

Definiteness and implicatures in Tagalog*

James N. Collins
Stanford University

1 Introduction

The use of an indefinite NP often implies that the NP’s descriptive content is instantiated by more than one individual. But do indefinites conventionally signal this notion of nonuniqueness or does nonuniqueness arise pragmatically, via reasoning about scalar alternatives? In this paper I argue that in Tagalog, indefinite bare NP patients are only able to implicate nonuniqueness if there is a grammatical alternative utterance employing a definite. In cases where the alternative utterance with a definite is blocked by the rules of Tagalog grammar (in particular word order configurations), the nonuniqueness implicature does not arise. I show that these results provide evidence for the pragmatic view of nonuniqueness. Building on this result, I discuss a model of implicature calculation which is sensitive to the syntactic well-formedness of pragmatic alternatives.

In focus is the interpretation of bare NPs in Tagalog. Tagalog demonstrates a puzzling paradigm (noted by McFarland, 1978; Schachter and Otnes, 1982; Adams and Manaster-Ramer, 1988, amongst others). The definiteness of the patient NP appears to be sensitive to the order of constituents within its containing clause. In verb-initial sentences, genitive case-marked patients are indefinite (1a). In actor-initial sentences, such as the cleft structure in (1b), this interpretive constraint on the genitive patient NPs is lifted, and it becomes compatible with a definite interpretation.

- (1) a. Nakakita siya [ng Amerikano]
PERF.AV.see NOM.3SG GEN American
‘He saw **an** American.’ (McFarland, 1978)
- b. [Siya_i]_{pivot} [ang nakakita ---_i [ng Amerikano]]_{cleft}
NOM.3SG NOM PERF.AV.see GEN American
‘He’s the one that saw **a/the** American.’ (McFarland, 1978)

The goals of this paper are to make this generalization precise. I characterize the phenomenon as the emergence of a ‘nonuniqueness’ implicature in clauses like (1a) which is suspended in clauses like (1b). This paper argues that this sensitivity of implicatures to clausal syntax is expected if we allow grammatical constraints to enter into the reasoning behind implicature calculation.

The argument proceeds as follows. I first introduce Tagalog’s voice system, typical of western Austronesian languages. I show how in verb-initial sentences, the speaker can choose between expressing a transitive verb in ACTOR VOICE with a genitive patient, or in PATIENT VOICE with a

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2016; Paul et al., 2016). For example, *ang saging* in (2a) is translated as an English definite with *the*. Genitive patients with *ng* are interpreted as indefinites (e.g. *ng saging* in (2b)).

In support of the analysis of BNomPats as definite, below I provide some evidence that BNomPats in Tagalog presuppose that their descriptive content is uniquely instantiated. For more detail, see Collins 2016. Semantic presuppositions, such as those triggered by definites, are ordinarily detected by the felicity of uttering the presupposition trigger given certain contextual assumptions. An analysis of a BNomPat as a definite should predict that it is felicitous in contexts which entail its presuppositions, and infelicitous in those that do not. I provide some evidence below that BNomPats behave as predicted by a definite analysis, while BGenPats behave like indefinites. The diagnostics are adapted from Tonhauser et al. (2013).

The utterance contexts in (3) minimally differ as to whether they entail the existence of an individual that instantiates the property of being a singer (*Context A*) or not (*Context B*). After being read one of these contexts (in English), consultants were asked to judge the felicity of the Tagalog utterances in (4a) or (4b).

- (3) a. *Context A*: Maria and Juan approach a closed room. They hear someone singing on the other side of the door. Maria walks in, shuts the door behind her. After a while, she emerges again and says to Juan: {(4a) | (4b)}
- b. *Context B*: Maria and Juan approach a closed room. Maria walks in, shuts the door behind her. After a while, she comes out again and says to Juan: {(4a) | (4b)}
- (4) a. Nakilala ko [ang mang-aawit]_{BNomPat} sa kuwarto
 PERF.PV.meet GEN.1SG NOM singer OBL room
 ‘I met the singer in the room.’
Response (Context A): Sounds natural, maybe she was in the room with the singer.
Response (Context B): Sounds unnatural
- b. Nakakilala ako [ng mang-aawit]_{BGenPat} sa kuwarto
 PERF.AV.meet NOM.1SG GEN singer OBL room
 ‘I met a singer in the room.’
Response (Context A): It’s correct, but there’s a possibility that the *mang-aawit* is not the one she heard singing.
Response (Context B): It’s correct.

Consultants rejected (4a) as infelicitous with *Context B*, which does not entail the existence of a singer, but accepted the utterance with *Context A*, which does. This data supports the analysis that BNomPats like *ang mang-aawit* impose a felicity constraint on the utterance context, thus behaving like a presuppositional definite. (4b) was accepted in both contexts, supporting the view that indefinite BGenPats like *ng mang-aawit* do not impose such constraints on the utterance context. Note that the consultant response to (4b) in *Context A* is suggestive of the nonuniqueness effect mentioned in the introduction: the consultant offered a scenario in which multiple individuals instantiate the property of being a singer.

Additionally, we can test whether BNomPats similarly require that the utterance context entail that their descriptive content is *uniquely* instantiated. Consultants were presented with the context in (5) in English, and again asked to judge Tagalog sentences containing BNomPats (6) for their felicity. The context in (5) does not contain prior mention of the BNomPats in (6). This is to avoid anaphoric uses of definites which are known to interfere with the uniqueness requirement imposed by definiteness (see Neale, 2004; Beaver and Coppock, 2015, etc.).

- (5) *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: {(6a) | (6b)}
- (6) a. Nasira ko [ang gulong]_{BNomPat}.
 PERF.PV.damage GEN.1SG NOM tire
 ‘I damaged the tire.’ (*Comment:* It’s unhelpful. She should answer which part.)
- b. Nasira ko [ang manibela]_{BNomPat}.
 PERF.PV.damage GEN.1SG NOM steering.wheel
 ‘I damaged the steering wheel.’ (*Comment:* That’s correct.)

The target utterances vary as to whether discourse participants are expected to assume that the BNomPat’s descriptive content is uniquely instantiated (given normal assumptions about the make-up of cars). The utterance context (5) does not entail unique instantiation of the BNomPat’s descriptive content in (6a), as the car probably has more than one tire. However, the context entails unique instantiation in (6b), as the car can be assumed to have just one steering wheel.

The judgements of (6a) as infelicitous and (6b) as felicitous are suggestive that BNomPats impose a requirement that the utterance context entail that its descriptive content is uniquely instantiated (see Paul et al., 2016; Collins, 2016, for additional discussion and data).

BNomPats stand in contrast to BGenPats. The indefinite status of BGenPats is evidenced by the judgement in (4b) where the presence of the BGenPat biased the consultant towards a *non-unique* reading of the NP. Further, (7) shows that the existential meaning component of BGenPats can be targetted by entailment cancelling operators like negation. This behavior is consistent with an analysis of BGenPats as indefinite.

- (7) Hindi ako bumili [ng saging]_{BGenPat}
 not NOM.1SG PERF.AV.buy GEN banana
 ‘I didn’t buy any banana.’ (*never* ‘There was a banana the man didn’t buy.’)

3 Nonunique interpretations of genitive patients

I propose the semantic analysis of basic clauses like (2a–2b) in (8). Here propositions are represented as partial functions from possible worlds to truth values, defined just in case the input world validates any presuppositions of the proposition. In the notational system of Heim and Kratzer 1998, ‘ $\lambda a : \phi . c$ ’ represents a partial function with a definedness condition ϕ .

The patient voice clause with a BNomPat (2a) is interpreted as a partial function, which can be phrased as follows: the proposition expressed by (2a) is a partial function from worlds to truth values, and given a world w , is defined just in case the cardinality of the set $\llbracket \mathbf{banana}_w \rrbracket$ is exactly 1, and where defined returns true iff the unique banana is bought by the speaker. The proposition expressed by (2b) is a total function, interpreted as an existential claim about an individual which is both a banana and bought by the speaker. See Collins 2016 for an analysis of how these readings are derived compositionally.

- (8) a. (2a) $\rightsquigarrow \lambda w : \exists!x[\mathbf{banana}_w(x)] . \mathbf{buy}_w(\iota(\mathbf{banana}_w))(Sp)$
 b. (2b) $\rightsquigarrow \lambda w . \exists x[\mathbf{banana}_w(x) \wedge \mathbf{buy}_w(x)(Sp)]$

The previous section argues for a definite interpretation of BNomPats. The analysis in (8a) holds that BNomPats introduce a presupposition of uniqueness. Contexts must entail unique instantiation of the BNomPat’s descriptive content in order for its use to be felicitous (though this

is potentially subject to covert domain restriction, as discussed in Section 3.3). We see the opposite kind of effect for indefinite BGenPats which appear to imply nonuniqueness in particular contexts.

- (9) a. Nadiskubre ni Karlos [ang buwan]_{BNomPat}
 PERF.PV-discover GEN Karlos NOM moon
 ‘Karlos discovered the moon.’ \rightsquigarrow *There is only one moon (in the discourse context)*
- b. Nakadiskubre si Karlos [ng buwan]_{BGenPat}
 PERF.AV-discover NOM Karlos GEN moon
 ‘Karlos discovered a moon.’ \rightsquigarrow *There is more than one moon (in the discourse context)*

The effect is even more dramatic where the descriptive content of the BGenPat is strongly biased towards being interpreted as uniquely instantiated. The NP *mundo* in unexceptional discourse contexts is interpreted as a singleton-set denoting property **earth**. In (10b), the BGenPat *ng mundo* appears to imply the existence of multiple earths, contrary to contextual assumptions.

- (10) a. pinoprotektahan ko [ang mundo]_{BNomPat}
 protect.PV GEN.1SG NOM earth
 ‘I protect the earth.’
- b. ? nagpoprotekta ako [ng mundo]_{BGenPat}
 AV-protect NOM.1SG GEN earth
 ‘I protect an earth.’ (*Comment: Sounds like a galactic being or something.*)

The semantic analysis of BGenPats in (8b) does not encode for the nonuniqueness implication observed in (9b,10a). Should (8b) be updated to incorporate this implication?

The observation that indefinites can imply nonuniqueness relates to a persistent question in the literature on indefinites. Do indefinites, like English DPs headed by *a* or Tagalog BGenPats, conventionally signal nonuniqueness? Or does nonuniqueness arise via pragmatic reasoning, via an inference that involves reasoning about a competitor? In the following subsection, I argue that the Tagalog data provides an argument for the latter view, as far as Tagalog BGenPats are concerned: an implication of nonuniqueness with respect to a BGenPat’s descriptive content arises via competition with BNomPats. The nonuniqueness implication arises as a CONVERSATIONAL IMPLICATURE in contexts where an analogous use of a BNomPat would signal unique instantiation.

3.1 The pragmatic view of nonuniqueness

Below I lay out some initial evidence for the status of the nonuniqueness implication of BGenPats as a conversational implicature. Firstly, the implication is cancellable and reinforceable, both properties of conversational implicatures but not of conventionalized entailments (Hirschberg, 1985). (11) shows the application of these tests to a well studied implicature. The English sentence *some of the students passed the test* is generally taken to implicate *Not all of the students passed the test*. (11) shows that this implicature can be felicitously cancelled or reinforced.

- (11) a. Some of the students passed the test, in fact all of them did. (*cancellation*)
 b. Some of the students passed the test, but not all. (*reinforcement*)

(12a) provides a typical example of a BGenPat implying nonuniqueness: the sentence in isolation biases towards an interpretation in which there are at least two authors of the book in question. (12b), accepted as felicitous by consultants, shows it is possible to follow an utterance like (12a)

with a denial of the nonuniqueness implication. As conversational implicatures are understood in a Gricean framework to arise via collaborative inference between discourse participants, we may expect that speakers may actively prevent her interlocutors from calculating an implicature with a continuation like (12b). Similarly, the nonuniqueness implication of (12a) can be reinforced by the continuation in (12c), again accepted by consultants as felicitous. The implication can be explicitly signalled with little perceived redundancy (see Levinson, 2000).

- (12) a. nakakilala ako ng may-akda ng aklat na iyon...
 PERF.AV.meet NOM.1SG GEN author GEN book LK that...
 ‘I met an author of that book...’
- b. ...at, siya lang ang nag-iisang may-akda
 and NOM.3SG only NOM only author
 ‘...in fact, he was the only author.’
- c. ...at meron ibang mga may-akda bukod sa kanya
 and exist other PL author besides OBL him
 ‘...and there were other authors besides him.’

The uniqueness implication of BNomPats, on the other hand, does not show these behavioral characteristics. As expected, (13a) implies unique instantiation of the NP’s descriptive content (i.e. that there is just one author of the book). Attempting to reinforce this implication (13b) results in a judgement of redundancy of the sort not observed with the analogous (12c). Likewise, attempting to cancel the uniqueness implication (13c) is somewhat more marked than the analogous (12b), though not entirely infelicitous. This haziness is somewhat expected if we allow speakers to update their knowledge of the cardinality of authors incrementally. Potentially, the mini-discourse (13a–13c) represents the speaker learning about the existence of authors in addition to the referent of the BNomPat in (13a).

- (13) a. nakilala ko ang may-akda ng aklat na iyon...
 PERF.PV.meet GEN.1SG NOM author GEN book LK that...
 ‘I met the author of that book...’
- b. ...at, siya ang nag-iisang may-akda ng aklat na iyon
 and NOM.3SG NOM only author GEN book LK that
 ‘...and he is the only author of that book.’ (*Comment: you can omit at siya ang nag-iisang may-akda, it sounds redundant.*)
- c. ...at, meron ibang mga may-akda ng aklat na iyon bukod sa kanya
 and exist other PL author GEN book LK that besides OBL OBL.3SG
 ‘...and there are other authors of that book besides him.’ (*Comment: It sounds like you’re saying and as a matter of fact!.*)

The contrast between (12) and (13) suggests that the nonuniqueness implication of BGenPats is derived pragmatically, while the uniqueness implication of BNomPats is conventionally encoded.

Just like the English alternative sentences in (11), the Tagalog actor voice and patient voice alternative sentences in (12a) and (13a) are ordered by semantic strength. Given the semantic proposal in (8), a patient voice sentence with a bare NP patient is semantically stronger than the alternative actor voice sentence with a bare NP patient. (8) is rewritten below, replacing the definite variant in (8a) with an equivalent existential statement (14a). The rewrite makes it clear that the definite and indefinite variants differ only by the presupposition triggered by the definite.

- (14) a. $\lambda w : \exists!x[\mathbf{banana}_w(x)] . \exists x[\mathbf{banana}_w(x) \wedge \mathbf{buy}_w(x)(Sp)]$
 b. $\lambda w.\exists x[\mathbf{banana}_w(x) \wedge \mathbf{buy}_w(x)(Sp)]$

Intuitively, if the speaker had intended to convey uniqueness, she would have employed (14a), which encodes uniqueness in its presuppositional content. If she uses the non-presuppositional version, she must intend to signal the opposite: nonuniqueness. The listener takes nonuniqueness to be a belief of the speaker in order to maintain the assumption that the speaker is being cooperative. (15) sketches this reasoning process, based on the outline of implicature reasoning in Potts 2013.

- (15) *Utterance*: ‘*Nakakilala ako ng may-akda*’ (= I met an author).
Implicature: There is more than one author. (i.e. *nonuniqueness/nonmaximality*)
- a. *Contextual premise*: *Sp* knows whether or not there is more than one author in the relevant discourse context.
 - b. *Contextual premise*: *Sp* is cooperative (i.e. will choose the alternative utterance which is optimal given Gricean maxims).
 - c. There is an alternative utterance (‘*Nakilala ko ang may-akda*’), with content q (= I met the (one and only) author) which *Sp* could have uttered.
 - d. q is preferential to p , the content of *Sp*’s actual utterance.
 - e. p and q are equally relevant.
 - f. by (b–e), *Sp* did not express q because *Sp* lacks evidence that q is true.³
 - g. by (a) and (f), *Sp* lacks evidence for the presupposition of q because it is false (i.e. there is more than one author).

In brief, the proposal holds that nonuniqueness can be inferred if we assume the speaker would have used the definite form (a BNomPat) if she took uniqueness to hold in the discourse context. As she uses the somehow less preferred BGenPat, she must take uniqueness to not hold, and thus implicate nonuniqueness. In the following subsection, I discuss the mechanism which determines that the patient voice variant of the utterance serves as the pragmatic alternative in (15c). Later, in Section 3.3, I discuss the premise in (15d) with reference to the proposal in Heim 1991 that there is a general preference for presupposition triggers like definites via the principle *Maximize Presupposition*.

3.2 Calculating alternatives

The use of step (15c) in order to derive the nonuniqueness implicature comes from a line of previous work starting with Hawkins (1991) and Heim (1991). These works focus on the contrast between English articles *a* and *the*. Like the present analysis, they reject the idea that the indefinite conventionally encodes for nonuniqueness. Instead, *a* and *the* are assumed to form a conventionalized scale of lexical alternatives. Thus the utterance of a sentence with *a* triggers a reasoning process like (15c): why did the speaker choose the indefinite form *a* over its ‘scalemate’ *the*?

I propose something similar in order to account for the Tagalog data. As Tagalog lacks articles like *the* (Collins, 2016; Paul et al., 2016), I propose a different approach, namely, that the actor

³In a semantics assuming three truth values (true, false, undefined), a proposition’s truth value is undefined for any world in which its presuppositions are not true. If its presuppositions are true, a proposition may map a world to true or false. (f) states that *Sp* did not utter q because she lacks evidence q is true, meaning q is either false or undefined. If q is false, its presuppositions are true, and its nonpresuppositional content is false. By uttering p , *Sp* commits herself to believing the nonpresuppositional content of both q and p (i.e. there is at least one author that I met), and thus q can only be undefined.

voice and patient voice morphemes form a conventionalized scale of lexical alternatives, $\langle AV, PV \rangle$. The utterance of an actor voice sentence triggers a comparison with the patient voice alternative, deriving the premise (15c). See Collins (to appear) for more arguments and discussion of this proposal.⁴

Generating an alternative to an uttered sentence requires some notion of syntactic replacement. The following principle is adapted from Singh (2011). It states that for any tree structure which contains a lexical item with a scalar alternative, we can reconstruct an alternative tree structure with the lexical item in question swapped out for its scalemate.

- (16) If $\langle \alpha, \beta \rangle$ is a scale, and S is a tree structure containing lexical item α as a terminal node, and S' is a tree structure identical to S except that at some terminal node, it contains β where S contains α , then S and S' are alternatives.

However, as stated, (16) encounters some morphosyntactic difficulties. The English case of swapping *a* for *the* is relatively simple, as the tree structure apart from the article remains consistent. However, in Tagalog, swapping out a voice morpheme for another voice morpheme has the effect of altering the case assignment to the verb's arguments. We must ensure that swapping the voice morpheme includes altering the concomitant case marking on the verb's arguments. In order to account for this, I provide a refinement of (16) in (17) which is one way of spelling out this notion.

- (17) If $\langle \alpha, \beta \rangle$ is a scale, and S is a tree structure containing lexical item α as a terminal node, and S' is a tree structure identical to S except that:
- i. at some terminal node, it contains β where S contains α ,
 - ii. for all subtrees s of S such that s is in a syntactic dependency with α (agreement, case, S-selection, etc.), s is replaced with a subtree s' in S' such that s' is identical to s except that the syntactic dependency is re-established with β in S'
- then S and S' are alternatives.

There are other applications of the principle in (17ii), such as pragmatic accounts of plurality (e.g. Krifka, 1989; Sauerland et al., 2005) which assume that plural NPs (18a) compete with singular alternatives (18b). (17ii) ensures that (18a) does not compete with the ungrammatical (18c). Instead the alternative (18b) is calculated, with the subject-copula agreement re-established.

- (18) a. Some boys are tall. b. Some boy is tall. c. *Some boy are tall.

Given (17ii), we can calculate the patient voice alternative of an actor voice sentence, like (19a), by swapping out the actor voice prefix *naka-* for the patient voice prefix *na-*, and making the concomitant changes to the case assignment of the two argumental NPs, deriving (19b).

- (19) a. nakakilala ako ng may-akda
 PERF.AV.meet NOM.1SG GEN author
 'I met an author.'
- b. nakilala ko ang may-akda
 PERF.PV.meet GEN.1SG NOM author
 'I met the author.'

⁴Under this proposal, the AV and PV competing lexical items are not necessarily ordered in terms of semantic strength. In fact, there is no evidence that the semantic contributions of AV and PV in relation to the quantification of the patient can be compared semantically. This is discussed further in Collins (to appear).

We can refer to the patient voice variant of an actor voice sentence as its scalar alternative, and thus replace (15c) with the generalized version (20). As the scalar alternative of an actor voice sentence (with a bare NP patient) will be the corresponding patient voice sentence with a definite patient, q in (20) will be ensured to encode for the definite presupposition.

- (20) There is a scalar alternative to Sp 's actual utterance, with content q , which Sp could have uttered.

3.3 Pragmatic enrichment and assumptions about cardinality

The derivation in (15) takes the nonuniqueness inference to be highly context dependent, relying on several assumptions about the mutual beliefs of the discourse participants. This predicts a high amount of indeterminacy with regards to the emergence of a nonuniqueness implicature. We expect that the implicature should fail to arise in contexts where certain assumptions fail to be met. Hirschberg (1985) cites this indeterminacy as an identifying property of conversational implicatures. As predicted, BGenPats may fail to imply nonuniqueness under certain conditions. The naturally occurring (21) is such an example, intuitively not implying the existence of multiple big fish. The example closely corresponds to Heim's (1991, p. 32) *Robert caught a 20ft. catfish*, which is intended to illustrate the same point.

- (21) Isang araw, nakahuli si Hangdangaw ng malaking isda.
 one.LK day PERF.AV.catch NOM Hangdangaw GEN large.LK fish
 'One day, Hangdangaw caught a large fish.' (↗ *there are multiple fish*)

The premise (20) asserts that the calculation of the implicature relies on the existence of a scalar alternative (i.e. the patient voice variant of (21)) which the speaker *could have* uttered. The patient voice variant contains the definite BNomPat *ang malaking isda*.

We can assume a context which does not entail the existence of one or more large fish, such as a discourse context where it is known that Hangdangaw is a keen fisherman, but it is unknown whether there were any big fish for him to catch on the day in question. Prior to an utterance of (21) in such a context, discourse participants entertain the possibility that there are no big fish. Thus, we should expect that (21), with an indefinite BGenPat is felicitous, as it does not impose an existential presupposition. However, its patient voice alternative should be infelicitous, as the existential presupposition of the definite BNomPat is not satisfied.

Therefore, on a speaker's utterance of (21) in the described context, the discourse participants cannot infer that (20) is true. It is false that the speaker *could have* uttered the patient voice alternative with a definite *ang malaking isda* 'the large fish', as to do so would create a presupposition failure. As the premise (20) does not hold, the reasoning sketched in (15) does not go through, and a nonuniqueness implicature does not arise.

I hypothesize the following generalization.

- (22) An actor voice sentence with a BGenPat does not implicate nonuniqueness in utterance contexts which do not entail the existence of individuals instantiating the BGenPat's descriptive content (i.e. $|\llbracket NP \rrbracket| \geq 0$).

By way of example, the effect is more dramatic with NPs which Schein (2015) characterizes as biased towards non-existence, such as those referring to stains, spills, mistakes, and dents. For example, (23) does not seem to implicate the existence of multiple stains. Prior to the utterance of (23), we can assume the discourse participants considered the possibility of (or were even biased

toward) there being no stains. As such, the definite, patient voice form would be infelicitous, and the actor voice form in (23) does not generate a nonuniqueness implicature.

- (23) nakakita ako [ng mantsa ng dugo]
 PERF.AV.see NOM.1SG GEN stain GEN blood
 ‘I saw a blood stain.’
 (www.wattpad.com/176142735-minsan-may-isang-tanga-one-shot-minsan-may-isang)

BGenPats appear to implicate nonuniqueness in discourse contexts which entail that the BGenPat’s descriptive content is instantiated by at least one individual. For example, given normal expectations that books have at least one author, (12a) is naturally interpreted in a context entailing the existence of an author, and as expected, the utterance does implicate nonuniqueness in such a context. I hypothesize the following generalization.

- (24) An actor voice sentence with a BGenPat implicates nonuniqueness in utterance contexts which entail the existence of one or more individuals instantiating the BGenPat’s descriptive content (i.e. $|\llbracket NP \rrbracket| \geq 1$).

Here I propose an explanation of why (24) might hold. The proposal is based on Heim’s (1991) principle in (25). Variants of this principle have been termed *Maximize Presupposition* in later work. This principle is employed in order to ensure that the definite variant of a sentence is preferred to the indefinite variant, thus motivating the premise (15d).

- (25) In utterance situations where the presupposition for the definite is already known to be satisfied, it is not permitted to utter the indefinite (cf. Heim, 1991, p. 33)

As stated, this principle does not help explaining the generalization in (24). In utterance contexts where $|\llbracket NP \rrbracket| \geq 1$ is assumed, the existence presupposition of a definite is entailed, but not the uniqueness presupposition. So in such contexts, the use of the definite should not be licensed.

Following previous work (e.g. Von Stechow, 1994; Stanley and Szabó, 2000, and many others), I assume quantificational expressions like definites and indefinites are implicitly restricted. Under this theory, the presupposition of uniqueness imposed by a definite like *ang may-akda* is not merely evaluated with respect to the overt descriptive content **author**. Instead, uniqueness is evaluated with respect to the intersection of the set $\llbracket \mathbf{author}_w \rrbracket$ with an implicit contextually supplied restriction set C , such that $|\llbracket \mathbf{author}_w \rrbracket \cap C| = 1$. This method ensures that an utterance of the definite *ang may-akda* does not encounter a presupposition failure due to the existence of multiple non-salient authors in the entire universe of discourse. Likewise, the existential claim of an indefinite is made with respect to the set $\llbracket \mathbf{author}_w \rrbracket \cap C$.

Under this theory, there is pragmatic uncertainty as to the value of C for any NP. The utterance of a definite will ensure that C gets a value such that $|\llbracket \mathbf{author}_w \rrbracket \cap C| = 1$ in order to satisfy the definite’s presuppositions. No such requirement is in place if an indefinite is uttered.

Suppose a speaker utters a BGenPat *ng may-akda* in a discourse context such that $|\llbracket \mathbf{author}_w \rrbracket| \geq 1$. The audience reasons that the speaker would have uttered *ang may-akda*, so long as the domain restriction C was such that $|\llbracket \mathbf{author}_w \rrbracket \cap C| = 1$, according to Heim’s constraint in (25). As the speaker chose not to utter a definite, she must intend to convey that $|\llbracket \mathbf{author}_w \rrbracket \cap C| > 1$, (i.e. that there is more than one author), thus implicating nonuniqueness.

This theory also helps us explain why there is a discrepancy between contexts in which existence is not assumed ($|\llbracket NP \rrbracket| \geq 0$), and contexts where existence is assumed but uniqueness is not ($|\llbracket NP \rrbracket| \geq 1$). Both contexts fail to satisfy the presuppositions of the unrestricted definite. In the

latter case, covert domain restriction will rescue an utterance of a definite from potential presupposition failure. However, the same cannot be said of contexts where existence is not assumed. If it is possible that the set $\llbracket NP \rrbracket$ is empty, then it is possible that any subset of $\llbracket NP \rrbracket$ is empty.

Finally, we come to the infelicitous examples like (10b), in which the use of a BGenPat is infelicitous. I hypothesize that the following generalization holds.

- (26) An actor voice sentence with a BGenPat is infelicitous in utterance contexts which entail that the BGenPat’s descriptive content is uniquely instantiated (i.e. $\llbracket NP \rrbracket = 1$)

This effect of indefinites has been well observed in the literature, motivating the notion of *Maximize Presupposition*, a version of which is stated in (25). Heim, as well as later authors (Percus, 2006; Sauerland, 2008), phrases the condition as something like a felicity condition. In cases where the presupposition of the definite is satisfied in the discourse, such that $\llbracket NP \rrbracket = 1$, and the flexibility afforded by covert domain restriction is not available, then the condition in (25) prevents the indefinite from being felicitous.

4 Word order effects on indefiniteness

The notion of *Maximize Presupposition* prevents certain utterances of indefinite BGenPats from being felicitous, such as (27).

- (27) # sumukat ako **ng kabilugan ng ulo ni John**
 PERF.AV.measure NOM.1SG GEN circumference GEN head GEN John
 ‘I measured **a** circumference of John’s head.’

As discourse participants naturally assume John’s head has just one circumference, the discourse context entails $\llbracket NP \rrbracket = 1$. Therefore, the presuppositions of the definite variant of (27) are defined, and an utterance of the indefinite (27) is blocked.

However, as observed by McFarland 1978, Schachter and Otnes 1982, and Adams and Manaster-Ramer 1988, amongst others, this constraint is suspended in clauses where the actor NP is extracted to a preverbal position. For example, (28) is a clefted variant of (27) in which the actor NP is extracted to a clause-initial position. Here, the infelicity observed in (27) is no longer present.

- (28) [ako_i]_{pivot} [ang sumukat ---_i **ng kabilugan ng ulo ni John**]_{cleft}
 NOM.1SG NOM PERF.AV.measure GEN circumference GEN head GEN John
 ‘I’m the one that measured **the** circumference of John’s head.’

The nonuniqueness implicature, observed in examples like (29a) (repeated from earlier), appears to surface in verb-initial sentences, but not in actor-initial sentences. (29b) is formed by extracting the actor NP, here via a *wh*-question structure. The nonuniqueness implicature is absent, and (29b) is compatible with a context in which there is just one moon (see McFarland, 1978; Schachter and Otnes, 1982, for more examples).

- (29) a. **Nakadiskubre** si Karlos **ng** buwan
 PERF.AV-discover NOM Karlos GEN moon
 ‘Karlos discovered a moon.’ (\rightsquigarrow *There is more than one moon*)
 b. [sino_i] [ang **nakadiskubre** ---_i **ng** buwan]
 NOM.who NOM PERF.AV-discover GEN moon
 ‘Who discovered the/a moon?’ (\rightsquigarrow *There are one or more moons*)

I propose that this suspension of the nonuniqueness implicature in actor-initial sentences is due to *a failure of pragmatic enrichment*. This proposal is tied to a well-observed morphosyntactic phenomenon, the so-called western Austronesian ‘Extraction Restriction’ (Schachter and Otones, 1982; Georgopoulos, 1985; Gerassimova, 2007, a.o.). The Extraction Restriction states that extraction of non-nominative NPs to a pre-verbal position is syntactically blocked. This means that agent-initial sentences (as in (28) and (29b)) *must* have the AV morpheme on the verb, and concomitantly, genitive case on the patient. Thus, extracting the nominative actor in (30a) is fine, but, the corresponding PV version (30b) is ungrammatical, or at least highly marked, as a genitive is extracted in violation of the Extraction Restriction.

- (30) a. [Siya] [ang nakadiskubre ---i ng buwan]
 NOM.3SG NOM PERF.AV-discover GEN moon
 ‘He is the one who discovered the moon.’
- b. */?? [Niya] [ang nadiskubre ---i ang buwan]
 GEN.3SG NOM PERF.PV-discover NOM moon

Applying the theory of pragmatic competition described in the previous section to (30), we gain an understanding of why the nonuniqueness implicature does not arise in actor-initial sentences. Recall that in Section 3.2, I proposed that the actor voice and patient voice were lexicalized scalar alternatives. Upon an utterance of (30a), discourse participants may reason about its patient voice alternative. However, in constructing the alternative according to the principle sketched in (17), the constructed alternative to an actor-initial clause like (30a) is the ungrammatical (30b).

Given that there is no viable grammatical alternative, (30a) does not pragmatically compete with a patient voice alternative. (31) is a reconstruction of how a nonuniqueness implicature fails to arise after an utterance of (30a).

- (31) *Utterance*: ‘Siya ang nakadiskubre ng buwan’ (= He is the one who discovered.AV ng moon).
Failed implicature: There is more than one moon. (i.e. *nonuniqueness/nonmaximality*)
- a. *Contextual premise*: *Sp* knows whether or not there is more than one moon in the relevant discourse context.
 - b. *Contextual premise*: *Sp* is cooperative (i.e. will choose the alternative utterance which is optimal: supported by evidence, most relevant, informative, least costly etc.).
 - c. It is **false** that there is an alternative utterance ‘Niya ang nadiskubre ang buwan’ (= He is the one who discovered.PV ang moon), with content *q* (= He discovered the (one and only) moon)), which *Sp* could have uttered.
 - d. by (c), *Sp* has reasons for not expressing the scalar alternative besides its presupposition being false, as it is not well-formed.
 - e. by (d), there is no evidence that *Sp* believes *q*’s presupposition is false.

The theory proposed in this paper has a very constrained notion of what structures count as scalar alternatives. The theory of alternative generation in (17), following Horn 1972, Gazdar 1979, Hirschberg 1991 and others, makes crucial use of conventionalized alternative lexical items, used to generate scalar alternative sentences. This view of alternative generation is highly syntacticized. It is not the case that in (31), the discourse participants can reason about a large range of structures with meanings that approximate the presuppositional definite (e.g. structures without a cleft structure, structures with demonstratives, structures with definite uses of the oblique case marker *sa*, and so on). The shape of the alternatives is highly constrained by the mechanism of alternative

generation in (17), which employs simple substitution of one lexical item for its scalemate, plus any concomitant changes in case and agreement, but no other alteration.

This highly constrained theory of alternative generation forces the discourse participants to recreate the ill-formed (30b) as an alternative of (30a). As the speaker had good reason not to utter the alternative (30b), the participants cannot conclude that the speaker failed to utter (30b) due to a presupposition failure. Therefore no implicature is generated.

This perspective taken in this paper of the interaction between grammaticality and pragmatic competition does not correspond exactly to standard implementations of pragmatic principles like *Maximize Presupposition*. For example, Schlenker (2012, p. 393) provides the following formulation of *Maximize Presupposition*.

(32) *Maximize Presupposition*: If S is a **alternative** to S' , and the context C is such that:

- a. the presuppositions of S and S' are satisfied within C ;
- b. S and S' have the same assertive content relative to C ;
- c. S carries a stronger presupposition than S' ,

then S should be preferred to S'

(32) is not enough to account for the failure of nonuniqueness to arise in (30a). If (30a) and (30b) are pragmatic competitors, then the strengthening inference via MP should arise, as (30b) is preferable via MP. By the reasoning in (31), the ungrammaticality of (30b) (due to the Extraction Restriction) prevents it from pragmatically competing with (30a), and thus prevents (30a)'s implicature from arising. Thus I advocate for the constraint in (33) that states grammatical well-formedness is a pre-condition for pragmatic competition.

(33) If S and S' are pragmatic alternatives, then S and S' are grammatically well-formed.

As the alternative (30b) is not syntactically well-formed, it cannot be a pragmatic alternative to (30a), and the strengthening inference from MP fails to arise. (33) is intended as a pragmatic principle applicable beyond *Maximize Presupposition* to other sorts of implicatures: the syntactic well-formedness of an alternative is a necessary condition for its pragmatic competition. Assessment of an alternative's viability must involve grammatical information, such as well-formedness.

5 Comparison with previous accounts

The observed interactions of word order and definiteness in Tagalog has been previously noted in descriptive literature (Schachter and Otones, 1982; McFarland, 1978; Adams and Manaster-Ramer, 1988). Previous accounts of this phenomena within formal frameworks, like the present account, associate the phenomenon with Tagalog's Extraction Restriction (Aldridge, 2005; Rackowski, 2002; Gärtner, 2004; Rackowski and Richards, 2005). Unlike the present account, previous accounts do not attempt to explain the interactions of word order and definiteness in terms of conversational implicature. Having introduced the outline of the pragmatic account in the previous sections, I will now consider analyses which appeal to other kinds of explanations.

5.1 Gärtner

Gärtner (2004) employs Optimality Theory in order to analyze cases of morphosyntactic constraints overriding violable interpretative constraints. Tagalog case marking is one such case. The theory centers around a family of markedness constraints called 'Unambiguous Encoding' (UE), which serve

to ensure that distinct interpretations of an NP are differentiated morphosyntactically. Gärtner suggests that such constraints could find a Gricean explanation in terms of maxims like ‘be perspicuous’ and ‘avoid ambiguity’. The relevant variant of UE employed for Tagalog is instantiated as in (34).

- (34) UNAMBIGUOUS ENCODING (TAGALOG):
- a. Indefinite patients are *ng*-marked.
 - b. Definite patients are *ang*-marked.

The intuition behind the OT account of Tagalog case marking is that the constraint in (34) is violable, and may be overridden by a higher ranked constraints which determine case marking. One such constraint, SYN1, determines the link between case marking and verbal morphology (35). SYN1 ensures that actor NPs are nominative in actor voice sentences, patient NPs are nominative in patient voice sentences, and so on.

- (35) SYN1: *Ang*-markers on NPs correspond to verbal morphology.

A second constraint, SYN2, encodes for Tagalog’s Extraction Restriction. The constraint states that traces/null operators bound by extracted NPs must take the place of an *ang* marked NP. Gärtner phrases the constraint in terms of relativization, but presumably the constraint should extend to various kinds of extraction phenomena.

- (36) SYN2: Relative operators are *ang*-marked.

The constraints SYN1 and SYN2 are unranked with respect to each other (symbolized by $\ll\gg$), but both outrank UE.

- (37) SYN1 $\ll\gg$ SYN2 \gg UE

This system derives the basic fact that genitive patients may be interpreted as either indefinites or definites in clauses with extracted agents. The competition in (38) shows how an agent relative clause (with a null operator agent) with an indefinite patient is mapped to a syntactic structure given the above constraints. Candidates with alternative mappings of nominative and genitive to the agent and patient are considered, as well as actor voice and patient voice variants of the verb.

A violation is incurred for cases in which the thematic role of the nominative NP does not match the thematic role referenced by the verbal morphology (SYN1). A violation is incurred for cases in which the operator bound by the relativized agent is not assigned nominative (SYN2). Finally, a violation is incurred for nominative encoding of the indefinite patient (UE). The winning candidate is (a), the indefinite patient being expressed as a genitive (as observed).

(38)	<i>input: indefinite patient</i>	SYN1	SYN2	UE
☞ a.	AV.verb NOM-Ag _{Op} GEN-Pat _{Indef}			
b.	AV.verb GEN-Ag _{Op} NOM-Pat _{Indef}	!*	*	*
c.	PV.verb NOM-Ag _{Op} GEN-Pat _{Indef}	!*		
d.	PV.verb GEN-Ag _{Op} NOM-Pat _{Indef}		!*	*

The competition in (39) shows how definite readings of genitives emerge in this system. The syntactic forms of the candidates are held constant from (38). However, now the intended interpretation of the patient is definite. As SYN1 and SYN2 are not sensitive to the change in definiteness of the patient, the same violations of these constraints are incurred. Candidates violate UE in

cases where definites are assigned genitive case. The winning candidate violates UE, as the definite patient is assigned genitive. However, as other encodings of the clause violate the higher ranked syntactic constraints, the definite reading of the genitive is licensed, despite the violation of UE.

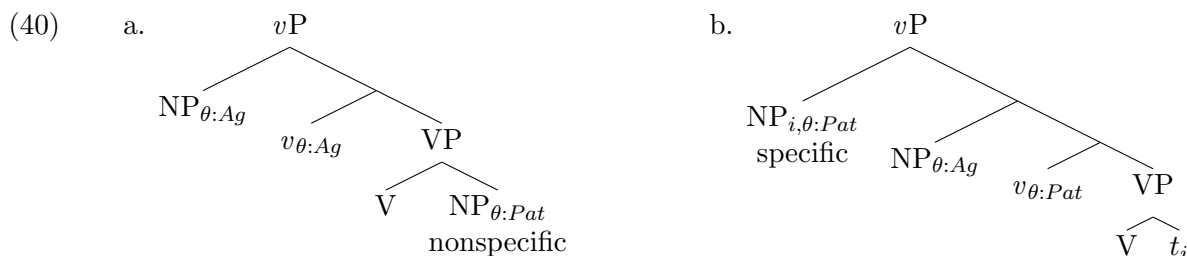
(39)	<i>input: definite patient</i>	SYN1	SYN2	UE
☞ a.	AV.verb NOM-Ag _{Op} GEN-Pat _{Def}			*
b.	AV.verb GEN-Ag _{Op} NOM-Pat _{Def}	!*	*	
c.	PV.verb NOM-Ag _{Op} GEN-Pat _{Def}	!*		*
d.	PV.verb GEN-Ag _{Op} NOM-Pat _{Def}		!*	

Although Gärtner’s analysis differs very much from the present analysis in terms of implementation, certain characteristics are similar. For example, genitive patients can in principle take on definite interpretations. However, in cases where the nominative patient is licensed, this possibility is blocked. Actor extraction blocks the expression of a definite as nominative and licenses a definite reading of the genitive.

5.2 Rackowski and Richards

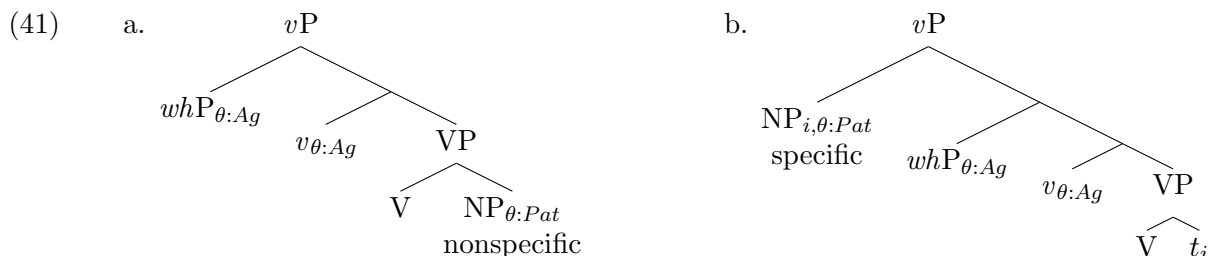
Rackowski and Richards’ (2005) analysis of the interaction of word order and definiteness in Tagalog is situated within a broader discussion of the interaction of extraction and the syntactic operation Agree. The discussion in this subsection focuses primarily on their treatment of emergent definite readings of genitive patients. Under their account, definite readings and indefinite readings of patients are conventionally encoded by different syntactic positions. In clauses with actor-extraction, genitive patients may appear in the syntactic position associated with definite readings, or in the syntactic position associated with indefinite readings, with no observable effect on the linear order of constituents. Thus the ambiguity between definite and indefinite readings of genitives corresponds to a syntactic ambiguity.

Under their proposed system, the first step of the syntactic derivation places transitive patient NPs as the complement of V. If they remain in this position, as in (40a), they inherit a ‘nonspecific’ (p. 567) interpretation. On the other hand, the patient NP can move to a higher position (40b), a second specifier of *v*P. In this position, they are interpreted as ‘specific’ (p. 567).



The movement of the NP in (40b) is preceded by agreement between the NP and *v*. By this process, *v* inherits the thematic features of the patient NP, which is spelled out as the patient voice morpheme. In cases where no NP moves, *v* inherits the thematic features of the agent NP, and *v* is spelled out as the actor voice morpheme. Rackowski and Richards generalize this syntactic operation as agreement with the highest specifier of *v*P. This process of agreement between *v* and the NP in its highest specifier results in the assignment of (what I have labelled) nominative case to the NP. This proposal corresponds to Gärtner’s SYN1, which determines that the thematic role signalled by the verbal morpheme is matched by the NP marked with *ang*. The proposal is not explicit about how genitive case is assigned, though we can state that it is assigned to argumental NPs which do not agree with *v*.

Moving to cases of agent-extraction, Rackowski and Richards propose that the syntactic generalizations outlined above are suspended in constructions with *wh*-movement. Under their account, *v* will always agree with the NP undergoing *wh*-movement, regardless of whether it occupies the highest specifier of *v*P or not. Although Rackowski and Richards do not spell out this analysis in terms of Optimality Theory, their prose formulation suggests the assumption of ranked, violable constraints: ‘The difference receives a natural account if we assume that Tagalog verbs agree preferentially with *wh*-phrases’ (p. 590). The *v*P structures above are redrawn with *wh*-phrases in the agent position, prior to the point in the derivation where they are extracted to a higher position. In these structures, *v* always inherits the thematic features of the *wh*-phrase and so *v* is realized as actor voice. The *wh*-extracted NP is always assigned nominative.



This generalization clearly parallels Gärtner’s SYN2, which determines that operators bound by *wh*-movement are assigned nominative case. In the accounts of both Gärtner and Rackowski and Richards, the agent’s status as an NP targetted by *wh*-movement ensures the assignment of nominative to the actor. In both accounts, this constraint overrides the ordinary process of nominative case assignment, which is sensitive to the interpretation of the patient as (in)definite or (non)specific.

5.3 Underspecification and ambiguity

The above accounts are intricate and offer much insight into the interaction of morphosyntax and definiteness, in Tagalog and cross linguistically. A thorough review of their arguments would be outside the scope of this paper but is a worthwhile task for future work. In this section, I focus on one issue: the construal of the distinction between the definite and indefinite readings of genitive patients as ambiguity or underspecification.

Under the account presented in this paper, the definite interpretation is understood as a special case of the indefinite interpretation. For example, (42) is a variant of an earlier example which shows the two readings.

- (42) Si Karlos ang nakadiskubre [ng buwan]
 NOM Karlos NOM PERF.AV-discover GEN moon
 ‘Karlos discovered a/the moon.’

The definite interpretation emerges where the set denoted by the NP’s descriptive content is assumed to have just one member. But otherwise, the entailments are the same as those of the indefinite interpretation. Represented schematically, where *A* corresponds to the set $\llbracket \mathbf{moon} \rrbracket$ (the NP’s descriptive content) and *B* represents the set $\llbracket \lambda x. \mathbf{discover}(x)(k) \rrbracket$.

- (43) a. $|A| = 1 \wedge A \cap B \neq \emptyset$ (*Definite reading*)
 b. $A \cap B \neq \emptyset$ (*Indefinite reading*)

The approach in this paper has been to assign (43b) as the conventional meaning of a sentence with a bare genitive patient, and allowed the singleton cardinality of the NP’s descriptive content ($|A| = 1$) to arise as a contextual premise. In cases where the patient voice variant is available (i.e., in verb initial structures), this contextual premise is pragmatically blocked. Thus, the approach taken here could be characterized as one of *underspecification*: only one conventional meaning is associated with bare genitive patients (43b), which may optionally be enriched (43a), contingent on certain contextual and structural factors outlined in this paper.

Both previous accounts construe the definite and indefinite readings of genitive patients in actor-initial sentences as derived via *ambiguity*. Under Gärtner’s account, *definite* and *indefinite* are treated as two distinct input values which are both mapped to the genitive form in extraction sentences by the stipulated constraints. Under Rackowski and Richards’ account, the two readings are encoded as a structural ambiguity in the syntax. Here, I explore some predictions of the ambiguity account of these previous analyses versus the underspecification account of this paper.

Definite and indefinite NPs show distinct sensitivity to negation. If genitive patients are ambiguous between definite and indefinite readings, the two possible readings should show a similar kind of distinction in behaviour under negation. In (44–45), all accounts assume the definite and indefinite readings are morphologically distinguished. Under negation, the indefinite genitive patient necessarily scopes below negation (44).⁵ Thus, as expected, the second clause in (44) is contradictory.

- (44) Hindi nakapanuod si Karlos [ng pelikula], #pero napanuod niya ang Star Wars
 not PERF.AV.see NOM Karlos GEN film but PERF.PV.see he NOM Star Wars
 ‘Karlos didn’t see a film, but he saw Star Wars.’ (*Comment*: No, you have to put *ibang* [‘other’], *Hindi nakapanuod si Karlos ng ibang pelikula* [Karlos didn’t see any other films].)

With (45) on the other hand, the second clause is non-contradictory.⁶ The second clause simply affirms that Karlos saw a film different to the film referred to by the definite.

- (45) Hindi napanuod ni Karlos [ang pelikula], pero napanuod niya ang Star
 not PERF.PV.see GEN Karlos NOM film but PERF.PV.see GEN.3SG NOM Star
 Wars
 Wars
 ‘Karlos didn’t see the film, but he saw Star Wars.’

(46) is an actor-initial sentence which includes negation. Under the ambiguity approach of the two previous analyses discussed in this section, (46) should be ambiguous between (negated) definite and indefinite readings. Under the approach pursued in this paper, (46) should simply be a negated indefinite. The judgement of (46) is that the continuation is contradictory, in much the same way as the negated genitive in (44).

⁵See Collins (2016) for an account of the obligatory narrow scope of BGenPats.

⁶There is a question as to why the mention of *Star Wars*, a distinct film from the film referred to by the BNomPat in the first clause, does not seem to contradict the uniqueness presupposition of the definite and create a presupposition failure (in either the Tagalog sentence or its English translation). Here, I again appeal to the theory that the uniqueness presupposition of a definite is calculated after the descriptive content is implicitly restricted. For example, if the discourse participants were discussing a particular film prior to the utterance in (45). Thus the set $\llbracket \mathbf{film} \rrbracket$ is not necessarily singleton, but intersected with an implicit restriction C , $\llbracket \mathbf{film} \rrbracket \cap \llbracket C \rrbracket = 1$.

- (46) Si Karlos ay hindi nakapanuod [ng pelikula], #pero napanuod niya Star Wars
 NOM Karlos TOP not PERF.AV.see GEN film but PERF.PV.see GEN.3SG Star Wars
 Wars
 Wars
 ‘Karlos didn’t see any film, but he saw Star Wars.’ (*Comment*: You were saying he didn’t see a movie, but you also were saying he watched a film. You need *ibang* ‘other’.)

If the first clause in (46) were truly ambiguous between a definite and indefinite construal of *ng pelikula*, a definite reading of *ng pelikula* should be possible, generating the same kind of discourse as in (45). If a definite reading of *ng pelikula* were possible, referring to a film which is not Star Wars, this discourse should be possible, contrary to the observed facts.

The apparent contradiction can be explained if we assume an existential reading of the genitive patient in both actor-initial and verb-initial sentences, as proposed under the present analysis. Under negation, the first clause can be schematized as $[A \cap B = \emptyset]$, where A corresponds to the set of films and B corresponds to the set of things Karlos saw. As Star Wars is contained in the set A , the second clause is correctly predicted to be contradictory.

6 Conclusion

The interpretation of Tagalog patients as definite or indefinite and the interaction of this interpretation with word order has been a persistent puzzle in Austronesian linguistics. I propose a pragmatic solution. Speakers and hearers reason about the choice between actor voice and patient voice variants of sentences. If a speaker chooses actor voice over patient voice, she implicates that the uniqueness implication of the nominative patient doesn’t hold. However, if the patient voice alternative is morphosyntactically blocked, an utterance of an actor voice sentence does not generate the same implicatures.

I argue that the Tagalog data provides evidence that pragmatic alternatives must be grammatically well formed to enter into pragmatic competition. This account requires that syntactic information must be available for the pragmatic component of interpretation, requiring discourse participants to reason about syntactic information in the calculation of an implicature.

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