W O R K I N G   P A P E R S

I N

L I N G U I S T I C S

The notes and articles in this series are progress reports on work being carried on by students and faculty in the Department. Because these papers are not finished products, readers are asked not to cite from them without noting their preliminary nature. The authors welcome any comments and suggestions that readers might offer.

Volume 46(1)

February

2015

An Equal Opportunity/Affirmative Action Institution

TAGALOG RELATIVE CLAUSE PRODUCTION: DATA FROM ADULTS AND CHILDREN

Nozomi Tanaka

Tagalog uses a focus system, where verbal affixation and case marking work in coordination to mark the syntactically prominent argument. Whether Tagalog has a nominative-accusative system or an ergative-absolutive system has long been a matter of discussion among linguists. The current study investigates the acquisition of relative clauses in Tagalog using an elicited production task and asks whether the acquisition of Tagalog relativization follows previously reported findings for nominative-accusative languages or ergative-absolutive languages. The results show that the overall pattern fits that of nominative-accusative languages. The study's child participants, however, showed a bimodal distribution, indicating that some children treat the language as nominative-accusative, while others analyze it as an ergative-accusative language.[*]

1. INTRODUCTION. The syntax of Tagalog has long been a matter of controversy and puzzlement. Variously described as nominative-accusative (e.g., Kroeger 1993; Rackowski 2002) and ergative-absolutive (e.g., De Guzman 1988; Aldridge 2004a), it is characterized by interacting systems of verbal affixation and case marking that jointly select one of the verb's arguments as prominent (or "focused"). This study asks the question of how the unique properties of Tagalog are manifested and acquired in basic relative clause patterns.

This paper is organized as follows. Section 2 provides an exposition of the basic morphosyntax of Tagalog and how that system interacts with the formation of relative clauses, which exhibit features not previously studied in the literature on language acquisition. Section 3 gives an overview of different analyses of the Tagalog grammatical system and their predictions on the acquisition of relative clauses. Section 4 first discusses Tagalog relativization, and then looks at reported findings in the acquisition of relativization in nominative-accusative and ergative-absolutive languages. Section 5 describes an experiment using an elicited production task that we carried out to investigate children's production of Tagalog relative clauses,[1] and section 6 offers some tentative conclusions and directions for future research based on the experiment's results.

2. TAGALOG SYNTAX. The uniqueness of Tagalog syntax can be exemplified in a preliminary way by the three-way contrast shown in (1).[2]

---

[1] This study was carried out by a team of researchers, although the analysis presented in this article is my own. I would like to acknowledge my collaborators: William O'Grady, Kamil Deen, Chae-Eun Kim, Ryoko Hattori, Ivan Paul M. Bondoc, and Jennifer U. Soriano.
[2] This paper's examples are glossed following the Leipzig Glossing Rules; accordingly, the glossing of some of the examples taken from other authors has been changed.

(1) a. Intransitive pattern with an agent subject
  T<um>akbo   aŋ   lalake.
  <AF.PFV>run CASE man
   'The man ran.'

 b. Transitive pattern with agent focus (AF)
  K<um>ain   naŋ isda aŋ   lalake.
  <AF.PFV>eat CASE fish CASE man
  'The man ate a fish.'

 c. Transitive pattern with theme focus (TF)
  K<in>ain   naŋ lalake aŋ   isda.
  <TF.PFV>eat CASE man CASE fish
  'The man ate the fish.'

In (1a) and (1b), the agent is focused, as indicated by the infix *-um-* on the verb and the case marker *aŋ* on *lalake* 'man'. In (1c), the focus falls on the theme argument *isda* 'fish', as shown both by its co-occurrence with *aŋ* and by the verbal infix *-in-*. See table 1 for a summary of agent-focus and theme-focus patterns in Tagalog.

TABLE 1. Case marking and verbal inflection in Tagalog agent-focus and theme-focus sentences.

	Agent Focus (*-um-*)	Theme Focus (*-in-*)
Case on agent	*aŋ*	*naŋ*
Case on theme	*naŋ*	*aŋ*

3. NOMINATIVE-ACCUSATIVE AND ERGATIVE-ABSOLUTIVE ANALYSES OF TAGALOG. A nominative-accusative system refers to a pattern in a language where the intransitive subject (S) and transitive subject (A) take the same form (nominative) and the transitive object (O) takes another form (accusative) (Dixon 1979; McGregor 2009). This system is seen in the majority of the world's languages, including English. See the Japanese examples in (2) and (3), in which both the intransitive subject *Hanako* in (2) and the transitive subject *Taroo* in (3) are marked with the nominative case marker *-ga*, and the transitive object *ringo* 'apple' in (3) is marked with the accusative case marker *-o*.

(2) Hanako-ga hasit-ta.
  Hanako-NOM run-PST
  'Hanako ran.'

(3) Taroo-ga ringo-o tabe-ta.
  Taroo-NOM apple-ACC eat-PST
  'Tarooo ate an apple.'

In an ergative-absolutive system, on the other hand, A is treated differently from S and O. One such language is Dyirbal. As seen in examples (4–7), Dyirbal marks A with the ergative marker *-ŋgu*, while S and O have absolutive case, realized as zero (Dixon 1979).

(4) ŋuma banaga-nʸu
  father.ABS return-NFUT
  'Father returned.'   (Dixon 1979:61)

(5) yabu   banaga-nʸu
  mother.ABS return-NFUT
  'Mother returned.'   (Dixon 1979:61)

(6) ŋuma yabu-ŋgu buṛa-n
  father.ABS mother-ERG see-NFUT
  'Mother saw father.'   (Dixon 1979:61)

(7) yabu   ŋuma-ŋgu   buṛa-n
    mother.ABS father-ERG see-NFUT
    'Father saw mother.'   (Dixon 1979:61)

The studies that regard Tagalog as a nominative-accusative language see *aŋ* as a nominative marker that marks the syntactically prominent argument (Kroeger 1993), and *naŋ* as either an oblique or a genitive marker.[3] In this analysis, the agent-focus pattern, as shown in (8), is considered to be an active transitive, in which the agent subject bears the nominative case, while the theme-focus pattern, as shown in (9), is considered non-active, with the theme object bearing the nominative case.

(8) B<um>ili   aŋ   babae   naŋ   isda.
    <TR.PFV>buy   NOM   woman   GEN   fish
    'The woman bought a fish.'   (Aldridge 2004a:59)

(9) B<in>ili   naŋ   babae   aŋ   isda.
    <PASS.PFV>buy   GEN   woman   NOM   fish
    'The woman bought the fish.'   (Aldridge 2004a:59)

The opposing view is the ergative-absolutive approach to Tagalog (Payne 1982; Cooreman et al. 1984; De Guzman 1988; Aldridge 2004a). In this analysis, the theme-focus sentences are considered canonical transitive patterns, where *aŋ* marks the absolutive object and *naŋ* marks the ergative subject, as shown in (10).

(10) B<in>ili   naŋ   babae   aŋ   isda.
     <TR.PFV>buy   ERG   woman   ABS   fish
     'The woman bought the fish.'   (Aldridge 2004a:101)

The agent-focus sentences are considered intransitives/antipassives,[4] where *aŋ* marks the absolutive and *naŋ* marks the oblique, as demonstrated in (11).

(11) B<um>ili   aŋ   babae   naŋ   isda.
     <INTR.PFV>buy ABS   woman   OBL   fish
     'The woman bought a fish.'   (Aldridge 2004a:100)

Two arguments have been presented for the ergative-absolutive analysis of Tagalog: text frequency and the order of acquisition. Cooreman and colleagues (1984) reported that, in written Tagalog, 24 percent of sentences occurred in the AF pattern, while 76 percent occurred in the TF pattern. McFarland (1984) reported a similar distribution, where 38 percent of the total verbal uses are in the AF form. These studies suggest that the basic pattern is the TF pattern, with the AF being a derived, antipassive form. However, Shibatani (1988) and Maclachlan (1996) both claimed that the disparity between AF and TF is not as great as between active and passive forms in nominative-accusative languages (e.g., English), and that sheer frequency cannot be used to decide whether AF or TF is the basic pattern.

As for acquisition, a few studies have suggested that TF is acquired earlier than AF, supporting the ergative analysis. Tucker (1971) tested children's mastery of agent focus and theme focus among other focus patterns, using two tasks: an imitation task and a sentence-completion task. In the imitation task, children were asked to repeat the sentences read by the researchers. In the sentence-completion task, they were given a sentence in a certain focus pattern and asked to turn the sentence into another focus pattern

---

[3] This is because *naŋ* is also used for genitive possessors, e.g., *libro naŋ babae* 'the girl's book.'

[4] Antipassives are seen among ergative languages. The agent is realized as the absolutive—the syntactically prominent argument—and the theme as the oblique (Dixon 1979). Because antipassive clauses are morphologically intransitive, it is possible to think of the absolutive agent as the intransitive subject (Schachter 1994).

by supplying the verb in a correct form, following a noun phrase given by the researchers.[5] The results from both tasks showed that theme focus was the easiest of all the focus patterns for the children. Segalowitz and Galang (1978) also conducted a sentence-completion task, but in a slightly different design. In this task, children were asked to describe pictures, instead of to transform a sentence from one structure to another. Their results showed that children did equally well in both AF and TF. They also conducted a comprehension task, in which children were asked to select an appropriate picture based on the sentence they had heard. When the sentence was produced in an NP-initial word order, children did equally well in both AF and TF; however, when the sentence had a canonical, verb-initial word order, they performed better when the sentence was in a TF pattern. Although Segalowitz and Galang (1978) presented a slightly more complicated picture than Tucker (1971) did, both studies seem to show that children know TF better than AF, as their performance was not better with AF than TF in Segalowitz and Galang's test. Because children typically acquire the basic form (e.g., active sentences in English) earlier than the derived form (e.g., passive sentences in English), these findings suggest that TF is the basic pattern in Tagalog. However, Maclachlan (1996) claimed that both AF and TF are acquired relatively early compared to passives in English and Inuktitut, suggesting that the previous acquisition data do not clearly show which form is more basic.

The present study therefore looks at the acquisition of relativization in order to gain empirical insight into whether children treat Tagalog as a nominative-accusative language or an ergative-absolutive language. Section 4 explains relativization in Tagalog in relation to previous studies on acquisition of nominative-accusative languages and ergative-absolutive languages. As discussed in section 4.1, acquisition of relativization has been shown to be asymmetrical between subject-relative clauses and object-relative clauses. The majority of acquisition studies in nominative-accusative languages suggest a subject-relative advantage in acquisition; that is, children acquire subject-relative clauses earlier (e.g., Cho 1999; Hsu et al. 2009). However, studies on ergative-absolutive languages have found that the subject advantage may be weaker (Polinsky et al. 2012; Gagliardi et al. 2013) or even completely reversed (Gutierrez-Mangado 2011), showing a clearly different pattern from nominative-accusative languages. Therefore, it is of interest to inquire whether children acquiring Tagalog show the nominative-accusative pattern or the ergative-absolutive pattern.

4. RELATIVIZATION IN TAGALOG. Relative clauses in Tagalog begin with the "linker" -ŋ, a complementizer-like item, and follow the noun that they modify.[6]

(12) Relativization of the sole argument of an intransitive verb
      lalaki=ŋ   [RC t<um>akbo]
      man=LK   <AF.PFV>run
      'the man that ran'

An important characteristic of Tagalog relative clauses is that only focused (*aŋ*-marked) arguments can be relativized. This constraint is irrelevant for intransitive patterns such as (12), where the verb has just one argument. However, the focus requirement has very tangible consequences for verbs that take both an agent argument and a theme argument.

(13) Agent-focus pattern
    a.   Relativization of the agent argument (acceptable)
          lalaki=ŋ   [RC k<um>ain   naŋ   isda]
          man=LK   <AF.PFV>eat   CASE   fish
          'the man that ate fish'

---

[5] This requires children to produce a sentence in NP-initial word order, which is possible (as long as the first NP is in focus) but not canonical in Tagalog.

[6] These examples show only head-initial relative clauses. Head-final and head-internal relative clauses also exist in Tagalog (Aldridge 2004b).

    b. Relativization of the theme argument (unacceptable)

      *isda=ŋ   [RC k<um>ain   aŋ   lalake]

      fish=LK   <AF.PFV>eat   CASE   man

      'the fish that the man ate'

(14) Theme-focus pattern

    a. Relativization of the theme argument (acceptable)

      isda=ŋ   [RC k<in>ain   naŋ   lalake]

      fish=LK   <TF.PFV>eat   CASE   man

      'the fish that the man ate'

    b. Relativization of the agent argument (unacceptable)

      *lalaki=ŋ   [RC k<in>ain   aŋ   isda]

      man= LK   <TF.PFV>eat   CASE   fish

      'the man that the fish ate'

As illustrated in (13–14), only the agent argument can be relativized in the agent-focus pattern and only the theme argument can be relativized in the theme-focus pattern. In this paper, the pattern in (13a) is referred to as an agent-focus relative clause (ARC) and that in (14a) as a theme-focus relative clause (TRC).

The existence of such contrasts and constraints raises two questions, both for the study of syntax and for the study of language acquisition. First, do children acquiring Tagalog exhibit a preference for either RC type in their production? Second, if children do show a preference, does it fit the prediction made by one or the other analysis of Tagalog syntax?

4.1 RELATIVIZATION IN NOMINATIVE-ACCUSATIVE LANGUAGES. It is known that the case system of a language has some effects on relativization, in terms of typology, processing, and language acquisition. On one hand, a preference for subject-relative clauses (i.e., relativization of the subject) over object-relative clauses (i.e., relativization of the direct object argument) is well-attested in nominative-accusative languages, such as English (e.g., Diessel and Tomasello 2005), Dutch (e.g., Frazier 1987), Swedish (e.g., Håkansson and Hansson 2000), Greek (e.g., Stavrakaki 2001), Persian (e.g., Rahmany et al. 2011), Hungarian (e.g., MacWhinney and Pleh 1988), Hebrew (e.g., Friedmann et al. 2009), Mandarin Chinese (e.g., Hsu et al. 2009), Japanese (e.g., Ishizuka 2005), and Korean (e.g., Cho 1999). Consider the English subject-relative clause, exemplified in (15), which is comprehended and produced with higher accuracy, read faster, and acquired earlier than the object-relative clause, of which (16) is an example (Brown 1972; Diessel and Tomasello 2005; Gibson et al. 2005; among others).[7]

(15) the boy that __ hugged the girl

(16) the boy that the girl hugged __

In Tagalog, the direct object of the AF construction cannot be directly extracted. The only way to have the direct object as the head of the relative clause is to use the TF pattern (the passive, in this analysis), in which the direct object in an active sentence is promoted to a grammatical subject—the syntactically prominent argument. Therefore, in a strict sense, Tagalog only has "subject-relative clauses" (Keenan and Comrie 1977). However, languages without such a restriction are also known to utilize the passive construction when the extraction of the direct object is difficult; some production studies show that, in order to avoid direct object-relative clauses, speakers sometimes use passive relative clauses. Nevertheless, they are still more likely to choose active subject-relative clauses over passive relative

---

[7] Mak and colleagues (2002) as well as Kidd and colleagues (2007) argue that object-relative clauses become easier for both adults and children when the head is inanimate, suggesting that the difficulty may be due to an animacy effect.

clauses (Ferreiro et al. 1976; de Villiers 1988; Hsu et al. 2009; Zukowski 2009; Kim 2013). Hence, if children acquire Tagalog as a nominative-accusative language, there should still be a difference between ARC—active subject-relative clauses—and TRC—passive relative clauses—and ARC is predicted to be easier to produce than TRC.

4.2 RELATIVIZATION IN ERGATIVE-ABSOLUTIVE LANGUAGES. The little research on ergative-absolutive languages that exists has reported interesting findings. Most of these studies (Carreiras et al. 2010; Gutierrez-Mangado 2011; Polinsky et al. 2012) were done on morphologically ergative languages, in which the alignment is only morphologically marked. A few other studies (Gagliardi et al. 2013; Clemens et al. 2014; Heaton 2014) are on syntactically ergative languages, in which ergativity has a syntactic consequence. In these languages, extraction of an argument, such as relativization and *wh*-questions, is restricted to absolutive arguments. The *aŋ*-only constraints in Tagalog relativization parallel syntactic ergativity; however, I will also review the studies on morphologically ergative languages as some syntactically ergative languages are suspected to be shifting to morphological ergativity. Studies on Basque, a morphologically ergative language, have reported an apparent preference for object-relative clauses over subject-relative clauses in adult sentence processing (Carreiras et al. 2010) as well as in acquisition (Gutierrez-Mangado 2011), which is the opposite of what we know to be true for most nominative-accusative languages. Here, subject-relative clauses refer to the relativization of the A-argument of a transitive verb—that is, the ergative argument in a transitive sentence—and object-relative clauses refer to the relativization of the O-argument of a transitive verb—the absolutive argument in a transitive clause. Two studies reported no significant preference for either pattern in, first, the adult processing of Avar, a morphologically ergative language (Polinsky et al. 2012), and second, the acquisition of Q'anjob'al Mayan,[8] a syntactically ergative language (Gagliardi et al. 2013).[9] According to both of these studies, the lack of a clear preference between the patterns is the result of competition between the grammatical preference for absolutive and the processing preference for relativization of the A-argument of a transitive verb. Based on these previous studies, a weakened advantage for ARC or TRC could be best understood as children treating Tagalog as an ergative-absolutive language. However, Clemens and colleagues (2014) tested adult speakers of syntactically ergative Ch'ol and found advantages in A-argument extraction in terms of response times as well as accuracy rates. They also found that, when the relative clauses are ambiguous, participants are more likely to interpret them as subject-relative clauses. They did not, however, find a uniform subject advantage in all conditions; the accuracy rate of object extraction when the contexts were semantically biased for object-relative clause interpretation was higher than the accuracy rate of subject extraction when the interpretation was biased for subject-relative clauses. Heaton (2014) also found a slight subject advantage in elicited production from adult speakers of Kaqchikel, a syntactically ergative language, although she suggested that the language may be losing syntactic ergativity. Therefore, results showing an ARC advantage would not necessarily rule out the possibility that children analyze Tagalog as a nominative-accusative language.

Studying the acquisition of Tagalog relative clauses should provide insight into the grammatical system of Tagalog. Therefore, our research questions are twofold: (1) Do children acquiring Tagalog show a preference for either ARCs or TRCs? (2) Do children treat Tagalog as a nominative-accusative language or an ergative-absolutive language? If children acquire Tagalog as an ergative-absolutive language, the additional complexity of ARCs would push children towards a preference for TRCs, either completely or partially. An elicited production task, described in section 5, was conducted to address these questions.

---

[8] Note that, in Q'anjob'al Mayan, extraction of an (ergative) transitive subject is not possible unless the verb takes the AF pattern. Extraction of the direct object from an active transitive sentence, on the other hand, is possible.

[9] Gagliardi and colleagues (2013) reported that the language may be losing syntactic ergativity, much like Kaqchikel described in Heaton 2014.

5. EXPERIMENT: ELICITED PRODUCTION OF RELATIVE CLAUSES

5.1 PARTICIPANTS. Nineteen Tagalog-speaking children (9 male; 10 female) age 4;1 to 5;5 (mean 4;10) were tested, along with 11 adult speakers as a control group. Nine of the children and four of the adults did not provide useful data for the final analysis (five of the children failed to complete the tasks; four failed to produce any targeted responses; the four adults failed to follow instructions; see section 6.1 for further discussion). All participants were native speakers of Tagalog living in Manila.

5.2 MATERIALS AND PROCEDURE. Following the methodology used in studies by Hsu and colleagues (2009) and Kim (2013), pictures and a brief prompt (presented in Tagalog) were used to elicit relative clause patterns. Participants were presented sequentially with 13 pairs of black-and-white pictures accompanied by Tagalog auditory prompts. These included three practice items and ten test items. The materials used five transitive verbs ('carry', 'hug', 'pinch', 'pull', and 'push') with two conditions for each verb: an agent relative clause condition and a theme relative clause condition. Figures 1 and 2 present sample test items for ARCs and TRCs, respectively.

FIGURE 1. Sample item used to elicit an agent relative clause.
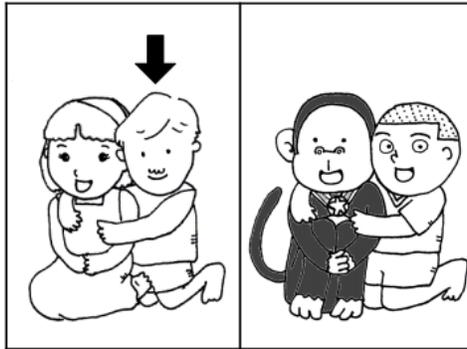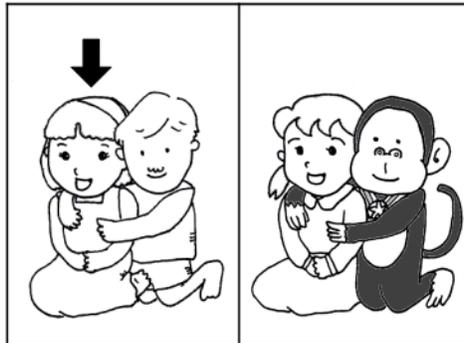

FIGURE 2. Sample item used to elicit a theme relative clause.

As figures 1 and 2 demonstrate, participants saw a two-panel picture in which each panel depicted two characters engaged in a transitive event (in this case, hugging). Participants first practiced with items involving adjectives rather than relative clauses. The participants were trained to name the character above whom the arrow appeared for the benefit of an experimenter who could not see the pictures. Because two characters of the same kind appear in the pictures (boys in figure 1; girls in figure 2), it would be uninformative to respond, for example, "the boy" (for figure 1). Because the action, hugging in this case, is the same in both pictures, it would likewise be uninformative to respond "the hugger." Only a relative clause pattern such as "the boy that is hugging the girl" would be genuinely informative.

Each item was accompanied by an auditory prompt in Tagalog describing the event in the picture.[10] For example, in the case of the ARC item in figure 1, participants heard, "A boy is hugging a girl. Another boy is hugging a monkey. Who has the arrow mark?" The targeted response was "the boy that is hugging the girl." Similarly, the presentation of the TRC item in figure 2 was accompanied by the auditory prompt, "A boy is hugging a girl. A monkey is hugging another girl. Who has the arrow mark?" The targeted response in this case was "the girl that the boy is hugging." Participants' responses were audio-recorded and transcribed for later analysis.

5.3 RESULTS. The analysis focused on NP [V NP] patterns containing a focus-marked verb and a gap corresponding to the *aŋ*-marked nominal—the basic relative clause template in Tagalog. For the purposes of analysis, responses that omitted the linker -*ŋ*, which was frequently absent from children's responses, were retained in the data. The excluded data (7% of the adults' and 58% of the children's total responses) included headless relative clauses,[11] relative clauses without an NP inside, relative clauses with a bare verb, relative clauses containing an *aŋ*-marked nominal, multiple RCs, cleft sentences, and so on.[12] These responses were excluded either because they were uninterpretable or were not relative clauses. The responses included in the analysis were coded for membership in three classes: targeted responses, head errors, and reversal errors.

Targeted responses consisted of RCs with the appropriate verbal affixation (AF for ARC; TF for TRC) and case marking.

I classified a response as a head error if the referent of the head was changed, along with its thematic role. In the following example of a head error, the targeted head is *the girl* (the theme) in (17a), but the response selects *the boy* (the agent) as head in (17b).

(17) a. Targeted (TRC): "*the girl* [that the boy is hugging]"
    b. Response (ARC): "*the boy* [that is hugging the girl]"

A response was treated as a reversal error if the correct head was selected, but its thematic role was changed from agent to theme or vice versa. In the following example, the relative clause is restructured in a way that changes the thematic role of *the girl* from theme to agent, as shown in 18b.

(18) a. Targeted (TRC): "*the girl* [that the boy is hugging]"
    b. Response (ARC): "*the girl* [that is hugging the boy]"

The 65 adult responses included in the analysis comprised 32 from the ARC condition and 33 from the TRC condition. As can be seen in table 2, adults did equally well in both conditions, with no significant difference between the two relative clause types.[13]

---

[10] The auditory prompt had an argument focus that matched that of the targeted RC: agent focus when an ARC was targeted and theme focus when a TRC was targeted.

[11] A headless relative clause refers to a grammatical relative clause that does not have an overt NP as a head. This corresponds to "the one that hugged the girl" (ARC) or "the one that the girl hugged" (TRC) in English. The adult data included one headless ARC and the child data, seven headless relative clauses (five ARC, two TRC). The inclusion of these relative clauses increases the adults' rate of targeted responses for ARC from 93.75% (as seen in table 2) to 93.94% (31 out of 33) and the children's rate for ARC from 80.00% (as shown in table 3) to 83.33% (25 out of 30). However, this does not influence the interpretation of the results.

[12] The rate of exclusion and the kinds of sentences that are excluded are in line with what are reported as non-target responses in previous studies (e.g., Hsu et al. 2009; Kim 2013). Most of the excluded data used the focus marker *aŋ* inside of the relative clauses. Only children made such errors, and they did so in both ARC and TRC conditions. Despite the pervasiveness of this type of response, it is unclear why children make such errors; therefore, I chose to exclude such responses from the analysis.

[13] Because of the exclusion of some data, the number of responses from each participant was different. Therefore, the mean of the means of each adult participant gives slightly different rates of targeted responses: 91.67% for the ARC condition (SD = 0.14) and 92.38% for the TRC condition (SD = 0.14).

TABLE 2. Results from adults (n = 7).

	Response Types	Frequency	Rate
ARC	Targeted	30/32	93.75%
	Head errors (TRC)	0/32	0.00%
	Reversal errors (TRC)	2/32	6.25%
TRC	Targeted	31/33	93.94%
	Head errors (ARC)	0/33	0%
	Reversal errors (ARC)	2/33	6.06%

The children provided 25 responses from the ARC condition and 23 responses from the TRC condition for the analysis. As summarized in table 3, the rate of targeted responses[14] was significantly higher in the ARC condition ($\beta = 1.54 \pm 0.62$, $p < .05$).[15] The most common mistake on TRC items involved head errors, which made up 47.83 percent of all responses in this condition. The second most common mistake involved reversals, which constituted 13.04 percent of all responses. Both error types produce ARC in place of TRC. This means that 58.33 percent of the responses in the TRC condition were realized as ARC. In contrast, the only common mistake on ARC items involved reversal errors (i.e., producing TRC in place of ARC), which made up 20.00 percent of all responses in this condition. This means that more TRCs were turned into ARCs than vice versa.

TABLE 3. Results from children (n = 10).

	Response Types	Frequency	Rate
ARC	Targeted	20/25	80.00%
	Head errors (TRC)	0/25	0.00%
	Reversal errors (TRC)	5/25	20.00%
TRC	Targeted	9/23	39.13%
	Head errors (ARC)	11/23	47.83%
	Reversal errors (ARC)	3/23	13.04%

The two participant groups did not show a significant difference in their responses to the agent relative clause items; however, they showed a significant difference in their responses to the theme relative clause items ($\beta = 4.12 \pm 1.41$, $p < .01$). This indicates that the children's performance significantly differs from the adults', but only in the TRC condition.

These findings appear to point toward an advantage for ARCs. However, if we look at the results from individual participants, an interesting picture emerges. Based on the results shown in table 4, the individual children fell into two distinct groups. Group 1 failed to produce a single correct TRC, but nonetheless showed largely successful performance on ARC patterns. In contrast, group 2 produced far more targeted TRC responses than ARC responses. This suggests that not all the children show the ARC advantage. Overall, then, we see indications of a bimodal distribution, with one group of children doing better on ARCs and the other manifesting an advantage for TRCs, although a study with a larger sample size is needed to confirm this distribution and test its statistical significance.

---

[14] As with the adults, the mean of the means for each child participant is slightly different: 70.00% for ARC (SD = 0.42), and 40.00% for TRC (SD = 0.52).

[15] I report fixed effect coefficients, β, from mixed effects logistic regression, which includes participants and items as random effects. The estimates of the two random effects were close to zero, indicating that the probability of targeted responses does not depend on individual participants or items.

TABLE 4. Results from individual children who produced targeted responses.

	Participants	ARC		TRC	
		Targeted	Errors	Targeted	Errors
Group 1	1	5	0	0	5
	2	3	0	0	2
	3	3	0	0	2
	4	3	0	0	1
	5	2	0	0	4
	6	1	1	0	0
Group 2	7	2	2	2	0
	8	0	2	3	0
	9	0	0	2	0
	10	1	1	2	0
		20	5	9	14

6. GENERAL DISCUSSION AND CONCLUSION. The aggregated results from the elicited production task show an overall higher rate of success for ARCs. However, some children performed well in the ARC condition while others performed better in the TRC condition, which indicates that at least some children treat Tagalog as an ergative-absolutive language. Such a bimodal distribution is not reported in any of the previous studies, and may be due to the morphosyntactic properties of Tagalog. As noted in sections 2 and 3, Tagalog syntax is unusual in its treatment of syntactic prominence. Regardless of which argument is selected for focus, including use as head of a relative clause, special verbal affixation is required. There is no morphologically unmarked form and no apparent default option. It is possible that this property of Tagalog opens the door to the variation in relative clause preferences observed in this study.

As noted in sections 5.1 and 5.3, some of the participants did not provide useful data, and some collected data were excluded from the analysis. Some of the children did not complete the task because they were uncomfortable around strangers or did not engage in the task, despite the researchers' attempts to build rapport. These issues might be avoided by testing older children. I would also like to point out some of the problems specific to this type of research, mainly in regard to (1) the experimental setting and (2) the participants' language experience. First, although the ideal environment for experimental work is a carefully controlled environment—a quiet room with necessary equipment where participants can work alone without distraction—this creates a challenge for field psycholinguistics. This study's participants were all familiar with the formal education setting and technology, and they were all tested at their daycare center or university, in a location where we could use a laptop. This is a far easier research environment than that of some other experimental work in field research settings (see Clemens et al. 2014). Even in this case, however, it was impossible to avoid all distractions, unlike in a laboratory designed for linguistic experiments. Second, because English is one of the official languages of the Philippines and is used commonly in the society, all the participants had some exposure to English at home, school, and elsewhere, and some of them were quite proficient bilinguals (much like the participants in Clemens et al. 2014). Although a language history survey confirmed the participants' dominance in Tagalog, the possibility of influence from English remains strong. It would be possible to recruit participants outside of Manila and of lower socioeconomic status, whose exposure to English would likely be less, but this would probably entail a trade-off in the desirable qualities for an experimental setting.

These problems, however, should not discourage researchers from doing experimental work in field research settings. Rather, such research should be encouraged so that we can develop new methodologies, as Clemens and colleagues (2014) suggested. Because research in psycholinguistics and acquisition generally lacks variety in languages and populations (Anand et al. 2011), an increase in field-based experimental work would also contribute to the cross-linguistic diversity of psycholinguistic and acquisition studies. However, as Clemens and her co-authors noted, we should always be aware of the

problem of noise in the data, and, for this reason, collect data from a large pool. This suggestion applies to the current study as well. Although I conducted some statistical tests on this small sample, it is more desirable to have a larger sample size, so that we have enough data to work with even if there is a high level of noise in the data.

Another limitation of the current study is the use of the elicited production task. We chose a production task because production is typically more demanding than comprehension (Lee-Ellis 2011). Moreover, because a production task requires participants to choose one form over other alternatives, their choice of forms informs us about the underlying mechanism. However, a limitation of production tasks is that they do not find out what children know but rather what they can do. It is possible that the children who did not perform well on the production task in the TRC condition have a good understanding of the TRC and comprehend it with an adult-like competence. Therefore, the next step is to also test children's comprehension of Tagalog relative clauses.

This study's results confirm the importance of studying less commonly researched languages in order to better understand the nature of relative clause preferences in the course of language acquisition. As we have seen, Tagalog offers opportunities to examine the development of structural features not found in the more commonly studied languages of Europe and Asia—and yields a novel result. In work currently in progress, I am seeking to exploit these opportunities further by examining the comprehension and production of Tagalog relative clauses in other age groups to see whether children do better in the ARC or the TRC condition; the former would support the nominative-accusative analysis and the latter would support the ergative-absolutive analysis. I expect this work to shed further light on the syntax and acquisition of this typologically unusual language.

LIST OF ABBREVIATIONS

A	transitive subject	NOM	nominative
ABS	absolutive	O	transitive object
ACC	accusative	OBL	oblique
ARC	agent-focus relative clause	PFV	perfective
AF	agent focus	PST	past
CASE	case marker	RC	relative clause
ERG	ergative	S	intransitive subject
GEN	genitive	SD	standard deviation
INTR	intransitive	TF	theme focus
LK	linker	TR	transitive
NFUT	non-future	TRC	theme-focus relative clause

REFERENCES

ALDRIDGE, EDITH. 2004a. Ergativity and verb-initial word order in Austronesian languages. Cornell University PhD dissertation.

ALDRIDGE, EDITH. 2004b. Internally headed relative clauses in Austronesian languages. *Language and Linguistics* 5(1):99–129.

ANAND, PRANAV; SANDRA CHUNG; and MATTHEW WAGERS. 2011. Widening the net: Challenges for gathering linguistic data in the digital age. In *NSF SBE 2020: Rebuilding the mosaic: Future research in the social, behavioral and economic sciences at the National Science Foundation in the next decade*. Retrieved from http://www.nsf.gov/sbe/sbe_2020/submission_detail.cfm?upld_id=121 on 19 January 2014.

BROWN, H. DOUGLAS. 1972. Children's comprehension of relativized English sentences. *Child Development* 42:1923–36.

CARREIRAS, MANUEL; JON ANDONI DUÑABEITIA; MARTA VERGARA; IRENE DE LA CRUZ-PAVÍA; and ITZIAR LAKA. 2010. Subject relative clauses are not universally easier to process: Evidence from Basque. *Cognition* 115:79–92.

CHO, SOOKEUN. 1999. The acquisition of relative clauses: Experimental studies on Korean. University of Hawai'i at Mānoa PhD dissertation.

CLEMENS, LAUREN EBY; JESSICA COON; PEDRO MATEO PEDRO; ADAM MILTON MORGAN; MARIA POLINSKY; GABRIELLE TANDET; and MATTHEW WAGERS. 2014. Ergativity and the complexity of extraction: A view from Mayan. *Natural Language & Linguistic Theory*, to appear.

COOREMAN, ANN; BARBARA FOX; and TALMY GIVÓN. 1984. The discourse definition of ergativity. *Studies in Language* 8(1):1–34.

DE GUZMAN, VIDEA P. 1988. Ergative analysis for Philippine languages: An analysis. In *Studies in Austronesian linguistics*, ed. by Richard McGinn, 323–45. Athens, OH: Center for Southeast Asia Studies, Ohio University.

DE VILLIERS, PETER A. 1988. Assessing English syntax in hearing-impaired children: Eliciting production in pragmatically-motivated situations. *Journal of the Academy of Rehabilitative Audiology* 21:41–71.

DIESSEL, HOLGER, and MICHAEL TOMASELLO. 2005. A new look at the acquisition of relative clauses. *Language* 81:882–906.

DIXON, R. M. W. 1979. Ergativity. *Language* 55(1):59–138.

FERREIRO, EMILIA; CHRISTINE OTHENIN-GIRARD; HAROLD H. CHIPMAN; and HERMINIA SINCLAIR. 1976. How do children handle relative clauses? *Archives de psychologie* 44:229–66.

FOX, BARBARA A. 1987. The noun phrase accessibility hierarchy reinterpreted: Subject primacy or the absolutive hypothesis? *Language* 63:856–70.

FRAZIER, LYN. 1987. Syntactic processing: Evidence from Dutch. *Natural Language and Linguistic Theory* 5:519–59.

FRIEDMANN, NAAMA; ADRIANA BELLETTI; and LUIGI RIZZI. 2009. Relativized relatives: Types of intervention in the acquisition of A-bar dependencies. *Lingua* 119:67–88.

GAGLIARDI, ANNIE; PEDRO MATEO PEDRO; and MARIA POLINSKY. 2013. The acquisition of relative clauses in Q'anjob'al Mayan. Paper presented at the 38th Annual Boston University Conference on Language Acquisition, Boston.

GIBSON, EDWARD; TIMOTHY DESMET; DANIEL GRODNER; DUANE WATSON; and KARA KO. 2005. Reading relative clauses in English. *Cognitive Linguistics* 16:313–53.

GUTIERREZ-MANGADO, M. JUNCAL. 2011. Children's comprehension of relative clauses in an ergative language: The case of Basque. *Language Acquisition* 18:176–201.

HÅKANSSON, GISELA, and KRISTINA HANSSON. 2000. Comprehension and production of relative clauses: A comparison between Swedish impaired and unimpaired children. *Journal of Child Language* 27:313–33.

HEATON, RAINA. 2014. An investigation of relativization in Kaqchikel. Paper presented at the University of Hawai'i Linguistics Department Tuesday Seminar, Honolulu, 8 April 2014.

HSU, CHUN-CHIEH NATALIE; GABRIELLA HERMON; and ANDREA ZUKOWSKI. 2009. Young children's production of head-final relative clauses: Elicited production data from Chinese children. *Journal of East Asian Linguistics* 18(4):323–60.

ISHIZUKA, TOMOKO. 2005. Processing relative clauses in Japanese. *UCLA Working Papers in Psycholinguistics* 2:135–57.

KEENAN, EDWARD L, and BERNARD COMRIE. 1977. Noun phrase accessibility and universal grammar. *Linguistic Inquiry* 8:63–99.

KIDD, EVAN, SILKE BRANDT; ELENA LIEVEN; , and MICHAEL TOMASELLO. 2007. Object relatives made easy: A cross-linguistic comparison of the constraints influencing young children's processing of relative clauses. *Language and Cognitive Processes* 22:860–97.

KIM, CHAE-EUN. 2013. Asymmetries in the production of relative clauses: First and second language acquisition. University of Hawai'i at Mānoa PhD dissertation.

KROEGER, PAUL R. 1993. Another look at subjecthood in Tagalog. *Philippine Journal of Linguistics* 24:1–16.

LEE-ELLIS, SUNYOUNG. 2011. The elicited production of Korean relative clauses by heritage speakers. *Studies in Second Language Acquisition* 33:57–89.

MACLACHLAN, ANNA. 1996. *Aspects of ergativity in Tagalog*. McGill University PhD dissertation.

MACWHINNEY, BRIAN, and CASABA PLEH. 1988. The processing of restrictive relative clauses in Hungarian. *Cognition* 29:95–141.

MAK, WILLEM M; WIETSKE VONK; and HERBERT SCHRIEFERS. 2002. The influence of animacy on relative clause processing. *Journal of Memory and Language* 47:50–68.

MCFARLAND, CURTIS. 1984. Computers and Tagalog grammar. In *Panagani: Essays in honor of Bonifacio P. Sibayan on his sixty-seventh birthday*, ed. by Andrew Gonzales, 236–46. Manila: Linguistic Society of the Philippines.

MCGREGOR, WILLIAM B. 2009. Typology of ergativity. *Language and Linguistics Compass* 3:480–508.

PAYNE, THOMAS E. 1982. Role and reference related subject properties and ergativity in Yup'ik Eskimo and Tagalog. *Studies in Language* 6:75–106.

POLINSKY, MARIA; CARLOS GÓMEZ GALLO; PETER GRAFF; and EKATERINA KRAVTCHENKO. 2012. Subject preference and ergativity. *Lingua* 122:267–77.

RACKOWSKI, ANDREA S. 2002. The structure of Tagalog: Specificity, voice, and distribution of arguments. Massachusetts Institute of Technology PhD dissertation.

RAHMANY, RAMIN; HAMIDEH MAREFAT; and EVAN KIDD. 2011. Persian speaking children's acquisition of relative clauses. *European Journal of Developmental Psychology* 8:367–88.

SCHACHTER, PAUL. 1994. The subject in Tagalog: Still none of the above. *UCLA Occasional Papers in Linguistics* 15.

SEGALOWITZ, NORMAN S., and ROSITA G. GALANG. 1978. Agent-patient word-order preference in the acquisition of Tagalog. *Journal of Child Language* 5:47–64.

SHIBATANI, MASAYOSHI. 1988. Voice in Philippine languages. In *Passive and voice*, ed. by Masayoshi Shibatani, 85–142. Amsterdam: John Benjamins.

STAVRAKAKI, STAVROULA. 2001. Comprehension of reversible relative clauses in specifically language impaired and normally developing Greek children. *Brain and Language* 77:419–31.

TUCKER, G. RICHARD. 1971. Focus acquisition by Filipino children. *Philippine Journal of Psychology* 4:21–4.

ZUKOWSKI, ANDREA. 2009. Elicited production of relative clauses in children with Williams syndrome. *Language and Cognitive Processes* 24(1):1–43.

nozomit@hawaii.edu