic type $\langle \langle e, t \rangle, t \rangle$. This modified object undergoes quantifier raising and it merges with the verb after the verb has merged with the subject.

$$(8) \quad \text{Abridged derivation of (3) (Non-incorporating)}$$

$$\begin{aligned} \text{FA}(([\![ng\ pulang\ libro]\!])[\![Bumili\ ang\ babaе]\!]) \\ = \text{FA} ((\lambda Q \exists x. [red(x) \& book(x) \& Q(x)]) (\lambda x. buy(x)(woman))) \\ = \exists x. [red(x) \& book(x) \& buy(x)(woman)] \end{aligned} \quad t$$

- NG arguments rely on external forces for licensing. As unmodified objects, they incorporate with the verb and are bound by EC in the nuclear scope. As modified objects, they invoke licensing by modification. W.r.t. unmodified NG subjects, I suggest that they are like objects in that they enter the derivation via RESTRICT and then are bound by EC. This works but it raises a theoretical problem because EC traditionally only binds nominals that haven't been raised to the restrictive clause and are within the nuclear scope (Heim 1982).

7 Conclusion

- Tagalog is a PNI language because it shares the semantic characteristics of incorporation but not the structural characteristics. In particular, word order does not affect the semantics but voice does.
- By borrowing the Chamorro incorporation analysis by Chung and Ladusaw (2004) for Tagalog I demonstrate the semantic well-formedness of this data.
- Final thought: Is EC over the restrictive clause reasonable?

COMMENTS AND QUESTIONS WELCOME!

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Appendix A: Voice and word order

- There are several voices, (agent, patient, benefactive, locative/instrumental), this presentation focuses on agent voice (AV) and patient voice (PV) because they are accessed most frequently.
- The verbal infix, *-um-*, assigns ANG to the agent and NG to all other arguments: Agent voice
- The verbal infix, *-in-*, assigns ANG to the patient and NG to all other arguments: Patient voice
- Voice and word order are dependent on which copy of the object is interpreted at LF and which copy is pronounced at PF.
- Voice is a morphological indicator of which object copy is interpreted at LF. Patient voice interprets the higher copy and agent voice interprets the lower copy.
- Word order is the result of which object copy is pronounced at PF. For VSO, the lower copy is pronounced. For VOS, the higher copy is pronounced.

1	LF PF	higher copy higher copy	Patient voice VOS	Example 2b
2	LF PF	higher copy lower copy	Patient voice VSO	Example 2a
3	LF PF	lower copy higher copy	Agent voice VOS	Example 1b
4	LF PF	lower copy lower copy	Agent voice VSO	Example 1a

Figure 1: Four possible outcomes due to interpretation of the object

Appendix B: Specificity and general number

- The distribution of specificity has a correlation with the distribution of general number. Specific arguments do not have general number, some non-specific arguments do.
- At LF, specific NPs are interpreted outside of VP while non-specific NPs are interpreted within VP (Diesing 1992). This is manifested in different ways cross-linguistically.
- In Dutch and Icelandic, surface position indicates structural position of arguments (Rackowski 2002:78). In (a), the subject occupies [spec IP] position rendering a specific reading whereas in (b), an expletive occupies this position therefore placing the subject lower in the phrase.

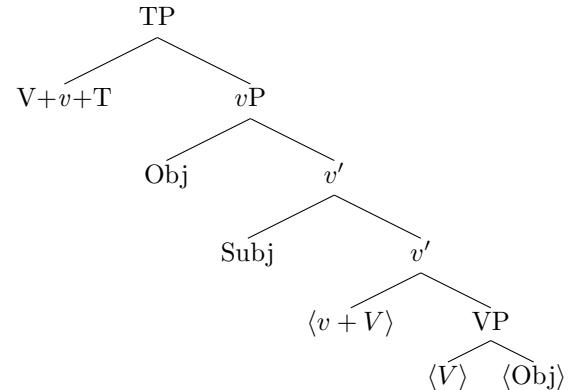


Figure 2: Illustrating higher and lower object copies

- (9) Dutch (Reuland 1988)

- a. Fred denkt dat [IP **twEE koeien** op het dak liggen].
Fred thinks that two cows on the roof lie
'Fred thinks that two (specific) cows are lying on the roof.'
- b. Fred denk dat [IP er [VP **twEE koeien** op het dak liggen]].
Fred thinks that there two cows on the roof lie
'Fred thinks that there are two cows lying on the roof.'

- Turkish uses nominal morphology to indicate structural position. The presence of the accusative suffix, *-i*, renders the object specific and the absence of this suffix renders it non-specific.

- (10) Turkish (Enç 1991:5)

- a. Ali bir kitab-i aldi
Ali one book-ACC bought
'A book is such that Ali bought it.'
- b. Ali bir kitap aldi.
Ali one book bought
'Ali bought some book or other.'

- Specificity in Tagalog is manifested through morphology as a result of voice.
- Subjects are mostly specific¹ but object specificity is dependent on voice. Patient voice objects are specific and agent voice objects are non-specific.
- Diesing's Mapping Hypothesis also applies to Tagalog specificity: Interpretation of the lower object copy at LF, yields a non-specific object and interpretation of the the higher object copy at LF yields a specific object.

¹See Paul et al. (ress) for exception.