Definiteness determined by syntax: A case study in Tagalog[1]

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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, such as Diesing's Mapping Hypothesis. I argue that the patterns fall out of general compositional principles so long as type-shifting operators are available to the grammatical system. I begin by weighing in a long-standing issue for the semantic analysis of Tagalog: the interpretational distinction between genitive and nominative transitive patients. I show that bare NP patients are interpreted as definites if marked with nominative case and as narrow scope indefinites if marked with genitive case. Bare NPs are understood as basically predicative; their quantificational force is determined by their syntactic position. If they are syntactically local to the selecting verb, they are existentially quantified by the verb itself. If they occupy a derived position, such as the subject position, they must type-shift in order to avoid a type-mismatch, generating a definite interpretation. Thus the paper develops a theory of how the position of an NP is linked to its interpretation, as well as providing a compositional treatment of NP-interpretation in a language which lacks definite articles but demonstrates other morphosyntactic strategies for signaling (in)definiteness.

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 on contextual factors. However, certain languages which lack definite 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/or the grammatical relation of the NP. This paper outlines a theory of how an NP's interpretation is linked to its syntactic surroundings, employing the type-shifting operators proposed by Partee 1986, which allow us to understand how Tagalog signals the definiteness of an NP via morphosyntactic strategies besides articles.

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 derives a definite reading of the patient. In contrast, in (1b), the choice of the "actor voice" prefix *nag-* as well as genitive case on the patient results in an indefinite interpretation of the patient. Articles are not employed in either case.[2]

(1) a. *t⟨in⟩ago=ko* *ang* *kompyuter*
⟨PV.PERF⟩.hide=GEN.1SG NOM computer
I hid **the** computer.

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[2]Abbreviations used – AV actor voice; BV benefactive voice; CAUS causative; COMP complementizer; FUT future; GEN genitive case; INF infinitive; IV instrumental voice; LK linker; LV locative voice; NEG negation; NOM nominative case; OBL oblique case; PERF perfect; PL plural; PROG progressive; PV patient voice; Q question particle; SG singular; TOP topic.

b. *nag-tago=ako* *ng* *kompyuter*
AV.PERF-hide=NOM.1SG GEN computer
I hid **a** computer.

Although the case markers *ang* and *ng* superficially have the morphosyntactic appearance of articles, semantic evidence is presented that neither *ang* nor *ng* consistently mark definiteness or indefiniteness, and should not be analyzed as either indefinite or definite articles. Thus this paper asks what compositional mechanisms account for the emergence of definiteness in examples like (1a), but not in (1b).

Previous accounts of article-free languages employ the type-shifting theory proposed by Partee 1986. According to this theory, NPs are type-ambiguous, able to take on individual-, property-, or quantificational-type interpretations via shifting mechanism, provided the resulting interpretation is able to semantically compose with its surroundings. 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 (2).

(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, definite, or indefinite meaning, depending, presumably, on the context" (Chierchia 1998:361). Languages like Tagalog appear to work differently. Like the Russian example, Tagalog examples like (1) lack precise analogues for English 'a' and 'the'. However, they do not rely on contextual cues in order to signal which nominal expression is definite and which is indefinite. Instead, the Tagalog bare NP patients are unambiguously definite or indefinite out of context, their interpretation being guided by morphosyntactic cues besides articles, such as case marking and voice marking on the verb.

I argue that the syntactic structure of the clause plays a large role in determining the patient'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 the observed interpretive difference.

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, following the semantic analysis of Greenlandic incorporated objects in Van Geenhoven 1998. The quantificational analysis of transitive verbs provides us with an understanding of how an NP's interpretation is crucially linked to its 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, even though bare NPs marked with nominative are definite, the nominative case marker should not be analyzed as a marker of definiteness. 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 genitive patients in §4, and nominative patients in §5, and discuss a broader picture of the syntax-semantic interface in §6. §7 concludes.

2 The interpretation of non-quantificational patients

Previous accounts of the Tagalog voice system differ on the semantic effects of voice and case morphology on 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 interpretive distinction between genitive and nominative patients as one of *specificity*. Nominative patients are claimed to be specific and genitive patients to be non-specific. However, evidence from this section suggests that this characterization is not sufficiently precise.

Firstly, the semantic effect of voice and case on patients depends crucially on the shape of the NP, in particular, whether or not the NP is quantificational or bare. Throughout, when I refer to a Tagalog NP "bare", I mean it is case marked, headed by a lexical noun (i.e., not a pronoun/proper name), but not modified by any quantificational expression, such as *isang* 'one' or *lahat* 'all'. Bare NPs are the focus of this section. Other kinds of nominal expressions, including quantificational NPs, pronouns, and proper names are dealt with in the following sections. Throughout, I refer to bare NP patients as "bare nominative patients" if marked with nominative and "bare genitive patients" if marked with genitive.

As far as bare NP patients are concerned, the semantic effect of case is one of definiteness. Bare nominative patients are not merely specific but definite. Here, I agree with the observations of previous authors, such as Foley and Van Valin 1984, Kroeger 1993, and Paul et al. 2016. Bare genitive patients are indefinite.

2.1 Tagalog voice and case

First, I will lay out the basic morphosyntactic facts relevant to the discussion. Following terminology laid out in Himmelmann 2005a, Tagalog is a symmetrical voice language, meaning 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 all finite clauses, roots like *bili* must appear with a voice affix.

(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.[3] 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.

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. (5) provide examples (from Foley 1998) demonstrating some additional voices available in Tagalog: the locative voice suffix *-an* in (5a), the instrumental voice prefix *ipaN-* in (5b), and the benefactive voice prefix *i-* in (5c). 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.

(5) 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)

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 (5) is controversial (see Rackowski and Richards 2005, Aldridge 2006, Chen 2017 for some perspectives). The focus in this paper is on actor voice and patient voice structures, as in (4), leaving cases like (5) aside for future work.

[3]This morphological analysis is a simplification. Tagalog verbs are additionally marked for grammatical 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-*. Again for simplicity, 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 a lack of reduplication, thus *-in-* is glossed as PERF.

2.2 Bare nominative patients imply uniqueness

This section argues that bare nominative patients in Tagalog, i.e., nominative patients which lack any overt quantificational elements, are definite descriptions. The definition I adopt for definite description draws directly from Frege 1892. A definite description is an expression whose internal composition includes a property-denoting sub-expression. In English, a property-denoting expression, such as an NP like *cat*, can be combined directly with the definite article *the* in order to form a definite description, like *the cat*. In languages which lack definite articles like Russian, and as I will argue, Tagalog, the bare NP serves dually as a property-denoting expression and as a definite description.

Following the Fregean perspective on definiteness, definite descriptions are referring expressions. When exactly one individual (in the discourse context) instantiates the relevant property-denoting expression, the definite description refers to that individual. In contexts in which the property is not instantiated, or instantiated by more than one individual, the definite description fails to refer. Sentences lack a truth value if they contain definite descriptions which fail to refer to individuals.

A basic characterization of Fregean definites follows in (7) (see, e.g., Heim and Kratzer 1998). Throughout the paper, the symbol $\rightsquigarrow$ maps linguistic expressions to their admissible translations into a logical description language. The symbol $[\ \text{NP}\ ]_{[+def]}$ stands for the morphosyntactic instantiation of a definite description in a given language (deliberately vague about whether it is formed using a definite article or not). The definition in (7) states that definite descriptions map to type e expressions, just like proper names.[4]

(7) $\quad [\ \textit{table}\ ]_{[+def]} \rightsquigarrow \iota x[C(x) \wedge \mathbf{table}(x)]$

C is a 'domain restriction', a free variable ranging over properties whose value is contextually supplied. This is included in order to handle cases in which the overt content of the definite description does not describe a unique referent, however, reference is nevertheless successful. Strawson 1950 points out that an utterance like '*The table is covered with books*' may have a truth value in contexts with more than one table. Rather, the uniqueness of the referent table is determined relative to what is relevant to the interlocutors, in which case the free variable C is valued as something like 'near the interlocutors', 'in this room', and so on (see Westerståhl 1984, von Fintel 1993, Stanley and Szabo 2000, etc.).

Is (6) an adequate analysis of Tagalog bare nominative patients? (6) imposes a definedness condition that the description is uniquely instantiated. Thus the analysis predicts that sentences containing bare nominative patients should only be judged as true in contexts in which the description is uniquely instantiated (provided of course that there are no presupposition canceling operators present). Thus (8a) should only be judged as true in a context in which there is exactly one individual instantiating the description, i.e., *may-akda ng palabas* 'author of (the) play'. In order to test this prediction, a context was devised in order to ask the native speaker consultant whether a rational agent would infer from the utterance whether or not the speaker was committed to the belief of unique instantiation.

Consultants were presented with a leading context (in English) setting up the speaker as an authority. The judgements suggest that nominative patients give rise to a uniqueness commitment on the part of the speaker (8a), while corresponding genitive patients do not (8b).[5]

[4] Expressions in the metalanguage map to objects in a given model M, using the interpretation function $[\![\cdot]\!]^{M,g}$. The definite description therefore refers to the individual who uniquely instantiates the intersection of the overt content of the description as well as the domain restriction C. If unique instantiation does not hold, reference fails.

(6) $\quad [\![\iota x[C(x) \wedge \mathbf{table}(x)]]\!]^{M,g} = d$ if $[\![\lambda x.C(x) \wedge \mathbf{table}(x)]]\!]^{M,g} = \{d\}$, else undefined.

[5] Schachter and Otanes (1985:§3.9) observe that plural marking, generally signalled by the pre-nominal particle *mga* may be dropped in Tagalog, thus unmarked NPs may take on plural interpretations. This creates a potential confound in the judgement of

(8) *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?

- *Response with (a)*: Yes, it definitely means just one author, because Juan said *ang may-akda*.
- *Response with (b)*: Nope, or maybe the one he met is an author, but not an author on that play.

The analysis of bare nominative patients as definite descriptions also predicts the following inferences about multiple bare nominative patients with the same descriptive content in a minimal discourse, borrowing a diagnostic from Matthewson 2001. In (9), consultants judge the bare nominative patients as referring to the same individual.

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

This judgement falls out of the semantic analysis in (7). Given that the definite description imposes the unique-instantiation condition, then multiple bare nominative patients with descriptive content **murderer** (restricted by the same covert domain restriction *C*) should be unable to refer to distinct individuals, thus forcing the coreferential interpretation.

Under the analysis of definiteness in (7), it is in fact not necessary that multiple instances of definites with the same overt description refer to the same individual. As the uniqueness requirement is relative to the description intersected with a covert restriction, it is possible for the descriptions to be intersected with two distinct covert restrictions, yielding two distinct unique instantiators. We do however, see a preference for coreferentiality across minimal discourses like in the Tagalog (9) and its English translation. I attribute this

unquantified NPs in contexts priming uniqueness such as the one in (8). In my observations, speakers did not interpret nominative NPs without *mga* as plurals, as the judgement in (8a) and elsewhere in the paper suggest. In Dionisio's (2012:§7.2) study of *mga*, she claims that only some speakers accept plural interpretations of nominatives without *mga*, stating that all of her consultants rejected plural interpretations of non-pluralized nominatives. Schachter and Otanes also note that speakers by default interpret non-pluralized NPs as singular without explicit contextual priming. The semantics and pragmatics of pluralization in Tagalog is a fruitful topic for future research but is out of this paper's scope, focusing on singular, count NPs.

preference to a pragmatic preference against shifting the value of contextual parameters without any over signalling, a preference reducible to general rational principles of informativity and ambiguity avoidance.

The actor voice variant of (9) in (10), does not force coreferentiality. In fact, judgements suggest the opposite preference, that multiple bare genitive patients are preferentially interpreted as non-coreferential. Taken together, the patient voice sentences in (8a) and (9) suggest that bare nominative patients imply the unique instantiation of the description, while the actor voice sentences in (8b) and (10) suggest that bare genitive patients do not give rise to this implication, and may even give rise to the opposite implication.

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

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

2.3 Bare nominative patients and presuppositions

If bare nominative patients are analyzed as definites as in (7), the sentences above should only have a truth value if the definedness condition of the definite description is met. This characterization has the potential to explain the infelicity of bare nominative patients in certain contexts. We observe that bare nominative patients are felicitous in contexts which entail unique instantiation of the description, but infelicitous in minimally different contexts in which there is no such entailment.

Comparing minimally different contexts in this way is a diagnostic lifted from Tonhauser et al. 2013. They use this diagnostic to determine whether or not linguistic expressions trigger what they term Strong Contextual Felicity (SCF) constraints. Thus Tagalog bare nominative patients trigger the SCF constraint that their description is uniquely instantiated.

The imposition of an SCF constraint suggests that bare nominative patients should be analyzed as presuppositional, creating infelicity in contexts in which unique instantiation is not supported by the context and not accommodated. As Beaver (2001:9) states of non-accommodated presuppositions: "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".

2.3.1 Triggering presupposition failure

In order to probe for the presence of an SCF constraint, consultants were presented with two contexts in (11). Context A is neutral with respect to the instantiation of the descriptive content *mang-aawit* 'singer', while minimally different Context B entails that the description is instantiated. The judgements in (12) suggest that nominative bare patients are infelicitous in Context A, which does not entail the description is instantiated, but felicitous in Context B. Bare genitive patients are felicitous in both contexts.

(11) *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:

(12) a. *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.

b. *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.

According to the proposed analysis, the bare nominative patient in (12) in Context A is infelicitous as it is an 'empty description' (using a term from Neale 2004), failing to refer as the description is not mutually understood by interlocutors to be instantiated, triggering presupposition failure. Additionally, *Context A* does not supply the necessary conditions under which the presupposition might be accommodated, for example, the nominative is not descriptively rich and the speaker is not assumed to be well-informed with respect to the presupposition (see Lewis 1979, Beaver and Zeevat 2007, Von Fintel 2008, Potts 2015, etc. for more on the conditions for accommodation).

We also find that bare nominative patients trigger infelicity if they are 'incomplete descriptions' (again using a term of Neale's) – their descriptive content is instantiated but non-uniquely. In (14), consultants judged two utterances. In the context (13), talking about a single car, the description *gulong* 'tire' is non-uniquely instantiated, while *manibela* 'steering wheel' is uniquely instantiated. The use of the incomplete description *ang gulong* is judged as more infelicitous than the complete description *ang manibela*.

(13) *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 {(14a) | (14b)}:

(14) 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.)

Given the availability of implicit domain restriction in the present theory of definiteness, the use of *ang gulong* 'tire' in such a context can be rescued provided there is sufficient contextual support for supplying the restriction *C* with a value which narrows the description to one individual such as 'that we were talking about', 'that is painted pink', etc. As (13) does not supply evidence for such a restriction, the use of the description *ang gulong* is dispreferred.

2.3.2 A note on familiarity

Implicit domain restriction allows us to understand uses of definites in contexts which do not entail unique instantiation. Primarily, anaphoric definites, referring to a previously mentioned discourse referents, fall into this category. In the English (15), the prior mention of a tooth in the previous discourse licenses the

use of a definite in the target sentence, although unique-instantiation of the *overt* descriptive content is not supported. Given the availability of implicit domain restriction, we can analyze the uniqueness requirement of *the tooth* as being evaluated relative to the intersection of the overt description 'tooth', and an implicit restriction which narrows the domain to exactly one individual, such as 'that is diseased'.

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

We find analogous cases in Tagalog in which 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 (16) the context does not entail uniqueness, but the use of the bare nominative patient is licensed by a previous mention. Examples like (16) do not force us to replace the proposed uniqueness constraint with a 'familiarity' constraint. Instead we need only take the uniqueness condition imposed by *ang kotse* 'car' in (16) to be evaluated relative to the overt content and an implicit restriction like 'that I saw in his garage', supported by the immediately preceding sentence. Thus examples like (16) do not constitute evidence against a uniqueness-based view of definiteness.

(16) *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*	*ni*	*Juan*	*ang*	*kotse.*
PERF.AV-see=I	GEN	one.LK	car	OBL	garage	PV-PROG.fix	GEN	Juan	NOM	car

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

In fact we find evidence against replacing the uniqueness-based view of definiteness with a familiarity-based view. Several authors (e.g., Löbner 1985; Ludlow and Segal 2004; Beaver and Coppock 2015) have cited definites with descriptive content that is inherently unique, observing that such definites impose no familiarity requirement. 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 (17), 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. These cases are predicted by a uniqueness-based account but not a familiarity-based account. Thus, in this paper I take an approach assuming that uniqueness is the characteristic commitment of definites, rather than familiarity.

(17)

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

He did the only thing that he thought of.^{W}

2.4 Interaction with scope-taking operators

As a final piece of evidence for the presuppositional nature of bare nominative patients, we examine their behavior in embedded contexts. Presuppositions do not scopally interact with certain operators ("holes" in the terminology of Karttunen 1973), including factive verbs, aspectual verbs, implicative verbs, negation, interrogative operators, and conditionals. This identifying behavior of presuppositions is usually diagnosed with so-called "family-of-sentences" (Chierchia and McConnell-Ginet 2000): the test sentence with presupposition 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 a presupposition p. See Tonhauser et al. (2013:83) for a set of diagnostics for projection employing the family-of-sentences technique.

Repeating the contexts from (11), consultants were asked to judge uses of bare nominative patients embedded under 'hole'-type operators. The bare nominative patient was still judged as infelicitous in such contexts, suggesting that the presupposition of the embedded expression 'projects' to the more complex expression, thus behaving prototypically like a semantic presupposition.

(18) 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.*

(19) probes into whether whether the existence implication of bare genitive patients is projective. The judgements suggest that interrogative operators and negation *do* scopally interact with the existence implication otherwise introduced by bare genitive patients. We also find similar results for conditional sentences. This suggests that the existence implication introduced by bare genitive patients cannot be analyzed as a presupposition.

(19) *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)}.
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.AV.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.

b. *Hindi* *ako* *nakakita* *[ng* *kabibi]* *sa* *kuweba.*
not NOM.1SG PERF.AV.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.

These data suggest bare genitive patients are narrow scope indefinites, necessarily taking scope below operators like negation and question operators in (19). A sentence like (19b) receives an interpretation as in (20), abstracting away from matters like tense, aspect, and modality for simplicity. Note that indefinites, like definites, are interpreted relative to an implicit domain restriction C.

(20) $\neg\exists x[\textbf{seashell}(x) \wedge C(x) \wedge \textbf{saw}(Sp,x)]$

2.5 Summary

The data presented in this section provide evidence that the semantic distinction between nominative and genitive bare patients is best characterized as one of definiteness. Bare nominative patients trigger a presupposition that their descriptions are uniquely instantiated. Bare genitive patients give rise to an existence entailment which is cancelled when embedded beneath entailment cancelling operators like negation and questions, suggesting it is not a presupposition, thus bare genitive patients behave like (narrow scope) indefinites.

The conclusions here go against previous analyses which characterize nominative case-marked patients as merely "specific". I argue that these characterizations are too weak. 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 regarding the uniqueness implications of bare nominative patients argues against this characterization.

3 Quantificational NPs

So far in this paper, I have argued that bare nominative patients in Tagalog are interpreted as presuppositional definites and bare genitive patients as indefinites. In this section, I argue against the hypothesis that the case marker *ang* has the semantics of a definite article like *the* and similarly against the hypothesis that *ng* has the semantics of an indefinite article like *a*. In doing so, I move beyond bare NPs and take a look at NPs which are modified by quantificational expressions.[6]

Previous work (Adams and Manaster-Ramer 1988, Kroeger 1993, Paul et al. 2016) has observed that nominative patients 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. Likewise, we observe genitives being interpreted as definite and/or specific, especially when *ng* is marking the thematic actor. I take these observations to argue against the analysis of *ang* and *ng* as inherently marking definiteness or specificity. In this respect I concur with Paul et al. 2016, but not with Foley 1998, Himmelmann 1998, 2005b. With these observations in mind, I sketch an analysis of how case marked expressions in Tagalog are internally composed.

3.1 The vacuity of *ang* and *ng*

Evidence that *ang* does *not* mark definiteness in Tagalog comes from NPs modified by the quantificational expression *isang*. *isang* is itself morphologically complex, composed of the cardinal numeral *isa*, 'one', and the "linker"-morpheme *ng*. The following examples show how patients with *isang* exhibit indefinite interpretations, despite the presence of *ang*, therefore disfavoring the analysis of *ang* as a definite determiner.

The context in (21) does not entail that the description is uniquely instantiated and therefore a bare nominative patient is infelicitous (21a). A nominative patient with *isang* is, in contrast, felicitous, as in (21b).

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

[6]Both *ang* and *ng* are clearly tied to the grammatical relation of the marked NP, thus their case marking function is assumed to be uncontroversial. The more specific analysis of *ang* and *ng* as dual markers of case and definiteness/specificity has precedence. Reid 2000, 2002 claims that *ang* historically derives from a demonstrative particle *a* (plus nominative case marking and the linker morpheme *ng*). Likewise, Kroeger 1988 and Foley 1998 show how pre-nominal particles in Kimaragang, a related Philippine-type language, dually mark case and definiteness.

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 (22) provides evidence that two occurrences of nominatives with *isang* with identical descriptive content are not required to be coreferential. In §2 we saw that the use of two nominatives with identical descriptions within a minimal discourse force coreferentiality. I argued this follows from the posited uniqueness commitment. (22) shows that the same effect is not present if the nominative contains *isang*.

(22) *Na-huli* *ni* *Maria* *ang* *isa-ng* *mamamatay tao* *noong* *Miyerkules* *at*
PERF.PV-catch GEN Maria NOM one-LK murderer on Wednesday and
na-huli *ni* *Karlos* *ang* *isa-ng* *mamamatay tao* *noong* *Huwebes*
PERF.PV-catch GEN Karlos NOM one-LK 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 provide further evidence that nominative patients with *isang* are felicitous in contexts which do not support unique instantiation. In (23a), the nominative patient's descriptive content is not uniquely instantiated in the contexts of a bookstore. In (23b), the bracketed nominative patient's descriptive content *malaking burger chain* 'large burger chain' is not uniquely instantiated relative to American burger chains. In (23c), 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. These data are explained if we take bare nominative patients to imply unique instantiation of the description while nominative patients with *isang* do not.[7]

(23) a. *B⟨in⟩ili=ko* *ang* *isa-ng* *maliit* *na* *aklat* *sa* *Biola* *Bookworm*
⟨PV.PERF⟩.buy=GEN.1SG NOM one-LK little LK book OBL Biola Bookworm
I bought a little book at the Biola Bookworm [about the First Great Awakening].^{W}

b. *...b⟨in⟩ili* *nito* *ang* *isa-ng* *malaki-ng* *burger* *chain* *sa* *Amerika.*
...⟨PV.PERF⟩.buy GEN.this NOM one-LK large-LK burger chain OBL America
[Jollibee became big news this last week because] it bought a big burger chain in America.^{W}

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

[7] Throughout, ^{W} stands for a naturally occurring example found online.

Unlike bare nominative patients, nominative patients with *isang* may be used in contexts which have not established the existence of individuals matching the descriptive content. In the following naturally occurring data (24), the nominative patients represent the first mention of the referent in question.

(24) a. *I-s⟨in⟩alaysay ni Jesus ang isa-ng talinhaga upang ituro sa kanila*
PV-⟨PERF⟩.recount GEN Jesus NOM one-LK parable in.order.to teach OBL them
na dapat sila-ng laging manalangin
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).

b. *...na-kilala=nila ang isa-ng bata na si Inari, apo ni Tazuna.*
...PV.PERF-meet=GEN.3PL NOM one-lk child LK NOM Inari, grandson GEN Tazuna
[During their stay at Tazuna's house,] they met a boy, Inari, grandson of Tazuna.[W]

The evidence in (25) shows that nominative patients with *isang* behave like quantificational indefinites with respect to certain scopal properties. For example, (25) suggests that, at least for some speakers, nominative patients with *isang* can scope within conditional clauses. The nominative patient with *isang* in (25a) 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 (25b), whose referent is consistent across hypothesized possibilities. (25c) is a naturally occurring example of a nominative patient with *isang* scoping within a conditional clause.

(25) a. *Ma-i-inis si Mary kung i-pa-patugtog ni John ang isa-ng rekord*
AV-FUT-mad NOM Mary if PV-FUT-CAUS.play GEN John 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 ang rekord*
AV-FUT-mad NOM Mary if PV-FUT-CAUS.play GEN John 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 naka-ligta-an=ko ang isa-ng dosis?*
what NOM must GEN.1SG-LK do-PV if PERF-omit-PV=I NOM one-LK dose
What do I do if I miss a dose?[W]

Similarly, the existential force introduced by nominative patients with *isang* can scope under negation. The speaker of (26) is not committed to the existence of an image.

(26) *Subali't hindi=ko na-kita ang isa-ng larawan ng aking sarili*
but not=GEN.1SG PERF.PV-see NOM one-LK picture GEN my self
But I didn't see an image of myself.[W]

The existential commitment imposed by definites, such as bare nominative patients, 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 work (e.g., Himmelmann 2005b, 2008) has proposed 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 (27). NPs fitting any one of these categories could be classified as specific.

(27) 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 (25b,c) and (26) 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 (28), *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.

(28) *Hindi=ko* *s⟨in⟩isi* *ang* *sinu-man*
not=GEN.1SG ⟨PV.PERF⟩.blame NOM who-even
I didn't blame anyone.[W]

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 (29a) is a news headline, thus necessarily the first mention of the descriptive content. (29b) 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.

(29) 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.[W]

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

An argument along the same lines can be constructed in order to show that the genitive case marker *ng* is not an indefinite article. Under an analysis of *ng* as an indefinite article, we are unable to explain the possibility of definite interpretations of bare genitives. Such interpretations are common when genitives appear in thematic roles besides the patientive role. For example, in (30a), the genitive patient is interpreted as a narrow scope indefinite, taking narrow scope with respect to negation. However, when marking the actor in a patient voice sentence, as in (30b), the genitive case marker is compatible with a definite interpretation, and thus the existential commitment of the actor argument outscopes negation. (30c) gives a naturally occurring example of genitive marking a uniquely instantiated description. These examples are unexpected if *ng* is analyzed as an indefinite determiner. The link between the genitive's interpretation as an indefinite and its interpretation as a thematic patient is discussed in the next section.

(30) 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.

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.

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

Just as we saw with nominative case marker, we also find that the genitive case marker is able to mark NPs modified by a wide range of quantificational determiners, including cases in which the genitive marks agents and patients. It is important to note that we observe variation among native speakers in the acceptance of genitive patients marked by universal and proportional quantifiers as in (31c-d). A topic for future work is a thorough investigation into what determines speakers' variable acceptance of such sentences.

(31) a. *madalas na b⟨in⟩i-bili ng karamihan ang mga generic na gamot.*
often LK ⟨PV⟩.PROG-buy GEN most NOM PL generic LK drug
most often bought the generic drugs.[W]

b. *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.[W]

c. *Puwede ka-ng k⟨um⟩ain ng lahat ng mga gusto mo kapag nagda-diet ka*
Can you-LK AV.eat GEN all GEN PL like you when AV-diet you
You can eat everything you want when you are dieting Sabbagh 2016:35c

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

Finally, we find cases where genitive case marks patients which are proper names, so long as the proper name refers to something inanimate, such as a location or cases like (32). While a more thorough investigation of these cases remains to be carried out, these proper names marked with *ng* are understood to be individual referring expressions, and thus it is unexpected that *ng* should be understood as an indefinite article here.

(32) a. *Na-nood si Alex ng Extra Challenge*
AV.PERF-watch NOM Alex GEN Extra Challenge
Alex watched Extra Challenge. Latrouite 2011:39c, citing Saclot 2006:10

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

In sum, the data presented in this section provide evidence against any hypothesis which takes *ang* and *ng* to encode definiteness or specificity, including analyses which take *ang* to be a definite/specific article and *ng* to be an indefinite/nonspecific article.

3.2 Composing NPs

Here I propose how Tagalog quantfied NPs take on quantificational force. In short, the quantified NP simply inherits the quantificational force of its outermost quantificational expression. This analysis takes *ang* and *ng* to be semantically vacuous, at least as far as the quantificational force of the NP is concerned.

Tagalog nouns are analyzed as property-type expressions, i.e., $\langle e,t\rangle$ in an extensional semantics. This analysis follows from Chierchia's (1998) proposed classification for the type-translation of NPs cross-linguistically. Under his analysis, languages whose NPs translate to $\langle e,t\rangle$-type expressions should exhibit certain properties including 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.

Furthermore, the analysis of lexical nouns as type $\langle e,t\rangle$ provides a simple explanation of Tagalog clauses with unmarked nominal predicates, such as *isda* 'fish' in (33). These can be analyzed as the combination an e-type subject (like *ang pagkain niya*), with an $\langle e,t\rangle$-type by simple functional application. See Schachter and Otanes (1982:p64,§3.6) on indefinite nominal predicates.

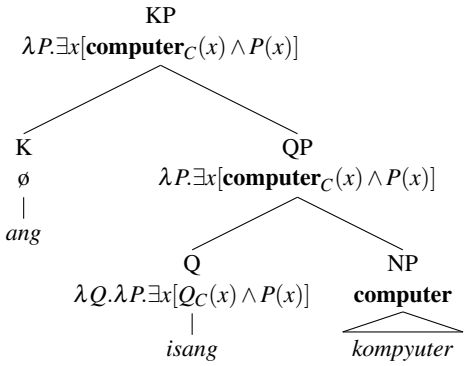
(33) *Isda ang pagkain niya*
fish NOM meal GEN.3SG
His meal was fish. Schachter and Otanes 1982:p64

Next, I propose that *ang* and *ng* are case markers (with category label K), and semantically vacuous. They can combine directly with $\langle e,t\rangle$-type NPs, in which case, the KP inherits the $\langle e,t\rangle$-type. The observed definite semantics of *ang*-marked bare NPs is contributed by type-shifting, to be discussed in §5.

Alternatively, the case marker can combine with generalized quantifier-denoting expressions of type $\langle\langle e,t\rangle,t\rangle$. These expressions are formed by overt quantificational expressions like *isang*. I refer to these expressions using the *semantic* label 'quantificational determiner', standardly assigned to expressions of the semantic type $\langle et,\langle et,t\rangle\rangle$. This is not to make a syntactic claim that expressions like *isang* or *lahat* 'all' have the syntactic category D(eterminer), or indeed even have the same syntactic category as each other, as they combine with their nuclear scope-denoting NP via different linking morphology, some selecting for a genitive case marker *ng*, some selecting for an oblique case marker *sa*, and some combining with the linker *-ng/na*. For neutrality, I give these expressions the syntactic label Q as a stand-in for a possible

range of syntactic structures. In (34), the quantificational expression *isang* combines directly with the $\langle e,t\rangle$-type noun, forming a generalized quantifier. Composition proceeds similarly for *ng*-marked quantificational phrases. NB: henceforth, the domain restriction C is subscripted, so that $\mathbf{P}_C(x)$ abbreviates $\mathbf{P}(x) \wedge C(x)$.

(34)



The semantic contribution of *isang* in (34) is somewhat of an oversimplification. *isang* is analyzed as a quantificational indefinite in order to capture data like (25) in which *isang* scopes within a conditional. However, Paul et al. 2016 observes wide scoping uses of indefinites with *isang*. 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 (34) is not affected: we can adopt an alternative analysis of *isang* as allowing exceptional wide scope, but retain the key claims in (34) that the NP is property-denoting, and that the case marker *ang* is semantically vacuous.

This analysis of *ang* opens up the possibility that nominative KPs can contain all manner of quantificational expressions. For example, 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' (35a), value judgement quantifiers like *ilan* 'few' (35b), *marami* 'many' (35c), and universal quantifiers like *lahat* 'all/every' (35d) and *bawat* 'all/every' (35e).[8] These data suggest we can generalize the analysis in (34) to all quantificational determiners.

(35) a. *Na-kita=niya ang karamihan ng mga tao sa lipunan bilang mga hangal*
PV-see=s/he NOM most GEN PL person OBL society as PL fool
He saw most people in society as fools.[W]

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

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

[8] 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 category D. 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 (34), the label Q 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.

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

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

3.3 Interim summary

So far, this paper has argued for a particular characterization of how non-quantificational (or 'bare') NPs are interpreted when they are patients of transitive verbs. Bare nominative patients are interpreted as definite descriptions. Bare genitive patients are interpreted as narrow scope indefinites. Evidence comes from the observation that bare nominative patients impose a presupposition that the description is uniquely instantiated. On the other hand, the existential commitment of bare genitive patients can be cancelled by higher scoping operators like negation.

I also provided evidence that the nominative case marker *ang* and genitive case marker *ng* should not be analyzed as articles encoding definiteness or specificity. Evidence for this conclusion comes from the observation that case marked KPs inherit the quantificational force of any quantificational determiner (if one is present). For example, there is ample data showing that nominatives marked by the indefinite expression *isang* 'one' are interpreted as indefinites, even though it is marked with *ang*. Thus, I proposed that case markers semantically vacuous as far as quantificational force is concerned. They can either combine with $\langle e,t\rangle$-type bare NPs, or $\langle\langle e,t\rangle,t\rangle$-type quantificational phrases.

4 Composing actor voice

In this section and the next, I show how the structure of Tagalog clauses gives rise to definite and indefinite interpretations of nominatives and genitives in the compositional semantics. In this section I focus on actor voice sentences with genitive case-marked patients. I propose that genitive case marked patients do not supply quantificational force of their own, but are quantified by the transitive verb itself, following the proposal of Van Geenhoven 1998. I show how this analysis derives both specific and nonspecific readings of genitive patients. The compositional analysis builds on the clause structure for Tagalog proposed by Guilfoyle et al. 1992.

4.1 Tagalog clause structure

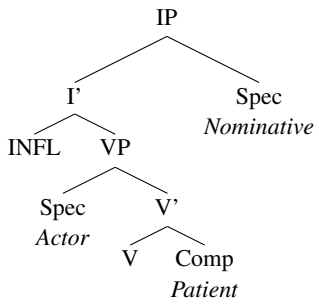
In order to lay the foundation for this section on actor voice clauses, and the following section dealing with patient voice clauses, I will lay out an account of the syntactic structure of Tagalog. I argue that the clause structure of Tagalog and, in particular, the structural positions of arguments play crucial roles in determining how bare 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 nominals in Tagalog: the nominative (marked with *ang*) and the thematic actor (see Schachter

1976 for an overview of this issue). GHT discuss how the nominative may undergo *wh*-extraction (e.g., for topicalization, relativization, *wh*-question and cleft formation) and license floating quantifiers. On the other hand, the actor argument licenses reflexive pronouns, is deleted in control clauses[9] and in imperatives.

GHT suggest a structural explanation for the split of subject properties between the nominative and the actor. 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 arguments: the nominative and the actor. Under their account, the actor argument occupies a VP-internal specifier position, a position associated with licensing reflexives, imperative and control deletion. The nominative, on the other hand, occupies the specifier of IP, the position from which *wh*-extraction and quantifier float is licensed. The structure they propose is sketched in (36). Spec,IP is a derived position: the argument 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.

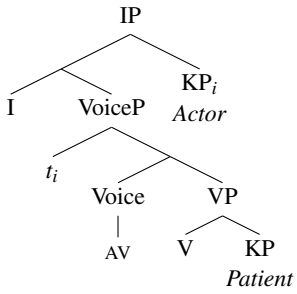
(36)



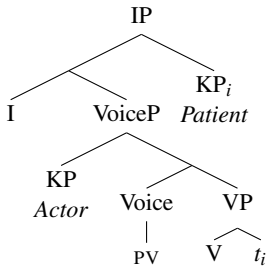
Starting with Hung 1988b, much work (e.g., Rackowski 2002, Rackowski and Richards 2005, Aldridge 2004, 2006, Travis 2005, and several others) takes the voice morpheme in Philippine languages to be instantiated on its own dedicated syntactic node, usually associated with the functional head *v* or Voice (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.

(37a) sketches an actor voice structure, incorporating the VoiceP hypothesis. The KP denoting the thematic actor is introduced in Spec,VoiceP, and then moves to the Spec,IP subject position. (37b) is a patient voice structure. Here, the KP denoting the thematic patient is introduced in Comp,VP and raises to Spec,IP.[10]

(37) a.



b.



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

[10]These structures predict that the nominative KP 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 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 KPs and PPs.

In order to account for the case-marking on Tagalog KPs, GHT adapt the analysis of Malagasy in Hung 1988b. KPs 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 KP which is not licensed (i.e., the KP matching the thematic role picked out by the voice morpheme), moves to Spec,IP. In this position, the KP receives nominative case from I.

GHT provide numerous pieces of evidence that the nominative KPs occupy a syntactically higher position than genitive KPs, as predicted by the structures in (37). These tests diagnose constituency even in a language like Tagalog which frequently allows postposing of prosodically heavy constituents. Firstly, according to GHT, nominative KPs can serve as the restrictor of the floating universal quantifier *lahat*, while genitive KPs cannot.

(38) 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. 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. 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 KPs control number agreement on the verb, only nominative KPs are able to undergo raising from subordinate clauses, and only nominative KPs are able to undergo *wh*-movement.

For the purposes of the analysis in this paper, I take the structures in (37) to be the relevant inputs for the compositional semantics. Crucially, the KP marked with nominative case sits in a structurally high position, and binds a trace (or copy, depending on the theory of movement) in its thematic position. The genitive patient, on the other hand, is sister to the transitive verb. This latter component of the analysis directly feeds into the compositional semantic treatment of the indefinite interpretations of genitive KPs pursued below.

4.2 Transitive verbs as existential quantifiers

Recall that bare genitive patients (i.e., genitive patient which are not overtly quantified) take narrow scope with respect to operators like negation, as in (39).

(39) *hindi k⟨um⟩ain ng pizza si Juan*
not ⟨AV.PERF⟩.eat GEN pizza NOM Juan
Juan didn't eat any pizza. *but not* There is a pizza Juan didn't eat (but maybe he ate other pizzas).

According to the syntactic structure assumed in the previous subsection, the genitive patient composes with the transitive verbal root *kain*.[11] Standardly, transitive roots translate into $\langle e, \langle e, t \rangle \rangle$-type relation-

[11] In derivations like (40), we are dealing with the composition of the verbal root in V with its KP-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).

denoting expressions. Adopting this assumption for Tagalog, attempting to compose a transitive verb root with its $\langle e,t\rangle$-type object via functional application results in a type-mismatch, as in (40).

(40) $[_{VP}$ *kain* $[_{KP}$ *ng pizza*$]] \rightsquigarrow$ *undefined*

$\langle e,et\rangle$ *et*

eat **pizza**

How are such type-mismatches resolved? Following Partee and Rooth 1983, Partee 1986, and much subsequent work, nominal expressions (such as Tagalog KPs) are in principle type-flexible, meaning they can be assigned a number of interpretations linked by a small set of type-shifting operators. In Partee 1986, these operators are designed to resolve compositional puzzles 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 nominal interpretation is not uniformly determined by the expression's lexical entry, but can be subject to type-shifting.

To be precise, we can take the function $(\cdot)^\bullet$, using the notation of Beaver and Krahmer 2001, to represent the "basic" translation of a tree structure (determined by the lexicon if the constituent is a terminal node, and by functional application otherwise). (41a) determines that the basic translation of $[\xi]$ is an admissible translation. (41b) determines that $[\xi]$ may have additional admissible translations provided there are type-shifters provided by the grammar of the requisite type. If so, $[\xi]$ is ambiguous, having multiple admissible translations.

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

b. $[\xi]$ has an admissible translation $\delta(\alpha)$, if and only if,

i. $[\xi]$ has an admissible translation α of type σ, and

ii. δ is a type-shifter of type $\langle\sigma,\tau\rangle$

Partee's (1986) framework makes available the type shifters *iota* and *EX* (labelled *A* by Partee), defined in (42). Note that (42) ensures that the resulting meanings are subject to an implicit domain restriction *C*, discussed in §2. Given the type-shifters in (42), a bare genitive like *ng pizza* has the admissible translations in (43): a property, an individual uniquely instantiating that property, and an indefinite description.

(42) a. $iota = \lambda P.\iota x[P_C(x)]$

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

(43) *ng pizza* $\rightsquigarrow$ **pizza** : $\langle e,t\rangle$

$\rightsquigarrow iota(\mathbf{pizza}) = \iota x[\mathbf{pizza}_C(x)] : e$

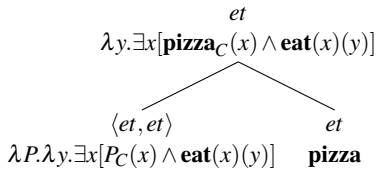
$\rightsquigarrow EX(\mathbf{pizza}) = \lambda Q.\exists x[\mathbf{pizza}_C(x) \wedge Q(x)] : \langle et,t\rangle$

Neither shifted reading of *ng pizza* generates the right interpretation for a sentence like (39). If *ng pizza* is interpreted as an *e*-type expression with *iota*, it will be interpreted as a presuppositional definite, contra to what is observed. If it is interpreted as a GQ-type expression using *EX* it will be interpreted as scope-taking indefinite – there is no reason to expect a GQ like *EX*(**pizza**) should not take scope via some mechanism like quantifier raising. For this reason I do not pursue the option of shifting bare genitive patient. However shifting will be used as an interpretational mechanism in §5 in the paper's account of definite nominatives in patient voice structures.

I instead propose that we should revise the original assumption that transitive verbs denote type $\langle e, et \rangle$ relations. In (44), the Tagalog verbal root itself introduces the existential quantificational force. It translates into a $\langle et, et \rangle$-type expression, as in (44a). (44a) 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, as in (44b).

(44) a. $kain \rightsquigarrow \lambda P.\lambda y.\exists x[P_C(x) \wedge \mathbf{eat}(x)(y)]$

b. $[_{VP}\ kain\ [_{KP}\ ng\ pizza]] \rightsquigarrow$



The analysis in (44b) explains why bare genitive 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.

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 (44a), 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 (45a), or ordinary relational $\langle e, et \rangle$-type interpretations, as in (45b).

(45) a. $eat_{\langle et,et \rangle} \rightsquigarrow \lambda P.\lambda y.\exists x[P_C(x) \wedge \mathbf{eat}(x)(y)]$

b. $eat_{\langle e,et \rangle} \rightsquigarrow \lambda x.\lambda y.\mathbf{eat}(x)(y)$

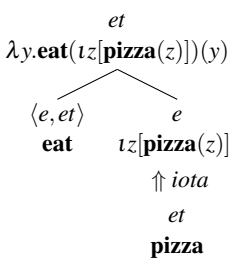
This is how Van Geenhoven accounts for the observation that transitive verbs may combine with object NPs of distinct types. Under her account, bare NPs like *apples* in (46a) are property-denoting. In (46a), the verb takes on its quantificational meaning in (45a) and may quantify over the property-denoting object. Otherwise, the verb can be interpreted as the two-place relation in (45b) and combine with quantificational objects as in (46b), assuming they have undergone an operation like QR.

(46) 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 turns out to be necessary. This is because the compositional system argued for in this paper, particularly in §5, crucially makes use of the type-shifter *iota*, as in (43), in the analysis of nominative case-marked patients.

If we assume that (a) relational meanings of transitive verbs are possible and (b) *iota* is available, then nothing rules out the parse in (47). This generates a *definite* reading of the bare genitive patient, conflicting with the observed narrow scope behavior outlined in §2. NB: throughout the paper, type-shifted interpretations for expressions are represented as unary branching structures, with the type-shifted interpretation directly dominating the non-shifted meaning.

(47) $[_{VP}$ *kain* $[_{KP}$ *ng pizza*$]] \rightsquigarrow$ 

derives a definite reading for genitives

I propose to avoid this problem by not allowing the relational meaning for verbs in (47a). Instead, Tagalog transitive verbs are uniformly of the quantificational type in (45a), and thus always have the potential to existentially quantify over their complement. Cases analogous to (46b), with quantificational objects, will be handled in section §6 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 typologically diverse languages follow in (48). These examples find an explanation if we assign the transitive verb a quantificational meaning as in (45a), which combines directly with and quantifies over its property-denoting bare NP complement. Besides the examples below, we also find similar patterns in Samoan (Collins 2017), Cantonese (Cheng and Sybesma 1999), Norwegian (Pereltsvaig 2006), Zapotec (Deal and Nee 2017), amongst others.

(48) 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)

4.3 Intensional objects

The previous section proposes a simple answer to the question of why bare genitive 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.

Like the present account Diesing assumes that indefinites do not introduce any quantificational force of their own. Their interpretation is governed by a principle like the one in (49), a component of the Mapping Hypothesis.

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

For example, Diesing derives (50a) with a narrow scope reading of *some variations* according to the principle in (49). This reading of (50a) has a syntactic parse as in (50b), with the indefinite remaining internal to the VP at LF. The indefinite is existentially closed *at the VP level*, thus scoping beneath the universal subject.

(50) a. Every cellist played some variations.

b. $[_{IP}$ every cellist$_x$ $[_{VP}\ t_x$ played some variations$_y$ $]]$

c. $[_{IP}$ every cellist$_x$ $\exists y[\textbf{variations}(y) \wedge \textbf{play}(y)(x)]]$

Van Geenhoven (1998:§2.3) points out some problems for this kind of approach. One issue is that Diesing's system includes a mechanism of exceptional scope taking, namely Quantifier Raising, which allows NPs to covertly move out of their VP-internal positions to take wide scope. Thus the theory does not explain the Carlson's (1977) observation that English bare plurals obligatorily receive narrow scope interpretations. If Diesing's system is employed to analyze Tagalog, we must similarly explain the obligatory narrow scope of bare genitive patients.

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

A second issue concerns the interpretation of objects of intensional transitive verbs such as *seek*, *search for*, *need*, and *want*. As is well known, objects of such verbs may take on nonspecific interpretations, in a particular sense of the term 'nonspecific'. For example, nonspecific objects of intensional transitives fail to give rise to an existence entailment: '*John seeks a purpose in life*' does not entail the existence of such a purpose. In contrast, indefinite objects with extensional transitives lack this property: '*John bought an armchair*' cannot be true unless an armchair exists. In this subsection, the term 'nonspecific' is used to refer to objects of intensional transitives under these particular nonspecific readings. As presented in (50), the account employing the Mapping Hypothesis does not derive nonspecific readings of intensional objects.

Consider the nonspecific reading of (52a). 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* (50) over to the intensional verb *seek* 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 (52c), approximating "there is a purpose that John seeks'.

(52) a. John seeks [a purpose in life].

b. $[_{IP}$ John$_x$ $[_{VP}\ t_x$ seeks a purpose$_y$ $]]$

c. $[_{IP}$ John$_x$ $\exists y[\textbf{purpose}(y) \wedge \textbf{seek}(y)(x)]]$

Thus, an account employing the Mapping Hypothesis is left to explain how indefinite objects of intensional transitive verbs like *seek* receive nonspecific readings. This point becomes crucial in the analysis of Tagalog genitive patients. As I outline below, Tagalog bare genitive 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 genitive patients with intensional verbs like *hanap* 'search' give rise to a nonspecific reading. In (53), the speaker does not express an intention to find any particular belt.

(53) *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. (54) suggests that the existential commitment ordinarily introduced by genitive patients in extensional contexts is suspended when the genitive is the patient of an ITV.

(54) *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 (55). Swapping out one description for the other changes the truth conditions of the sentence as a whole. This constitutes evidence that bare genitive patients are interpreted as non-specific when selected by ITVs like *hanap*.

(55) 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. (55a) $\not\models$ (55b)

- *Comment:* if they're looking for the female employees, they're not necessarily looking for the electrical engineer.

These tests point towards bare genitive patients 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, and thus NPs translate to functions from individuals to propositions, i.e., they are $\langle e, \langle s,t \rangle \rangle$-type. Thus *inhinyero* translates to $\lambda x.\lambda w.\mathbf{engineer}_w(x)$, *babae* to $\lambda x.\lambda w.\mathbf{woman}_w(x)$, and so on.

In this paper, transitive verbs are analyzed as relations between an individual (the agent) and a property (which the patient instantiates). We can carry this over to intensional transitive verbs. Following Zimmermann (1993, 2006), intensional transitive verbs are given translations such as (56). Adapting Quine's (1960) classic proposal, ITVs decompose into a modal operator, and an embedded relational predicate. For example, *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 (56), *hanap* is a relation between an individual x and a property P such that x tries to find some individual who instantiates P.[12]

(56) $\textit{hanap} \rightsquigarrow \lambda P.\lambda x.\lambda w.\mathbf{try}_w\ (x)\ (\lambda v.\exists y[P_v(y) \wedge \mathbf{find}_v(y)(x)])$

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

(57) a. $[_{\text{VP}}\ \textit{hanap}\ [\textit{ng inhinyero}]] \rightsquigarrow \lambda x.\lambda w.\mathbf{try}_w\ (x)\ (\lambda v.\exists y[\mathbf{engineer}_v(y) \wedge \mathbf{find}_v(y)(x)])$

b. $[_{\text{VP}}\ \textit{hanap}\ [\textit{ng babae}]] \rightsquigarrow \lambda x.\lambda w.\mathbf{try}_w\ (x)\ (\lambda v.\exists y[\mathbf{woman}_v(y) \wedge \mathbf{find}_v(y)(x)])$

The existential quantifier scopes below the modal operator **try**. Therefore, engineers in (57a) 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 (54). Furthermore, the representations in (57) derive the right results for the substitution data in (55). 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 (56) 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 (58), 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 (58a), and extensional if not, as in (58b).

(58) a. $\textit{hanap} \rightsquigarrow \lambda P.\lambda y.\lambda w.\mathbf{try}_w\ (y)\ (\lambda v.\exists x[P_v(x) \wedge \mathbf{find}_v(x)(y)])$

b. $\textit{tago} \rightsquigarrow \lambda P.\lambda y.\lambda w.\exists x[P_w(x) \wedge \mathbf{hide}_w(x)(y)]]$

Thus bare genitive patients receive nonspecific interpretations when selected by intensional transitive verbs like *hanap*. Although bare genitive patients are nonspecific in this particular usage, they are not nonspecific across the board. In fact, in non-intensional contexts, bare genitive patients freely admit specific interpretations, as observed by Sabbagh 2016 and Paul et al. 2016. For example, when selected by the non-intensional transitive verb *kilala* 'met', the bare genitive patient can be specific, licensing cross-sentential anaphora.

(59) *naka-kilala=ako* *ng* *babae,* *at* *saka,* *siya* *ay* *si* *Jennifer*
PERF.AV-meet=NOM.1SG GEN woman, and also, NOM.3SG TOP NOM Jennifer
'I've met a woman, and what's more, it's Jennifer.'

The analysis pursued so far predicts this. According to this paper, bare genitive patients are simply existentially quantified over the verb. Thus, if there is no operator taking wider scope over the existential quantifier supplied by the transitive verb, as in (58b), then nothing prevents the bare genitive patient taking on a specific, indefinite reading.

Furthermore, the semantics of quantification in this paper supplies a contextual domain restriction C. With enough contextual support, interlocutors can reason about a particular value for C, thus (59) can be given an interpretation like (60).

[12]NB: the representations above leave out domain restriction for simplicity. 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.

(60) $\exists x[\textbf{woman}_C(x) \wedge \textbf{meet}(x)(Sp)]$

With enough contextual support, interlocutors can reason about a particular value for C. If contextual cues provide that the speaker has a particular referent in mind, the value for C approximates something like 'that the speaker is thinking of', deriving a specific reading of the indefinite. This is the approach taken by Schwarzschild 2002 in his account of specific readings of indefinites.

If interlocutors converge on this specific reading by setting the appropriate value for C, we can derive specific readings for bare genitive patients. For example, Paul et al. (2016) note examples like (61) in which the bare genitive patient is able to take on a specific reading. Such examples are compatible with the present account given that interlocutors are permitted to reason about the quantificational domain when making any indefinite statement.

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

4.4 Interim summary

To summarize this section, the indefinite interpretations of bare genitive patients was analyzed as stemming from their analysis as $\langle e,t\rangle$-type expressions. Transitive verbs in Tagalog are analyzed as inherently quantificational, existentially quantifying over their property-denoting complements. As the patient is quantified within the VP constituent, we account for its inability to take scope over VP-external operators like negation or conditionals. This analysis accounts for the observation that bare NP patients which are local to their selecting verb are interpreted as narrow scope indefinites, an observation dating to Carlson 1977. This observation has often been analyzed using Diesing's Mapping Hypothesis, including by several authors in their analyses of Tagalog NP-interpretation (Aldridge 2004, Rackowski and Richards 2005, etc.). The present analysis of transitive verbs as inherently quantificational provides an explanation for the observed link between an NP's VP-internal position and interpretation as an indefinite.

The quantificational analysis of transitive verbs also explains the nonspecific readings of bare genitive patients when they are complements to intensional transitive verbs like *hanap* 'search'. The existential quantifier introduced by the transitive is analyzed as scoping beneath a modal component. This analysis overcomes an issue with the account pursued by Diesing 1992, which introduces existential closure at the VP-layer and thus existentially closes the bare NP argument outside the scope of the intensional transitive verb, thus incorrectly predicting a specific reading of bare NP complements of intensional transitives.

5 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.

5.1 Definiteness via type-lowering

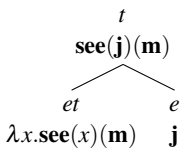
The syntactic analysis illustrated in §4 placed nominative KPs in the subject position, Spec,IP, reflected in the structures in (62), which divide clauses into a nominative KP subject and an I' predicate.

(62) a. *[$_{I'}$ k⟨um⟩ain] [$_{KP}$ si Juan]*
⟨AV.PERF⟩.eat NOM Juan
Juan ate.

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

Keeping things extensional for simplicity, the *e*-type proper name KP *si Juan* is analyzed as composing directly with the $\langle e,t\rangle$-type I'-constituent. The internal composition of the I'-constituent is discussed in the next subsection. Similar principles apply for nominative pronouns.[13]

(63) [$_{I'}$ *nakita ni Maria*] [$_{KP}$ *si Juan*] $\rightsquigarrow$

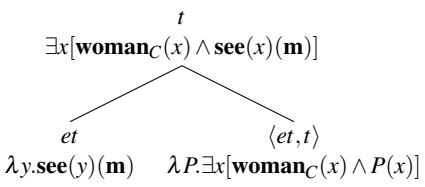


The composition of quantificational expressions with predicates follows immediately from this proposal. The subjects in (64) translate to $\langle\langle e,t\rangle,t\rangle$-type expressions denoting generalized quantifiers. They compose directly with the I'-constituent, as in (65).

(64) a. *[$_{I'}$ na-kita ni Maria] [$_{KP}$ ang isang babae]*
PERF.PV-see GEN Maria NOM one-LK woman
Maria saw one woman.

b. *[$_{I'}$ na-kita ni Maria] [$_{KP}$ ang lahat ng babae]*
PERF.PV-see GEN Maria NOM all GEN woman
Maria saw every woman.

(65) [$_{I'}$ *nakita ni Maria*] [$_{KP}$ *ang isang babae*] $\rightsquigarrow$



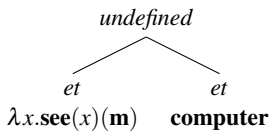
Bare NPs, on the other hand, are property-denoting, they are the wrong type to compose with the similarly property-denoting I'-constituent, as neither constituent is the right type to serve as the functor.

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

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

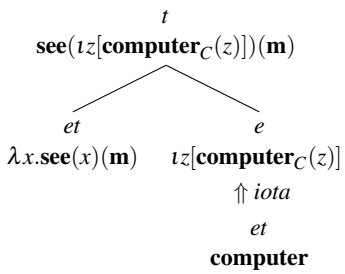
[13] Guilfoyle et al. 1992 don't provide an explicit analysis of pronominal clitics. I assume that they undergo cliticization in order to attach to the right edge of the main verb and that this movement is irrelevant for the purposes of semantic composition.

(67) $[_{\text{I'}}$ *nakita ni Maria*$]$ $[_{\text{KP}}$ *ang kompyuter*$]$ $\rightsquigarrow$



In order to generate the definite interpretation of *ang kompyuter*, I propose that the property-denoting expression is shifted by *iota*, introduced in §4, which shifts $\langle e,t\rangle$-type expressions to their e-type unique instantiators. If we assume *iota* as part of the compositional system, then we allow the bare nominative patient to be interpreted as its unique instantiator, accounting for the observation that bare nominative patients are interpreted as presuppositional definites.[14] The definite reading of the bare NP is therefore derived without the use of an article.[15]

(68) $[_{\text{I'}}$ *nakita ni Maria*$]$ $[_{\text{KP}}$ *ang kompyuter*$]$ $\rightsquigarrow$



The analysis I pursue in this paper can be compared to the proposal of Paul et al. (2016), who analyze the (in)definiteness of *ang*-marked phrases as stemming from lexical features which are specified with the binary values $[+/-\text{DEF}]$. Under their analysis, the case marker *ang* is not specified for definiteness, but adopts either a $[+\text{DEF}]$ or $[-\text{DEF}]$ 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 $[-\text{DEF}]$ feature. Otherwise, *ang* takes on a $[+\text{DEF}]$ by default.

The present analysis provides an explicit characterization of how the indefiniteness of quantificational determiners like *isang* is inherited by the whole nominative noun phrase. As an expression like *ang isang kompyuter* will be interpreted as an $\langle et,t\rangle$-type generalized quantifiers, it will compose directly with the predicate as in (65). Without a quantificational determiner, the nominative KP is property-denoting and must be type-shifting, corresponding to Paul et al.'s observation that the bare NP takes on a $[+\text{DEF}]$ feature in the absence of any quantificational expression.

5.2 Ruling out indefinite type-shifting

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* introduced in §4 behaves essentially like a covert indefinite determiner. If such a type-shifter such as the one defined in (69) is permitted, nothing rules out its application to bare NPs, generating indefinite readings of those NPs.

[14] A question arises as to why the property-denoting I'-constituent cannot be interpreted employing *iota*. This would give rise to an interpretation of (66) approximating "The unique thing that Maria saw is a computer." which is not a possible reading. 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.

[15] 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 (68), except for the alteration in the syntactic categories of the constituents.

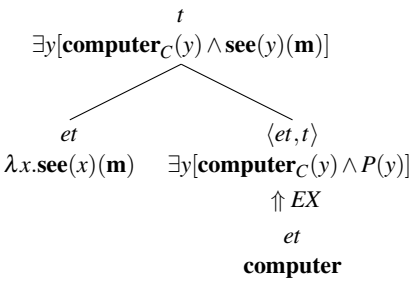
(69) $[\textit{ang kompyuter}] \rightsquigarrow$ $\langle et,t\rangle$
$\lambda P.\exists x[\textbf{computer}_C(x) \wedge P(x)]$
$\Uparrow EX$
et
computer

As Coppock and Beaver 2015 point out, this component of Partee's theory is useful 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 (70). 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 (70).

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

Why doesn't this operation take place in Tagalog, generating an unattested reading of bare nominative patients? (71) is a derivation of an indefinite reading of a bare nominative patient which is incorrectly allowed by the present theory. How do we rule out readings like (71)?

(71) $[_{\text{I}'}$ *nakita ni Maria*$]$ $[_{\text{NP}}$ *ang kompyuter*$]$ $\rightsquigarrow$ unattested



There are two general approaches to this problem. Both are employed in Chierchia's (1998) cross-linguistic investigation of bare NPs. The first is a 'Blocking Principle' like the one defined by Chierchia in (72). This principle states that a type-shifter is blocked from applying if it is overtly instantiated in the language. 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*.

(72) *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,
$D(X) = \tau(X)$

The second approach, also adopted by Dayal 2004 and Coppock and Beaver 2015, takes there to be a general preference for shifting to e-type expressions over shifting to $\langle\langle e,t\rangle,t\rangle$-type expressions.[16] Coppock and Beaver label this preference as Type Simplicity, defined in (73). As *iota* yields a type-e interpretation, it should be preferred to *EX*, yielding a type-$\langle\langle e,t\rangle,t\rangle$ interpretation.[17]

[16] Chierchia's (1998) original proposal includes a similar principle which determines that the indefinite type-shifter is less preferred than a type-shifter $\cap$ which shifts property-denoting expressions to kind-denoting expressions.

[17] Coppock and Beaver suggest this principle could reduce to a preference against structures which require covert movement. As $\langle\langle e,t\rangle,t\rangle$-type expressions are interpreted using an operation like QR, while e-type expressions aren't, e-type expressions should be preferred.

(73) **Type Simplicity**:
Given a choice between two type-shifting operations, a hearer should choose the one resulting in the simpler type and accommodate any associated presuppositions if they are consistent with the available evidence as to what the speaker presupposes. (Coppock and Beaver 2015:p413)

Type Simplicity has the potential to explain why the derivation in (71) is blocked: the NP meaning shifts to a $\langle\langle e,t\rangle,t\rangle$-type, when shifting to an *e*-type was possible via *iota*.

Could the Blocking Principle also be invoked? One possibility is that the type-shifter *EX* is blocked by the lexicalization of an indefinite determiner in Tagalog, namely *isang*. If we assign *isang* and *EX* encode the same meaning, as in (74), then we expect that the covert application of *EX* should be blocked in Tagalog, explaining why bare nominative patients appear to only be interpreted as definites.

(74) a. $EX = \lambda Q.\lambda P.\exists x[P_C(x) \wedge Q(x)]$
b. *isang* $\rightsquigarrow \lambda Q.\lambda P.\exists x[P_C(x) \wedge Q(x)]$

An approach employing the Blocking Principle has some crosslinguistic motivation. 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*.

(75) {*Iša* | *Ha-iša*} *halxa* *la-super.*
woman DEF-woman go.PAST.3F.SG to.the-supermarket
{A woman | The woman} went to the supermarket. Hebrew

Likewise, we find cases in which languages do not lexicalize a definite article (like Taglaog), but lexicalize an indefinite one, In these languages, bare singular NPs can express definiteness, while the indefinite variant is expressed using a determiner. For example, Farsi (76a) and Teotitlán del Valle Zapotec (76b). This pattern is expected given Chierchia's Blocking Principle, where the overt indefinite determiner blocks the application of *EX*, just like *isang* in Tagalog.

(76) a. *Amir* {*keik* *o* | *ye* *keik* *o*} *xord*
Amir cake ACC INDEF cake ACC ate.3SG
Amir ate {the cake | a cake}. Farsi (Jasbi 2015:p19)

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

Despite the cross-linguistic appeal, an account of Tagalog employing the Blocking Principle runs into problems when we consider mass and plural NPs. Nominative plural patients are interpreted as definites, just like their singular counterparts. The nominative plural in (77) gets an exhaustive inference, thus behaving like a plural definite. We must therefore analyze the nominative in (77) as being shifted by a (pluralized) *iota*, yielding an *e*-type interpretation, namely the individual maximally instantiating the description.

Why doesn't *EX* apply in this example? We can no longer say *EX* is blocked by the availability of *isang*, as *isang* is not grammatical in combination with pluralized NPs. Thus the Blocking Principle does not sufficiently account for data like (77), and an additional principle must be invoked, namely Type Simplicity in (73).

(77) *Context: Mayroong mariming ibon sa labas ng bahay ni Maria.*
There are many birds outside Maria's house.

S⟨in⟩alo	*ni*	*Maria*	*ang*	*(*isang)*	*mga*	*ibon.*
⟨PV.PERF⟩.catch	GEN	Maria	NOM	one-LK	PL	bird

Maria caught the birds. (*Comment*: All of them.)

What are the cross-linguistic implications of assuming both Type Simplicity and the Blocking Principles as rules of grammar? If both principles are active in a language, we predict that the lexicalization of a definite article should block the application of *iota*, via the Blocking Principle, thus bare NPs should only take on indefinite interpretations. This type of system is exemplified by Hebrew, in which *iota*-shifting is blocked by the definite particle *ha-*. In languages like Hebrew, the application *EX*-shifting is not blocked by Type Simplicity. This is because there is never a choice between *EX* and *iota*, given that *iota* is blocked by the definite article.

On the other hand, in a Tagalog type-system, which lexicalizes neither an overt version of *iota* nor an overt version of *EX* (applying to both singulars and plurals), bare NPs may only shift by *iota*. Shifting by *EX* is blocked by Type Simplicity in such languages.

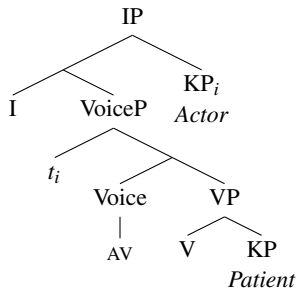
What about systems such as Russian in (70), in which there are no overt articles and bare NPs seemingly allow both definite and indefinite readings. In this case, neither *iota* nor *EX* should be blocked, but Type Simplicity should determine a preference for *iota* and therefore definite readings of bare NPs. Thus, the indefinite reading in (70) must either be derived by some mechanism other than type-shifting (just like indefinite readings of bare genitives in Tagalog are derived under the present analysis), or Type Simplicity should be analyzed as being inactive in Russian. A detailed exploration of systems like Russian's in light of interactive principles which block type-shifting mechanisms is a topic for future research.

6 The internal composition of the predicate

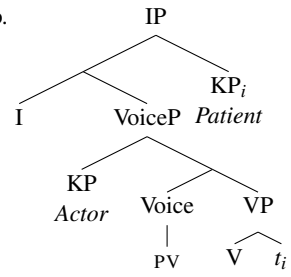
The account in this paper ties the interpretation of a nominal expression to its surface syntactic position. Genitive bare patients are interpreted as indefinites as they are quantified over by the verbal root, given that they occupy the Comp,VP position in (78a). Nominative bare patients move to a derived position in the overt syntax and thus must type-shift in order to compose with the I'-predicate, generating a definite interpretation.

It remains to be explained how the internal composition of the I'-constituent proceeds. For example, given that nominative patients move from their thematic positions in the overt syntax, binding a VP-internal trace in (78b), we must explain how verbal roots semantically compose with the patient's trace when this structure is interpreted.

(78) a.



b.



I assume a standard architecture for the syntax-semantics interface. Syntactic structures are constructed by (overt) syntactic operations, including subject movement. These operations are undertaken for morphosyntactic purposes. For example, in the analyses of Philippine-type systems in Hung 1988a and Guilfoyle et al. 1992, subject movement takes place so that the moved element can be Case licensed.

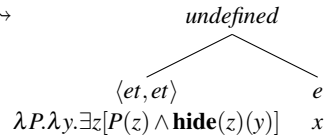
According to one way of spelling out this intuition, the movement of the KPs to Spec,IP in (78) is driven by the checking of uninterpretable features on KP by the head I^0. As the movement of the KP is driven by a morphosyntactic factor, namely Case, it is not dependent on whether the KP is definite or indefinite, quantificational or non-quantificational, pronominal, lexical, or a proper name. This analysis stands in opposition to accounts which take the movement to be driven by factors like specificity, such as Aldridge 2004, Rackowski 2002, and Rackowski and Richards 2005.

Once the structures in (78) are constructed by overt syntactic operations, they must be interpreted by the compositional semantic component of grammar. As each structure in (78) contains a moved element, binding a trace, providing a semantics for the structures in (78) requires a semantic treatment of overt XP-movement. For this, I appeal to the theory of quantifier raising as proposed by Heim and Kratzer 1998. This theory is ordinarily used to deal with *covert* scope-taking of quantifiers. However, here we will use it to provide a semantics for *overt* movement of the Tagalog subject. Heim and Kratzer's also employ this interpretive mechanism to provide a semantics for overt movement of NPs. In their case it is used in their treatment of the overt movement of NPs from the VP-internal subject position (see Heim and Kratzer 1998:§8).

The nominative patient moves from Comp,VP to Spec,IP, binding a trace in its original VP-internal position. According to Heim and Kratzer's theory, the trace of the moved patient is interpreted as an individual variable. This variable is λ-bound higher up in the structure. In this paper's analysis, this will be at the I'-level, i.e., the point at which the moved patient composes with the rest of the clause.

As the trace of the patient is an individual variable, it is the wrong type to compose with the $\langle et, et\rangle$-type 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 in a patient voice sentence, as in (79). Note that *tago* is simply represented as an un-affixed 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.

(79) $[tago\ t_i] \rightsquigarrow$



Again we can appeal to the type-shifting theory of Partee (1986), which 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*. Where *iota* maps properties onto their unique instantiators, *ident* maps individuals onto their uniquely characterizing properties, as in (80).

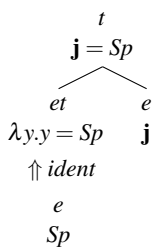
(80) $ident = \lambda x.\lambda y.y = x$

There's independent empirical evidence that the type-shifter *ident* is warranted in Tagalog. Expressions which have a basic *e*-type interpretation, such as pronouns and proper names, can constitute predicates in Tagalog, as in (81a) (compare these to nominal predicates as in (33)). Partee's type-shifting system is intended provide a unified treatment of argumental uses of NPs and apparently predicative uses. For example, in (81), 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 (81), *ident* is applied to the pronoun, shifting its denotation from the speaker to the property which uniquely instantiates the speaker.

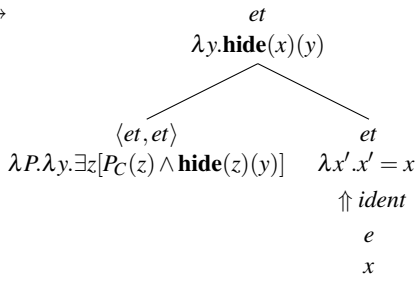
(81) *[Ako]* *[si* *Juan]*
NOM.1SG NOM Juan
I'm Juan.

(82) $[_{\text{KP}}\ \textit{Ako}]\ [_{\text{KP}}\ \textit{si Juan}] \rightsquigarrow$



Cases like (81) 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 (79b) (introduced by the movement of the patient) into an $\langle e,t\rangle$-type expression, as in (83a). Thus, the transitive verbal root can combine with a property-denoting expression, as usual (83b). The resulting meaning in (83b) 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. [18]

(83) $[\textit{tago}\ t_i] \rightsquigarrow$



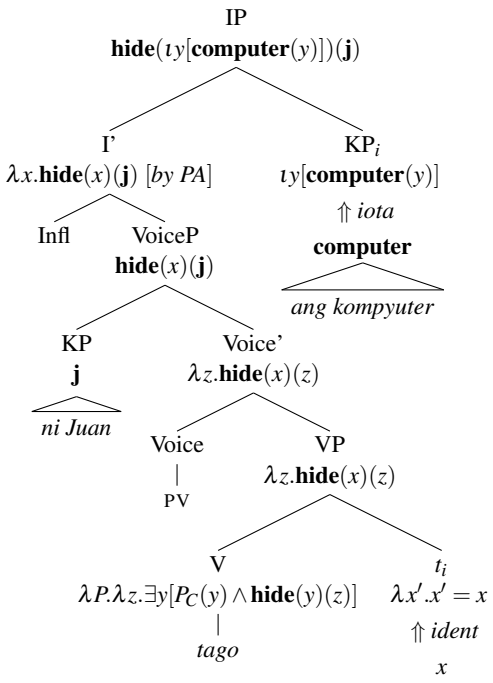
We can now construct the compositional semantics for a basic patient voice sentence as in (78b). The syntax of a basic patient voice sentence is sketched in (84).

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 (84) is interpreted as below.[19]

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

[19] 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.

(84)



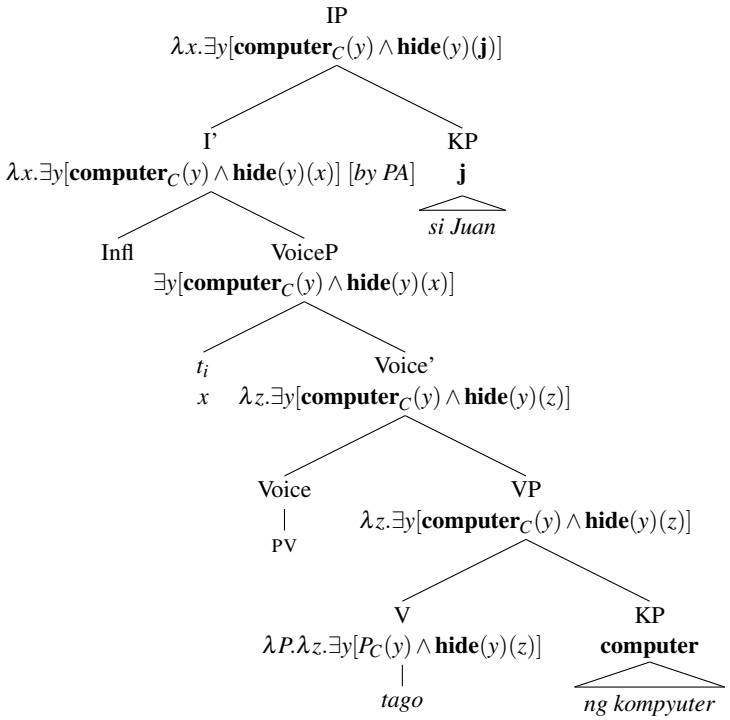
The analysis in (84) provides a complete picture of how patient voice sentences with definite bare nominative patients semantically compose. The bare nominative patient (in Spec,IP) shifts via *iota* in order to compose with the predicate. This ensures its definite interpretation without the use of a definite article. Meanwhile, its trace shifts via *ident* in order to compose with the verbal root. As the nominative KP 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.[20]

We can compare the patient voice structure to an analogous actor voice structure. (85) sketches the syntactic structure of a basic actor voice sentence. Here the actor KP moves to the subject position and the patient KP is VP-internal. This structure explains why genitive bare 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.

[20] A reviewer asks in what order the following operations take place: (i) *iota*-shifting of the nominative patient, and (ii) movement of the nominative patient to Spec,IP. If (i) takes place after (ii), why doesn't the nominative patient compose directly with the transitive verb without type-shifting? In this paper's analysis, the movement of the subject takes place in the overt syntax, driven by syntactic considerations, for example, in the Hung 1988a and GHT analysis of Philippine-type voice systems, the NP in question moves to the subject position in order to be Case licensed.

Thus, there is no question of why the nominative patient doesn't compose directly with the transitive verb. A structure in which the nominative NP is a structural sister to the transitive verb is never "delivered" to the compositional semantic component of grammar. With this understanding of the syntax-semantics interface in mind, the ordering of (i) and (ii) is not important. Regardless of whether *iota*-shifting of the nominative patient takes place before or after movement of the patient to Spec,IP, the interpretation will be the same: the patient will still be a type *e* definite, which composes with the I'-constituent.

(85)

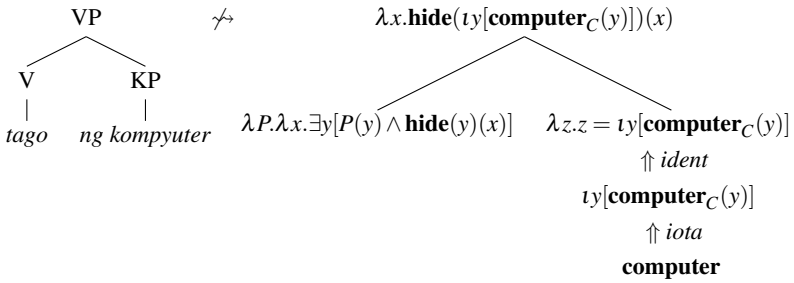


To briefly summarize, the syntactic structures in (78) must be assigned a compositional interpretation. In order to do this, we must fix a semantics for the overt movement of the nominative KP. Moved nominals bind a trace in their original position. This trace is interpreted as a bound individual variable. The I'-constituent ends up being interpreted as a $\langle e,t\rangle$-type property, abstracting over this individual variable. This individual variable must be shifted via *ident* in order to compose with the transitive verb, which as per §4, combine with property-denoting expressions. Note that *ident* is independently necessary in order to interpret copular clauses such as (81).

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

An outstanding question is why genitive bare patients 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 bare NPs marked with genitive case, which should be ruled out. But under the present analysis, with both *iota* and *ident* available, what rules out the parse in (86)? 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 bare NP. So far, nothing in the present analysis rules this out.

(86)



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 nominative to the subject position

creates a type-mismatch which can be resolved by lowering the nominative's type, from $\langle e,t\rangle$ to e, via *iota*.

In (86), the property-denoting bare genitive 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 (86) does *not* resolve a type-mismatch. In order to rule out derivations like (86), 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 (87), 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.

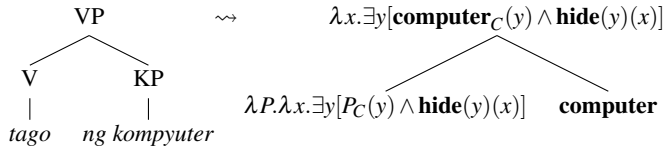
(87) For all tree structures Z, with daughters X and Y, such that Y has an admissible translation α,

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.

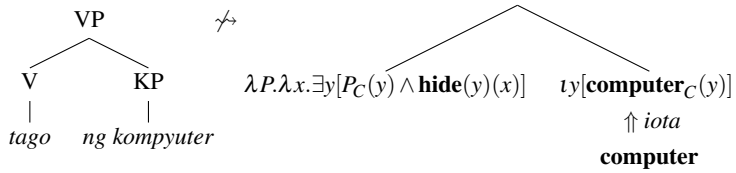
(88–90) illustrate how this principle blocks the application of type-shifting in structures with genitive bare patients. In (88), we have a well-formed tree structure in which no type-shifting is employed. Here, the observed indefinite reading of the genitive is derived.

(88)



The rule in (87) blocks the patient from shifting via *iota*, as in (89). Here a type shifter has applied to the patient in violation of the clause (c) in (87): the non-type-shifted, $\langle e,t\rangle$-type meaning of the patient is already able to compose with its sister, as in (88). The type-shifter is not mending any type-mismatch here so it is not licensed.

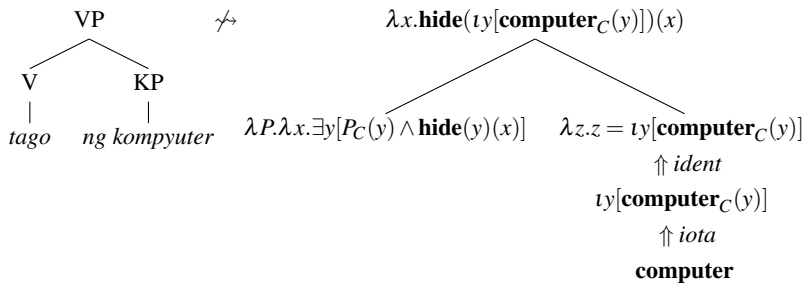
(89)



Structure blocked by clause (87c)

By (87), shifting the patient by *iota* (or any type-shifter) is blocked when the property-denoting patient occupies this Comp,VP syntactic position. As *iota*(**computer**) is not an admissible translation for the NP, the structure in (90) is also blocked. In this structure, the patient 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 (87): the type-shifter is applying to an inadmissible translation of the patient.

(90)



Structure blocked by clause (87a)

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 (89). 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 (90).

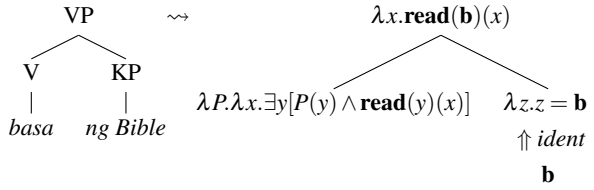
As stated earlier, certain types of genitive patients can be definites, such as inanimate proper names as in (91).

(91) a. *Na-nood* *si* *Alex* *ng* *Extra* *Challenge*
AV.PERF-watch NOM Alex GEN Extra Challenge
Alex watched Extra Challenge. Latrouite 2011:39c, citing Saclot 2006:10

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

These examples are handled as in (92). Under the present analysis, proper names like *ng Bible* are given *e*-type interpretations. Thus, in order for the *e*-type expression to compose with the selecting verb, they must shift via *ident*, allowing composition to proceed. Examples like (91) are therefore predicted by the analysis.

(92)



Before moving on to other sorts of genitive case-marked patients, I will briefly discuss oblique case-marked patients of certain actor voice verbs. The factors governing alternations between genitive and oblique case on the patient argument are complex and beyond the scope of this paper.

Although genitive inanimate proper names are permitted as in (91), actor voice verbs do not allow genitive case-marked personal names or pronouns to surface in the patient position. If the verb is lexically specified to allow oblique case marked objects, animate proper names and pronouns must appear with oblique case marking, as in the examples below.

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

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

Bare 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. Again, the facts here are complex and a more detailed discussion is outside the scope of this paper. In such cases, patients marked with the oblique case marker are generally interpreted as definites.

(94) 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 (94), 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.

Following the general approach of this paper, the effect of this syntactic movement would be to ensure that bare oblique patients are interpreted like bare 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.

To summarize, this section provides an analysis of why bare genitive patients are interpreted as indefinites and not definites. They are unable to shift to e-type expressions via *iota*, and then back to $\langle e,t\rangle$-type expressions via *ident*, due to the general principle that type-shifting is used to mend type-mismatches. In structures in which types are not matched, type-shifting is blocked. If the genitive is already e-type, for example, a proper name, then it creates a type mismatch and must shift via *ident*.

6.2 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, as discussed earlier, Sabbagh 2016 demonstrates that at least some speakers accept a range of quantificational expressions as genitive patients, including "strong" quantificational modifiers like *lahat* 'all' and *karamihan* 'most'. Sabbagh backs this observation up with naturally occurring examples, including the following in (95) repeating earlier examples.

(95) a. *Puwede ka-ng k⟨um⟩ain ng lahat ng mga gusto mo kapag nagda-diet ka*
Can you-LK AV.eat GEN all GEN PL like you when AV-diet you
You can eat everything you want when you are dieting Sabbagh 2016:35c

b. *Siya ang na-nalo sa poll kung saan naka-kuha siya*
NOM.3SG NOM PERF.AV-win OBL poll COMP where PERF.AV-receive NOM.3SG
ng karamihan ng boto.
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. In (96), 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.

(96) $[_{IP}$ *ng karamihan ng boto*$_i$ $[\lambda_i$ $[_{IP}$ ... $[_{VP}$ *kuha* t_i $]$ $]$ $]$ $]$
most votes receive

When this syntactic structure is interpreted, 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*. 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.

Both nominative and genitive quantificational patients are interpreted 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 (97).

(97) a. *nag-tago* *si* *Juan* *ng* *isang* *kompyuter*
PERF.AV-hide NOM Juan GEN one computer
Juan hid one computer

b. *t⟨in⟩ago* *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 (98), 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.

(98) *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 (99a) and a predicative sense in (99b). Note that in (99), # is a function which determines the number of atomic sub-parts of an individual.

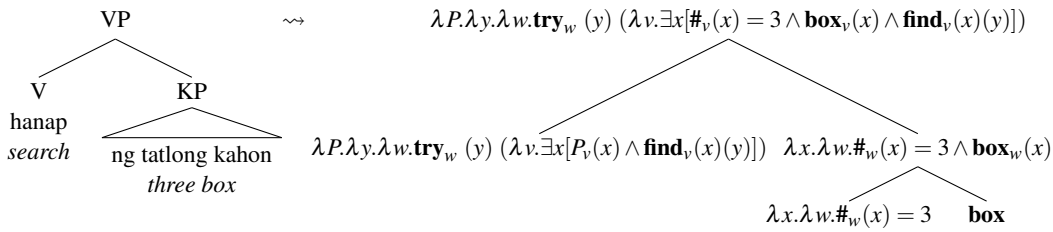
(99) a. $tatlo_1 \rightsquigarrow \lambda P.\lambda Q.\exists x[\#(x) = 3 \wedge P(x) \wedge Q(x)]$
b. $tatlo_2 \rightsquigarrow \lambda x.\#(x) = 3$

The predicative sense of cardinal numerals is evidenced by their usage as predicates in the morphosyntactic sense, as in (100). 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.

(100) *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 (98). A rough sketch follows in (101). 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.

(101)



A final point about cardinal numerals: (101) 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 (102). 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 (102) 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.

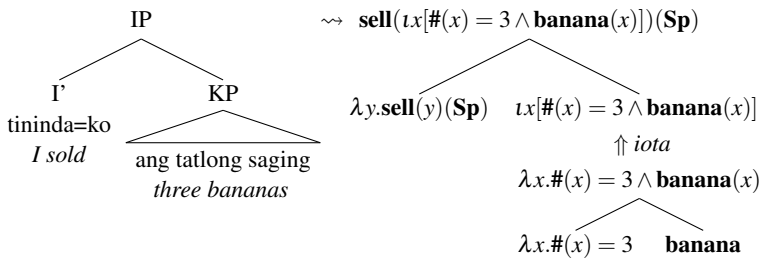
(102) *Context*: Carlos works in a fruit store. Carlos:

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 (102) is unproblematic given the property-denoting sense of cardinal numerals proposed in (99). 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.

(103)



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 nominal expression and how its interpretation is linked to its 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 (104) 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, must type-shift via *iota*, generating their observed definite readings.

(104) Nominative patients (in Spec,IP)

	Type	Mode of composition	Quantificational source
Bare NPs	$\langle e,t\rangle$	via *iota*	(definedness condition of) *iota*
Quantificational NPs w/ predicative dets.	$\langle e,t\rangle$	via *iota*	(definedness condition of) *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.

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.

(105) 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 in a variety of languages (e.g., 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.

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