

***Proceedings of the Eighteenth Meeting of the  
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**Lauren Eby Clemens  
Gregory Scontras  
Maria Polinsky  
(dir.)**

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**WHO DOES *WHO* COMPOSE?**

Andreea Nicolae  
Gregory Scontras  
Harvard University

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## *The Proceedings of AFLA 18*

### PREFACE

The 18<sup>th</sup> annual meeting of the Austronesian Formal Linguistics Association (AFLA 18) was held March 4-6, 2011, at Harvard University. A total of 30 presentations representing the work of 43 researchers were given, including three plenary talks by Robert Blust, Marc Brunelle, and Manfred Krifka. In addition to work on the syntax of Austronesian languages, the original focus of AFLA, researchers presented analyses of phenomena from a variety of core linguistics subfields including phonetics, phonology, and semantics, as well as their interfaces. In order to personalize the meeting and highlight the strong historical component of Harvard's Department of Linguistics, we also encouraged the presentation of work dealing with diachronic analyses of language phenomena. The culmination of these efforts appears here in these Conference Proceedings, which include twelve papers presented during the conference.

Throughout this process we have received generous support from a variety of sources within the Harvard Community. Financial support came from the Office of the Dean of the Faculty of Arts and Sciences, the Office of the Provost, Linguistics Circle: A Workshop of Linguistic Interfaces, the GSAS Research Workshop in Indo-European and Historical Linguistics, the GSAS Research Workshop in Language Universals and Linguistic Fieldwork, and the Harvard GSAS Graduate Student Council. Student participants in the volunteer effort include Michael Erlewine, Ruthe Foushee, Laura Grestenberger, Christopher Hopper, Julie Li Jiang, Caitlin Keenan, Louis Liu, Andreea Nicolae, Hazel Pearson, and Cheng-Yu Edwin Tsai. We also gratefully acknowledge the encouragement, endorsement, and assistance of the Harvard Department of Linguistics.

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To the groups and individuals who made this conference possible, and to the many researchers who made the event as enriching and stimulating as it was, we offer our sincerest thanks.

Lauren Eby Clemens, Gregory Scontras and Maria Polinsky, Harvard University

## HOW DOES *WHO* COMPOSE?\*

Andreea Nicolae  
Harvard University  
nicolae@fas.harvard.edu

Gregory Scontras  
Harvard University  
scontras@fas.harvard.edu

This paper proposes an analysis of *sino* ‘who’ in Tagalog as a proper noun that leaves behind an individual-denoting trace, type  $e$ , in cases of gapped extraction. This is in contrast to *ano* ‘what,’ which, following (Heim 1987), we claim is the common noun variant of *wh*-words and leaves behind a trace of type  $\langle e, t \rangle$ . We form our argument on the basis of three pieces of evidence: first, in existential constructions, both *sino* and proper nouns are disallowed. Second, *sino* suggests a morphological decomposition that includes the proper noun determiner *si*. Third, like proper nouns, *sino* is disallowed in cases of incorporation/compounding. Having established that *sino* is an interrogative proper noun and *ano* an interrogative common noun, we show how assumptions about LINKER in Tagalog, a particle that signals non-saturating semantic composition, must be amended to handle the new facts.

### 1. Introduction

This paper aims to classify the *wh*-word for ‘who’ in Tagalog, *sino*, as a proper noun. We show that the behavior of ‘who,’ that is, where it can and cannot occur, mirrors that of proper nouns and pronouns. Furthermore, we show how *sino* may straightforwardly decompose into a proper noun determiner together with a question particle, the word for ‘what.’ We take this evidence to suggest that ‘who,’ rather than behaving like ‘which persons,’ is in fact a proper noun with interrogative force. We show how this proposal is in line with previous work on the semantics of ‘who’ (Heim 1987) in that it predicts significant differences in behavior between ‘who’ and ‘what’; while ‘who’ is the interrogative form of a proper noun and thus behaves as such, ‘what’ is the interrogative form of a common noun, and so its behavior mirrors that of other common nouns. In each of our diagnostics, we find this to be the case for Tagalog: ‘who’ patterns with proper nouns while ‘what’ patterns with common nouns. Once we accept that ‘who’ is in fact a proper noun, its idiosyncrasies receive a straightforward explanation on the basis of semantic types.

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## 2. Existentials

### 2.1. Background: English existentials

Existentials are sentences whose basic function is to affirm the non-emptiness of a set denoted by a noun phrase; we refer to this noun phrase as the pivot of the existential construction. In (1), we assert that the pivot (underlined) has an instance in Maine.

- (1) There is a dense forest in Maine.

There is a well-known, systematic class of restrictions on the pivots of existential sentences. First, the pivot cannot be an overt bound variable pronoun, as in (2). Second, when the pivot is quantificational, it must receive a narrow scope reading, (3a).

- (2) \*No perfect relationship is such that there is it.

- (3) a. There must be someone in John's house. narrow scope only  
b. Someone must be in John's house. ambiguous

Taken together, the data in (2) and (3) suggest that the pivot of an existential cannot be filled by a bound individual variable, whether overt or covert. Heim (1987) uses this description to characterize her Definiteness Restriction (DR).

- (4) **Definiteness Restriction** (Heim 1987)

\*There be  $x$  when  $x$  is an individual variable.

We may use the DR in (4) to inform our understanding of a broader range of data involving existential constructions. For example, we find that *wh*-traces in existential questions form a heterogeneous class with respect to their ability to occur as pivots, exemplified in (5) (judgments from Safir (1982)).

- (5) a. How many soldiers were there in the infirmary?  
b. ??Which actors were there in the room?  
c. ?Who was there in the room when you got home?

The acceptability of these constructions appears to depend on the semantic type of the moved *wh*-phrase. Given that *which NP* behaves as a definite, type  $e$ , the DR rules it out. On the other hand, *how many* is modificational, and so *how many NP* will be property-denoting, type  $\langle e, t \rangle$ . Most interestingly, the acceptability of *who* is unclear, and so we cannot use the DR as a diagnostic for its semantics, at least not with these English data.

Before turning to *who* in more detail, however, let's consider the facts about *what*. The acceptability of (6) suggests that 'what' should be analyzed as something other than 'which thing(s)'; if it received such an analysis it should pattern with the examples containing 'which' like (5b).

- (6) What is there in Austin?

Based on data like (6), Heim (1987) claims that *what*-questions may be analyzed as involving narrow-scope occurrences of “something of kind  $x$ ,” where  $x$  is a variable bound by the interrogative operator. In effect, Heim analyzes the trace of *what* as something that is property denoting, type  $\langle e, t \rangle$ . We may thus restate her DR as a constraint on individual-denoting expressions, type  $e$ , appearing as pivots of existentials:

- (7) **Definiteness Restriction** reconceived:

\*There be  $x$  when  $x$  is type  $e$ .

Given this constraint and the dubious status of *who* in (5c), we are faced with the question of how *who* should be analyzed, that is, whether its trace is akin to that of ‘what person’ or that of ‘which person.’ While the data from English are unclear, data from Austronesian, specifically Tagalog, are much sharper and will constitute our first argument in favor of viewing ‘who’ in this language as an individual-denoting proper noun on a par with ‘which person.’ We turn to these data next.

## 2.2. Tagalog existentials

As a basic introduction to the existential constructions in Tagalog, consider the examples in (8).

- (8) a. May malaki-ng disyerto sa Australya.  
       exist big-LK desert LOC Australia  
       ‘There is a big desert in Australia.’  
       b. May babae-ng darating sa bahay ko.  
       exist woman-LK came LOC house NS.1SG  
       ‘There was a woman (who) came to my house.’

Existential sentences are formed by *may*, an existential predicate, followed by a noun phrase (the pivot).<sup>1</sup> As in English, these sentences assert the non-emptiness of the set denoted by the pivot. They optionally contain a locative PP or some other phrase following the noun phrase. Only indefinite, property-denoting pivots are allowed in existential constructions. Note that the examples in (9), where the pivots are headed by the weak quantifiers *ila* ‘some,’ *marami* ‘many,’ and *kaunti* ‘few,’ are grammatical.

- (9) a. Mayroo-ng ila-ng mga dahilan kung bakit atrasado ang mga bayad  
       exist.there-LK some-LK PL reason COMP why late S PL payment  
       ‘There are a few reasons why the payments are late.’  
       b. Mayroo-ng marami-ng ilaw sa silid na pinagkakatatipunan nila  
       exist.there-LK many-LK lamp LOC room LK gathered NS.3PL

<sup>1</sup> Note that *may* sometimes occurs with *roon*, which Sabbagh (2009) takes to be the semantically vacuous ‘there’. We return to this issue in §6.

- ‘There were many lamps in the room where we were gathered.’  
 c. May kaunti-ng gulo sa Mindanao.  
     exist.few-LK riot LOC Mindanao  
     ‘There were a few riots in Mindanao.’

However, when the noun phrase is headed by a strong quantifier such as *lahat* ‘all,’ *bawat* ‘every,’ or *karamiha* ‘most,’ the sentence is ungrammatical.

- (10) a. \*May(roo-ng) bawat (isa-ng) babae sa bahay.  
         exist.there-LK every one-LK woman LOC house  
         (‘There is each/each of the woman in the house.’)  
     b. \*May lahat sa bahay.  
         exist.there-LK all LOC house  
         (‘There is everyone in the house.’)  
     c. \*May(roo-ng) karamiha-ng tao sa bahay.  
         exist.there-LK most-LK person LOC house  
         (‘There were most of the people at the house.’)

Assuming that strong quantifiers need to undergo QR for interpretability, the pivots in (10) will leave behind an individual variable trace of type *e*; this configuration is ruled out by the DR in either of the forms presented above. In (9), the pivot will denote a property as a result of modification by a weak quantifier; note that this property-denoting pivot, type  $\langle e, t \rangle$ , is not in violation of the DR.

As in English, we find that not all *wh*-questions pattern alike with respect to their ability to function as a pivot. In Tagalog, however, the contrast between ‘who’ and ‘what’ is much clearer. In (11), we see that gapped extraction of *ano* ‘what’ is possible in an existential construction; when we try to do the same with *sino* ‘who,’ the sentence becomes ungrammatical as in (12).

- (11) a. Ano ang mayroon *t* sa bahay ni Juan?  
         what S exist.there LOC house NS Juan  
         ‘What is there in Juan’s house?’  
     b. Kung gusto mo malaman kung ano ang mayroon *t*, magtanong lang.  
         if what NS.2SG know COMP what S exist.there ask just  
         ‘If you want to know what there is, just ask.’  
 (12) \*Sino ang mayroon *t* sa bahay?  
         who S exist.there LOC house  
         (‘Who is there in the house?’)

It seems then that *ano* ‘what’ is patterning with indefinites with respect to its ability to function as a pivot in existentials. On the other hand, *sino* ‘who’ patterns with non-indefinites (e.g., DPs with strong quantifiers) in that it cannot act as a pivot. Crucially, both *sino* and *ano* are allowed in regular *wh*-questions with gapped extraction, as in (13).

- (13) a. Sino ang nagnakaw ng kotse mo?  
 who TOP stole. LK car your  
 ‘Who stole your car?’ Wegmüller (1998, p. 45)
- b. Kanino mo ibinigay ang pera?  
 whom NS.2SG give S money  
 ‘Who did you give the money to?’ Schachter and Otones (1972, p. 512)
- c. Sino ang nakakita kanino?  
 who S saw whom  
 ‘Who saw who?’ Kaufman (p.c.)
- d. Ano ang ninakaw ni Pedro?  
 what S steal NS Pedro  
 ‘What did Pedro steal?’ Wegmüller (1998, p. 46)

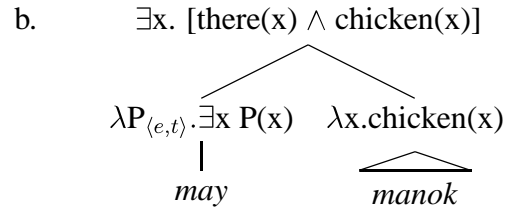
When we look for other elements that pattern with *sino* in their inability to function as existential pivots, we find that like *sino*, neither pronouns nor proper nouns may serve as the pivot of an existential, as illustrated in (14).

- (14) a. \*May(roo-ng) siya/niya sa bahay.  
 exist.there-LK S.3SG/NS.3SG LOC house  
 (‘There was him in the house.’)
- b. \*May(roo-ng) (si/ni) Pablo sa handaan ko.  
 exist.there-LK S/NS Pablo LOC party NS.1SG  
 (‘There was Pablo at my party.’)

According to Sabbagh (2009), the restriction on the pivot of a Tagalog existential is that it must be property-denoting, type  $\langle e, t \rangle$ , which is directly in line with our restatement of Heim’s DR in (7) above. For Sabbagh, this restriction follows straightforwardly from the semantics he gives to the existential predicate *may*, which he takes to be of type  $\langle \langle e, t \rangle, t \rangle$ .

$$(15) \quad \llbracket \text{may} \rrbracket = \lambda P_{\langle e, t \rangle}. \exists x P(x)$$

- (16) a. May manok sa bahay.  
 exist chicken LOC house  
 ‘There’s a chicken in the house.’



As we see in the semantics in (15), *may* requires that its argument be property-denoting. Thus, when the complement of *may* is not property-denoting, say of type  $e$ , the derivation crashes, (17).

- (17) a. \*May(roo-ng) (si/ni) Pablo sa handaan ko.  
 exist.there-LK S/NS Pablo LOC party NS.1SG  
 (‘There was Pablo at my party.’)





Before turning to the semantics of *wh*-words in pivot positions, let's review how an analysis along the lines of Sabbagh's proposal can account for the contrast in grammaticality between weakly and strongly quantified pivots, as in (9) and (10). Following Landman 2004, weak quantifiers like 'few' are assumed to be of type  $\langle e, t \rangle$ , composing with their nominal complements via Predicate Modification to form a DP of type  $\langle e, t \rangle$ , the type needed to compose with the existential predicate. On the other hand, strong quantifiers like 'every' are of type  $\langle \langle e, t \rangle, \langle \langle e, t \rangle, t \rangle \rangle$ . They compose with their complements via Functional Application, resulting in DPs of type  $\langle \langle e, t \rangle, t \rangle$ , which are unable to compose with the existential predicate. The reason, then, why weak but not strong quantifiers may appear in the pivot of an existential is that the semantic type of the existential predicate is compatible with the semantic type of the former but not the latter.

At this point we must ask why *ano*, and not *sino*, is allowed to function as the pivot of an existential. If we assume that *wh*-words leave behind a trace of type  $e$ , we expect that neither 'who' nor 'what' should be allowed in existentials. In the spirit of Heim (1987), we assume instead that 'what' leaves behind a trace of type  $\langle e, t \rangle$ , explaining its ability to compose with *may* via Functional Application. Heim does not, however, explain the asymmetry with 'who'; that is, we lack an argument for why 'who' cannot leave a trace of type  $\langle e, t \rangle$ . As an interim conclusion, the behavior of *sino* 'who' in existentials will follow if we assume that *sino* is a proper noun that leaves behind a trace of type  $e$ , a type which cannot compose with the existential predicate. We next turn to our second piece of evidence suggesting that *sino* should be analyzed as an interrogative proper noun.

### 3. *Sino* = *si*+(*a*)*no*

We saw in the previous section evidence from the behavior of *sino* in existentials suggesting that it behaves as a proper noun. Now, we consider the morphological makeup of *sino*. As we shall see, *sino*'s morphological makeup suggests that it is a fusion of the proper noun determiner, together either with the word for 'what,' or with a Proto-Austronesian question particle. To piece together the elements in the historical decomposition of *sino*, first consider the following paradigm:

	COMMON N SG	COMMON N PL	PROPER N SG	PROPER N PL
S marker	ang	ang mga	<b>si</b>	sina
NS marker	ng	ng mga	ni	nina
'sa-form'	sa	sa mga	kay	kina

Table 1: Tagalog Determiners

Notice that Tagalog has separate determiners for proper and common nouns. Notice further that the proper noun S marker is *si*, as seen in Table 1. Now, following Blust (1995), we assume that *sino* is morphologically complex. At this point we are faced with two options for decomposing *sino*; both options involve the proper noun determiner *si*.

The first option is to decompose *sino* into *si+no*, where *no* is a variant of the Proto-Austronesian uncertainty marker *\*nu*. A survey of question words in Austronesian (see Table 2 for question words in Tagalog) shows that *\*nu* is a common component of these words. The second option for decomposing *sino* is into *si+ano* ‘what’. Under this analysis, *ano* is further decomposed into *a+\*nu*.<sup>2</sup> Looking at the Tagalog *wh*-word paradigm, we find evidence for both analyses.

TAGALOG	sino	ano	saan	kailan	paano	bakit	kanino
ENGLISH	who	what	where	when	how	why	whose

Table 2: Tagalog Question Words

Consider the word *saan* ‘where’, in which we see the oblique marker *sa* followed by *an*, presumably from *ano*. On the other hand, *kanino* ‘whose’ appears to decompose into *kay+ni+no*, or [prepositional determiner+NS detminer+*\*nu*]. This decomposition for *kanino* is appealing on conceptual grounds since asking about the possessor of something amounts to asking about a non-topic/subject participant who relates to what is possessed via an oblique, or prepositional relationship, hence the presence of the prepositional determiner.

We find evidence to mediate between these hypotheses in closely related AN languages such as Indonesian, where the decomposition is more transparent. Consider the data in (18).

- (18) a. *Siapa orang itu?*  
       who person that  
       ‘Who is that person?’  
       b. *Apa yang kamu mau?*  
       what EMPH you want  
       ‘What do you want?’

The proper noun S marker/determiner in Indonesian, as in Tagalog, is *si*. The word for ‘what’ is *apa*. Thus, *siapa* ‘who’ in Indonesian directly decomposes into [proper noun determiner+‘what’]. Assuming that Tagalog *sino* developed along a similar trajectory, this represents evidence for the decomposition of *sino* into *si+ano*.

Regardless of the approach we take to the diachronic decomposition of *sino*, it is important to note that both analyses lend support to the idea that *sino* would behave just like any other proper noun: diachronically, it is morphologically headed by a proper noun determiner. In the last section

<sup>2</sup> At this point we are not sure what the semantic origin of *a* would be. One option is that it comes from *ang*, the common noun determiner, where *ng* has deleted before *n*.

we saw this parallel between proper nouns and *sino* in the case of existentials. In the next section, we demonstrate further similarities between proper nouns and ‘who.’

#### 4. *Wh*-incorporation and compounding

We have encountered two pieces of evidence suggesting *sino* should be treated as a proper noun: *sino*’s inability to function as the pivot of an existential constructions, and the proper noun determiner in *sino*’s diachronic decomposition. Now, we consider the case of *wh*-incorporation. In Austronesian languages that allow incorporation, when it comes to *wh*-words, ‘what’ can incorporate while ‘who’ cannot. Consider the following data from Tongan (Polinsky p.c.); in (19) we see an instance of noun incorporation, while in (20) we see that when it comes to *wh*-incorporation, ‘who’ is disallowed from participating in these constructions.

- (19) a. na’e inu a e koke ’e Sione  
 PAST drink ABS DET Coke ERG Sione  
 ‘Sione drank a/the coke.’  
 b. na’e inu koke ’a Sione  
 PAST drink coke ABS Sione  
 ‘Sione drank coke. (noun incorporation)
- (20) a. Ko hai/e haa na’e fakamavahevahe’i ’e he tu’i?  
 who/what PAST separate ERG DET chief  
 Whom/what did the chief separate?  
 b. na’e fakamavahevahe haa ’a e tu’i?  
 PAST separate what ABS DET chief  
 ‘What did the chief separate?’ (what-incorporation)  
 c. \*na’e fakamavahevahe hai ’a e tu’i?  
 PAST separate who ABS DET chief  
 (‘Who did the chief separate?’) (who-incorporation)

Note that where we have incorporation, nouns appear without determiners/case adjacent to the verb. Tagalog does not have productive verbal incorporation, so it is not possible to test these constructions directly. However, a limited number of roots allow compounding. These compounding constructions, similarly to incorporation, disallow proper nouns, as the contrast in (21) illustrates.

- (21) a. Amoy-lupa ang lalahey.  
 odor-earth S man  
 ‘That man smells like earth.’  
 b. \*Amoy-si-Juan ang lalahey.  
 odor-S-Juan S man  
 (‘That man smells like John.’)

Here, like in incorporation, the noun appears without any determiner, which would otherwise be necessary if the noun were standing on its own. Crucially, as in Tongan, Tagalog illustrates the same asymmetry with respect to the ability of *wh*-words to incorporate: only *ano* ‘what’ may participate in these compounding constructions. Where we try to compound ‘who,’ the result is ungrammatical, as illustrated in (22).

- (22) a. Amoy-ano kaya siya?  
smell-what SPEC S.3SG  
'I wonder what he/she smells like?' (*what*-incorporation)
- b. \*Amoy-sino kaya siya?  
smell-who SPEC S.3SG  
'I wonder who he/she smells like?' (*who*-incorporation)

As in the existential construction, we can explain this asymmetry in compounding/incorporation if we assume that the composing material must be of type  $\langle e, t \rangle$ . Thus, a common noun like ‘earth’ may form a compound as in (21a). Proper nouns, on the other hand, resist this type of composition as they are of type  $e$ ; observe the ungrammaticality of (21b). Returning to *wh*-words, we must now explain the asymmetry between *sino* and *ano*. As before, we may use Heim’s strategy for turning the trace associated with ‘what’ into something of type  $\langle e, t \rangle$ , and therefore into something that may incorporate/compound. Continuing to assume that ‘who’ is a proper noun, we predict its inability to incorporate/compound by maintaining that its trace is of type  $e$ .<sup>3</sup> With this conception of the semantics of ‘who’ and the trace it leaves behind, we must now reconcile our analysis with facts about the linker in Tagalog. We turn to this issue in the two sections that follow.

## 5. The Linker in Tagalog

As noted in Foley (1976), Tagalog possesses a particle which surfaces as enclitic *-ng* on words ending in a vowel, and as *na* elsewhere, which is distinct from the adverb *na* ‘already.’ In its enclitic form (*-ng*), it is important not to confuse this particle with the standalone non-subject marker *ng*, which is phonologically distinct ([*-ŋ*] vs. [*naŋ*]). In what follows, we examine the distribution of this particle, henceforth LINKER (also referred to elsewhere in the literature as “ligature”).

In (23), we see that when a noun composes with an adjective in attributive position, LINKER is obligatory, (23a). If the adjective appears in predicative position, LINKER is prohibited, (23b). Furthermore, the relative order of the property-denoting terms flanking LINKER is flexible.

- (23) a. bahay \*(na) maganda  
house LK beautiful  
'beautiful house'
- a'. maganda-ng bahay  
beautiful-LK house  
'beautiful house'

<sup>3</sup> Daniel Kaufman (p.c.) notes that compounds with place names and proper names are appropriate, but only when the determiner is omitted. He suggests that *sino*'s inability to incorporate is in fact solely an effect on the proper-noun determiner *si*, which makes up part of the morphologically complex *sino* (cf. Section 3).

- b. Maganda(\*-ng) ang bahay  
beautiful-LK S house  
'The house is beautiful.'

Nominal modifiers also surface with LINKER, whereas predicative nominals do not. That is, the combination of N+N in argument position requires LINKER.

- (24) a. ang doktor \*(na) babae  
S doctor LK woman  
'the woman-doctor' (i.e., the doctor that is a woman)  
b. Doktor ang babae  
doctor S woman  
'The woman is a doctor.'

Adverbial modification surfaces with LINKER, similarly to modificational adjectives and nominals. However, when the adverb serves as a predicate of the clause, LINKER is prohibited, as in (25b).

- (25) a. Bigla\*(-ng) binukasan ni Fred ang pintuan  
sudden-LK be opened NS Fred S door  
'Fred suddenly opened the door.'  
b. Bigla(\*-ng) ang pagbukas ni Fred ng pintuan  
sudden-LK S opening NS Fred NS door  
'The opening of the door by Fred was sudden.'

Another area in which we witness a contrast in the distribution of LINKER is the clausal domain. Observe that when we modify a noun with a relative clause, LINKER obligatorily intervenes between the head noun and the relative clause, as in (26). When the same clause serves as a standalone proposition, i.e. a matrix clause as in (27), LINKER no longer appears.

- (26) a. bahay \*(na) nakita ko  
house LK saw I  
'house that I saw'  
b. ang babae\*(-ng) nagbabasa ng diyaryo  
S woman-LK read NS newspaper  
'the woman who is reading the newspaper'

Rubin (1994, p. 117)

- (27) a. Nakita ko (\*ng) ang bahay  
saw I LK S house  
'I saw the house.'  
b. Ang babae(\*-ng) ay nagbabasa ng diyaryo  
S woman-LK is reading NS newspaper  
'The woman is reading the newspaper.'

Rubin (1994, p. 117)

Finally, when we look at quantificational expressions, we see that what have been classified as weak quantifiers appear with LINKER, while strong quantifiers do not.

- (28) a. kaunti\*(-ng) gulo  
       few-LK riot  
       ‘a few riots’  
       b. bawa’t (\*na) bata  
       each/every LK child  
       ‘every child’

Sabbagh (2009, p. 680)

The puzzle we are faced with at this point is what characterizes the distribution of LINKER. More precisely, we ask what role LINKER serves such that it obligatorily appears in the positions in which we observe it and is prohibited elsewhere. Review its distribution in Table 3 below.

✓LINKER	*LINKER
Attributive adjective	Predicative adjective
Adverbial modifier	Predicative adverbial
Nominal modifier	Predicative nominal
Relative clause	Matrix clause
Weak quantification	Strong quantification

Table 3: The distribution of LINKER

What we see is that LINKER appears wherever we expect to find non-saturating semantic composition. In other words, *-ng* or *na* surface in the context of modification (cf. Rubin 1994, Sabbagh 2009). When we have two property-denoting elements, type  $\langle e, t \rangle$ , LINKER is present between them, flagging that the semantics needs to resort to a compositional mechanism other than Functional Application, say Predicate Modification (Heim and Kratzer 1998).<sup>4</sup> Alternatively, one can view the contribution of LINKER as that of symmetry breaking: two elements of the same type are composing, and LINKER intervenes. For the purposes of this discussion, we need not distinguish between an analysis that takes LINKER to be a functional element performing the role of Predicate Modification (type  $\langle \langle e, t \rangle, \langle \langle e, t \rangle, \langle e, t \rangle \rangle \rangle$ ), and one under which LINKER merely serves as a morphological flag of the fact that this non-saturating composition is taking place (cf. Chung and Ladusaw 2004). With this conception of LINKER in mind, we now return to the issue of existential constructions. Recall Sabbagh’s semantics for the existential predicate *may*, repeated below.

$$(29) \quad \llbracket \text{may} \rrbracket = \lambda P_{\langle e, t \rangle} . \exists x P(x)$$

Now, consider the data in (30) where we see both the particle *roon* and LINKER. Sabbagh

<sup>4</sup> Another mode of non-saturating semantic composition that could be signaled by LINKER is Restrict (Chung and Ladusaw 2004).

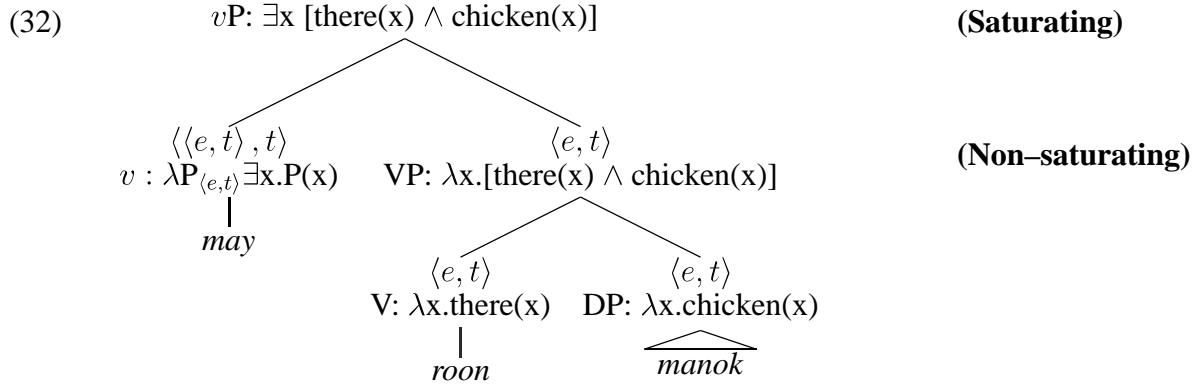
(2009) analyzes *roon* as a semantically inert ‘there’ (cf. Moro 1997, Chapter 3 for discussion), and provides the semantics in (31).

- (30) a. May-roon\*(-g) manok sa bahay  
exists-there-LK chicken LOC house  
‘There is a chicken in the house.’  
b. May-roon\*(-g) malaki-ng disyerto sa Australya  
exists-there-LK big-LK desert LOC Australia  
‘There is a big desert in Australia.’

Sabbagh (2009, p. 715)

- (31)  $\llbracket \text{roon} \rrbracket = \lambda x. \text{there}(x)$

According to the Sabbagh, the reason LINKER appears in the presence of *roon* is just as we have stated above: the pivot is predicate-denoting, type  $\langle e, t \rangle$ , and so is *roon*; in order to compose, we need to resort to non-saturating composition, signaled by LINKER. In (32), we illustrate how this composition proceeds for a sentence such as (30a). Crucially, where non-saturating composition is required between *roon* ‘there’ and the pivot *manok* ‘chicken’, LINKER appears.



Lastly, note that when *roon* is absent, LINKER is prohibited, as in (33).

- (33) May \*(-ng/na) manok sa bahay  
exist chicken LOC house  
‘There is a chicken in the house.’

Having identified the role of LINKER with modification in the grammar of Tagalog, we can now return to the analysis of *wh*-words and their behavior in existential constructions.

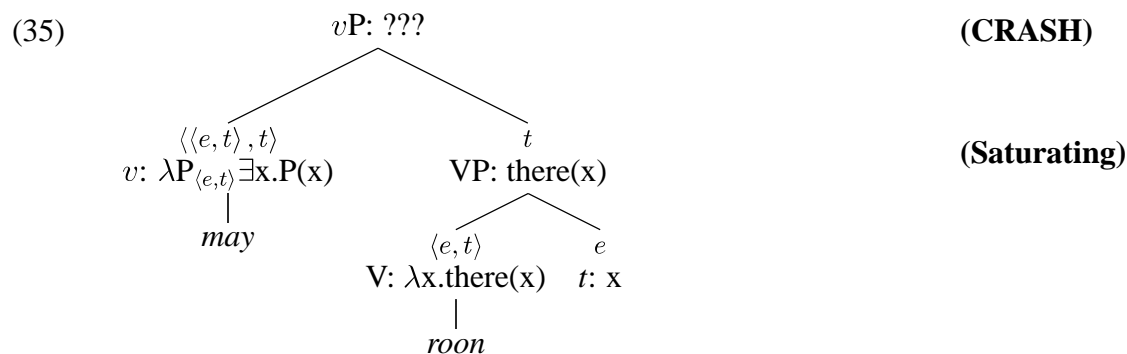
## 6. LINKER and *sino*

With an analysis of LINKER in hand, we may revisit the issue of *wh*-words in existentials and see how this analysis better informs our understanding of these constructions. Recall what was said about the contrast between *ano* ‘what’ and *sino* ‘who’: the former, but not the latter, may

leave behind a trace of type  $\langle e, t \rangle$ , thus satisfying the reconceived Definiteness Restriction banning individual-denoting pivots. As we saw above, in the presence of *roon*, property-denoting (type  $\langle e, t \rangle$ ) pivots surface with LINKER realized on *roon*. Assuming that *ano* ‘what’ moves from the pivot position and leaves behind a trace of type  $\langle e, t \rangle$ , we might expect to find LINKER signaling the composition of *roon* and this trace. Interestingly, LINKER does not surface with *ano* (or with *sino*, for that matter) as we see in (34), repeated from (11) and (12) above.

- (34) a. Ano ang may-roon(\*-g) *t* sa bahay ni Juan?  
 what S exist-there-LK LOC house NS Juan  
 ‘What is there in Juan’s house?’  
 b. \*Sino ang may-roon(-g) *t* sa bahay?  
 who S exist-there-LK LOC house  
 (‘Who is there in the house?’)

The absence of LINKER in (34a) presents a puzzle: either we have mischaracterized the distribution of LINKER and it does not surface whenever we have non-saturating composition, or we have misidentified the semantic type of the trace of *ano* ‘what’ such that in fact it may compose in a saturating manner with *roon*. In what follows, we will pursue the first of these approaches to account for the absence of LINKER with *ano*. There are two reasons for this tack: first, we presented strong evidence above in favor of viewing LINKER as an element that arises in the context of modification. Second, it is not clear how the semantic composition would proceed if the trace of *ano* were to saturate the argument of *roon* given that *roon* is predicate-denoting, type  $\langle e, t \rangle$ . In order for the trace that *ano* leaves behind to saturate the argument of *roon*, it would have to be individual denoting, type  $e$ . Ignoring the fact that this sort of trace violates both incarnations of the Definiteness Restriction presented above, once *roon* has its argument saturated the resulting structure is propositional in type, and so it cannot compose with the existential predicate; we expect the derivation to crash when the existential predicate tries to compose with the unit that results from the composition of *roon* and an individual-denoting expression, the trace. We illustrate this point in the tree below.





Without changing our assumptions about the semantic type of the trace left behind by *ano*, we retain our characterization of the contrast between *sino* and *ano* in existentials: the semantic types of the traces left behind by these *wh*-words differ such that *ano*'s trace, type  $\langle e, t \rangle$ , satisfies the Definiteness Restriction whereas *sino*'s trace, type  $e$ , does not and so it cannot serve as the pivot of an existential.

Why, then, is LINKER absent in an *ano*-existential with *roon*, as in (34a)? By characterizing its presence in terms of whether or not we have non-saturating composition, and by assigning both *roon* and the trace left behind by *ano* property-denoting types, our analysis predicts that LINKER should be present. While the issue requires further, more detailed study, at this point we hypothesize that LINKER only flags non-saturating composition when the elements participating in this operation overtly flank it. Because the elements involved in the case of an *ano*-existential are *roon* and a trace, that is, one of the elements is covert and thus not phonologically realized, either the phonological/syntactic pressure to break up these elements is absent, or the function of LINKER, now characterized as signaling non-saturating composition of the overt elements that flank it, is rendered inappropriate in this particular case.

To summarize, we have shown that the facts about LINKER, namely that it surfaces in the context of non-saturating composition when the composing elements overtly flank it, are compatible with our proper noun analysis of *sino*: what sets *sino* apart from *ano* is that the former, but not the latter, leaves an individual-denoting trace that is semantically incompatible with the pivot position of an existential construction which requires a property-denoting element.

## 7. Conclusion

We began with the observation that *sino* ‘who,’ together with pronouns and proper nouns, is disallowed in the pivot position of existential constructions in Tagalog. We found additional support for aligning *sino* ‘who’ with proper nouns from two domains: morphologically, *sino* lends itself to a decomposition that includes the proper noun determiner *si*; syntactically and semantically, both ‘who’ and proper nouns resist incorporation and entering into compounds. Throughout our discussion we compared *sino* with what we saw to be its common noun counterpart, *ano* ‘what.’ Our claim is that the difference between these *wh*-words lies in the type of the traces they leave behind: *sino* leaves an individual-denoting trace of type  $e$  whereas *ano* leaves a property-denoting trace of type  $\langle e, t \rangle$ . This claim led us to consider the facts about the linker particle *-ng/na* in Tagalog, which we showed surfaces in the context of non-saturating semantic composition between two property-denoting elements. While the absence of LINKER in existential constructions with gapped extraction of *ano* initially posed a problem for this characterization of the role of LINKER, we showed how a minor amendment to the role of LINKER yielded the structures compatible with our claims. Together, these arguments lead us to the conclusion that the asymmetry in behavior between *sino* and *ano* should follow from the fact that these two *wh*-words leave traces of distinct types. One prediction that arises from this analysis is that *sino* ought to appear wherever we ex-

pect to find something of type *e*, while *ano* ought to appear wherever we expect to find something property-denoting, type  $\langle e, t \rangle$ .

Future work on *sino* should explore the role contributed by the proper noun determiner *si*, as its presence is non-trivial in that it determines whether a name behaves as a proper or a common noun (Nicolae and Scontras 2010). Additionally, we must ask whether ‘who’ in Austronesian, or even just Tagalog, is unique in its proper noun-hood; the strongest form of our proposal would be that ‘who’ in fact behaves as a proper noun across Language.

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