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Definiteness determined by syntax

A case study in Tagalog

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Abstract Using Tagalog as a case study, this paper provides an analysis of a cross-linguistically well attested phenomenon, namely, cases in which a bare NP's syntactic position is linked to its interpretation as definite or indefinite. Previous approaches to this phenomenon, including analyses of Tagalog, appeal to specialized interpretational rules like Diesing's Mapping Hypothesis. I argue that such empirical patterns fall out of general compositional principles so long as type-shifting operators are available to the compositional system. I begin by weighing in on some long-standing issues in the semantic analysis of Tagalog bare NPs. I show that bare NPs which are thematic patients are interpreted as presuppositional definites if marked with nominative case and as narrow scope indefinites if marked with genitive case. Bare NPs are analyzed as basically predicative. If a bare NP is local to its selecting verb, such as a genitive case-marked patient, it is existentially quantified over by the verb itself, generating an indefinite interpretation. If a bare NP moves to a derived position, it must type-shift in order to avoid a type-mismatch, generating a definite interpretation. This paper explains how a grammatical system like Tagalog's, which lacks articles but demonstrates other morphosyntactic strategies for signaling (in)definiteness, can be integrated into our understanding of compositional semantics.

Keywords definiteness · Tagalog · Austronesian · syntax-semantics interface · quantification · type-shifting · bare NPs

1 Introduction

Not every language signals definiteness via articles. Several languages (such as Russian, Kazakh, Korean etc.) lack articles altogether. Ordinarily, bare NPs in such languages are understood as being interpreted as either definite or indefinite depending

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on contextual factors. However, certain languages which lack articles, such as Tagalog, are able to unambiguously signal the definiteness or indefiniteness of an NP via mechanisms besides articles, such as verbal affixes, case marking, and the grammatical relation of the NP (e.g., subject, direct object). The aim of this paper is to explain how languages which employ these kinds of morphosyntactic strategies for marking definiteness may integrated into our theories of compositional semantics. I show how Tagalog's system informs our understanding of the kinds of interpretations which are available for transitive verbs and their NP arguments.

The data in (1) illustrate how the (in)definiteness of patient NPs in Tagalog is signalled. In (1a), the choice of the *patient voice* infix *-in-* on the verb and nominative case on the patient NP derives a definite reading of the patient. In contrast, in (1b), the choice of the "actor voice" prefix *nag-* as well as genitive case marking on the patient NP results in an indefinite interpretation of the patient. Articles are not employed in either case. Although the case markers *ang* and *ng* superficially have the morphosyntactic appearance of articles, semantic evidence is presented in §3 and §5 that neither *ang* nor *ng* should be classified as articles or markers of definiteness, concurring with the findings of Paul et al. 2016. Given the absence of articles, the question is what compositional mechanisms account for the emergence of definiteness in examples like (1a), but not in (1b)?[1]

(1) a. *t⟨in⟩ago=ko* *ang* *kompyuter*
⟨PV.PERF⟩.hide=GEN.1SG NOM computer
I hid **the** computer.
b. *nag-tago=ako* *ng* *kompyuter*
AV.PERF-hide=NOM.1SG GEN computer
I hid **a** computer.

Previous accounts of article-free languages have made much use of the type-shifting theory of NP interpretation proposed by Partee 1986. According to this theory, NPs are type-ambiguous. Certain NPs are able to take on *e*-type, definite denotations provided that certain syntactic and semantic conditions hold. This conditions are outlined in later sections of this paper. For example, Chierchia 1998 cites Russian as an example of an article-free language which derives definite and indefinite readings of bare NPs by the covert application of different type-shifters, accounting for examples like the following.

(2) *V* *komnate* *byli* *malčik* *i* *devočka*
in room were boy and girl
In (the/a) room were (the/a) boy and (the/a) girl. Chierchia 1998:(27d)

According to his proposal, the use of type-shifters in the compositional semantics of these languages means that "bare arguments would occur freely and have a generic,

[1] Abbreviations used – ABS absolutive; ACC accusative; AGR agreement; ASP aspect; AV actor voice; BV benefactive voice; CAUS causative; COMP complementizer; FUT future; GEN genitive case; INDEF indefinite; INF infinitive; IV instrumental voice; LK linker; LV locative voice; NEG negation; NEUT neuter; NOM nominative case; NOMZ nominalizer; OBL oblique case; PERF perfect; PL plural; PROG progressive; PST past; PV patient voice; Q question particle; SBJNCTV subjunctive; SG singular; TOP topic.

definite, or indefinite meaning, depending, presumably, on the context" (Chierchia 1998:361). Languages like Tagalog appear to work differently. Although Tagalog examples like (1) contain (singular, count) bare NPs, just like the Russian example (2), the Tagalog bare NPs are *unambiguously* definite or indefinite. How is it that definiteness comes to be signalled in Tagalog?

I argue that the syntactic structure of the clause plays a large role in determining an NP's interpretation. Several previous analyses of Tagalog clause structure (e.g., Guilfoyle et al. 1992, Aldridge 2004, Rackowski and Richards 2005 and many others) propose that the alternations in voice and case in (1a) and (1b) represent underlying differences in the syntactic structure: the nominative case-marked patient in (1a) *ang kompyuter* occupies a "derived" position (i.e., the NP undergoes movement), while the genitive case-marked patient in (1b) *ng kompyuter* occupies a position local to its selecting verb. I build on these analyses and propose that this structural difference leads to an interpretive difference: bare NP patients which are syntactically local to their selecting verb are interpreted as narrow scope indefinites, while non-local bare NPs are not subject to such a constraint.

Similar observations about the link between the syntactic position of Tagalog NPs and their interpretations have been made by previous authors, such as Rackowski 2002, Aldridge 2004, Rackowski and Richards 2005, and Sabbagh 2016. In order to account for the interpretive differences between VP-internal NPs and VP-external NPs, these accounts have appealed to a theory of the syntax-semantic interface originating in Diesing 1992. Under these previous approaches, NPs which occupy a VP-internal position are subject to an interpretive constraint which determines that they receive some kind of indefinite or nonspecific interpretation. For example:

(3) a. "everything internal to vP is assigned a nonspecific interpretation" (Rackowski and Richards 2005:568)
b. "Diesing (1992) and others have shown that shifted objects in Germanic languages must receive presuppositional interpretations. If, however, the object remains inside VP ... [it] can undergo Existential Closure and receive a nonspecific interpretation." (Aldridge 2004:232)

One goal for this paper is develop a theory of *why* NPs which are syntactically local to their selecting verb are constrained to be interpreted as indefinites. I propose a way that this kind of analysis can be derived compositionally, without appealing to non-compositional interpretive constraints as in (3). Tagalog transitive verbs are interpreted as inherently quantificational, able to existentially quantify over their bare NP complements, adapting the proposal of Van Geenhoven 1998. The quantificational analysis of transitive verbs provides us with an understanding of how NP interpretation is crucially linked to the NP's syntactic position. NPs which are not complements of their selecting verbs (e.g., NPs which have undergone movement to a subject position) are "too far" from the verb to be existentially quantified by it. These moved NPs are instead therefore interpreted using type-shifting operators, potentially deriving definite interpretations.

I begin the discussion in §2 by describing the semantic distinction between nominative patients in patient voice sentences like (1a), and genitive patients in actor voice sentences like (1b). In §3, I then expand the empirical picture to overtly quantified

noun phrases. I show how the inclusion of a quantificational expression within the NP "overrides" the interpretive constraint outlined in (1): nominative patients which include certain quantificational expressions may be interpreted as indefinites. Therefore there is nothing about nominative case-marked NPs which is inherently definite. This observation provides a crucial argument for the view that definiteness in (1a) arises in the course of composition via type-shifting. Once the theory of type-shifting is laid out, I go on to explain the paper's compositional treatment of Tagalog patient NPs and how this informs our understanding of the link between an NP's syntactic position and its interpretation. I focus on definite nominative patients in §4, indefinite genitive patients in §5, and discuss the complete picture of the syntax-semantic interface in §6. §7 concludes.

2 The interpretation of Tagalog patient NPs

In this section, I investigate how bare NP patients of transitive verbs are interpreted. In particular, I focus on the effect of case and voice marking on the interpretation of these expressions. I argue that in Tagalog, the interpretation of a bare NP is in part signalled by voice and case marking. The observations in this section serve as an empirical basis for the theory built in the subsequent sections.

Previous accounts differ on the semantic effects of voice and case morphology on bare NP patients. Many previous accounts (e.g., Adams and Manaster-Ramer 1988, Maclachlan and Nakamura 1997, Rackowski 2002, Aldridge 2004, Rackowski and Richards 2005) have characterized the distinction as one of *specificity*. Nominative bare NP patients are claimed to be specific and genitive bare NP patients to be non-specific. However, evidence from this section suggests that this characterization is not sufficiently precise. Nominative bare NPs are not merely specific but definite. Here, I agree with the observations of previous authors, such as Foley and Van Valin 1984, Kroeger 1993, Foley 1998, and Paul et al. 2016.

First, I will lay out the basic morphosyntactic facts relevant to the discussion. Following terminology laid out in Foley 1998 and Himmelmann 2005a, Tagalog is a symmetrical voice language. This entails that Tagalog demonstrates an alternation between at least two voices, neither of which is morphologically unmarked. (4) provides an example of how the Tagalog verbal root *bili*, 'buy', may take either the infix *-um-* or the infix *-in-*. In finite clauses, roots like *bili* must appear with a voice affix. These features set the system of voice affixation in symmetrical voice languages apart from those in Indo-European languages, in which verbs may alternate between a morphologically unmarked voice (like an active) and a morphologically marked voice (like a passive).

(4) a. *b⟨um⟩ili* *ng* *isda* *sa* *tindahan* *ang* *lalaki*
⟨AV.PERF⟩.buy GEN fish OBL store NOM man
The man bought (a) fish at the store.

b. *b⟨in⟩ili* *ng* *lalaki* *sa* *tindahan* *ang* *isda*
⟨PV.PERF⟩.buy GEN man OBL store NOM fish
The man bought the fish at the store.

Like voice systems in other languages, the choice of voice affix is associated with particular case marking configurations of the verb's arguments. Actor voice affixes like *-um-* are associated with nominative case marking on the NP denoting the thematic actor. Patient voice affixes like *-in-* are associated with nominative case on the thematic patient.[2] In (4a) and (4b), nominative case is signalled by the case marker *ang*.

NPs which are not marked nominative but are nonetheless arguments of the verb are marked with genitive case. For example, the patient NP in the actor voice (4a) and the actor NP in the patient voice (4b) are marked with the genitive case marker *ng* (pronounced *nang*). The case is referred to as genitive based on its alternate use marking possessors as in (5).

(5) a. *...sa pagtatanggol ng bayan*
...OBL defense GEN country
...in the defense of the country. Schachter and Otanes 1982:p458

b. *...sa payo ng kaibigan niya*
...OBL advice GEN friend GEN.3SG
...on the advice of his friend. Schachter and Otanes 1982:p458

By Himmelmann's typological classification, Tagalog belongs to a subset of symmetrical voice languages referred to as "*Philippine-type languages*". Philippine-type languages demonstrate at least two morphologically distinct voices associated with non-actor thematic roles.[3,4] (6) provide examples (from Foley 1998) demonstrating some additional voices available in Tagalog: the locative voice suffix *-an* in (6a), the instrumental voice prefix *ipaN-*[5] in (6b), and the benefactive voice prefix *i-* in (6c). These are all associated with nominative case-marked NPs which are non-actors. In each example below, both NP arguments of the verb are not marked nominative and thus both receive genitive case.

(6) a. *bi-bil-han ng lalaki ng isda ang tindahan*
FUT-buy-LV GEN man GEN fish NOM store
The man will buy (a) fish at the store. Foley 1998:(1c)

b. *ipam-bi-bili ng lalaki ng isda ang salapi*
IV-FUT-buy GEN man GEN fish NOM money
The man will buy (a) fish with the money. Foley 1998:(1d)

[2] This morphological analysis is a simplification. Tagalog verbs are marked for aspect. Inchoative aspect is marked by the infix *-in-*, which deletes in the presence of *-um-*, as in (4a). For simplicity, I characterize *-um-* as dually marking inchoative and actor voice. Furthermore, patient voice is better characterized as being marked by the suffix *-in*, which deletes in the presence of the inchoative infix *-in-*. Here, I analyze *-in-* as dually marking patient voice and inchoative. Also note that perfect aspect in Tagalog is marked jointly by the inchoative infix and the lack of reduplication, thus *-in-* is glossed as PERF.

[3] In reference to the thematic role of this non-actor NP, Himmelmann (2005a:p113) uses the term "undergoer" in the sense of Foley and Van Valin 1984, instead of "patient".

[4] Besides this feature of voice alternations, Himmelmann also identifies phrase marking clitics like Tagalog case-markers and second position clitics as further features of Philippine-type languages.

[5] The *N* is a homorganic nasal.

c. *i-bi-bili* *ng* *lalaki* *ng* *isda* *ang* *bata*
BV-FUT-buy GEN man GEN fish NOM child
The man will buy (a) fish for the child. Foley 1998:(1e)

The syntactic and semantic analysis of structures like those in (6) is controversial (see Rackowski and Richards 2005, Aldridge 2006, Chen 2017 for some recent perspectives). The focus in this paper is on actor voice and patient voice structures, as in (4), leaving cases like (6) aside for future work.

As illustrated by the English translations in (4) and in a similar pair in (7), the voice and case alternation corresponds to a change in definiteness of the patient NP.[6] The genitive patient in (7a) is interpreted as an indefinite while the nominative patient in (7b) is interpreted as a definite. In the remainder of this section, I discuss the empirical diagnostics leading to this conclusion and why this conclusion should be preferred to alternative analyses, such as those which characterize the distinction as one of specificity (e.g., Rackowski 2002; Aldridge 2004; Rackowski and Richards 2005).

(7) a. *nag-tago=ako* *ng* *kompyuter*
PERF.AV-hide=NOM.1SG GEN computer
I hid a computer.
b. *t⟨in⟩ago=ko* *ang* *kompyuter*
⟨PV.PERF⟩.hide=GEN.1SG NOM computer
I hid the computer.

2.1 Commitments to existence and uniqueness

The definition I adopt for definiteness derives from Frege 1892, Russell 1905, Barwise and Cooper 1981, and many others. The utterance of a sentence with a definite, singular NP gives rise to the following two speaker commitments.[7]

(8) i. the *existence* of an individual instantiating the property denoted by the NP's descriptive content

[6] Again, the voice affixes interact with the inchoative infix *-in-*. In (7a), the actor voice prefix *nag* jointly marks actor voice and inchoativity. The patient voice suffix *-in* deletes in the presence of the inchoative infix *-in-*, as in (7b). For simplicity, in cases such as (7b), I gloss *-in-* as dually marking inchoative and patient voice. Again, the perfect in Tagalog is signalled by the combination of the inchoative and the lack of reduplication.

[7] The *existence* and *uniqueness* commitments are decoupled in this definition of definiteness. This approach contrasts an alternative approach in which definiteness is defined as *unique instantiation*, i.e., the existence of exactly one individual instantiating the description. The choice to decouple *existence* and *uniqueness* as separate commitments follows Coppock and Beaver 2012, 2016, who make an argument that a separation is necessary, based on their proposal that the English determiner *the* encodes for *uniqueness* but not *existence* (which emerges in English via the use of covert type-shifters). If *existence* and *uniqueness* are taken to be separable commitments, it follows that various expressions cross-linguistically which have been descriptively labeled as 'definite' may encode for both commitments, or only one. In light of this possibility, I reserve the term 'definite' in order to label expressions which encode for both commitments in (8) and I will eventually argue that Tagalog bare NP, nominative patients do indeed encode for both commitments and warrant classification as definite. By this definition, English *the*, under Coppock and Beaver's (2012, 2015) analysis would not meet the definitional criteria for definiteness.

ii. the *uniqueness* of this individual, i.e., no other (contextually relevant) individuals instantiate this property

Taken together, (i) and (ii) entail that the NP's descriptive content is instantiated by exactly one individual. In this subsection, I show that Tagalog bare nominative patient NPs give rise to the speaker commitments (i) and (ii).

The use of term "commitment' follows Condoravdi and Lauer 2011 (who in turn build on Gunlogson 2008). The minimal effect of the utterance of a declarative sentence is the bringing about of a doxastic commitment on the part of a speaker. Thus, if an utterance gives rise to a commitment p for an agent a, then a is publicly commited to act as though s/he believes p.[8] I take this notion of commitment to be a useful catch-all term for propositional meanings of utterances including at-issue content, conventional and conversational implicatures, presuppositions, and so on, approximating what Tonhauser et al. (2013) refer to as "implications". Regardless of whether a sentence S presupposes, asserts, or implicates p, an utterance of S engenders its speaker to publicly commit to p and thereby behave in a way consistent with believing p. Likewise, a listener who publicly accepts to adopting the content of S as his/her commitments is similarly engendered to behave in a way consistent with p.

Construing meanings as speaker commitments is helpful in designing stimuli for consultation with native speakers. This generalized characterization of commitments allows us to avoid the jargon and/or abstractness of questions of the form 'does sentence S entail/give rise to the proposition p?'. Construing commitments as constraints on an agent's future actions allows us to phrase questions in terms of an agent's expectations, goals, desires, and so on.

For example, (9) diagnoses whether bare nominative patients give rise to an *existence* commitment. If an agent overhears a (reliable) speaker utter a sentence with a bare nominative or genitive patient, is the agent constrained to act as though she believes that there is an individual instantiating the NP's descriptive content? Consultants were presented with a leading context (in English) setting up the speaker as an authority. From this example, both bare genitive and bare nominative patients give rise to a commitment of *existence*.

(9) *Context*: Maria is at the beach, and she wants to find at least one seashell. She overhears Juan and Karlos talking. Juan is an expert on finding seashells. Juan says "(a)/(b)":

a. *Doon* *sa* *kuweba,* *nakita* *ko* *ang* *kabibi*
there OBL cave, PERF.PV.see 1SG.GEN NOM seashell
In that cave, I saw the seashell.

b. *Doon* *sa* *kuweba,* *nakakita* *ako* *ng* *kabibi*
there OBL cave, PERF.AV.see 1SG.NOM GEN seashell
In that cave, I saw a seashell.

[8] If an agent a is publicly commited to believing p, a excludes possible future eventualities in which all of the following hold: (i) a doesn't act according to the commitment, and (ii) the commitment is not voided before any failure to observe the commitment, and (iii) the commitment does not count as violated. In sum, a commitment is a constraint on future (linguistic and non-linguistic) actions (Condoravdi and Lauer 2011:pp154–155).

Question: Based on this information, should Maria expect to find a seashell in that cave?

- *Consultant response with (a)*: Yes. Juan said that he found a shell there.
- *Consultant response with (b)*: Yes. Juan is an expert.

(10) diagnoses whether bare NP patients give rise to a commitment of *uniqueness*. Again, the leading context sets the speaker as an authority on the number of individuals instantiating the descriptive content. The judgements suggest that the utterance of a bare nominative patient (10a) gives rise to a *uniqueness* commitment, but a bare genitive patient does not. In fact, the judgement suggests that bare genitive patients may even give rise to the opposite commitment, *anti-uniqueness*, leading to the expectation that the play has multiple authors.[9]

(10) *Context*: Maria is leaving the theater. She just saw a play. She doesn't know whether the play she saw has multiple authors, or just one author, but she wants to go backstage and meet the author or authors of the play. Juan, who saw the same play, is a theater expert who knows exactly which author or authors wrote the play. Maria overhears Juan talking to Karlos about the play. Juan:

a. *Sa likod ng entablado, nakilala ko ang may-akda ng palabas*
OBL behind GEN stage, PERF.PV.meet GEN.1SG NOM author GEN play
Backstage, I met the author of the play.

b. *sa likod ng entablado, nakakilala ako ng may-akda ng palabas*
OBL behind GEN stage, PERF.AV.meet NOM.1SG GEN author GEN play
Backstage, I met an author of the play

Question: Based on this information, should Maria expect to find backstage that the play has one author or multiple authors?

- *Consultant response with (a)*: Yes, it definitely means just one author, because Juan said *ang may-akda*.
- *Consultant response with (b)*: No, nope, or maybe the one he met is an author, but not an author on that play.

The hypothesis that bare nominative patients give rise to *existence* and *uniqueness* commitments sheds light on the data in (11), adapted from Matthewson (1998:106). Two bare nominative patients in the same discourse with the same descriptive content are preferentially interpreted as coreferential. If a bare nominative patient gives rise to a commitment that its descriptive content is uniquely instantiated, then multiple bare nominative patients with the same descriptive content should be unable to refer to distinct individuals, thus forcing the coreferential interpretation observed in (11).

[9] See Collins 2016a and Collins 2016b for more discussion of the *anti-uniqueness* effect of genitive patients.

(11) *Nahuli* *ni* *Maria* *ang* *mamamatay tao* *noong* *Miyerkules*
PERF.PV.catch GEN Maria NOM murderer on Wednesday
at *nahuli* *ni* *Karlos* *ang* *mamamatay tao* *noong*
and PERF.PV.catch GEN Karlos NOM murderer on
Huwebes
Thursday.

Maria caught the murderer on Wednesday and Karlos caught the murderer on Thursday.

- *Comment 1*: It's the same murderer.
- *Comment 2*: Sounds like Maria let him go.

As expected under the current working hypothesis, (12), the actor voice variant of (11), does not force coreferentiality. If bare genitive patients *do not* give rise to a *uniqueness* commitment, we have no expectation that multiple bare genitive patients with identical descriptive content necessarily refer to the same individual, as observed in (12). In fact, judgements suggest the opposite preference, that multiple bare genitive patients are preferentially interpreted as non-coreferential.[10]

(12) *Naka-huli* *si* *Maria* *ng* *mamamatay tao* *noong* *Miyerkules*
PERF.AV-catch NOM Maria GEN murderer on Wednesday
at *naka-huli* *si* *Karlos* *ng* *mamamatay tao* *noong*
and PERF.AV-catch NOM Karlos GEN murderer on
Huwebes
Thursday

Maria caught a murderer on Wednesday and Karlos caught a murderer on Thursday.

- *Comment*: Fine, they are different murderers.

So far, the data suggests that bare nominative patients give rise to *existence* and *uniqueness* commitments, while bare genitive patients only give rise to an *existence* commitment, at least in declarative sentences without entailment canceling operators. This is summarized in Fig. 1.

2.2 Contextual felicity constraints

Starting with Frege 1892, definite expressions are ordinarily analyzed as presuppositional. Specifically, the *existence* and *uniqueness* commitments of definites are encoded as semantic presuppositions of the definite description. Evidence that Tagalog

[10] This analysis is somewhat simplifying. The *uniqueness* and *existence* are more precisely characterized as being defined over contextually restricted domains. For example, in (11), uniqueness holds of salient murderers, rather than all possible murderers. Standardly, the restricted domain can be derived by intersecting the denotation of the descriptive content with a contextually supplied restriction set. Ostensibly, the two nominative patients could be restricted by two distinct sets and thus referring to two distinct individuals. Thus, the judgement in (11) may be explained by assuming a pragmatic preference against shifting the evaluation of contextual parameters mid-discourse without any overt signalling.

	Existence	Uniqueness
Bare nominative patients	Yes	Yes
Bare genitive patients	Yes	No

Fig. 1 Commitments associated with bare NPs and case-marking

bare nominative patients encode *existence* and *uniqueness* as presuppositions would support the view that they should be classified as definites.

Following the characterization of presuppositions in Karttunen 1973, whenever an utterance containing a presupposition trigger is uttered sincerely, the speaker of the utterance assumes the triggered presuppositions hold and assumes his/her audience does also. Ordinarily, utterances of presupposition triggers in contexts which clearly do not support such assumptions are understood to give rise to judgements of infelicity. As Beaver (2001:9) states: "the presuppositions of a sentence are seen as conditions that contexts must obey in order for an utterance of the sentence to be felicitous in that context". With this intuition in mind, we can diagnose the presence of semantic presuppositions by testing whether the acceptability of the utterance is sensitive to certain contextual assumptions.

Tonhauser et al. (2013:pp75–76) provide a well worked out strategy for diagnosing whether or not an utterance imposes a felicity constraint on an utterance context. This technique is designed for the purposes of consultation with linguistically untrained native speakers and is therefore useful for investigating the presuppositional of definite expressions cross-linguistically.[11]

Tonhauser et al. refer to a notion of "strong contextual felicity constraint" (henceforth SCF constraint). SCF constraints are "imposed" by linguistic expressions, or triggers. If a trigger t imposes an SCF constraint p, then p is required to be a mutual assumption of the conversational participants in order for an utterance of t to be felicitous. The definition in (13) provides a diagnostic for determining whether a linguistic expression imposes an SCF constraint.

(13) **Diagnostic for strong contextual felicity**: Let S be an atomic sentence that contains trigger t which gives rise to a commitment m.[12]
   i. If uttering S is acceptable in a context in which m is unsettled, then trigger t does not impose a strong contextual felicity constraint with respect to m.
   ii. If uttering S is unacceptable in a context in which m is unsettled and acceptable in a minimally different context which entails m, then trigger t imposes a strong contextual felicity constraint with respect to m (cf. Tonhauser et al. 2013:76).

[11] For example, see Jasbi 2015 for an example of a careful investigation into definiteness in Persian employing the Tonhauser et al. strategy.

[12] I define a trigger as the smallest linguistic expression which gives rise to a commitment in the manner discussed in §2.1. Note here that the wording in (13) differs from Tonhauser et al. 2013, who label m as projective content. I employ the wording here in order to remain neutral as to whether the commitment m is projective or not. Projection is addressed in §2.3.

With this definition in mind, we can apply these diagnostics to Tagalog bare NP patients checking whether the commitments of the previous subsection are imposed as SCF constraints.

The following examples investigate the existence commitment imposed by nominative patients and genitive patients. Context A is (14) in neutral with respect to the *existence* of individuals who are singers, while Context B is entails *uniqueness*. Following (13), if an NP imposes an SCF constraint of *existence* (with respect to its descriptive content), it should be infelicitous in a context like A, but felicitous in a context like B.

(14) *Context A:* Maria and Juan approach a closed room. Maria walks in, shuts the door and stays in there for a while. Then, she comes out again and says to Juan:
Context B: Maria and Juan approach a closed room. They hear someone singing on the other side of the door. Maria walks in, shuts the door and stays in there for a while. Then, she emerges again and says to Juan:

Presented with these contexts, native speakers were asked to judge the felicity of nominative and genitive bare NP patients. The judgements reveal that in the *existence*-neutral context A, nominative patients are judged as infelicitous, but in the *existence*-positive context, nominative patients are felicitous, as in (15). According to the diagnostic, this suggests that nominative bare NP patients impose *existence* as an SCF constraint.

(15) *Na-kilala=ko* *ang* *mang-aawit* *sa* *kuwarto*
PERF.PV-meet=GEN.1SG NOM singer OBL room
I met the singer.
Consultant response with Context A: Sounds unnatural
Consultant response with Context B: Sounds natural, maybe she was in the room with the singer.

On the other hand, genitive bare NP patients are felicitous in either context, as in (16). This suggests that genitive bare NP patients do not impose an SCF constraint of *existence*.

(16) *Naka-kilala=ako* *ng* *mang-aawit* *sa* *kuwarto*
PERF.AV-meet=NOM.1SG GEN singer OBL room
I met a singer.
Consultant response with Context A: It's correct.
Consultant response with Context B: It's correct, but there's a possibility that the *mang-aawit* is not the one she heard singing.

The next context is designed to test whether nominative bare NP patients impose *uniqueness* as an SCF constraint. Note that we do not need to provide an analogous test for genitive patients as in the previous subsection, I argued they do not give rise to a commitment of *uniqueness*. The test is applied slightly differently here. Here, I give just one context, (17), but vary the descriptive content of the nominative patient.

(17) *Context:* Maria is calling an insurance agent about her damaged car. The insurance agent asks Maria which part of the car is damaged. Maria says {(18a) | (18b)}:

The utterances in (18) vary as to whether interlocutors are expected to assume *uniqueness*, given usual assumptions about the make-up of cars. Given that cars generally have more than one tire, the context in (17) does not entail *uniqueness* with respect to the nominative patient's descriptive content in (18a). However, as cars generally just have one steering wheel, the context in (17) does entail *uniqueness* with respect to the nominative's descriptive content in (18b). The judgements in (18) suggest that nominative bare NP patients impose an SCF constraint of *uniqueness*.

(18) a. *Na-sira=ko* *ang* *gulong*
PERF.PV-damage=GEN.1SG NOM tire
I damaged the tire. (*Comment:* It's unhelpful, she should answer which part.)
b. *Na-sira=ko* *ang* *manibela*
PERF.PV-damage=GEN.1SG NOM steering.wheel
I damaged the steering wheel. (*Comment:* That's correct.)

The context in (17) is set up in such a way as to avoid prior mention of the nominative patient's descriptive content. This is especially important when investigating definites. As is well known, definites may be used anaphorically, referring to a previously mentioned discourse referent. In such cases, the *uniqueness* commitment is weakened, allowing felicitous use of definites in contexts in which *uniqueness* is quite clearly not entailed. Observe how in the following English example (19), the prior mention of a tooth within the preceding discourse licenses the use of the definite in the target sentence, even though the referent of the definite "the tooth" need not be the only tooth in the utterance context, i.e., the dog is not necessarily assumed to just have one tooth.

(19) *Context:* Maria is a veterinarian. She is operating on a dog's diseased tooth.
Target: At first, she operated on the tooth.

Examples such as (19) are explained by appealing to a theory of contextual domain restriction. The uniqueness requirement of definiteness imposes a pragmatic pressure on interlocutors to restrict the quantificational domain of a definite NP to a singleton set by intersecting the denotation of the descriptive content with a contextually supplied salient set of individuals (e.g., individuals recently mentioned). Hence, the definite article in (19) is applied to the (singleton) set of teeth recently mentioned in the discourse.

We find uses of Tagalog nominative patients licensed in contexts which do not entail unique instantiation, so long as one individual is marked as more highly salient than the others by virtue of being mentioned in the preceding discourse. In (20) the context does not entail *uniqueness*, but the use of the bare nominative patient is licensed by a previous mention.

(20) *Context:* Juan is working in his garage. Maria and Carlos don't know how many cars he owns, one, two, or even more. They walk past his garage. Maria says to Carlos:

Naka-kita=ako *ng* *isa-ng* *kotse* *sa* *garahe.* *In-aayos*
PERF.AV-see=NOM.1SG GEN one.LK car OBL garage PV-PROG.fix
ni *Juan* *ang* *kotse.*
GEN Juan NOM car

I saw a car in the garage. Juan is fixing the car.

Data like (20) could suggest that the *uniqueness* constraint should be replaced by something like a *familiarity* constraint: bare nominative patients require their referent to be *discourse old*. In fact, Paul et al. 2016 suggest that Tagalog nominative NPs encode for *familiarity* by default, and lack a *uniqueness* commitment, following Arkoh and Matthewson's (2013) analysis of definites in Akan.

The data presented in this section point towards *uniqueness* being a commitment of at least some nominative NPs, namely bare NP patients. Although *familiarity* appropriately characterizes the interpretation of certain bare nominative patients, we find other examples in which bare nominative patients are able to introduce new discourse referents. For example, definites with descriptive content which is inherently understood as unique.

Several authors (e.g., Löbner 1985; Ludlow and Segal 2004; Horn and Abbott 2013; Beaver and Coppock 2015) note that the supposed familiarity requirement of definite NPs is suspended when the descriptive content of the NP ensures uniqueness. For example, superlatives ("the tallest man in the world") and definite NPs modified by "only" ("the only way out"), are felicitous when referring to discourse new individuals. This kind of pattern is also observed in Tagalog. In (21), the nominative patient introduces a discourse new individual (the "method" the protagonist thought of). As the NP contains the modifier *tangi*, 'only, unique', the *uniqueness* constraint is necessarily satisfied and the utterance is felicitous despite the discourse new status of their referent. For this reason, in this paper, I take an approach assuming that *uniqueness* is the characteristic commitment of definites, rather than *familiarity*.

(21) *g⟨in⟩awa=niya* *ang* *tangi-ng* *paraan* *na*
⟨PV.PERF⟩.do=GEN.3SG NOM only-LK method LK
na-isip=niya
PV.PERF-think=GEN.3SG

He did the only thing that he thought of.[13]

The data in this section suggest that the *existence* and *uniqueness* commitments of nominative bare NP patients are imposed as SCF constraints. The *existence* commitment of genitive bare NP patients is not imposed as an SCF constraint. This is summarized in Figure 2. Together with the projection data discussed in the following subsection, the findings of this subsection provide evidence that *existence* and *uniqueness* are presuppositions triggered by nominative bare NP patients, which therefore should be classified as definites.

[13] http://www.goodreads.com/book/show/25995593-my-love-my-hero

	Existence	Uniqueness
Bare nominative patients	Yes	Yes
Bare genitive patients	No	N/A

Fig. 2 SCF constraints triggered by Tagalog NPs

2.3 Projection

As argued in the previous subsection, if a linguistic expression imposes an SCF constraint, this constitutes evidence that the constraint is a semantic presupposition encoded by the expression. Traditionally, presuppositions are expected to not scopally interact with a certain class of operators ("holes" in the terminology of Karttunen 1973), including factive verbs, aspectual verbs, implicative verbs, negation, interrogative operators, and conditionals. For example, if a sentence S (such that $S \rightsquigarrow \phi$) presupposes p, then the negation of S, S' (such that $S \rightsquigarrow \neg\phi$) also presupposes p, and *mutatis mutandis* for any other hole operator. This property of presuppositions is commonly referred to as "projection".

For example, Beaver (2001:13) provides the set of examples in (22), adapting Frege's (1892) example. (22a) is taken to presuppose (22e). Embedding (22a) under negation, within a conditional antecedent or under an epistemic modal does not change this property: (22b–d) still presuppose (22e).

(22) a. [Whoever discovered the elliptic form of the planetary orbits] died in misery.
b. [Whoever discovered the elliptic form of the planetary orbits] did not die in misery.
c. If [whoever discovered the elliptic form of the planetary orbits] died in misery, he should have kept his mouth shut.
d. Perhaps [whoever discovered the elliptic form of the planetary orbits] died in misery.
e. Somebody discovered the elliptic form of the planetary orbits.

If *existence* and *uniqueness* are presuppositions triggered by bare nominative patients, we should expect them to project through operators such as negation, conditionals, and interrogative operators. Projection is usually diagnosed with so-called "family-of-sentences" (Chierchia and McConnell-Ginet 2000): the test sentence with implication p is embedded under negation, within a conditional antecedent, and within a polar question, and the subsequent complex sentences are tested as to whether there is still an implication of p. Tonhauser et al. (2013:83) define a set of diagnostics for projection employing the family-of-sentences technique. Their diagnostic is itself adapted from Matthewson 2004.

In short, say an expression t imposes an SCF constraint p in a positive declarative sentence S. If t is embedded in an interrogative/negated/conditionalized variant of S and continues to impose p as an SCF constraint, then p is projective.

Applying this diagnostic to Tagalog, we merely need to adjust previous tests of contextual felicity, using negated and interrogative sentences instead of positive, declaratives. (23) repeats the contexts in (14). Again, Context A is *existence*-neutral while Context B is *existence*-positive.

(23) *Context A:* Maria and Juan approach a closed room. Maria walks in, shuts the door and stays in there for a while. Then, she comes out again.
Context B: Maria and Juan approach a closed room. They hear someone singing on the other side of the door. Maria walks in, shuts the door and stays in there for a while. Then, she comes out again.

In (24a), an interrogative containing a bare nominative patient is infelicitous in the *existence*-neutral Context A, but felicitous in *existence*-positive Context B. Likewise, in (24b), a negative sentence containing a bare nominative patient gives rise to the same kind of judgements. As neither the interrogative operator nor negation cancels the SCF constraint of *existence* imposed by the nominative patient, *existence* is projective.

(24) a. *Na-kilala=mo* *ba* *ang* *mang-aawit* *sa* *kuwarto?*
PERF.PV-meet=GEN.2SG Q NOM singer OBL room
Juan says: Did you meet the singer?
– *Context A:* In this case, no one is singing so you can't ask that question, unless you're the only one that hears someone singing.
– *Context B: Accepted.*

b. *Hindi=ko* *na-kilala* *ang* *mang-aawit* *sa* *kuwarto*
not=GEN.1SG PERF.PV-meet NOM singer OBL room
Maria says: I didn't meet the singer.
– *Context A:* From Juan's perspective, the sentence is strange, because Juan doesn't know about the singer.
– *Context B: Accepted.*

The following examples, variants of (17), test whether the *uniqueness* commitment of nominative patients is projective. The use of a nominative patient is still marked in a *uniqueness*-neutral context, even when the patient is embedded in an interrogative (25a) or a negative sentence (25b).

(25) a. *Context:* Maria is calling an insurance agent about her damaged car. The insurance agent asks Maria which part of the car is damaged. She asks:
Na-sira=mo *ba* *ang* *gulong?*
PERF.PV-damage=GEN.2SG Q NOM tire
Did you damage the tire?
– *Comment:* It's a tiny bit strange because the agent isn't asking about a particular tire, she should use *ng*.

b. *Context:* Maria is calling an insurance agent about her damaged car. The insurance agent asks Maria which part of the car is *not* damaged. Maria says:

Hindi=ko *na-sira* *ang* *gulong*
not=GEN.1SG PERF.PV-damage NOM tire

I didn't damage the tire.

– *Comment:* It sounds like the wrong answer, she should say *which* tire is not damaged.

If the descriptive content is understood to be uniquely instantiated in the utterance context, the interrogative and negative examples are acceptable.

(26) a. *Context:* Maria is calling an insurance agent about her damaged car. The insurance agent asks Maria which part of the car is *not* damaged. She asks:
Na-sira=mo *ba* *ang* *manibela?*
PERF.PV-damage=GEN.2SG Q NOM steering.wheel

Did you damage the steering wheel? (*Accepted*)

b. *Context:* Maria is calling an insurance agent about her damaged car. The insurance agent asks Maria which part of the car is *not* damaged. Maria says:
Hindi=ko *na-sira* *ang* *manibela*
not=GEN.1SG PERF.PV-damage NOM steering.wheel

I didn't damage the steering wheel. (*Accepted*)

Bare nominative patients commit the speaker to the *existence* and *uniqueness* of an individual instantiating the descriptive content. These commitments are imposed as projective, contextual felicity constraints. Therefore, nominative bare NP patients show the hallmarks of Fregean presuppositional definites.

Earlier I argued that the *existence* commitment of bare genitive patients was not imposed as an SCF constraint. This commitment may nevertheless be projective. Potts 2005 describes a class of projective meanings which are not required to be mutually assumed by conversational participants. In order to diagnose whether the *existence* commitment of bare genitive patients fall into this category, we simply need to ask whether the commitment persists when the genitive is embedded beneath entailment canceling operators like interrogative operators, negation, and conditionals.

Modifying (9), (27) probes into whether whether the *existence* commitment of bare genitive patients is projective. The judgements suggest that interrogative operators, negation, and conditionals *do* cancel the *existence* commitment otherwise triggered by genitive patients. This suggests that the commitment is not projective.

(27) *Context*: Maria is at the beach, and she wants to find one or more seashells. She overhears Juan and Karlos talking. Juan is an expert on finding seashells. Juan says {(a)|(b)|(c)}.
Question: Based on this information, should Maria expect to find at least one seashell in that cave?

a. *Nakakita* *ka* *ba* *[ng* *kabibi]* *sa* *kuweba.*
PERF.PV.see NOM.1SG Q GEN seashell OBL cave

Did you see a seashell in the cave?

– *Comment*: It depends on the answer of Karlos to Juan, she needs more information.

	Commitment	SCF constraint	Projective
Bare nominative patients	Existence	Yes	Yes
	Uniqueness	Yes	Yes
Bare genitive patients	Existence	No	No

Fig. 3 Commitments of Tagalog patients and their behavior

b. *Hindi ako nakakita [ng kabibi] sa kuweba.*
not NOM.1SG PERF.PV.see GEN seashell OBL cave
I didn't see a seashell in that cave.
– *Comment*: It's clear that she can't find any shells.

c. *Kung nakakita ka [ng kabibi] sa kuweba,*
if PERF.PV.see NOM.1SG GEN seashell OBL cave,
sabihin mo sa akin.
tell.INF.PV GEN.2SG OBL.1SG
If you saw a seashell in that cave, let me know.
– *Comment*: There's a possibility that there are shells, but she needs more information.

2.4 Summary

The data presented in this and the previous subsections provide evidence that the interpretive effect that voice and case morphology have on patient NPs is best characterized as a shift in definiteness.

Nominative patients which are bare NPs presuppose *existence* and *uniqueness* like typical definites. Bare NP genitive patients, on the other hand, only give rise to an *existence* commitment which is cancelled by operators such as negation, thus behaving like (narrow scope) indefinites. This is summarized in Figure 3.

The conclusions here go against previous analyses which characterize nominative case-marked patients as merely "specific". I argue that these characterizations are not sufficiently precise. The characterization of nominative patients as specific opens up the possibility that they are interpreted as specific indefinites. However, the evidence presented in this section suggests such interpretations are not possible.

Since Russell 1905, many theories of definiteness assume that definites give rise to a *uniqueness* commitment, while indefinites do not. This hypothesis plays a large role in diagnosing NPs as definites or specific indefinites in semantic fieldwork. For example, Matthewson (1998) diagnoses a class of NPs in St'át'imcets as specific indefinites but not definites. Her conclusion is in part based on the observation that the NPs in question do not give rise to a *uniqueness* commitment.

The Tagalog data suggest the opposite conclusion. Bare nominative patients *do* give rise to a *uniqueness* commitment. The coreferentiality of (28a), a repeat of example (12), follows from the assumption of the nominative patient's *uniqueness*

commitment. Compare (28b) to the English example with “a certain murderer” or “a particular murderer”. These English specific indefinites are compatible with non-coreferential readings, unlike the Tagalog nominative patients. These kind of data suggest that a characterization of nominative patients in Tagalog as “specific” is too unrestricted, leaving open the possibility that nominative bare NP patients are interpreted as specific indefinites, which is not borne out by the data.

(28) a. *Nahuli* *ni* *Maria* *ang* *mamamatay tao* *noong*
PERF.PV.catch GEN Maria NOM murderer on
Miyerkules *at* *nahuli* *ni* *Karlos* *ang* *mamamatay tao*
Wednesday and PERF.PV.catch GEN Karlos NOM murderer
noong *Huwebes*
on Thursday.
Maria caught the murderer on Wednesday and Karlos caught the murderer on Thursday.
b. Maria caught a certain/particular murderer on Wednesday and Karlos a certain/particular murderer on Thursday.

This paper’s characterization of bare genitive patients as narrow scope indefinites is compatible with the observations in Sabbagh 2016 and Paul et al. 2016 that “specific” readings of bare genitive patients are possible. As genitive patients are characterized as indefinites, it is expected that at least in some instances, they take on specific intepretations. Compare English indefinites with *a(n)* which are able to take on specific or non-specific interpretations depending on structural and pragmatic factors. Tagalog genitive patients are argued in this paper to be obligatorily narrow scope. This means that specific readings are only possible in structures in which there is no wider scoping operator such as negation. Absent any such operator, nothing rules out specific readings of genitive patients.[14]

[14] Previous authors (e.g., McFarland 1978) have noted definite readings of bare genitive patients, especially in sentences with an initial actor NP. In general, genitive patients in verb-initial clauses are incompatible with descriptions which are mutually understood be interlocutors to be uniquely instantiated. For example, the uniquely instantiated genitive patient (29) is highly marked. Here, the pragmatic infelicity is comparable to the English translation with *a*. However, in clauses with an initial actor NP, such as the cleft in (29b), the same genitive patient becomes felicitous.

(29) a. ??s⟨*um*⟩ukat=ako [ng kabilugan ng ulo ni John]
⟨AV.PERF⟩.measure=NOM.1SG GEN circumference GEN head GEN John
??I measured a circumference of John’s head.
b. ako ang s⟨*um*⟩ukat [ng kabilugan ng ulo ni John]
NOM.1SG NOM ⟨AV.PERF⟩.measure GEN circumference GEN head GEN John
I’m the one who measured the circumference of John’s head.

Collins 2016b proposes that this effect is pragmatic. As in this paper, genitive patients are analyzed as simple indefinites. Like indefinites in English, genitive patients trigger a pragmatic ‘anti-uniqueness’ effect (see Heim 1991, Hawkins 1991 for discussion of English indefinites). Collins 2016b argues that cases like (29b) are not actually definites, but are indefinites which do not trigger the ‘anti-uniqueness’ effect. The contrast between the genitive patients in (29a) and (29b) can therefore be understood as a pragmatic effect, thus the existence of examples like (29b) are entirely compatible with the view of compositional semantics presented in this paper.

3 Quantificational NPs

So far in this paper, I have argued that nominative bare NP patients in Tagalog are interpreted as presuppositional definites. In this section, I argue against the hypothesis that the case marker *ang* has the semantics of a definite article like *the*. In doing so, I move beyond bare NPs and take a look at NPs which are modified by a quantificational expression.

Previous authors (Bell 1978 on Cebuano, Adams and Manaster-Ramer 1988, Kroeger 1993, Paul et al. 2016) have noted that nominative NPs which contain certain indefinite quantificational expressions, such as *isang* 'one', and *ibang* 'another', are interpreted as indefinites, despite the presence of the particle *ang*, ordinarily associated with definite interpretations.

This pattern is entirely general: nominative NPs inherit the quantificational force of a quantificational expression, if one is present. This generalization extends to various kinds of quantifiers, including indefinite quantifiers (30a), universal quantifiers (30b), proportional quantifiers (30c), and so on.

(30) a. *t⟨in⟩ago=ko* *ang* *isa-ng* *kompyuter*
⟨PV.PERF⟩.hide=GEN.1SG NOM one.LK computer
I hid one computer.

b. *t⟨in⟩ago=ko* *ang* *lahat* *ng* *kompyuter*
⟨PV.PERF⟩.hide=GEN.1SG NOM all GEN computer
I hid every computer.

c. *t⟨in⟩ago=ko* *ang* *karamihan* *ng* *mga* *kompyuter*
⟨PV.PERF⟩.hide=GEN.1SG NOM most GEN PL computer
I hid most computers.

Based on these kinds of data, I reject the hypothesis that *ang* contributes the semantics of a definite determiner. Examples like (30a) show that the addition of indefinite quantifer can create a quantificational indefinite. As *ang* may appear on both bare nominative patients and quantified nominative patients, and thus, on either indefinite or definite NPs, I conclude that *ang* does not encode for (in)definiteness. In this respect I concur with Paul et al. 2016, but not with Foley 1998, Himmelmann 1998, 2005b, who analyze *ang* as an article/determiner.

3.1 Is *ang* a definite article, specific article, or neither?

In this section I present the main arguments against *ang* being analyzed as a definite or specific article. As *ang* is clearly tied to the grammatical relation of the marked NP, its analysis as having a case marking function is uncontroversial. However, does it similarly encode for the definiteness or specificity of the NP?[15]

Evidence against this hypothesis comes from NPs modified by the quantificational expression *isang*. *isang* is itself morphologically complex, composed of the

[15] *A priori* this hypothesis has cross-linguistic precedence: Kroeger 1988 and Foley 1998 show how prenominal particles in Kimaragang, a related Philippine-type language, dually mark case and definiteness.

cardinal numeral *isa*, 'one', and the "linker"-morpheme *ng*.[16] The following examples show how NPs with *isang* exhibit indefinite interpretations, despite the presence of *ang*, therefore disfavoring the analysis of *ang* as a definite determiner.

The context in (31) does not entail the uniqueness of an individual instantiating the NP's descriptive content and therefore, as expected, a nominative bare NP is infelicitous (31a). A nominative NPs with *isang* is, in contrast, felicitous, as in (31b).

(31) *Context:* The teacher is running a seminar in which six students signed up:

a. *i-p⟨in⟩asa* *ng* *guro* *ang* *mag-aaral*
PV-⟨PERF⟩.pass GEN teacher NOM student

The teacher passed the student.
Consultant response: Not with six students, it sounds wrong.

b. *i-p⟨in⟩asa* *ng* *guro* *ang* *isa-ng* *mag-aaral*
PV-⟨PERF⟩.pass GEN teacher NOM one-LK student

The teacher passed one student.
Consultant response: Fine, it sounds like five of them failed.

The data in (32) provides evidence that two occurrences of nominative NPs with *isang* with identical descriptive content are not required to be coreferential. (32a), repeating an earlier example, shows that the use of nominative bare NPs forces coreferentiality, which I argued in the previous section follows from the posited uniqueness commitment. (32b) shows that the same effect is not present if the NPs contain *isang*.

(32) a. *Na-huli* *ni* *Maria* *ang* *mamamatay tao* *noong*
PERF.PV-catch GEN Maria NOM murderer on
Miyerkules *at* *na-huli* *ni* *Karlos* *ang* *mamamatay tao*
Wednesday and PERF.PV-catch GEN Karlos NOM murderer
noong *Huwebes*
on Thursday.

Maria caught the murderer on Wednesday and Karlos caught the murderer on Thursday. (*Comment*: Sounds like Maria let him go.)

b. *Na-huli* *ni* *Maria* *ang* *isa-ng* *mamamatay tao* *noong*
PERF.PV-catch GEN Maria NOM one-LK murderer on
Miyerkules *at* *na-huli* *ni* *Karlos* *ang* *isa-ng*
Wednesday and PERF.PV-catch GEN Karlos NOM one-LK
mamamatay tao *noong* *Huwebes*
murderer on Thursday.

Maria caught a murderer on Wednesday and Karlos caught a murderer on Thursday. (*Comment:* Sounds like two different murderers)

The following naturally occurring data further show nominative patients with *isang* are felicitous in contexts which do not support *uniqueness*. In (33a), the nominative patient's descriptive content is not uniquely instantiated in the contexts of a bookstore. In (33b), the bracketed nominative patient's descriptive content *malaking*

[16] See Scontras and Nicolae 2014 for discussion of this morpheme.

burger chain ‘large burger chain’ is not uniquely instantiated relative to American burger chains. In (33c), the descriptive content *dahon* ‘leaf’ is explicitly stated to be non-unique, referencing the spider’s choice of a leaf from a plurality of leaves fallen on the ground.

(33) a. *B⟨in⟩ili=ko* *ang* *isa-ng* *maliit* *na* *aklat* *sa* *Biola*
⟨PV.PERF⟩.buy=GEN.1SG NOM one-LK little LK book OBL Biola
Bookworm *tungkol* *sa* *Una-ng* *Dakila-ng* *Paggigising.*
Bookworm about OBL first-LK great-LK awakening
I bought a little book at the Biola Bookworm about the First Great Awakening.[17]

b. *At* *naging* *malaki-ng* *balita* *nito-ng* *nakaraa-ng* *araw*
and PERF.become big-LK news GEN.this-LK last-LK day
ang *Jollibee* *dahil* *b⟨in⟩ili* *nito* *ang* *isa-ng*
NOM Jollibee because ⟨PV.PERF⟩.buy GEN.this NOM one-LK
malaki-ng *burger* *chain* *sa* *Amerika.*
large-LK burger chain OBL America
Jollibee became big news this last week because it bought a big burger chain in America.[18]

c. *Maingat* *na* *p⟨in⟩i-pili* *ng* *gagamba* *ang* *isa-ng*
careful LK ⟨PERF⟩.PROG-choose GEN spider NOM one-LK
dahon, *marahil* *mula* *sa* *mga* *nakalapag* *sa* *lupa.*
leaf, probably from OBL PL fallen OBL ground
Carfully the (leaf-curling) spider chooses one leaf, probably from ones fallen on the ground.[19]

The above data are explained if we take bare nominative patients to impose a commitment of *uniqueness* while nominative patients with *isang* do not.

Like bare nominative patients and bare genitive patients, nominative patients with *isang* appear to commit the speaker to the *existence* of an individual instantiating the descriptive content. Unlike bare nominative patients, nominative patients with *isang* do not impose *existence* as an SCF constraint. They may be used in contexts which have not established the existence of individuals matching the descriptive content. In the following naturally occurring data (34), the nominative NPs represent the first mention of the discourse referent in question.

(34) a. *I-s⟨in⟩alaysay* *ni* *Jesus* *ang* *isa-ng* *talinhaga* *upang*
PV-⟨PERF⟩.recount GEN Jesus NOM one-LK parable in.order.to
ituro *sa* *kanila* *na* *dapat* *sila-ng* *laging* *manalangin*
teach OBL them LK must NOM.3SG-LK always.LK AV.pray
Jesus recounted a parable in order to teach them that they must always pray... (Lukas 18:1).

[17] http://www.rlhymersjr.com/Online_Sermons_Tagalog/2009/082209PM_ErrorsRevival.htm
[18] http://www.journal.com.ph/editorial/opinion/pinas-most-promising-daw
[19] http://wol.jw.org/tl/wol/d/r27/lp-tg/102002528#h=4

b. *Sa* *kanila-ng* *pamamalagi* *sa* *bahay* *ni* *Tazuna* *ay*
OBL they-LK stay OBL house GEN Tazuna TOP
na-kilala=nila *ang* *isa-ng* *bata* *na* *si* *Inari,*
PV.PERF-meet=GEN.3PL NOM one-lk child LK NOM Inari,
apo *ni* *Tazuna.*
grandson GEN Tazuna

During their stay at Tazuna's house, they met a boy, Inari, grandson of Tazuna.[20]

So far, nominative NPs with *isang* show characteristic properties of indefinites. They do not commit the speaker to *uniqueness* and do not require individuals instantiating the descriptive content to be established in the discourse.

The evidence in (35) shows that nominative NPs with *isang* behave like quantificational indefinites with respect to certain scopal properties. For example, (35) suggests that nominative patients with *isang* can scope within conditional clauses. The nominative patient with *isang* in (35a) is non-referential, the identity of the record being permitted to freely vary without altering the truth of the conditional as a whole. The same is not true of the bare nominative patient in (35b), whose referent is consistent across hypothesized possibilities. (35c) is a naturally occurring example of a nominative patient with *isang* scoping within a conditional clause.

(35) a. *Ma-i-inis* *si* *Mary* *kung* *i-pa-patugtog* *ni* *John*
AV-FUT-annoyed NOM Mary if PV-FUT-CAUS.play GEN John
ang *isa-ng* *rekord*
NOM one-LK record

Mary will be annoyed if John plays a record.
– *Comment:* Any record in general.

b. *Ma-i-inis* *si* *Mary* *kung* *i-pa-patugtog* *ni* *John*
AV-FUT-annoyed NOM Mary if PV-FUT-CAUS.play GEN John
ang *rekord*
NOM record

Mary will be annoyed if John plays the record.
– *Comment:* There's a specific record.

c. *Ano* *ang* *dapat* *ko-ng* *gaw-in* *kung*
what NOM must GEN.1SG-LK do-PV if
naka-ligta-an=ko *ang* *isa-ng* *dosis?*
PERF-omit-PV=GEN.1SG NOM one-LK dose

What do I do if I miss a dose?[21]

Similarly, the existential force introduced by nominative patients with *isang* can be cancelled by negation. The speaker of (36) is not committed to the existence of a mistake, and in fact asserts the non-existence of such a mistake.

[20] tl.wikipedia.org/wiki/Naruto

[21] http://www.bccdc.ca/NR/rdonlyres/8EE8C1E4-0227-4CEC-9A45-0C883C1D412E/0/IsoniazidMarch2015_TagV04.pdf

(36) *Siguro hindi=mo g⟨in⟩awa ang isa-ng tapat*
maybe not=GEN.1SG PERF.PV.make NOM one-LK true
“mapanganib” pagkakamali.
dangerous mistake
Maybe you didn’t make a truly “dangerous” mistake.[22]

The existential commitment imposed by definites, such as nominative bare NPs, is introduced as a semantic presupposition. We therefore expect it is not able to be targeted by operators like conditionals and negation. However, the existential commitment introduced by *isang* does appear to be targetable by such operators, suggesting the commitment is non-presuppositional. Therefore, the data presented in this section is problematic for an account which takes *ang* to encode for definiteness. While the nominative case marker *ang* does mark presuppositional definites (namely, bare NP patients), it also marks quantificational indefinites like those presented in this section.

Previous authors (e.g., Himmelmann 2005b, 2008) propose a less restrictive account according to which *ang* is a specific determiner, rather than a definite determiner. In order to evaluate this hypothesis, I appeal to the disjunctive definition of specificity in Farkas 1994. Farkas provides three potential definitions of specificity, informally characterized as in (37). NPs fitting any one of these categories could be classified as specific.

(37) a. *Epistemically specific*: An NP is epistemically specific if the NP refers to a uniquely identifiable individual in the mind of the speaker (but not necessarily in all conversational participants).
b. *Scopally specific*: An NP is scopally specific if its reference is rigid with respect to any quantificational operators.
c. *Partitively specific*: An NP is partitively specific if it quantifies over a set of individuals given in the discourse.

Examples like (35b,c) and (36) are particularly problematic for the hypotheses that *ang* marks epistemic specificity or scopal specificity. In these cases the existential commitment introduced by *isang* can be understood as scoping under another operator, ensuring that its reference is non-rigidly determined. Expanding beyond *isang*, we also find problems for the specificity analysis of *ang* when we look at non-interrogative uses of *wh*-items. In Tagalog, *wh*-items may be combined with particles (*man* or *kahit*) to form quantificational expressions. These expressions have several uses, including uses approximating English free relatives with *-ever* (e.g., *whatever Mary wants*), but also uses which approximate English indefinite DPs headed by *any*.

Combined with a negative element as in (38), *ang sinuman* is interpreted as a narrow scope indefinite. The NP here is non-referential and therefore cannot be considered either scopally or epistemically specific.

(38) *Hindi=ko s⟨in⟩isi ang sinu-man*
not=GEN.1SG ⟨PV.PERF⟩.blame NOM who-even
I don’t blame anyone.[23]

[22] http://nursecode.com/2015/10/top-nurse-interview-questions-and-answers/?lang=tl
[23] https://www.wattpad.com/145721681-upos-na-sigarilyo-simula-at-katapusan

Can the above examples with *ang* be considered partitively specific instead? Under this hypothesis, *ang* would signal the discourse given status of the overt descriptive content of the nominative phrase. However, we find data in which the descriptive content of an indefinite *ang* phrase is discourse new. The following example (39a) is a news headline, thus necessarily the first mention of the descriptive content. (39b) is the first sentence of the same article. Thus the use of the nominative indefinite here is incompatible with an analysis which requires *ang* to signal discourse givenness of the nominative's descriptive content.

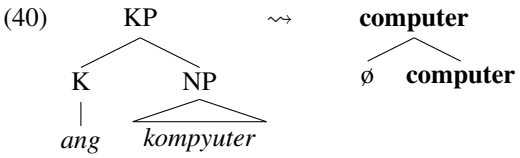
(39) a. *Unggoy naka-wala, k⟨in⟩agat ang isa-ng bata*
monkey runaway, ⟨PV.PERF⟩.bite NOM one-LK child
Runaway monkey, bites a child.

b. *In-atake at k⟨in⟩agat ng isa-ng nakawala-ng*
⟨PV.PERF⟩-attack and ⟨PV.PERF⟩-bite GEN one-LK runaway-LK
unggoy ang isa-ng bata sa Batac, Ilocos Norte
monkey NOM one-LK child OBL Batac, Ilocos Norte
A runaway monkey attacked and bit a child in Batac, Ilocos Norte.[24]

In sum, the data presented in this section provide evidence against any hypothesis which takes *ang*, and by extension nominative case-marked NPs, to have a consistent semantics encoding definiteness or specificity.

3.2 Quantificational force

I propose that *ang* is a case marker (with category label K), and is semantically vacuous. It can either combine directly with bare NPs, or combine with DPs including quantificational determiners such as *isang*. NPs denote in the $\langle e,t\rangle$ domain (i.e., they are interpreted as properties). *ang* combines with the NP and the KP inherits the property interpretation of the NP, as in (40). The definite semantics which we observe is contributed by type-shifting, to be discussed in §4.

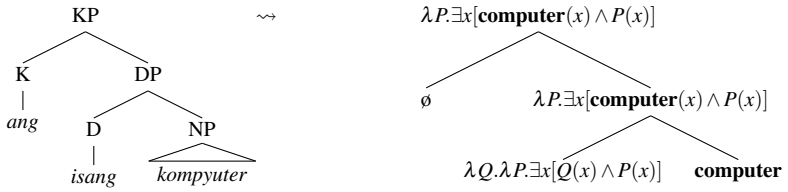
(40)


Quantificational expressions like *isang*, on the other hand, are analyzed as quantificational determiners – they combine with property-denoting NPs are create generalized quantifiers, as in (41). The syntactic category of *isang* in (41) is D. However, it is not crucial to the analysis that these expressions are syntactically classified as determiners of category D. In fact, several of the quantificational expressions in this subsection demonstrate quite different morphosyntactic properties, some selecting for a genitive case marker *ng*, some selecting for an oblique case marker *sa*, and some combining with the general purpose linker *-ng/na*. See Paul et al. 2016 and Cortes

[24] http://news.abs-cbn.com/video/nation/regions/03/06/15/unggoy-nakawala-kinagat-ang-isang-bata

et al. 2012 for more discussion on whether Tagalog even lexicalizes a category of determiners. What is crucial is that these quantificational expressions labeled D serve to create quantifier-denoting nominal expressions of type $\langle\langle e,t\rangle,t\rangle$.

(41)



The semantic contribution of *isang* in (41) is somewhat of an oversimplification. *isang* is analyzed as a quantificational indefinite in order to capture data like (35) in which *isang* scopes within a conditional. However, Paul et al. 2016 claim that nominative NPs with *isang* allow readings where the indefinite takes wide scope with respect to scope islands such as conditional antecedents and relative clauses. These data suggest that, at least on some readings, *isang* encodes for a different scope-taking mechanism, e.g., Reinhart's (1997) choice functions. I will leave the question of whether *isang* allows exceptional scope readings as a topic for future research. In any case, the compositional treatment in (41) is not affected: we can adopt an alternative analysis of *isang* as an indefinite determiner which allows exceptional wide scope, but retain the key claims in (41) that the NP is property-denoting, and that the case marker *ang* is semantically vacuous.

The semantically vacuous analysis of *ang* opens up the possibility that NPs with *ang* can contain all manner of quantificational expressions. Indeed, we find nominative patients appearing with a wide range of quantificational determiners. Below is a representative collection of naturally occurring examples demonstrating a range of different quantificational expressions. These include proportional quantifiers like *karamihan* 'most' (42a), *ilan* 'few' (42b), *marami* 'many' (42c), and universal quantifiers like *lahat* 'all/every' (42d) and *bawat* 'all/every' (42e). [25]

(42) a. *Na-kita=niya* *ang* *karamihan* *ng* *mga* *tao* *sa*
PERF.PV-see=GEN.3SG NOM most GEN PL person OBL
lipunan *bilang* *mga* *hangal*
society as PL fool

He saw most people in society as fools.[26]

[25] A reviewer points out that some of these lexical items such as *karamihan* 'most' and *lahat* 'all' could be instead analyzed as nouns (analogous to English 'plurality/majority' and 'whole/entirety' respectively). This alternative analysis would be consistent with the syntactic analysis of *ang* as a determiner. The analysis of expressions like *karamihan* and *lahat* as syntactically nominal is certainly possible, however, it does not obviously extend to other examples of quantificational expressions which demonstrate different, non-nominal morphosyntactic properties such as *isang* 'one' and *maraming* 'many', which attach to the head noun via the 'linker' *-ng*, and *bawat* which attaches directly to the head noun. As stated above (41), the label D should be taken as a loosely defined syntactic category, generally applicable to a range of quantificational expressions of potentially various morphosyntactic categories, including nominal and non-nominal quantificational expressions.

[26] http://www.filipinopod101.com/2013/07/11/advanced-audio-blog-s2-13-top-10-filipino-artists-ang-kiukok/

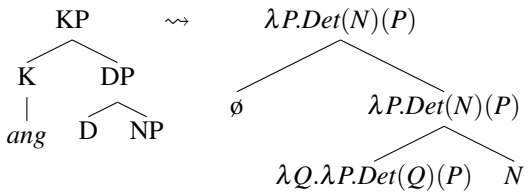
b. *Na-kita=nila* *ang* *ilan* *sa* *mga* *alagad* *ni* *Jesus*
PERF.PV-see=GEN.3PL NOM few OBL PL disciple GEN Jesus
na *k⟨um⟩a-kain* *ng* *tinapay*
LK ⟨AV⟩.PROG-eat GEN bread
They saw a few of Jesus's disciples eating bread. (Mark 7:2)

c. *Noong* *1947,* *na-kita=ko* *ang* *marami-ng* *bangkay*
in 1947, PERF.PV-see=GEN.1SG NOM many-LK body
sa *mga* *lansangan* *ng* *Taul.*
OBL PL street GEN Taul.
In 1947, I saw many bodies in the streets of Taul.[27]

d. *Huli-hin* *at* *pagmulta-hin* *ang* *lahat* *ng* *jeep* *na* *hi-himpil*
catch-PV and fine-PV NOM all GEN jeep LK FUT-stop
sa *kanto* *para* *mag-hintay* *ng* *pasahero.*
OBL curb for AV-pickup GEN passenger
Catch and fine all jeeps that park on the curb in order to pick up passengers.[28]

e. *Tulung-an=natin* *ang* *bawat* *babae* *na* *t⟨um⟩ayo* *sa*
help-PV=GEN.1PL NOM each woman LK AV.INF.stand OBL
sariling *mga* *paa*
her PL foot
We help each woman stand on her feet.[29]

These data suggest we can generalize the analysis in (41) to all quantificational determiners, as in (43).

(43)


The analysis I pursue in this paper can be compared to the proposal of Paul et al. (2016), who characterize definiteness as stemming from lexical features which are specified with binary values, such as [+/− DEF] (see Heim 2011 for a similar system). Under their analysis, *ang* is not specified for definiteness, but adopts either a [+DEF] or [−DEF] feature based on the surrounding syntactic context. If *ang* co-occupies the extended noun phrase with an indefinite determiner like *isang*, it takes on a [−DEF] feature. Otherwise, *ang* takes on a [+DEF] by default.

The analysis in (43) provides an explicit characterization of how the indefiniteness of the quantificational determiner *isang* is inherited by the whole nominative noun phrase. As this paper's analysis holds that the meaning of the noun phrase is

[27] http://wol.jw.org/tl/wol/d/r27/lp-tg/102005287?q=anghel&p=par
[28] http://www.autoindustriya.com/talkboard/shoulder-lane/6/survey-on-traffic/20147
[29] https://lenirobredo.com/leni-robredo-visits-jesses-tomb-asks-for-blessing-guidance/

directly determined by the lexical semantics of the quantificational determiner, there is no need to appeal to any additional features.

Like the analysis in Paul et al. 2016, my analysis takes the definiteness of the nominative bare NP to be determined by the NP's syntactic context. Following this insight, I provide a compositional analysis of how the definite interpretation of the bare NP arises. Using the Tagalog data, the remainder of the paper builds a theory of how the interpretation of an NP is determined by its syntactic context. I show how the data give us a better understanding of what kinds of constraints are imposed on both verbal and NP interpretations, and how these constraints interact with compositional semantics.

4 Composing patient voice

In this section, I provide an analysis of how nominative patients enter into semantic composition in patient voice sentences. I show how this compositional analysis derives the observed interpretations of nominative patients. I focus on definite readings which are generated if the patient is a bare NP. I propose that bare NP patients are property-denoting expressions, and for this reason, they are unable to compose with their immediate syntactic context. This compositional problem is resolved by type-shifting. The bare NP type-shifts via Partee's *iota*, which induces a definite interpretation of the NP. In this section, I focus on the composition of the nominative patient with the patient voice predicate. I leave the internal composition of the patient voice predicate aside until §6.

The analysis outlined in this section gives us an understanding of the differential behavior of bare NPs versus quantified NPs in languages which lack dedicated definite articles such as Tagalog. Property-denoting bare NPs in argumental positions must be type-shifted in order to compose with their selecting verbs, thereby inducing a definite interpretation. Thus even in languages which do not lexicalize definite articles, definite readings of NPs may be systematically derived, so long as the conditions for type-shifting are met.

4.1 Syntactic perspectives on Tagalog

First, I will lay out an account of the syntactic structure. I argue that the clause structure of Tagalog and, in particular, the structural positions of NPs play crucial roles in determining how NPs are interpreted. The syntactic analysis in this section draws on the proposal of Guilfoyle, Hung, and Travis 1992.

The starting point of the Guilfoyle, Hung, and Travis (henceforth GHT) account is the observation that morphosyntactic properties normally associated with subjecthood appear to be split between two possibly different NPs in Tagalog: the nominative NP (marked with *ang*) and the NP denoting the thematic actor (see Schachter 1976 for an overview of this issue). GHT discuss how the nominative NP may undergo *wh*-extraction (e.g., for topicalization, relativization, *wh*-question and cleft formation)

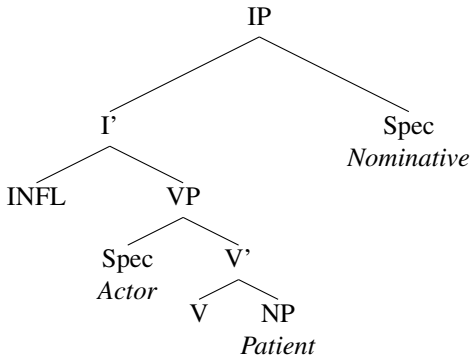
and license floating quantifiers. On the other hand, the actor NP licenses reflexive pronouns, is deleted in control clauses[30] and in imperatives.

GHT suggest a structural explanation for the split of subject properties between the nominative NP and the actor NP. They argue that two syntactic positions are associated with different properties ascribed to subjects. In Tagalog, these two positions may be simultaneously occupied by two different NPs: the nominative NP and the actor NP.

Under their account, the actor NP occupies a VP-internal specifier position, a position associated with licensing reflexives, imperative and control deletion. The nominative NP occupies the specifier of IP, the position from which *wh*-extraction and quantifier float is licensed.

The structure they propose is sketched in (44). Spec,VP is associated with the thematic actor. Spec,IP is associated with the *ang*-marked NP. Spec,IP is a derived position: the NP occupying this position binds a trace in its thematic position within the VP. Verb-initial word order is derived via a combination of V-to-I head movement (as proposed in Guilfoyle et al. 1992, Aldridge 2004, Pearson 2005), and a rightward branching Spec,IP.

(44)



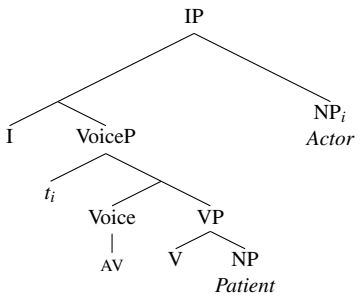
Starting with Hung 1988, much work (e.g., Rackowski 2002, Rackowski and Richards 2005, Aldridge 2004, 2006, Travis 2005, and several others) take the voice morpheme in Philippine languages to be instantiated on its own dedicated syntactic node, usually associated with the functional head *v* or Voice (as proposed by Kratzer 1996), the head responsible for selecting the agentive argument. See Travis 2010 for multiple arguments that verbal affixes and the verbal root should occupy distinct syntactic positions. (45a) sketches an actor voice structure, incorporating the VoiceP hypothesis. The NP denoting the thematic actor is introduced in Spec,VoiceP, and then moves to the Spec,IP subject position. (45b) is a patient voice structure. Here, the NP denoting the thematic patient is introduced in Comp,VP and raises to Spec,IP.[31,32]

[30] Though see Kroeger 1993 for arguments that the control facts are more complicated and vary depending on the predicate and modality.

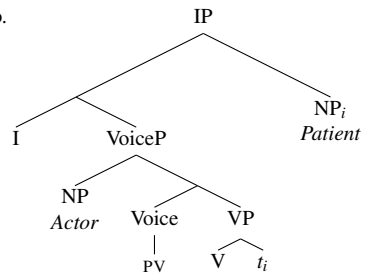
[31] For simplicity, the trees in (45) label arguments as NP, though they should be taken to be KPs, i.e., NPs embedded beneath a case marker.

[32] These structures predict that the nominative NP is always clause-final. However, Tagalog's word order is to some extent flexible. GHT discuss how variant word orders without clause-final nominatives can be

(45) a.



b.



In order to account for the case-marking on Tagalog NPs, GHT adapt the analysis of Malagasy in Hung 1988. NPs which remain in their thematic positions are case licensed by the voice morpheme. Extending this proposal to Tagalog, the actor voice morpheme licenses genitive case on the patient, while the patient voice morpheme licenses genitive case on the actor. In both cases, the NP which is not licensed (i.e., the NP matching the thematic role picked out by the voice morpheme), moves to Spec,IP. In this position, the NP receives nominative case from Infl.

GHT provide numerous pieces of evidence that the nominative NPs occupy a syntactically higher position than genitive NPs, as predicted by the structures in (45). These tests diagnose constituency even in a language like Tagalog which frequently allows postposing of prosodically heavy constituents. Firstly, nominative NPs can serve as the restrictor of the floating universal quantifier *lahat*, while genitive NPs cannot.

(46) a. *B⟨um⟩asa-ng* *lahat* *ng* *mga* *libro* *ang* *mga* *bata*
⟨AV.PERF⟩.read-LK all GEN PL book NOM PL child
All of the children read books (*not* *The children read all the books.)
Schachter and Otanes 1982:148

b. *B⟨in⟩asa-ng* *ng* *mga* *bata* *lahat* *ang* *mga* *libro*
⟨PV.PERF⟩.read-LK all GEN PL child NOM PL book
The children read all the books (*not* *All the children read books.)
Schachter and Otanes 1982:148

Under the analysis in GHT, the quantificational adverb *-ng lahat* is adjoined at the INFL layer, and therefore, nominative NPs move into a position which is syntactically local to the floating quantifier. In this position, it can compose with the quantifier, serving as its restriction.

We find other pieces of evidence that nominatives occupy a syntactically higher position than their genitive counterparts. Kroeger 1993 shows that only nominative NPs control number agreement on the verb, only nominative NPs are able to undergo raising from subordinate clauses, and only nominative NPs are able to undergo *wh*-movement.

derived. Firstly, pronominal arguments (including nominatives) are always expressed as clitics attached to the leftmost constituent of the clause. Secondly, nominative actors are permitted to remain in their thematic positions (Spec,VoiceP). Finally, Tagalog allows rightward shifting of prosodically prominent NPs and PPs.

We also find evidence for the constituency of verbal roots and patient NPs, as predicted by the GHT account above. For example, Tagalog has some idioms consisting of a transitive verbal root and a patient NP, including *magbilang ng poste* 'to be unemployed (lit. 'to count posts'), and *nagbukas ng dibdib* 'to propose marriage, to show compassion' (lit. 'to open one's breast'). As the examples below show, the voice alternations do not prevent an idiomatic meaning from emerging, as predicted if we assume that the root and patient form a constituent at some underlying level of representation.

(47) a. *...b⟨in⟩u-buks-an ang kanyang dibdib sa Islam*
PROG-open-PV NOM his breast OBL Islam
(Whoever Allah wills to guide) [he] opens his heart to Islam.[33]

b. *...hilingin-g mag-bukas ng dibdib sa akin.*
ask.PV-LK AV.open GEN breast OBL me
(holding his hand ... in the corner of the library,) and [he] asked to marry me.[34]

For the purposes of the analysis in this paper, I take the following structures in (45) to be the relevant inputs for the compositional semantics. Crucially, the NP marked with nominative case sits in a structurally high position, and binds a trace (or copy, depending on the theory of movement) in the NP's thematic position.

4.2 Definiteness via type-lowering

The syntactic analyses in (45) give us a more precise understanding of the compositional semantics of Tagalog sentences, and how definite interpretations of NPs arise. The structures in (45) divide clauses into subjects (the nominative-case-marked constituents in Spec,IP) and predicates (I' constituents containing the verb), schematized in (48)

(48) a. $[k\langle um\rangle ain]_{I'}$ $[si\ Juan]_{NP}$
⟨AV.PERF⟩.eat NOM Juan
Juan ate.

b. $[na\text{-}kita\ ni\ Maria]_{I'}$ $[si\ Juan]_{NP}$
PERF.PV-see GEN Maria NOM Juan
Maria saw Juan.

The compositional analysis I provide translates tree structures into expressions of a logical representation language. Following the notation of Beaver and Krahmer 2001, $(.)^\bullet$ is a function from trees to expressions in the representation language. $(si\ Juan)^\bullet$ is an e-type expression $\mathbf{j}$ which itself denotes the individual Juan. Predicates translate to $\langle e,t\rangle$-type expressions. Binary branching tree structures are composed via functional application unless otherwise stated.[35] A basic example like (48b)

[33] Quran 6:125

[34] https://mifilipino9.wordpress.com/2013/06/13/kuwento-ni-mabuti/

[35] Thus, if $\xi^\bullet$ is an expression of type $\langle\sigma,\tau\rangle$ and $\chi^\bullet$ is an expression of type σ, then $[\xi\ \chi]^\bullet = \xi^\bullet(\chi^\bullet)$.

is analyzed as in (49). Similar principles apply for nominative pronouns.[36] NB: the internal composition of the I' constituent (i.e., *nakita ni Maria*) is addressed in §6.

(49) a. $[\![\textit{si Juan}]\!]^{\bullet}_{\text{NP}} = \mathbf{j}$
b. $[\![\textit{nakita ni Maria}]\!]^{\bullet}_{\text{I'}} = \lambda x.\mathbf{see}(x)(\mathbf{m})$
c. $([\![\textit{nakita ni Maria}]\!]_{\text{I'}}, [\![\textit{si Juan}]\!]_{\text{NP}})^{\bullet} = \mathbf{see}(\mathbf{j})(\mathbf{m})$

The composition of quantificational DPs with predicates follows immediately from this proposal. The subjects in (50) translate to $\langle\langle e,t\rangle,t\rangle$-type expressions denoting generalized quantifiers. They compose directly with the I'-constituent, as in (51).

(50) a. *[k⟨um⟩ain]$_{I'}$ [ang lahat ng babae]$_{NP}$*
⟨AV.PERF⟩.eat NOM all GEN woman
Every woman ate.
b. *[na-kita ni Maria]$_{I'}$ [ang lahat ng babae]$_{NP}$*
PERF.PV-see GEN Maria NOM all GEN woman
Maria saw every woman.

(51) a. $[\![\textit{ang lahat ng babae}]\!]^{\bullet}_{\text{NP}} = \lambda P.\forall x[\mathbf{woman}(x) \rightarrow P(x)]$
b. $([\![\textit{nakita ni Maria}]\!]_{\text{I'}}, [\![\textit{ang lahat ng babae}]\!]_{\text{NP}})^{\bullet}$
$= \lambda P.\forall x[\mathbf{woman}(x) \rightarrow P(x)]\ \Big(\lambda y.\mathbf{see}(y)(\mathbf{m})\Big)$
$= \forall x[\mathbf{woman}(x) \rightarrow \mathbf{see}(x)(\mathbf{m})]$

As is standard, bare NPs translate to $\langle e,t\rangle$-type expressions which denote properties.[37] As bare NPs are property-denoting, they are the wrong type to compose with the similarly property-denoting I'-constituent, as neither constituent is the right to type to serve as the functor.

(52) *[na-kita ni Maria]$_{I'}$ [ang kompyuter]$_{NP}$*
PERF.PV-see GEN Maria NOM computer
Maria saw the computer.

Thus, without additional mechanisms, the IP-constituent has no interpretation.

(53) a. $[\![\textit{ang kompyuter}]\!]^{\bullet}_{\text{NP}} = \mathbf{computer}$
b. $[\![\textit{nakita ni Maria}]\!]^{\bullet}_{\text{I'}} = \lambda y.\mathbf{see}(y)(\mathbf{m})$
c. $([\![\textit{nakita ni Maria}]\!]_{\text{I'}}, [\![\textit{ang kompyuter}]\!]_{\text{NP}})^{\bullet} = \textit{undefined}$

Following the theories of Partee and Rooth 1983 and Partee 1986, which in turn draw from Dowty's (1979) lexical redundancy rules, I assume a limited set of available type-shifters – operations which alter the semantic type of certain expressions.

[36] Guilfoyle et al. 1992 don't provide an explicit analysis of pronominal clitics. I assume that they undergo cliticization in order to attach to the right edge of the main verb and that this movement is irrelevant for the purposes of semantic composition.

[37] Chierchia 1998 proposes a classification of language determining the basic type-translation of NPs. Under his analysis, languages whose NPs translate to $\langle e,t\rangle$-type expressions should exhibit mass/count distinctions, overt plural marking, and lack a classifier system (of the kind observed in Mandarin and Japanese). Tagalog does indeed exhibit these properties.

The shifters defined in Partee 1986 are proposed in order to shift the types of English NPs. The theory is designed to resolve compositional puzzles stemming from the observation that certain NPs in English appear to be argumental in some syntactic functions but predicative in others.

Central to the proposal is the notion that NPs are type-ambiguous: their translation into the representation language is not uniformly determined within the lexicon, but is systematically sensitive to the syntactic context of the NP. According to Partee's proposal, the type-shifters are "implicit" in the sense that they have no phonological reflex, accounting for the systematic ambiguity of NP-interpretation.

I spell out the proposal in this paper by positing that tree structures may have multiple translations into the representation language. I take the function $(.)^\bullet$ to represent the "basic" translation of tree structures (i.e., determined by the lexicon if the constituent is a terminal node, and by functional application otherwise). (54) states that the basic translation of a tree structure is always a possible translation.

(54) $[\xi]$ has an admissible translation $(\xi)^\bullet$.

We can then define inductively a set of possible alternative translations for any structure, given a set of type-shifters. The definition is recursive, allowing for successive applications of type-shifters.

(55) $[\xi]$ has an admissible translation $\delta(\alpha)$, if and only if,
   a. $[\xi]$ has an admissible translation α of type σ, and
   b. δ is a type-shifter of type $\langle\sigma,\tau\rangle$,

Partee 1986 defines the type-shifter IOTA, which denotes a function mapping a property to the unique individual satisfying the description, as in (56). *iota* has the semantics of a presuppositional definite article: *iota* applied to a property-denoting expression denotes the unique individual who instantiates that property. Thus, *iota* encodes for the *uniqueness* and *existence* presuppositions observed in the interpretation of definite NPs.

(56) $iota = \lambda P.\iota x[P(x)]$[38]

Assuming *iota* is available type-shifter in Tagalog, it should be possible to use *iota* in the interpretation of property-denoting bare NPs. Applying this to example (52), the basic translation of the bare NP is a property-denoting expression (57a). Its shifted translation is the individual who is the unique instantiator of that property (57b). This translation is admissible by (55) as there exists an available type shifter *iota* of the right type. As the shifted meaning of the NP is an *e*-type expression, composition via

[38] $\iota x[P(x)]$ is defined just in case P maps exactly one individual to *True*, and where defined, denotes that individual. This definition only extends to singular, count nouns (i.e., those which denote properties of atomic individuals). The proposal can be extended to nouns which denote properties of non-atomic individuals (plural and mass nouns) if *iota* is defined as picking out the individual who is unique maximal sum of the set P.

functional application proceeds as normal (57d).[39] The definite reading of the bare NP is therefore derived without the use of an article.[40]

(57) a. $[\textit{ang kompyuter}]^{\bullet}_{\text{NP}} = \textbf{computer}$
b. $\textit{iota}([\textit{ang kompyuter}]^{\bullet}_{\text{NP}}) = \iota x[\textbf{computer}(x)]$
c. $[\textit{nakita ni Maria}]^{\bullet}_{\text{I'}} = \lambda y.\textbf{see}(y)(\textbf{m})$
d. $((\textit{nakita ni Maria})^{\bullet}\ \textit{iota}(\textit{ang kompyuter})^{\bullet})^{\bullet}$
$= \lambda y.\textbf{see}(y)(\textbf{m})\ (\iota x[\textbf{computer}(x)])$
$= \textbf{see}(\iota x[\textbf{computer}(x)])(\textbf{m})$

4.3 Ruling out indefinite readings

As it stands, the theory is too permissive. Partee's theory also allows for type-shifters which shift properties into indefinite quantifiers. For example, the type-shifter *EX* (termed *A* by Partee) in (58) behaves essentially like a covert indefinite determiner. If such a type-shifter is permitted, nothing rules out its application to bare NPs, generating indefinite readings of those NPs.

(58) $EX = \lambda Q.\lambda P.\exists x[Q(x) \wedge P(x)]$

As Coppock and Beaver 2015 point out, this component of Partee's theory is necessary in order to explain how certain languages which lack determiners derive indefinite readings of bare NPs. For example, Russian bare NPs are able to take both indefinite and definite readings (59). This can be explained by assuming that both *iota* and *EX* are available type-shifting operations employed to resolve type-mismatches in Russian. Either may apply to the NP *knigu*, accounting for the amibiguous interpretation of (59).

(59) *Anna* *čitaet* *knigu*
Anna is.reading book
Anna is reading a/the book. Coppock and Beaver 2015:378

Why doesn't an analogous operation not take place in Tagalog, generating an unattested reading of nominative bare NP patients? (60) is a derivation of an indefinite reading of a nominative bare NP patient which is incorrectly allowed by the present theory. How do we rule out readings like (60)?

[39] A question arises as to why the property-denoting I'-constituent cannot be interpreted employing *iota*. This would give rise to an interpretation of (52) approximating "The unique thing that Maria saw is a computer." which is not a possible reading of (52). Here, I follow the intuition that Partee's theory is intended as a theory of NP-interpretation and therefore the application of type-shifters is sensitive to the syntactic category of the tree structure being interpreted. The rule in (55) can be made more precise by specifying that δ can apply to NP constituents only.

[40] How tied is this analysis to GHT's syntactic structure, i.e., is it crucial that the nominative NP occupy Spec,IP? Aldridge 2004, 2006 and Rackowski and Richards 2005 assume that nominative NPs move to a specifier of *v*P instead. The analysis presented in this section is compatible with these alternative syntactic analyses, so long as we make the standard assumption that the *v*'-constituent which is sister to the nominative NP under these analyses is specified to compose with individual-denoting expressions. The composition will proceed just like in (57), except for the alteration in the syntactic categories of the constituents.

(60) $(EX(\textit{ang kompyuter}^{\bullet})\ (\textit{nakita ni Maria})^{\bullet})^{\bullet}$
$= \exists x[\textbf{computer}(x) \wedge \textbf{see}(x)(\textbf{m})]$

Chierchia 1998 proposes a *Blocking Principle* in order to deal with this kind of problem. Chierchia proposes that English NPs denote in the $\langle e,t\rangle$ domain. Chierchia asks why (singular and count) bare NPs cannot appear in argumental positions in English, given the availability of type-shifters like *iota* and *EX*. He suggests that in English, the application of *iota* and *EX* on singular, count NPs is blocked by the presence of the English definite and indefinite articles, *the* and *a/some*. His "Blocking Principle" determines that the application of a type-shifter is blocked in languages which lexicalize an overt manifestation of the type-shifter, as in (61). Thus languages which lexicalize a definite determiner do not allow type-shifting via *iota*, while languages which lexicalize an indefinite determiner do not allow type-shifting via *EX*.

(61) *Blocking Principle* ('Type Shifting as Last Resort')
For any type shifting operation τ and any X:
$*\tau(X)$
if there is a determiner D such that for any set X in its domain,
$D(X) = \tau(X)$

Russian, according to Chierchia's proposal, lexicalizes neither an overt definite or indefinite article. Thus, by the *Blocking Principle*, either definite or indefinite readings of NPs are derivable via the *iota* or *EX* type-shifters respectively, accounting for the ambiguity of examples like (59).

As pointed out by Chierchia, we find languages in which bare NPs are interpreted as indefinites, while definites are expressed with the use of an article. Malagasy, Welsh, Irish, Hebrew, and Classical Greek meet this description (see, e.g., Lyons 1999:§2.1.1). For example, in Hebrew, the bare noun *iša*, 'woman', is interpreted as an indefinite, but as a definite when preceded by the particle *ha-*. This pattern falls out of Chierchia's Blocking Principle if *ha-* is analyzed as blocking the application of *iota* but not *EX*.

(62) a. *Iša* *halxa* *lasuper.*
woman go.PAST.3F.SG to.the.supermarket
A woman went to the supermarket.
b. *Ha-iša* *halxa* *lasuper.*
DEF-woman go.PAST.3F.SG to.the.supermarket
The woman went to the supermarket.

Tagalog, on the other hand, does not lexicalize a definite article. Therefore, the application of *iota* is not blocked. Tagalog does lexicalize an overt version of *EX* in (58), namely *isang*. As *isang* and *EX* encode the same meaning under this paper's analysis, as in (63), we expect that the covert application of *EX* should be blocked in Tagalog.

(63) a. $EX = \lambda Q.\lambda P.\textbf{one}(Q)(P)$
b. $\textit{isang}^{\bullet} = \lambda Q.\lambda P.\textbf{one}(Q)(P)$

This would explain why nominative bare NP patients appear to only be interpreted as definites. If Tagalog lacked an indefinite determiner like *isang*, or *isang* was semantically distinct from *EX* in some way, we would predict that indefinite readings of nominative bare NP patients should emerge.

We find this sort of pattern emerging in other languages in which bare NPs have definite interpretations, while indefinite NPs are expressed using a determiner. Farsi (64) and Teotitlán del Valle Zapotec (65), demonstrate a similar pattern to Taglaog. In these languages, bare singular NPs can express definiteness, while the indefinite variant is expressed using a determiner, *ye* in Farsi and *te* in Zapotec. This pattern is expected given Chierchia's Blocking Principle, where the overt indefinite determiner blocks the application of *EX*, just like *isang* in Tagalog.

(64) a. *Amir [keik o] xord*
Amir cake ACC ate.3SG
Amir ate the cake. Farsi (Jasbi 2015:p19)

b. *Amir [ye keik o] xord*
Amir INDEF cake ACC ate.3SG
Amir ate a cake. Farsi (Jasbi 2015:p20)

(65) a. *Kedih y-u'u-di [beez] le'n kanast*
NEG NEUT-be-NEG frog in basket
The frog isn't in the basket. Zapotec (Deal and Nee 2017:(38))

b. *Kedih y-u'u-di [te beez] le'n kanast*
NEG NEUT-be-NEG INDEF frog in basket
A frog isn't in the basket. Zapotec (Deal and Nee 2017:(38))

Although Chierchia's Blocking Principle is sufficiently explanatory for data concerning bare singular NPs, Chierchia (1998:374) and Dayal (2004) claim that the system must be enriched in order to handle the interpretation of bare plural NPs. Chierchia and Dayal claim that type-shifters must be ranked. Lower ranking type-shifters may only apply if higher ranking type-shifters are blocked or otherwise unavailable. Dayal claims that *iota* must be ranked above *EX*, essentially hard coding the observed preference for definite and kind interpretations of bare plurals over indefinite interpretations. Deal and Nee 2017 adopt Dayal's proposal in order to handle the interpretation of Zapotec bare plural NPs (as opposed to the bare singular NPs in (65)). As this paper exclusively deals with singular count bare NPs, Chierchia's Blocking Principle is sufficiently explanatory without the enrichment via ranking of type-shifters.

5 Composing actor voice

While nominative bare NP patients are interpreted as definites, genitive bare NP patients are interpreted as narrow scope indefinites. It has been argued that nominative bare NPs obtain a definite interpretation via the type-shifter *iota*. But this raises a question: why don't we see the same operation occur with genitive bare NPs? In this section, I provide an analysis of how actor voice sentences are composed semantically

and how bare NP patients of actor voice verbs obtain an indefinite interpretation, despite their lack of an indefinite article.

To start, we can easily discount the hypothesis that *ng* is an indefinite article. The data in (66) shows that *ng* does not always admit indefinite interpretations. In patient position, with an actor voice verb, the genitive patient is interpreted as a narrow scope indefinite, taking narrow scope with respect to negation (66a). However, when marking the actor NP in a patient voice sentence, as in (66b), the genitive NP is compatible with a definite interpretation, and thus the existential commitment of the actor NP outscopes negation.

(66) a. *Hindi naka-panood ang babae ng interesante-ng pelikula*
NEG PERF.AV-watch NOM woman GEN interesting-LK film
The woman didn't watch any interesting film. (*but not:* There is an interesting film that the woman didn't watch.)

b. *Hindi na-panood ng babae ang interesante-ng pelikula*
NEG PERF.AV-watch NOM woman GEN interesting-LK film
The woman didn't watch the interesting film. (*but not:* No woman watched the interesting film.)

We also find that the genitive case marker is able to mark NPs modified by a wide range of quantificational determiners. Based on these kinds of data, I take *ng* to be a simple case marker with a vacuous semantics, just as was proposed for *ang* in previous sections.

(67) a. *B⟨in⟩ili ng isa-ng hari ang larawang ipininta na*
PV.buy GEN one.LK king NOM painting LK
t⟨in⟩a-tawag na Mona Lisa
⟨PV⟩.PROG-call LK Mona Lisa
The painting, called the Mona Lisa, was bought by a king.[41]

b. *Dahil dito, madalas na b⟨in⟩i-bili ng karamihan ang*
consequently, often LK ⟨PV⟩.PROG-buy GEN most NOM
mga generic na gamot.
PL generic LK drug
Consequently, most often bought the generic drugs.[42]

c. *na-kita ng bawa't isa sa kanila ang bagay na ito.*
PERF.PV-see GEN all one OBL them NOM thing LK this
Everyone of them saw this thing.[43]

As genitive case is semantically vacuous, we must attribute the narrow scope indefinite semantics observed in examples like (66a) as being derived from additional factors, such as the NP's patient thematic role and/or its syntactic position.

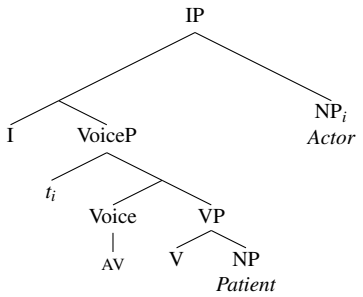
[41] https://tl.wikipedia.org/wiki/Mona_Lisa

[42] http://www.buhayofw.com/medical-advice/other-diseases-of-ofws/generic-versus-branded-medicines-benefits-disadvantages-gamot-553edf8cc719e#.V3WbcZMrKRs

[43] spiritualbuildingstones.info/190-tagalog.html

Under the approach I take in this paper, the crucial factor determining the interpretation of a patient NPs is its syntactic position. Recall that in §3, I offered a syntactic analysis in which genitive and nominative patients occupied different syntactic positions. Genitive patients remain in their VP-internal positions and compose directly with transitive verbal roots in V, as in (68).

(68)



Previous accounts (e.g., Rackowski 2002, Aldridge 2004, Rackowski and Richards 2005, Sabbagh 2016, Paul et al. 2016) have shared the syntactic assumption that genitive patients occupy a VP-internal position. All these accounts appeal to a theory of NP-interpretation according to which, the VP-internal syntactic position of the NP determines the NP's interpretation as narrow scope and/or nonspecific: "everything internal to vP is assigned a nonspecific interpretation" (Rackowski and Richards 2005:568). This kind of approach has origins in Diesing 1992, and is also pursued in Chomsky 2001 in an analysis of object shift.

In Diesing's view, NPs are interpreted as open formulas which are existentially closed in a narrow scope position relative to VP-external scope-taking operators. This component of Diesing's theory is spelled out via a filter on tree structures which is referred to as the Mapping Hypothesis. Structures in which VP-internal NPs are existentially closed in a wide scope position are ruled ungrammatical.

The analysis I pursue here shares the intuition that bare genitive patients are VP-internal, property-denoting, and are existentially closed at some point in the compositional semantics. However, I pursue an analysis which does not appeal to post-derivational constraints like the Mapping Hypothesis. Rather, the narrow scope interpretation of VP-internal NPs is derived by the lexical semantics of the NP itself and its selecting verb. The theory presented here provides an explanation of why bare NPs which are syntactically local to the selecting verb are interpreted as indefinites, while non-local NPs are not subject to this constraint, thus deriving some of the observations made in the original Diesing work compositionally.

Besides the syntactic assumptions discussed in the previous section, the analysis assumes the following semantic premises.

(69) A. Bare NP systematically denote properties.
B. The type-shifters *ident* and *iota* are available.
C. Transitive verbs existentially quantify over their patient arguments.

I justify each of these premises in turn and their role in deriving the observed facts. I take A and B to be relatively uncontroversial given the basic approach taken in this

paper. C is an approach originating in Carlson 1977, later adapted by Van Geenhoven 1998. In §5.1, I justify the assumption of C and I discuss how A and C jointly derive the indefinite interpretation of genitive bare NP patients.

5.1 Transitive verbs as existential quantifiers

To start, I will focus on simple examples like (70), explaining why the genitive patient must take narrow scope with respect to operators like negation in (70b).

(70) a. *k⟨um⟩ain* *ng* *pizza* *si* *Juan*
⟨AV.PERF⟩.eat GEN pizza NOM Juan
Juan ate a pizza.
b. *hindi* *k⟨um⟩ain* *ng* *pizza* *si* *Juan*
not ⟨AV.PERF⟩.eat GEN pizza NOM Juan
Juan didn't eat any pizza.

Standardly, transitive verbal roots like *kain*[44] translate into $\langle e, \langle e,t \rangle \rangle$-type relation-denoting expressions. Adopting this assumption for Tagalog, attempting to compose a transitive verb root with its property-denoting bare NP object results in a type-mismatch.

(71) a. $kain^{\bullet} = \lambda x.\lambda y.\mathbf{eat}(x)(y)$
b. $(ng\ pizza)^{\bullet} = \mathbf{pizza}$
c. $(kain^{\bullet}\ (ng\ pizza)^{\bullet})^{\bullet} = \textit{undefined}$

Following the analysis in §4, *ng pizza* has an admissible, definite interpretation, via the type-shifter *iota*. Thus, nothing prevents the type-mismatch in (71) being resolved by *iota*, generating an unattested definite reading of the genitive patient. Thus, (72) is incorrectly generated.

(72) $(kain^{\bullet}\ iota(ng\ pizza)^{\bullet})^{\bullet}$
$= \lambda x.\lambda y.\mathbf{eat}(x)(y)\ \left(\iota z[\mathbf{pizza}\ z]\right)$
$= \lambda y.\mathbf{eat}(\iota z[\mathbf{pizza}(z)])(y)$ *unattested reading*

I propose that we should revise the original assumption that transitive verbs denote relations, as in (71a). Under the revised proposal, Tagalog verbal roots themselves introduce the observed existential quantificational force, translating into expressions which include an existential quantifier, as in (73a). (73a) is a relation between an individual y and a property P which holds just in case x eats something that instantiates property P. Thus it is the verbal root itself which quantifies over the property-denoting NP. (73) provides a revised analysis of how transitive verbs compose directly with their bare NP patients, deriving an existentially quantified reading of the patient in (73c).

[44] In derivations like (71), we are dealing with the composition of the verbal root in V with its NP-arguments. Here, *kain* 'eat' lacks its actor voice infix *-um-*. V is represented as an uninflected verbal root in order to maintain consistency with the syntactic analysis assumed in this paper. The verbal root is category V, which concatenates with voice and aspect morphemes via head movement, which is irrelevant for the purposes of semantic composition (see Aldridge 2004).

(73) a. $kain^{\bullet} = \lambda P.\lambda y.\exists x[P(x) \wedge \mathbf{eat}(x)(y)]$
b. $(ng\ pizza)^{\bullet} = \mathbf{pizza}$
c. $(kain^{\bullet}\ (ng\ pizza)^{\bullet})^{\bullet} = \lambda P.\lambda y.\exists x[P(x) \wedge \mathbf{eat}(x)(y)]\ \left(\mathbf{pizza}\right)$
$= \lambda y.\exists x[\mathbf{pizza}(x) \wedge \mathbf{eat}(x)(y)]$

The analysis in (73c) explains why genitive bare NP objects are obligatorily narrow scope. As the existential quantification is introduced in the meaning of the verb itself, it necessarily scopes below operators such as conditionals and negation, which combine above the level of the VP. For example, if we combine the VP-meaning in (73c) with negation, as in (74a), we see how the negation introduced by the particle *hindi* necessarily scopes above the existential quantifier introduced by the verb, and a narrow scope interpretation of the indefinite patient is derived as in (74b).

(74) a. $hindi^{\bullet} = \lambda P.\neg P$
b. $(hindi^{\bullet}\ (kain\ ng\ pizza)^{\bullet})^{\bullet} = \lambda y.\neg\exists x[\mathbf{pizza}(x) \wedge \mathbf{eat}(x)(y)]$

The analysis provided here shares much with Van Geenhoven's (1998) account of how verbs in West Greenlandic compose with incorporated nouns, which in turn builds on a proposal from Carlson 1977. These incorporated nouns, like the Tagalog genitive patients discussed in this section, are bare NPs which are interpreted as obligatorily narrow scope indefinites. Like the present account, Van Geenhoven has bare NP patients denoting properties. Furthermore, transitive verbs in Van Geenhoven's account can have denotations like (73a), existentially quantifying over property-denoting bare NPs.

However, Van Geenhoven proposes that transitive verbs are systematically ambiguous. Transitive verbs may take on quantificational $\langle et, et\rangle$-type interpretations, as in (75a), or ordinary relational $\langle e, et\rangle$-type interpretations, as in (75b).

(75) a. $(eat_1)^{\bullet} = \lambda P.\lambda y.\exists x[P(x) \wedge \mathbf{eat}(x)(y)]$
b. $(eat_2)^{\bullet} = \lambda x.\lambda y.\mathbf{eat}(x)(y)$

This is how Van Geenhoven accounts for the observation that transitive verbs may combine with object NPs of distinct types. Under her account, bare NPs like *apples* in (76a) are property-denoting. In (76a), the verb takes on its quantificational meaning in (75a) and may quantify over the property-denoting object. Otherwise, the verb can be interpreted as the two-place relation in (75b) and combine with quantificational objects as in (76b).

(76) a. Tim ate apples. *quantificational verb*
b. Tim ate every apple. *relational verb*

Should we then take this approach for Tagalog, taking transitive verbs to be systematically ambiguous in the same way? Here, I depart from Van Geenhoven's analysis, taking the quantificational interpretation for transitive verbs to be basic, and other interpretations to be derived. This departure is necessary as the compositional system argued for in this paper crucially makes use of the type-shifter *iota*. Van Geenhoven's system, on the other hand, does not make use of *iota*. Thus in Van Geenhoven's system, relational verb meanings will encounter a type-mismatch when combining with property-denoting complements.

If we assume that (a) relational meanings of transitive verbs are possible and (b) *iota* is available, then nothing rules out the parse in (77). This generates a *definite* reading of the genitive patient, predicting that it will be a referential expression, exhibiting scopelessness, rather than the observed narrow scope behavior.

(77) a. $kain^{\bullet}_{rel} = \lambda x.\lambda y.\mathbf{eat}(x)(y)$
b. $(ng\ pizza)^{\bullet} = \mathbf{pizza}$
c. $(kain^{\bullet}_{rel}\ iota((ng\ pizza)^{\bullet}))^{\bullet}$
$= \lambda x.\lambda y.\mathbf{eat}(x)(y)\ \left(\iota z[\mathbf{pizza}(z)]\right)$
$= \lambda y.\mathbf{eat}(\iota z[\mathbf{pizza}(z)])(y)$ *unattested reading*

Given that we have good reasons to incorporate *iota* into the compositional system (as per §4), avoiding the parse in (77c) is difficult if relational meanings for transitive verbs are permitted. I propose to avoid this problem by not allowing the relational meaning for verbs in (77a). Instead, Tagalog transitive verbs are uniformly of the quantificational type in (75a), and thus always have the potential to existentially quantify over their complement. Cases analogous to (76b), with quantificational objects, will be handled in the next section using the type-shifter *ident*.

While this analysis is defended here for Tagalog, it extends nicely to some other languages. In many languages we find bare singular NP patients which are syntactically local to the verb, and are interpreted as indefinites. These are often referred to as pseudo incorporated objects: examples from three genetically unrelated languages follow in (78). These examples find an explanation if we assign the transitive verb a quantificational meaning as in (75a), which combines directly with and quantifies over its property-denoting bare NP complement. Besides the examples below, we also find similar patterns in Tongan (Ball 2008), Samoan (Collins 2017), Cantonese (Cheng and Sybesma 1999), Norwegian (Pereltsvaig 2006), Zapotec (Deal and Nee 2017), Spanish and Catalan (Espinal and McNally 2011), amongst others.

(78) a. *Kimea aqlab barā mā [še'r mi-xun-e]*
Kimea often for us poem ASP-read-3SG
Keam often reads poetry for us. Farsi (Karimi 2003:p91)
b. *ke [kumi mena ke nonofo ai] a lautolu*
SBJNCTV seek thing SBJNCTV settle there ABS they
... they would seek a place to settle. Niuean (Massam 2001:p160)
c. *Ben [kitap oku-du-m]*
I book read-PST-1SG
I was book-reading. Turkish (Von Heusinger and Kornfilt 2005:p5)

This is not to say that the quantificational analysis of transitive verbs should hold universally. We expect parametric variation cross-linguistically. As we have seen, Van Geenhoven 1998 argues that transitive verbs alternate between the quantificational and relational meanings. We also find cases in which transitive verbs combine with property-denoting complements, and then go on to combine with another (non-bare) NP, filling the same thematic role. Chung and Ladusaw 2004 observe this phenomenon in Chamorro.

(79) *Gäi-[ga']* *un* *ga'lagu* *ennao* *na* *patgun*
AGR.have-pet a dog that LK child
That child has a pet dog (lit. pet-has a dog).

This could be incorporated into the present framework by taking Chamorro incorporating verbs to (a) combine with property-denoting arguments just like Tagalog, but (b) fail to existentially close the individual argument instantiating the property. Compare the lexical entry for a transitive verb in (80) to the entry for Tagalog in (75a).[45,46]

(80) $g\ddot{a}i^{\bullet} = \lambda P.\lambda x.\lambda y.P(x) \wedge \mathbf{eat}(x)(y)$

Returning to Tagalog, one outstanding issue stems from data presented by Paul et al. 2016 which suggest that genitive indefinite patients are able to take exceptional scope. Paul et al. claim that some speakers allow a reading of (81) where the bare genitive patient has a specific referent. They analyze this reading as one where the genitive patient has taken exceptional scope out of the relative clause, a scope island.

(81) *Alam* *ng* *lahat* *ang* *dahilan* *kung* *bakit* *t⟨um⟩u-tulong* *ng* *bata*
know GEN all NOM reason Q why AV.PROG-help GEN child
si *Juan*
NOM Juan
Everyone knows the reason that Juan helps a child.

The present analysis maintains that the genitive patient is quantified over by the verb, thus necessarily scopes within the relative clause. These kinds of exceptional scope data can be reconciled with the present analysis using pragmatic mechanisms. Schwarzschild 2002 shows how wide scope readings of indefinites can be derived simply by assuming a contextual premise that the descriptive content (here, **child**) is instantiated by just one individual. If interlocutors assume that, within the conversational context, reference is restricted to just one salient child, then the appearance of the NP's scopelessness is explained. Under this kind of account, the semantic analysis in (73) is maintained, however, in contexts in which the speaker implictly restricts the domain of quantification to a set containing exactly one pizza, the appearance of scopelessness emerges.

[45] Burnett 2011 makes a related set of observations about French bare NP objects. She argues that these objects can be quantified over by adverbials and therefore the individual argument should be left open, motivating an analysis similar to Chung and Ladusaw's for Chamorro. The present account could extend to the French data using a lexical entry like (80) for French transitive verbs.

[46] Another point of variation is the anaphoric potential of the indefinite object. In Tagalog, bare NP genitive patients are able to license cross-sentential pronominal anaphora, so long as the existential commitment of the genitive patient is not outscoped by some other operator which blocks its anaphoric potential (like negation for instance). This is expected given the analysis in this section. However other languages with similar patterns do not allow bare NP objects to license cross-sentential anaphora. See Farkas and De Swart 2003 on Hungarian, Espinal and McNally 2011 on Catalan, Collins to appear on Samoan.

Collins (to appear) suggests a way these patterns could be brought into the present framework: in languages which block the anaphoric licensing potential of the bare NP object, the existential quantifier introduced by the transitive verb is embedded beneath the dynamic closure operator of Groenendijk and Stokhof 1991:p62–63.

5.2 Comparing accounts: non-specific readings of intensional objects

The previous section proposes a simple answer to the question of why genitive bare NP patients are interpreted as indefinites: they are existentially quantified by the verb itself by virtue of being the verb's syntactic sister. Here, I will compare this approach with the approach taken by several previous authors on the topic of Tagalog NP-interpretation. As stated earlier, several authors (Rackowski 2002, Aldridge 2004, Rackowski and Richards 2005, Sabbagh 2016, Paul et al. 2016) assign an indefinite (or nonspecific) interpretation to genitive patients by appealing to Diesing's Mapping Hypothesis: NPs which are syntactically internal to the VP are assigned a narrow scope interpretation.

The account I have presented in the previous subsection is fully compositional, in that the interpretations are derived by the lexical semantics of the constituent expressions alongside a small set of type-shifting operators. The Mapping Hypothesis relies on non-compositional interpretive principles like (82). This principle assumes, like the present account, that indefinites do not introduce any quantificational force of their own.

(82) Material from VP (such as a property-denoting indefinite) is mapped into the nuclear scope (of some quantifier)

For example, Diesing derives (83a) with a narrow scope reading of *some variations* according to the principle in (82). This reading of (83a) has a syntactic parse as in (83b), with the indefinite remaining internal to the VP at LF. The structure is interpreted according to the principle in (82). This ensures that the variable introduced by the indefinite is existentially closed *at the VP level*. This generates the narrow scope reading of *some variations*, as in (83c).

(83) a. Every cellist played some variations.
b. $[_{IP}$ every cellist$_x$ $[_{VP}\ t_x$ played some variations$_y$ $]]$
c. $[_{IP}$ every cellist$_x$ $\exists y[\mathbf{variations}(y) \wedge \mathbf{play}(y)(x)]]$

Van Geenhoven (1998:§2.3) points out some problems for this kind of approach. One issue is that the Mapping Hypothesis does not explain why bare NPs such as English bare plurals (and by extension, Tagalog genitive bare NPs) obligatorily receive narrow scope interpretations, as originally observed by Carlson 1977. The observation here is a clear parallel to the observation that Tagalog genitive bare NPs similarly receive narrow scope.

(84) John didn't play [variations].
He didn't play any variations but not *There are variations he didn't play.*

Diesing's analysis of the syntax-semantics interface allows for the possibility of quantifier raising, whereby NPs may covertly move out of their VP-internal positions and escape the interpretational constraints exemplified in (83). Therefore, the basic system does not prevent the NP *variations* in (84) from covertly raising out of the VP, escaping existential closure. The account, directly ported over to the Tagalog data, therefore does not explain why genitive bare NPs obligatorily take narrow scope with respect to negation, without additional stipulation.

A second issue concerns the interpretation of objects of intensional transitive verbs such as *search for*, *need*, and *want*. As presented in (83), the account employing the Mapping Hypothesis does not derive nonspecific readings of intensional objects. Consider the nonspecific reading of (85a). How should this reading be derived? If we covertly move *a purpose in life* via quantifier raising, we will generate a specific reading, as the indefinite will take scope over the intensional verb *need*.

However, leaving the indefinite in-situ fares no better. Directly porting the analysis of the extensional verb *play* (83) over to the intensional verb *need* derives the wrong result. As the system existentially quantifies the object *at the VP level*, the existential quantifier outscopes the verb itself. This generates a specific reading of the object, as in (85c), approximating "there is a purpose that John needs'.

(85) a. John needs [a purpose in life].
b. $[_{IP}$ John$_x$ $[_{VP}$ t_x needs a purpose$_y$ $]]$
c. $[_{IP}$ John$_x$ $\exists y[\mathbf{purpose}(y) \wedge \mathbf{need}(y)(x)]]$

Thus, an account employing the Mapping Hypothesis is left to explain how indefinite objects of intensional transitive verbs like *need* receive nonspecific readings. This point becomes crucial in the analysis of Tagalog genitive patients. As I outline below, Tagalog genitive bare NP patients appear to obligatorily receive nonspecific readings with intensional transitive verbs (ITVs). Here, I show how this paper's account can derive this observation.

Bare NP genitive patients with intensional verbs like *hanap* 'search' give rise to a nonspecific reading. In (86), the speaker does not express an intention to find any particular belt.

(86) *naghahanap=ako* *ng* *sinturon*
AV.PROG.search=NOM.1SG GEN belt
I am looking for a belt.
– *Comment:* No particular belt, any belt will do.

Non-specific patients of ITVs do not commit the speaker to the existence of an individual instantiating the description. For example, "*John is looking for a purpose in life*" does not entail the existence of such a purpose. (87) suggests that the existential commitment ordinarily introduced by genitive patients in extensional contexts is suspended when the genitive is the patient of an ITV.

(87) *naghahanap* *si* *Juan* *ng* *unikorn*
AV.PROG.search NOM Juan GEN unicorn
Juan is looking for a unicorn.
– *Comment:* The speaker doesn't necessarily believe in unicorns, Juan doesn't necessarily think they're real but he's looking for one.

Furthermore, non-specific patients of ITVs are unable to swap out their descriptive content for a co-extensional description. Say that two distinct descriptions are determined by the context to be instantiated by the same set of individuals, as in (88). Swapping out one description for the other changes the truth conditions of the sentence as a whole. This constitutes evidence that genitive bare NP patients are interpreted as non-specific when selected by ITVs like *hanap*.

(88) Context: *a small company's only electrical engineer is also the only female employee*

a. *naghahanap* *ang* *mananaliksik* *ng* *babaeng* *kawani*
AV.PROG.search NOM researcher GEN female.LK employee
The researcher is looking for a female employee

b. *naghahanap* *ang* *mananaliksik* *ng* *inhinyerong* *eletriko*
AV.PROG.search NOM researcher GEN engineer.LK electrical
The researcher is looking for an electrical engineer

– (88a) $\not\models$ (88b)
  – *Comment:* it's the same subset and if they're looking for the female employees, they're not necessarily looking for the electrical engineer.

These tests point towards genitive bare NPs having a nonspecific interpretation when they are patients of intensional transitive verbs. Note that this does not mean that genitive patients are always nonspecific (as claimed by previous authors such as Rackowski 2002), but simply that they take narrow scope with respect to other scope-taking operators in the sentence, including intensional transitive verbs.

Here I show how these facts are derived in this paper's proposed system. In order to do this, we need to move to an intensional semantics. This is achieved in (89) simply by relativizing the existing interpretations to a world argument. (89) demonstrate some basic $\langle e, \langle s,t \rangle \rangle$-type interpretations for NPs.

(89) a. $inhinyero^{\bullet} = \lambda x.\lambda w.\mathbf{engineer}_w(x)$
b. $babae^{\bullet} = \lambda x.\lambda w.\mathbf{woman}_w(x)$

Transitive verbs, extensional or intensional, are interpreted as relations between individuals and properties, existentially quantifying over property-denoting arguments. In the previous subsection, I proposed that extensional transitive verbs like *tago*, 'hide', are interpreted as in (90a). Can we propose a totally analogous semantics for intensional transitive verbs like *hanap*, 'search', as in (90)? This lexical entry combines with property-denoting objects as in (91).

(90) a. $tago^{\bullet} = \lambda P.\lambda y.\lambda w.\exists x[P_w(x) \wedge \mathbf{hide}_w(x)(y)]$
b. $hanap^{\bullet} = \lambda P.\lambda y.\lambda w.\exists x[P_w(x) \wedge \mathbf{search}_w(x)(y)]$

(91) a. $(hanap^{\bullet}_2\ inhinyero^{\bullet})^{\bullet} = \lambda x.\lambda w.\exists y[\mathbf{engineer}_w(y) \wedge \mathbf{search}_w(y)(x)]$
b. $(hanap^{\bullet}_2\ babae^{\bullet})^{\bullet} = \lambda x.\lambda w.\exists y[\mathbf{woman}_w(y) \wedge \mathbf{search}_w(y)(x)]$

This is the wrong result, incorrectly excluding non-specific readings of the patient NPs. The derived reading approximates "there is an engineer that x is searching for". Nothing predicts that the existential force should be cancelled by the intensional transitive verb, contra (87). Furthermore, if the contexts provides that the sets denoted by $\mathbf{engineer}_w$ and $\mathbf{woman}_w$ are identical, as in (88), (91b) and (91c) should be semantically equivalent, contra (88).

In order to fix this problem, I propose the semantics in (92). Here, I follow Zimmermann (1993, 2006) in taking ITVs to basically denote relations between individuals and properties. Adapting Quine's (1960) classic proposal, ITVs decompose into a modal operator, and an embedded relational predicate. *search* decomposes into

something approximating *try to find*, such that a proposition that *Juan is searching for a belt* can be roughly paraphrased as *Juan is trying to find a belt*. In (92), *hanap* is a relation between an individual x and a property P such that (roughly) x tries to find some individual who instantiates P.[47]

(92) $hanap^{\bullet} = \lambda P.\lambda x.\lambda w.\mathbf{try}_w\ (x)\ (\lambda v.\exists y[P_v\ y \wedge \mathbf{find}_v\ y\ x])$

(93) illustrates how this meaning of *hanap* composes with its bare NP argument.

(93) a. $(hanap^{\bullet}\ inhinyero^{\bullet})^{\bullet}$
$= \lambda x.\lambda w.\mathbf{try}_w\ (x)\ (\lambda v.\exists y[\mathbf{engineer}_v(y) \wedge \mathbf{find}_v(y)(x)])$
b. $(hanap^{\bullet}\ babae^{\bullet})^{\bullet} = \lambda x.\lambda w.\mathbf{try}_w\ (x)\ (\lambda v.\exists y[\mathbf{woman}_v(y) \wedge \mathbf{find}_v(y)(x)])$

The existential quantifier scopes below the modal operator **try**. Therefore, engineers in (93a) are only claimed to exist in worlds in which the agent's goals are realized, and not necessarily in the actual world. Thus, we correctly predict that ITVs have the potential to cancel the existential commitment otherwise conveyed by bare NP patients, as in (87). Furthermore, the representations in (93) derive the right results for the substitution data in (88). The agent may be trying to find individuals who instantiate the property **engineer** without any consideration of whether they instantiate **woman** in the actual world. Thus, the representation in (92) is successful in deriving representations which match native speaker judgements.

The approach of this paper is to provide quantificational meanings for transitive verbs, regardless of whether the verbs are extensional or intensional. Comparing the representations in (94), we see that the analysis formally encodes for a distinction between intensional and extensional transitive roots: intensional if the existential quantifier is lexically specified to scope below a modal operator, as in (94a), and extensional if not, as in (94b).

(94) a. $hanap^{\bullet} = \lambda P.\lambda y.\lambda w.\mathbf{try}_w\ (y)\ (\lambda v.\exists x[P_v(x) \wedge \mathbf{find}_v(x)(y)])$
b. $tago^{\bullet} = \lambda P.\lambda y.\lambda w.\exists x[P_w(x) \wedge \mathbf{hide}_w(x)(y)]]$

6 Syntax-sensitive NP interpretation

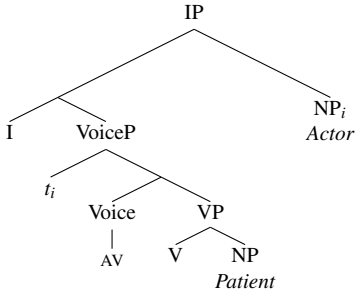
The account in this paper ties the interpretation of an NP to its syntactic position. The previous section argued that genitive bare NP patients compose directly with the selecting verbal root. This is expected if we assume the clause structure introduced in §4. This structure places genitive patients in the complement of VP, as in (95a). However, the account so far is left to explain the internal compositional of patient voice sentences.

According to the syntactic analysis in (95b), the nominative patient moves to the high position Spec,IP, binding a trace in its thematic position. How does this trace compose with the verbal root? Given the analysis in the previous section, Tagalog verbal roots compose with property-denoting expressions. Thus, in order to provide

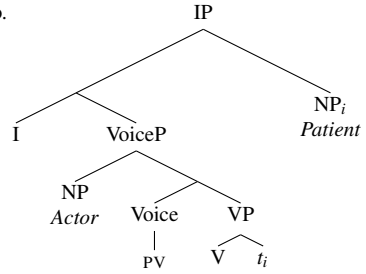
[47] To be precise, **try** is a universal quantifier over worlds, such that its prejacent is true in all worlds compatible with x's goals. $\lambda w.\mathbf{try}_w\ (x)\ (\lambda v.\exists y[P_v\ y \wedge \mathbf{find}_v\ y\ x]) = \lambda w.\forall v[\mathbf{goals}_w\ v\ x \rightarrow \exists y[P_v\ y \wedge \mathbf{find}_v\ y\ x]]$, where $(\mathbf{goals}_w\ v\ x)$ means that v is compatible with x's goals in w.

a comprehensive view of the composition of the Tagalog clause, we require an explanation of how verbal roots semantically combine with the patient's trace.

(95) a.



b.

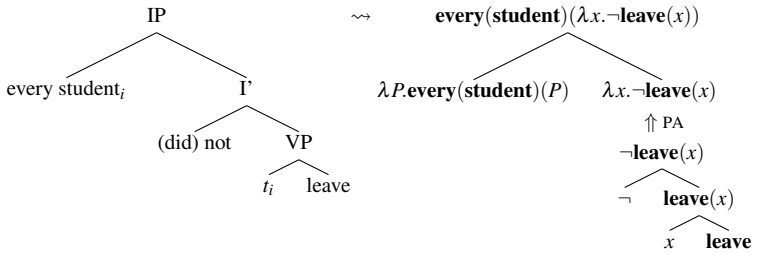


6.1 Interpreting moved NPs

Interpreting the structures in (95) requires a semantics for NP-movement. I appeal to the theory of quantifier raising as proposed by Heim and Kratzer 1998. This theory is designed to assign interpretations to syntactic structures which include moved NPs. While their theory is most commonly employed in order to account for the scope taking properties of quantificational NPs, their account of NP movement is intended to incorporate both overt and covert movement (see Heim and Kratzer 1998:§8). Most pertinent to the present paper, their proposal specifically deals with cases in which NPs raise from their VP-internal thematic positions to derived subject positions.

For example, Heim and Kratzer (1998:§8.4) provide a syntactic structure for a basic English sentence with negation similar to the structure in (96). The subject DP binds a co-indexed trace in a VP-internal position. The trace is interpreted as an individual variable combining with its selecting verb. Composition proceeds generating a type-*t* interpretation for the I'-constituent (i.e., $\neg$**leave**(x)). In order for this constituent to compose with the quantificational subject, a principle termed *predicate abstraction* is employed. *Predicate abstraction* ensures that the individual variable denoted by the trace is λ-bound. Thus the I'-constituent comes to denote the set of individuals which did not leave. This meaning can composed with the subject quantifier, generating a coherent interpretation for the entire sentence.

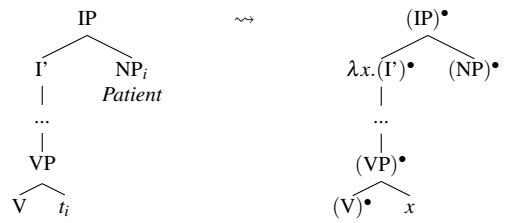
(96)



$\rightsquigarrow$

This is the approach I will take in accounting for the interpretation of NP-movement in Tagalog. Moving back to the Tagalog patient voice structures, here the patient NP moves from Comp,VP to Spec,IP, binding a trace in its original VP-internal position. The trace is interpreted as an individual variable, which is λ-bound at the I'-level, i.e., the point at which the moved NP composes with the rest of the sentence.

(97)



As the trace of the patient NP is an individual variable, it is the wrong type to compose with the verbal root, which composes with property-denoting expressions. For example, the root *tago*, 'hide' cannot compose with the *e*-type trace left by the moved patient NP in a patient voice sentence, as in (98). Note that *tago* is simply represented as an unaffixed root. This is because we are dealing with the composition of the V with its arguments, and based on the syntactic analyses presented in §4, voice and aspectual affixes are introduced into the structure above VP.

(98) a. $tago^{\bullet} = \lambda P.\lambda y.\exists x[P(x) \wedge \mathbf{hide}(x)(y)]$
b. $t_i^{\bullet} = z$
c. $(tago^{\bullet}\ t_i^{\bullet})^{\bullet} = \textit{undefined}$

Again we can appeal to the type-shifting theory of Partee (1986). Partee provides a means by which individual-denoting expressions may take on property-denoting expressions, using the type-shifter *ident*. *ident* is the inverse of *iota*.[48] Where *iota* maps properties onto their unique instantiators, *ident* maps individuals onto their uniquely characterizing properties, as in (99).

(99) $ident = \lambda x.\lambda y.y = x$

There's independent empirical evidence that the type-shifter *ident* is warranted. Expressions which have a basic *e*-type interpretation, such as pronouns and proper names, can constitute predicates in Tagalog, as in (100a). Partee's type-shifting system is intended to provide a unify argumental uses of NPs with apparently predicative uses. For example, in (100), two individual-denoting expressions are equated in a (copula-free) equational clause. Here, *ident* must be applied to one of the individual-denoting expressions in order for it to enter into semantic composition. In (100), *ident* is applied to the pronoun, shifting its denotation from the speaker to the property which uniquely instantiates the speaker.

(100) a. *[Ako]* *[si* *Juan]*
NOM.1SG NOM Juan
I'm Juan.
b. $ident(ako^{\bullet})\ si\ Juan^{\bullet} = (\lambda y.y = Sp\ (\mathbf{j}))$
$= (\mathbf{j} = Sp)$

Cases like (100) independently justify the use of *ident* within the compositional system. As *ident* is available for shifting *e*-type expressions to $\langle e,t\rangle$-type expressions, following Zimmermann 1993, we can use it in order to shift the *e*-type trace in

[48] As *iota* and *ident* are one another's inverse, the following equivalences hold: for all individuals d, $iota(ident(d)) = d$, and where P denotes a singleton set, $ident(iota(P)) = P$.

(98b) (introduced by the movement of the patient) into an $\langle e,t\rangle$-type expression, as in (101a). Thus, the transitive verbal root can combine with a property-denoting expression, as usual (101b). The resulting meaning in (101b) is the relational meaning ordinarily ascribed to transitive verbs. Thus, using Partee's *ident* type-shifter on the patient's trace, we can derive basic relational meaning for transitive verbs from the higher type quantificational meaning.

(101) a. $ident(t_i^{\bullet}) = \lambda x'.x' = z$

b. $(tago^{\bullet}\ ident(t_i^{\bullet}))^{\bullet} = \lambda P.\lambda y.\exists x[P(x) \wedge \mathbf{hide}(x)(y)]\ \left(\lambda x'.x' = z\right)$
$= \lambda y.\exists x[\lambda x'.x' = z\ (x) \wedge \mathbf{hide}(x)(y)]$
$= \lambda y.\exists x[x = z\ \wedge \mathbf{hide}(x)(y)]$
$= \lambda y.\mathbf{hide}(z)(y)$[49]

We can now construct the compositional semantics for a basic patient voice sentence as in (95b). The syntax of the basic patient voice sentence in (102) is sketched in (103).

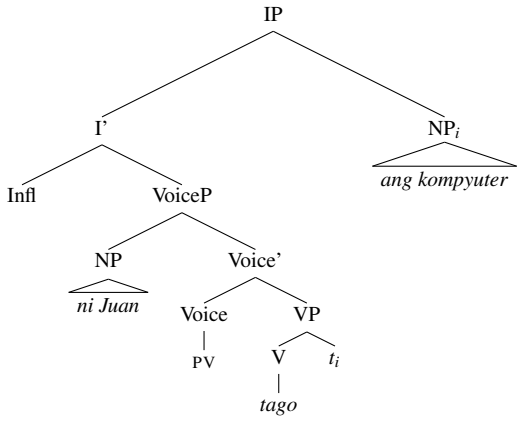
(102)

t⟨in⟩ago	*ni*	*Juan*	*ang*	*kompyuter*
⟨PV.PERF⟩.hide	GEN	Juan	NOM	computer

Juan hid the computer

Recall that the syntactic analysis assumes that the transitive verbal root is a lexical item of category V which composes with voice and aspectual affixes via head movement. I take the head movement operation involved to be irrelevant for the purposes of semantic composition. The syntactic structure in (103) is interpreted as in (104).[50]

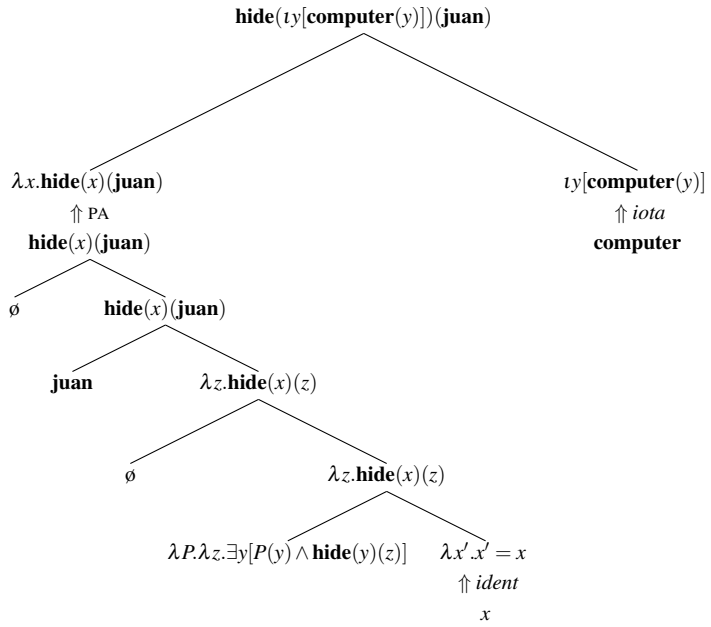
(103)



[49] The equivalence between the expressions $\lambda y.\exists x[x = z\ \wedge \mathbf{hide}(x)(y)]$ and $\lambda y.\mathbf{hide}(z)(y)$ is perhaps easier to see if we consider the set theoretic denotations. The statement $\exists x[x = z \wedge \mathbf{hide}(x)(y)]$ is true iff the singleton set containing the variable z, $\{z\}$, has one member in common with the set of individuals hidden by y, $\{x : \mathbf{hide}(x)(y)\}$. The only way for this statement to be true is if z is hidden by y, i.e., $\mathbf{hide}(z)(y)$.

[50] Although the voice morpheme is often semantically contentful (depending on the identity of the root), encoding information relating to the lexical aspect/aktionsart, I have not represented this information within the semantics of the voice morpheme or Infl within this representation for reasons of simplicity.

(104)

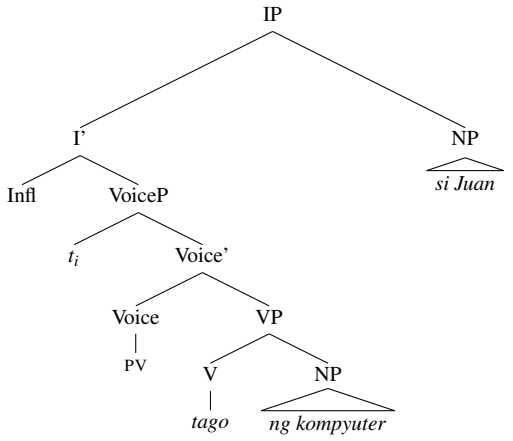


The analysis in (104) provides a complete picture of how patient voice sentences with definite bare NP patients semantically compose. The bare NP nominative patient (in Spec,IP) shifts via *iota* in order to compose with the predicate. This ensures its definite interpretation without the use of a definite article. Meanwhile, its trace shifts via *ident* in order to compose with the verbal root. As the nominative NP moves to a higher position, away from the transitive verb, it is unable to be existentially quantified by the verbal root. The patient must obtain quantificational force via other means, either by an overt quantificational determiner (like *isang*), or via type-shifting.

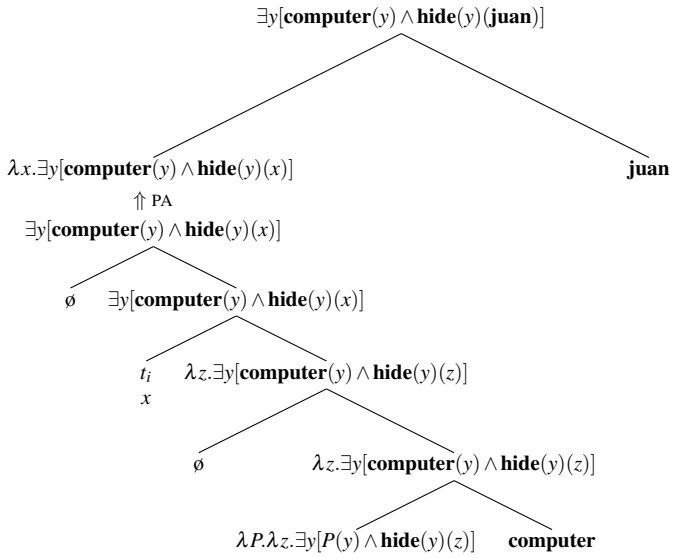
We can compare the patient voice structure to an analogous actor voice structure. (106) sketches the syntactic structure of the basic actor voice sentence (105). Here the actor NP moves to the subject position and the patient NP is VP-internal. The structure is interpreted as in (107).

(105) *nag-tago* *ng* *kompyuter* *si* *Juan*
⟨AV.PERF⟩.hide GEN computer NOM Juan
Juan hid a computer

(106)



(107)



This structure explains why genitive bare NP patients are interpreted as indefinites. As they are syntactically local to the verb, not moving to the higher position, they are existentially quantified by the verbal root itself.

As this paper focuses on the interpretational distinction between nominative and genitive patients, it leaves aside a full treatment of the interpretation of agents. In brief, the analysis in (104) suggests that the agent position in patient voice sentence is occupied by an individual-denoting expression. As expected, this position can be filled by individual-denoting expressions like proper names and pronouns (see (102) above for a basic example). However, there is also a prediction that genitive bare NP agents in patient voice sentences must be definites. As the position is occupied by individual-denoting expressions, bare NPs must type-shift via *iota* in this position, generating a definite interpretation. We do indeed find genitive bare NP agents with definite interpretations, (108) provides a basic example.

(108) *i-d⟨in⟩eklara* *ng* *presidente* *ng* *Pilipinas* *na* *iyon* *ang*
PV-⟨PERF⟩.declare GEN president GEN Philippines LK that NOM
wika-ng *pambansa.*
language-LK national
The president of the Philippines declared that it was the national language.

However, Paul et al. 2016 provide examples like (109) which suggest genitive bare NP agents do allow indefinite interpretations – (109) is cited as allowing a non-specific reading of the genitive agent. Data like these suggest other compositional principles are at play in the composition of agents, and that the analysis in (104) may be too restrictive as far as the agent position is concerned – a complete analysis must account for why we are able to obtain both definite and indefinite interpretations of genitive agents. One option is to allow the agent argument of the transitive verb to optionally lift to combine with property-denoting expresisons, just like we have seen for the patient position. As this paper focuses on the interpretation of patient arguments, I leave a full account of cases like (109) for future research.

(109) *Maari-ng* *kun-in* *ng* *magnanakaw* *ang* *pera=mo*
can-LK take-PV GEN thief NOM money=GEN.2SG
It might be the case that a thief takes your money. ($\exists > \Diamond$, $\Diamond > \exists$)
Paul et al. 2016:(38)

6.2 What does and doesn't shift via *ident*?

An outstanding question is why genitive bare NPs do not shift via *iota*, generating a definite reading. Recall that one of the reasons we rejected the relational analysis of transitive verbs in §5 was that it was compatible with definite interpretations of genitive patients, which should be ruled out. But under the present analysis, with both *iota* and *ident* available, what rules out the parse in (110)? Here, the bare NP shifts to an *e*-type interpretation via *iota*, and then back to a property interpretation via *ident*. The result is an incorrect definite reading of the patient. So far, nothing in the present analysis rules this out.

(110) $(tago^{\bullet}\ ident(iota(ng\ kompyuter^{\bullet})))^{\bullet}$
$= \lambda P.\lambda y.\exists x[P(x) \wedge \mathbf{hide}(x)(y)]\ \left(\lambda x'.x' = \iota z[\mathbf{computer}(z)]\right)$
$= \lambda y.\mathbf{hide}(\iota z[\mathbf{computer}(z)])(y)$ *unattested reading*

Throughout this paper, type-shifting (via *ident* and *iota*) has been employed in order to resolve type-mismatches in the compositional semantics. For example, moving a bare NP to the subject position creates a type-mismatch which can be resolved by lowering the bare NP's type via *iota*.

In (110), the property-denoting bare NP patient *ng kompyuter* is the *correct* type to compose with its selecting verb, which is looking for a property-type argument. Therefore, why is type-shifting employed here? The type-shifting in (110) does *not* resolve a type-mismatch.

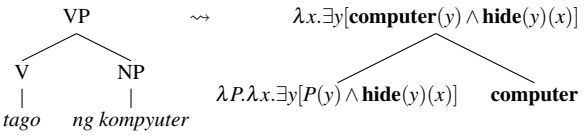
In order to rule out derivations like (110), I appeal to a type-shifting principle which can be roughly stated as "don't type-shift where no type-shifting is necessary" or "only type-shift if there is a type-mismatch". I spell this principle out in (111), a revision of the earlier type-shifting rule proposed in §4.

Now the type-shifting rule directly references the immediate syntactic context of the expression which undergoes type-shifting. The rule states that a type-shifter may only be applied to an expression X if X is unable to compose with (the translation of) its syntactic sister. Intuitively, type-shifters can only be applied in order to mend a type-mismatch.

(111) For all tree structures Z, with daughters X and Y, such that Y has an admissible translation α,
X has an admissible translation $\delta(\beta)$, if and only if,
a. X has an admissible translation β of type σ, and
b. δ is a type-shifter of type $\langle\sigma,\tau\rangle$, and
c. neither $\alpha(\beta)$ nor $\beta(\alpha)$ are defined.

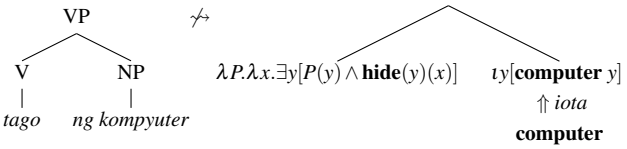
(112–114) illustrate how this principle blocks the application of type-shifting in structures with genitive bare NPs. In (112), we have a well-formed tree structure in which no type-shifting is employed. Here, the observed indefinite reading of the genitive is derived.

(112)



The rule in (111) blocks the NP from shifting via *iota*, as in (113). Here a type shifter has applied to the NP in violation of the clause (c) in (111): the non-type-shifted, $\langle e,t\rangle$-type meaning of the NP is already able to compose with its sister, as in (112). The type-shifter is not mending any type-mismatch here so it is not licensed.

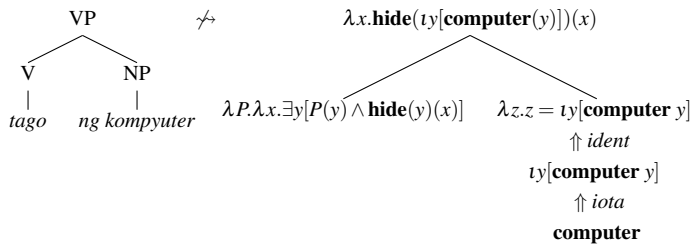
(113)



Structure blocked by clause (111c)

By (111), shifting the NP by *iota* (or any type-shifter) is blocked when the property-denoting NP occupies this Comp,VP syntactic position. As *iota*(**computer**) is not an admissible translation for the NP, the structure in (114) is also blocked. In this structure, the NP is shifted a second time by *ident*. Even though the application of *ident* does "mend" a type-mismatch, the structure is nevertheless ruled out by clause (a) of (111): the type-shifter is applying to an inadmissible translation of the NP.

(114)



Structure blocked by clause (111a)

The general aim here is to avoid a proliferation of type-shifters. Type-shifters are blocked in syntactic environments where their application does not mend a type-mismatch in the compositional semantics, as in (113). If the application of a type-shifter is blocked by this principle, it is not possible to amend the structure with successive applications of further type-shifters, as in (114).

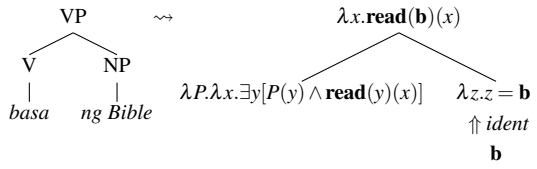
This is not to say that patients of actor voice verbs are never interpreted as definites. In fact, actor voice verbs permit proper name patients marked with genitive case, so long as the proper name has an inanimate referent. The possibility of such cases is expected under the present analysis which allows the shifting of individual-denoting expressions to property-denoting expressions via *ident*.

(115) a. *Na-nood* *si* *Alex* *ng* *Extra* *Challenge*
AV.PERF-watch NOM Alex GEN Extra Challenge
Alex watched Extra Challenge. Latrouite 2011:39c

b. *Nag-ba-basa* *si* *Alex* *sa* *kanila* *ng* *Bible*
AV-PROG-read NOM Alex OBL them GEN Bible
Alex is reading the bible to them. Latrouite 2011:39d

Given the availability of *ident* in the compositional system, such examples can be handled as in (116). The proper name is interpreted as an individual-denoting expression. Thus, it is unable to compose with the verbal root which only combines with property-denoting expressions. Therefore, the proper name must shift via *ident*, allowing composition to proceed. As the type-shifter repairs a mismatch, it does not violate the definition in (111).

(116)



Before moving on to other sorts of genitive case-marked patients, I will briefly discuss oblique case-marked patients of actor voice verbs. The factors governing alternations between genitive and oblique case on the patient argument are somewhat complex and worthy of their own paper, and so I will be unable to discuss oblique case-marked patients in full here. A future extension of this project is to reconcile these alternative realizations of actor voice patients with the present analysis.

Although genitive inanimate proper names are permitted, actor voice verbs do not allow genitive case-marked personal names or pronouns to surface in the patient position. These sorts of patients must appear with oblique case marking, as in the examples below.

(117) a. *Kinailangan* *ko* *pang* *[tumawag* *kay* *Dr.* *Dave]*
must.LK GEN.1SG still AV.INF.call OBL Dr Dave
I need to call Dr. Dave. Sabbagh 2016:20

b. *gaano* *karaming* *mga* *tao* *ay* *[nagdagdag* *sa* *akin]* *bilang*
how much.LK PL person TOP AV.add OBL 1SG as
isang *kaibigan*
one.LK friend
[I was surprised at] how many people added me as a friend.
Sabbagh 2016:19

Bare NP patients of actor voice verbs may also appear with this oblique case, though this is more prevalent in nominalizations and structures in which the thematic actor has been extracted to a pre-verbal position. Patients marked with the oblique case marker are generally interpreted as definites.

(118) a. *pag-patay* *sa* *pusa* *ng* *aso*
NOMZ-kill OBL cat GEN dog
The dog's killing of the cat. Shibatani 1988:(15a)

b. *Sino* *ang* *b⟨um⟩aril* *sa* *ibon?*
NOM.who NOM ⟨AV.PERF⟩.shoot OBL bird
Who shot the bird? McFarland 1978:p149

A possible analytical path follows from Sabbagh 2016, who argues that oblique case-marked patients, like the underlined expressions in (118), are syntactically distinct from genitive case-marked patients. Under Sabbagh's account, oblique case-marked patients must move to a position which is structurally higher than their underlying VP-position, therefore binding a VP-internal trace. Under this account, the morphosyntactic features determining a nominal's status as a proper name or pronoun would be forced to undertake this movement obligatorily, assuring their oblique case-marking.

Following the general approach of this paper, the effect of this syntactic movement would be to ensure that bare NP oblique patients are interpreted like bare NP nominative patients. As they move to a higher position, they no longer can directly compose with the verbal root. Thus, they must type-shift via *iota*, generating a definite interpretation. I leave a fuller version of this analysis aside as a goal for future work.

6.3 Composing quantificational patients

We also find quantificational expressions as genitive patients of actor voice verbs. In general, Tagalog speakers most readily accept quantificational genitive patients only

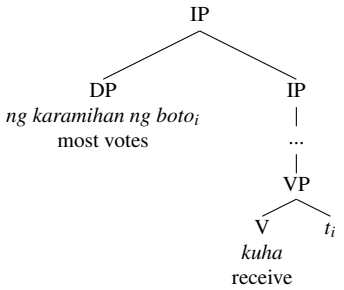
if the quantificational expression is "weak", i.e., those quantifiers which can serve as existential pivots, including *isang* and the cardinal numerals, *marami* 'many' and *ilan* 'some, a few', and so on. However, Sabbagh 2016 demonstrates that at least some speakers accept a range of quantifiers as genitive patients, including "strong" quantifiers like *lahat* 'all' and *karamihan* 'most'. Sabbagh backs this observation up with naturally occurring examples, including the following. A promising topic for future work is a thorough investigation into what determines speakers' variable acceptance of such sentences.

(119) a. *Puwede ka-ng k⟨um⟩ain ng lahat ng mga gusto*
Can you-LK ⟨AV.PERF⟩.eat GEN all GEN PL like
mo kapag nagda-diet ka, di ba?
2SG.GEN when AV.PROG-diet 2SG.NOM not Q
You can eat everything you want when you are dieting, can't you?
Sabbagh 2016:35c

b. *Siya ang na-nalo sa poll kung saan*
NOM.3SG NOM PERF.AV-win OBL poll COMP where
naka-kuha siya ng karamihan ng boto.
PERF.AV-receive NOM.3SG GEN most GEN vote
He won in the poll by receiving most of the votes. Sabbagh 2016:35e

Whether or not the quantifiers are strong or weak, the present account is able to handle such examples. In order to incorporate these cases, we need a mechanism for interpreting quantificational expressions in object position. Many mechanisms would suffice, such as Montague's (1973) 'quantifying in', or Cooper Storage (Cooper 1983). In (120), Heim and Kratzer's (1998) version of quantifier raising (QR) is employed. Here, the syntactic tree is amended at an abstract level by moving the quantificational expression from the object position to adjoin to a sentential node, binding a trace in its original position.

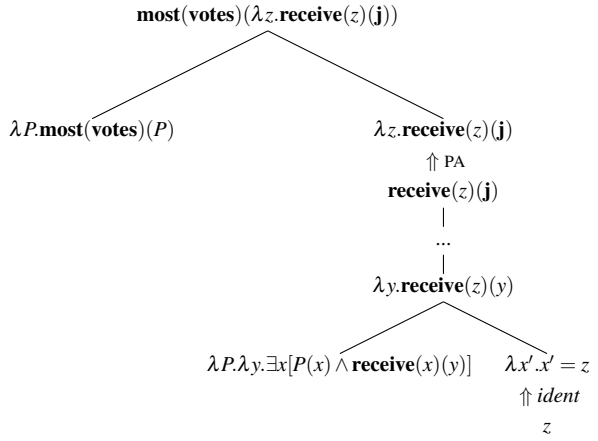
(120)



When this syntactic structure is interpreted, as in (121), the trace of the quantifier is interpreted as an individual variable, just like any trace of a moved nominal expression in this paper's system. As the trace is the wrong type to compose with the verbal root, it must shift via *ident*. The operation proceeds much like the proper name in (116). In order to compose with the raised quantifier, the trace must be λ-bound via Predicate Abstraction as discussed in §6.1. Note that for simplicity, the agent is identified as some arbitrary individual **j**. Thus, armed with (a) shifting via *ident*, as

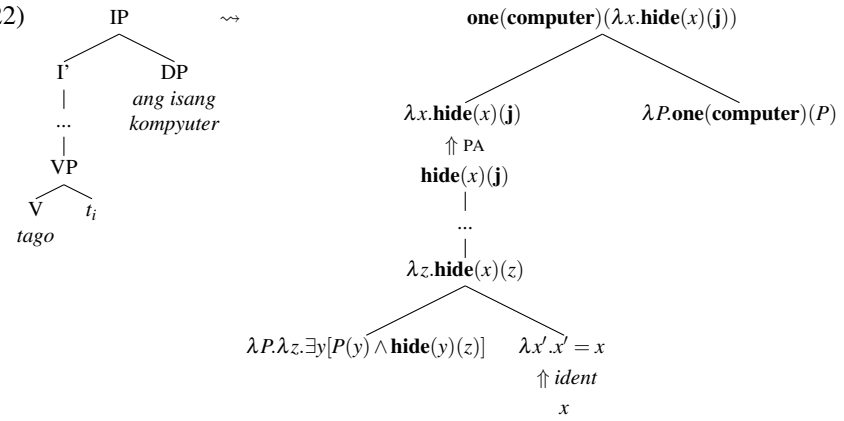
well as (b) a means of interpreting quantificational expressions such as QR, clauses with genitive quantificational patients pose no problem.

(121)



The mechanism of interpretation sketched in (121) provides a way of accounting for quantificational patients with genitive case. The mechanism shares many similarities with how quantificational patients with nominative case are interpreted. Recall (from §4.2) that quantificational patients with nominative case are analyzed as moving from their thematic positions in the overt syntax to the Spec,IP position (the position reserved for nominative case-marked nominal expressions). From this position they can compose with the I'-predicate without type-shifting.

(122)



Both nominative and genitive quantificational patients are interpeted as binding a trace in the VP-internal position. The nominative patient binds the trace in the overt syntax, and the genitive patient binds it covertly. In both cases, the trace must shift via *ident* in order to compose with the verbal root. The two structures generate similar interpretations. This is reflected in native speaker intuitions. Consultants report that quantificational patients which are able to take either case have similar interpretations, such as in (123).

(123) a. *nag-hanap* *si* *Juan* *ng* *isang* *kompyuter*
PERF.AV-hide NOM Juan GEN one computer
Juan hid one computer
b. *h⟨in⟩anap* *ni* *Juan* *ang* *isang* *kompyuter*
PERF.PV-hide GEN Juan NOM one computer
Juan hid one computer

The investigation of quantificational patients becomes more complicated as we start looking at intensional predicates like *hanap*. Consultants report that actor voice predicates with genitive patients modified by cardinal numerals, as in (124), do permit non-specific readings. This is unexpected if the quantificational expression *ng tatlong sinturon* is analyzed as taking wide scope via QR, which will generate a specific interpretation.

(124) *nag-hanap* *si* *Juan* *ng* *tatlong* *sinturon*
PERF.AV-search NOM Juan GEN three belt
Juan searched for (any) three belts.

I propose to complicate the analysis of cardinal numerals. Under this new approach, cardinal numerals have two senses, a quantificational sense in (125a) and a predicative sense in (125b). Note that in (125), # is a function which determines the number of atomic sub-parts of an individual.

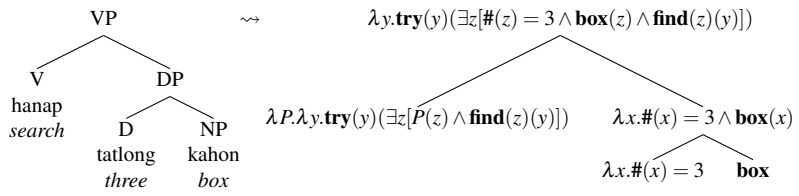
(125) a. $tatlo_1 \rightsquigarrow \lambda P.\lambda Q.\exists x[\#(x) = 3 \wedge P(x) \wedge Q(x)]$
b. $tatlo_2 \rightsquigarrow \lambda x.\#(x) = 3$

The predicative sense of cardinal numerals is evidenced by their usage as predicates in the morphosyntactic sense, as in (126). We find similar uses of other weak quantifiers like *marami* 'many' and *ilan* 'few'. See Geurts 2006 for extensive discussion of the notion of predicative and quantificational senses of cardinal numerals, and how the multiple sense of numerals can be understood according to the type-shifting framework developed by Partee 1986, much like the present paper.

(126) *Tatlo* *[ang* *kahon-g* *kahoy]*
three NOM box-LK wood
The wooden boxes are three. Schachter and Otanes 1982:p130

Given the availability of a predicative sense for cardinal numerals, it is no surprise that genitive patients containing cardinal numerals permit a non-specific reading with intensional predicates, as in (124). A rough sketch follows in (127). The meanings of the cardinal numeral and the head noun are intersected, using Heim and Kratzer's (1998:63–66) rule of Predicate Modification. This yields a property-denoting expression. The patient is thus able to directly compose with the intensional predicate. The patient is existentially quantified by the transitive verbal root, and thus a non-specific reading is generated.

(127)



A final point about cardinal numerals: (127) predicts that expressions with cardinal numerals like *tatlong N* have property-denoting readings. Given this prediction, how do we account for patients with cardinal numerals that have raised to the Spec,IP position, as in (128). Recall that nominative case-marked generalized quantifier-denoting expressions in this position compose with the predicate without type-shifting (see §4.2 and §6.2). However, property-denoting expressions in this position must shift via *iota*, generating a definite interpretation. Thus we predict that nominative patients with cardinal numerals should allow definite interpretations.

Native speaker judgements demonstrate that such definite readings of nominative patients are possible, and for some speakers even preferred. In this following context which disfavors *uniqueness*, the speaker reported infelicity with the use of a nominative patient containing a cardinal numeral. The comment included in (128) suggests the presupposition failure can be resolved by imagining the three bananas singled out by the definite reading of *ang tatlong saging* are in some way discourse familiar.

(128) *Context*: Carlos works in a fruit store. Carlos:

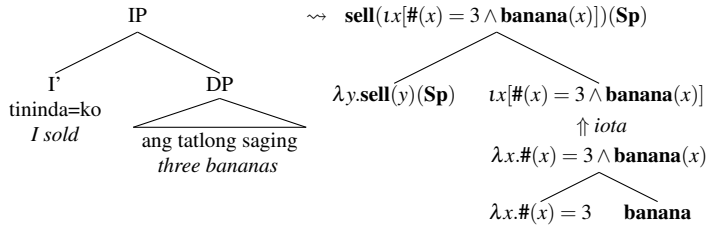
t⟨in⟩inda=ko	*ang*	*tatlo-ng*	*saging*
⟨PV.PERF⟩.sell=GEN.1SG	NOM	three-LK	banana

I sold the three bananas.

Comment: It's so weird, he sold the three bananas that you wanted me to sell, like he's holding three bananas, I sold *these three*.

This definite reading of the quantified patient in (128) is unproblematic given the property-denoting sense of cardinal numerals proposed in (125). The property-denoting sense of the numeral combines with the head noun via Predicate Modification, yielding a property type for the entire nominal (i.e., the property of being three bananas). As usual, property-denoting nominals in the Spec,IP position shift via *iota*, yielding the observed definite reading.

(129)



More detailed investigation is necessary in order to tease apart the definite and indefinite readings of cardinal numerals, and under which conditions each reading is available, as well as the precise nature of the predicative and quantificational senses

of cardinal numerals and other weak quantifiers. However, the framework developed in this paper, following Partee 1986 provides some headway in accounting for a range of readings involving quantified patient expressions in both genitive and nominative case.

7 Conclusion

This paper has used Tagalog as a case study in order to build a theory of the interpretation of an NP and how it is linked to the NP's syntactic position. In the article-free language Tagalog, the definiteness and indefiniteness of an NP is signalled by a number of morphosyntactic factors including voice and case morphology. I argued, following previous syntactic work, that voice and case morphology in Tagalog signal underlying differences in syntactic structure. Following this intuition, I argue that differences in syntactic structure have concomitant effects on the compositional semantics which can determine whether or not a given NP should be interpreted as definite or indefinite.

The following tables give a summary of the key components of the proposal for reference. In (130) I have listed the various types of nominative patients. All of these patients were analyzed as occupying Spec,IP (the "subject" position) following the syntactic analysis of Guilfoyle et al. 1992. As the various types of nominatives have different semantic types, they must compose with the property-denoting predicate (the I'-constituent) via different means. These different means give rise to the observed variety of interpretations.

Nominatives which are individual-denoting or quantifier-denoting can directly compose with the predicate, and thus their quantificational force is determined purely by the lexically encoded meanings of their constituent parts. Property-denoting nominatives, on the other hand, including bare NPs, must type-shift via *iota*, generating their observed definite readings.[51]

(130) Nominative patients (in Spec,IP)

	Type	Mode of composition	Quantificational source
Bare NPs	$\langle e,t\rangle$	via *iota*	*iota*
Quantificational NPs w/ predicative dets.	$\langle e,t\rangle$	via *iota*	*iota*
Other quantificational NPs	$\langle\langle e,t\rangle,t\rangle$	direct composition	the determiner
Pronouns/Proper names	e	direct composition	N/A

Genitive patients are analyzed as occupying a VP-internal position. In this position, I proposed that they directly compose with the verbal root, which is specified to combine with property-denoting complements. Thus property-denoting genitive patients, including bare NPs, directly compose with the verbal root, generating indefinite interpretations. In these cases, the verbal root itself serves to quantify over its property-denoting complements.

[51] It's somewhat unexpected to refer to *iota* as a 'quantificational source', as *iota* shifts expressions to an e-type interpretation. By quantificational source here, I am referring to the *uniqueness* and *existence* commitments introduced by the *iota* type-shifter, which 'quantifies' the bare NP in the sense that it determines the cardinality of the description, i.e., that it has exactly one instantiator.

e-type complements, such as impersonal proper names, and traces, must combine with the verbal root via the use of the type-shifter *ident*, which has the effect of neutralizing the existential quantifier encoded by the verb. Finally, quantifier-denoting genitive patients were analyzed as being interpreted via QR, binding a trace in the VP-internal position, which like any other trace, must shift via *ident* in order to compose with the verbal root. Note that personal proper names and pronouns are excluded from this list as they are banned from appearing as genitive patients in Tagalog.

(131) Genitive patients (in Comp,VP)

	Type	Mode of composition	Quantificational source
Bare NPs	$\langle e,t\rangle$	direct composition	the verb root
Quantificational NPs w/ predicative dets.	$\langle e,t\rangle$	direct composition	the verb root
Other quantificational NPs	$\langle\langle e,t\rangle,t\rangle$	QR	the determiner
(Impersonal) proper names	e	via *ident*	N/A

Zooming out, this paper sheds light on a cross-linguistically common pattern, namely, the link between the VP-internal position of an NP and the NP's interpretation as an indefinite. Much previous research has yielded similar observations is a variety of languages (e.g., Medeiros 2013 on Hawaiian, Jasbi 2015 on Farsi, Cheng and Sybesma 1999 on Chinese, Collins and Thráinsson 1996 on Icelandic, to name a few). One goal for this paper is to contribute to developing a comprehensive theory of this phenomenon with a view to extending the analysis cross-linguistically. The general view of this analysis is that the interpretation of an NP in an article-free language emerges from two interacting factors: the set of type-shifting operators which determines the set of possible interpretations for any NP, and the NP's syntactic context which determines an appropriate semantic type for the NP.

Acknowledgements

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