WORKING PAPERS

IN

LINGUISTICS

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.

DEPARTMENT OF LINGUISTICS FACULTY

2018

PRODUCTION AND COMPREHENSION OF MALAY RELATIVE CLAUSES BY L1 CHILDREN

PETER CHONG

Malay and related languages such as Indonesian are regarded as having a subject relativization advantage in terms of acquisition (Tjung 2009; Bakar, Razak, and Woan 2016). The present study investigates whether there is a preference for agent or patient relative clauses in production and comprehension in child Malay. Twelve Malaysian Malay-speaking children aged 3;9-8;6 (mean: 6;6) participated in an experiment involving an elicited-production task and a picture-selection task. From the overall responses, the children were found not to have any agent or patient preference in terms of production. However, the children performed better for agent relative clauses in terms of comprehension.

1. INTRODUCTION. The acquisition of Malay relative clauses is relatively understudied. In particular, the Malaysian Malay[1] variety has seen only very preliminary research on this topic with data from very few participants. The present research is exploratory in nature and asks the question of whether child native speakers of Malaysian Malay show a preference for agent relative clauses compared to patient relative clauses.

In the field of child language acquisition, how the relative clause is acquired has remained a popular topic. Part of its popularity is due to the following factors: (1) Children do not completely acquire relative clauses until a relatively late age compared to other structures. (2) Certain types of relative clauses appear to be more easily acquired. While these factors appear to be generalizable cross-linguistically, their application is not universal and absolute, especially since the acquisition of relative clause has been studied in only a small proportion of the world's languages. Therefore, data from more languages will serve to determine the extent to which these tendencies are true.

This paper is organized as follows. This introductory section first provides background information on relative clauses in general, then explores an overview of the variation in relative-clause acquisition across languages, and finally reviews previous acquisition research in various varieties of Malay. Section 2 discusses the voice system of Malaysian Malay and explains how arguments can be relativized. Section 3 describes the experiment that was carried out, which consists of two parts – an elicited production task and a picture selection task. Section 4 presents the results of the data collection and its analysis. Finally, section 5 offers some preliminary conclusions and future research directions based on the findings.

1.1 RELATIVE CLAUSES (RCS). Relative clauses are a type of filler-gap dependency (Hawkins 1999) exemplified in (1).

1 a. the <u>musician</u> [that _ saw the director] (Subject RC)
   b. the <u>musician</u> [that the director saw _] (Direct object RC)

(Kim 2013)

The fillers (represented by the underlined NPs) correspond to the head noun phrases (NP), while the gaps (represented by '_') correspond to the relativized position in the RC. As the filler and gap correspond to the moved element and its trace (Fodor 1989)—for example, the head NP in (1a) is the subject of the verb in the relative clause—there is an association between them which must be resolved to interpret the meaning of the clause (Hawkins 1999). Listeners need to correctly identify the gap and hold the filler in working memory

---

[1] Various Malay dialects are divided roughly along state lines in Malaysia. Most of these dialects are mutually intelligible, although some varieties are relatively more divergent. Malaysian Malay is used here as a general term to refer to Malay spoken in Malaysia and is not meant to refer specifically to the national language, officially known as *Bahasa Malaysia* (Malaysian Language). The national language is based on the dialect spoken in the southern region of Peninsular Malaysia, and is the variety of Malay that is taught in the formal education system. As children do not enroll in primary schools until the calendar year in which they turn 7, the Malay variety they acquire first will be a regional dialect, especially for those children residing in rural areas.

while simultaneously processing all the material between those elements (Hawkins 1999). This cognitive load makes certain RCs potentially challenging to produce and process compared to other types, the most common of which is the subject-object asymmetry found in many languages (Miyamoto and Nakamura 2003; Reali and Christiansen 2007). Besides NPs in subject and object positions as seen in (1), NPs can also be relativized from other positions, such as indirect object, oblique, possessor, and object of comparison (Keenan and Comrie 1977). However, as the focus of this study is on subject and object RCs, the other types of RCs will not be explicated further.

1.2 ACQUISITION OF RELATIVE CLAUSES ACROSS LANGUAGES. Relative to other syntactic structures, relative clauses tend to be acquired late (Clancy, Lee, and Zoh 1986). For example, by the age of 3, English-speaking children have acquired passives well enough to be productive with newly learned verbs, even when prompted by non-passive lead-ins (Brooks and Tomasello 1999) and comprehend reflexives at an above-chance level in truth value-judgment tasks (McKee 1992). On the other hand, English-speaking 4-year-olds have difficulty repeating relative clauses (Diessel and Tomasello 2005). While Hebrew-speaking children as young as 3 are able to produce some relative clauses, they typically only master comprehension of relative clauses two to three years later (Friedmann and Novogrodsky 2004).

Children tend to acquire subject relative clauses (SRC), such as in (2a), earlier than object relative clauses (ORC), such as in (2b). In a comprehension task, Italian 3-year-olds were at ceiling level for SRC, while some of them performed above chance for ORC. Only children 4 years and older performed in an adult-like manner for ORC (Adani 2011). Hebrew-speaking children were able to perform above chance at age 4 when comprehending SRC, while they were able to perform above chance for ORC comprehension only at age 6 (Friedmann and Novogrodsky 2004). The subject advantage was also observed in languages such as English, Korean, and Cantonese (Kim 2013; Lau 2016).

2 a. The boy [who __ kissed Mary].
   b. The boy [(who) Mary kissed __].

(Diessel and Tomasello 2005)

However, SRC-ORC are not the only dimensions in which children can differ in their acquisition. Even in languages which allow only subject relative clauses, such as Tagalog, children in general appeared to be better at producing agent relative clauses (ARC) than theme relative clauses (TRC), although individually some of the children were better at TRC than ARC (Tanaka 2015).

1.3 ACQUISITION OF RELATIVE CLAUSES IN VARIETIES OF MALAY. Research on Malaysian Malay is limited to a single preliminary production and comprehension study on a group of 6 Malay L1 children aged 4 to 9 (one child for each year) (Bakar, Razak, and Woan 2016). The children at all ages performed equally well for SRC and ORC comprehension, with some errors committed by the 4- and 6-year-olds. However, all the children were worse at producing ORC compared to SRC. In fact, even the older children were below chance. It is important to note that this study used the bare forms of verbs in the test items. Bare forms tend to be more colloquial in nature.

This object relativization disadvantage echoes the claim made for Jakarta Indonesian (Tjung 2006) and Standard Indonesian[2] (Tjung 2009). Tjung (2009) suggests that adults and children do not prefer to relativize objects directly as in (3). Instead, they often instead opt first to passivize the object and then relativize it, as in (4). This is because the passive in Indonesian is not more structurally complex than the active. Both verb types are equally marked with active verbs prefixed by *meN-* and passive verbs prefixed by *di-*. Tjung (2009) also offers the explanation that agent and patient (the semantic roles of subjects in active and passive sentences) are equally able to encode the meaning of transitive propositions in Indonesian and related languages.

3. [Semua   yang   SBY   lakukan __]:   bukti,   bukan   janji   nyata,   bukan wacana
    all   REL   SBY   do   proof   not   promise concrete not   discourse
    'All that SBY did: proof, not just promise, not just talk'

---

[2] While there are differences between Standard Malay of Malaysia and Standard Indonesian, these are mostly phonological and lexical in nature. Both varieties are almost identical in terms of sentential syntax and semantics (Nomoto and Shoho 2007).

4. [Semua   yang __ di-lakukan SBY]: bukti, bukan janji   nyata,   bukan wacana
   all   REL   do   SBY   proof   not   promise concrete not   discourse
   'All that was done by SBY: proof, not just promise, not just talk'

While there is an apparent preference for subject relativization in Malay, it is uncertain whether agent and patient are equally preferred.

2. TRANSITIVE VERBS AND RELATIVIZATION IN MALAY. The voice of morphological transitive verb forms is marked by the prefixes *meN-* (active) and *di-* (passive).[3]

5. Dia   sudah mem-baca buku   itu.
   she   PERF   meN-read book   that
   'She has read the book.'

6. Buku   itu sudah di-baca   (oleh)-nya.
   book   that PERF di-read   (by)-her
   'The book has already been read by her.'

With the *meN-* prefix, the preverbal nominal is typically the agent or the actor, while when the verb is marked with *di-*, the preverbal nominal is typically a theme or patient. When the verb is marked with *di-*, the postverbal nominal may be marked with *oleh,* though this is not obligatory.

Relativization is marked by the presence of the relativizer *yang* with the NP relativized from the subject position. Examples 7—8 show relativization in a *meN-*marked clause and a *di-*marked clause, respectively.

7. [Orang   yang __ mem-baca buku   itu] lewat.
   person   REL   meN-read book   that late
   'The person who read the book was late.'

8. [Buku   yang __ di-baca   (oleh)-nya] hilang.
   Book   REL   di-read (by)-her   missing
   'The book that was read by her is missing.'

It is also possible to have reduced relative clauses without the relativizer. This construction results in clauses which are identical to declarative sentences such as (5) and (6). In complete sentences, these reduced relative clauses will be disambiguated by the presence of the matrix verb. However, when used as stand-alone replies in casual conversation, they are less easily distinguishable from simple sentences. As the focus of this study is not on these reduced forms, they will not be discussed further. We now turn to the experiment in which we tested child production and comprehension of these two different kinds of relative clauses in Malay.

---

[3] It is possible to have morphologically bare verb forms where the voice of such forms is marked by word order. In bare forms the agent precedes auxiliary/negation/adverb in the active, while in the passive no element can intervene between the agent and the verb stem.

5a. Dia sudah   baca   buku   itu.
    she PERF   read   book   that
    'She has read the book.'

6a. Buku   itu sudah   dia baca.
    book   that PERF   she read
    'She has already read the book.'

3. METHODOLOGY. The experimental materials (pictures and lead-in sentences) were adapted and translated from Tanaka 2015. There are two tasks in the experiment: an elicited-production task to investigate the production of relative clauses, and a picture-selection task to test comprehension.

In the production task, children were shown a set of pictures. An assistant, who is a native speaker of Malay, then read a set of lead-in sentences corresponding to those pictures:
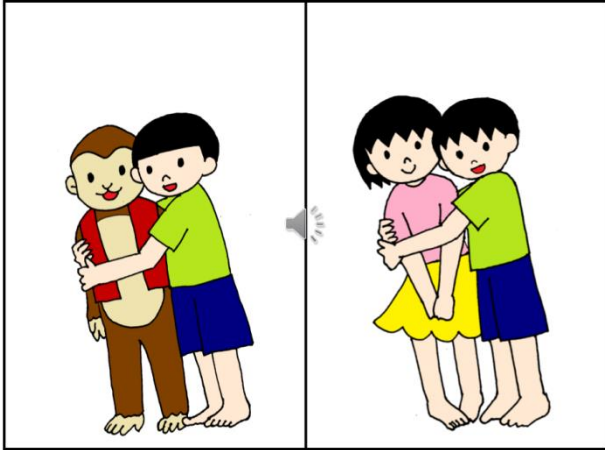
9. Terdapat   dua budak lelaki   di sini.
    Present   two child   man   at here
    'There are two boys here.'

    Seorang   budak lelaki me-meluk monyet,   seorang budak lelaki
    one   child man   meN-hug   monkey   one   child man
    me-meluk budak   perempuan.
    meN-hug   child   woman
    'One boy is hugging a monkey, another boy is hugging a girl.'
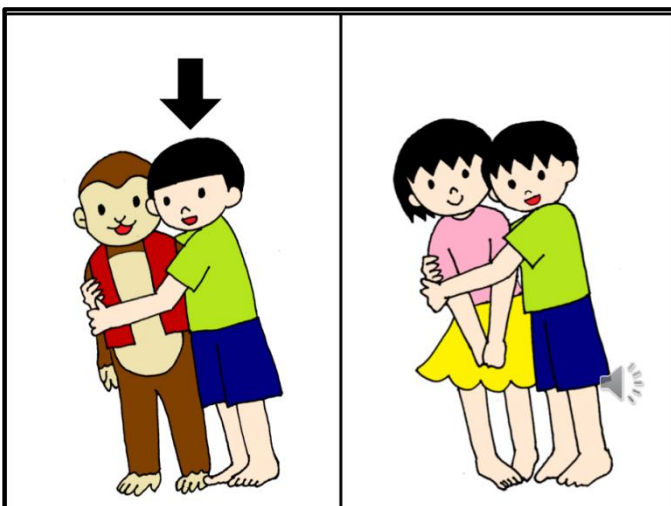
10. Di manakah   anak panah?
   At where   arrow
    'Where is the arrow?'

The child was then asked to describe (to the researcher, who was seated in a manner where he could not see the child's set of pictures) where the arrow is pointing. The structure of the pictures was designed to maximize the chances for the production of a relative clause. Because there are two boys in the pictures, a response of 'over the boy' is insufficient to identify where the arrow is. Moreover, because the boy is hugging different characters in each picture, a response of 'the boy that is hugging' is also insufficient—an overt object is required. Furthermore, the boys in the two pictures are dressed the same (thus avoiding responses regarding clothing, such as 'the one wearing a green shirt'), have similar facial features (avoiding responses like 'the one with big eyes'), and differ along characteristics that are not easy to put into words. Finally, the fact that the researcher is seated in such a way that they cannot see the pictures that the child is looking at, the child cannot simply point at the relevant character and say "this one." This methodology has been used previously in Tanaka 2015, as well as in many others (e.g., Hsu, Hermon, and Zukowski 2009).

The production task consists of 20 transitive verb items with the following breakdown:

	Reversible	Non-reversible
MeN- (agent subject)	5	5
Di- (patient subject)	5	5

The reversible and non-reversible conditions refer to whether the NP described in the lead-ins can semantically be reversed. For example, a sentence such as *the boy is pushed by the girl* is reversible, since *the boy* and *the girl* can be switched and the sentence would still be acceptable. However, as sentence such as *the boy pushed the truck* is not reversible since *the boy* and *the truck* cannot be reversed without producing a semantic anomaly. Thus reversibility was controlled by manipulating the animacy of the direct object. In addition, there were 10 less complex intransitive items which serve as a baseline for comprehension.

In the comprehension portion, the same speaker read lead-in sentences which asked the child to place stickers on the correct picture:
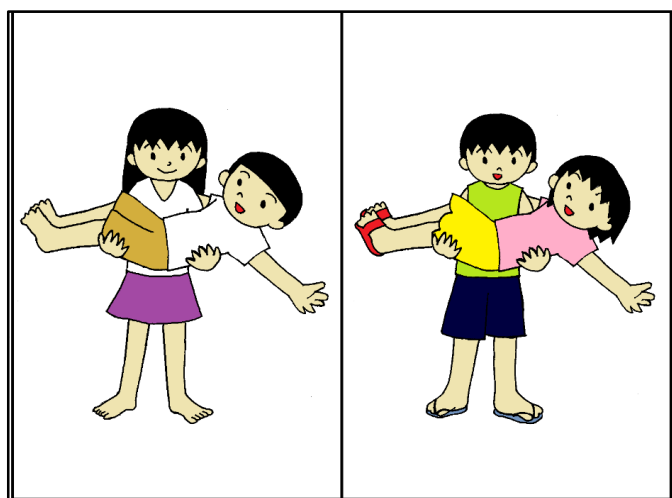

11. Lekat   sticker di bawah budak lelaki yang   di-dukung oleh   budak   perempuan.
    stick   stick   at under child man   REL   di-carry   by   child   woman
    'Stick the sticker under the boy carried by the girl.'

There were 10 items in the comprehension task, with 5 items each of agent relative clauses (using *meN-*) and patient relative clauses (using *di-*).

Twelve Malay L1 children aged 3;9-8;6 (mean: 6;6) were recruited from the northern region of Peninsula Malaysia. All the children did both parts of the experiment, with the production task conducted first. Two children (3;9, 7;4) were excluded from the production task because they did not complete the task, while one child (8;5) was excluded from the comprehension portion for the same reason.

4. RESULTS

4.1 PRODUCTION RESULTS. Only responses which clearly describe the correct character and which contain the relativizer *yang* were coded as correct responses. For example:
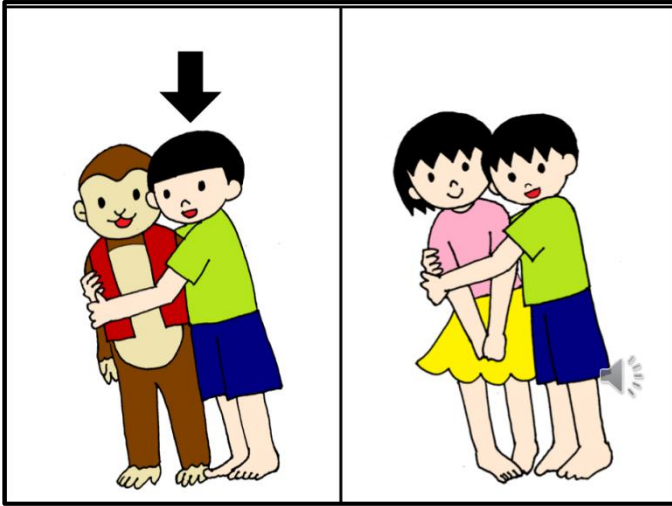
12a. Anak panah   berada   di   atas   budak lelaki   yang   me-meluk   monyet.
       arrow   located   at   top   child   man   REL   meN-hug   monkey
'The arrow is above the boy that is hugging the monkey.'

Bare verb forms were coded as correct so long as they also contained the relativizer. However, declarative sentence responses such as 12b were not.

12b. Budak lelaki   me-meluk   monyet.
      child   man   meN-hug   monkey
'The boy is hugging the monkey.'
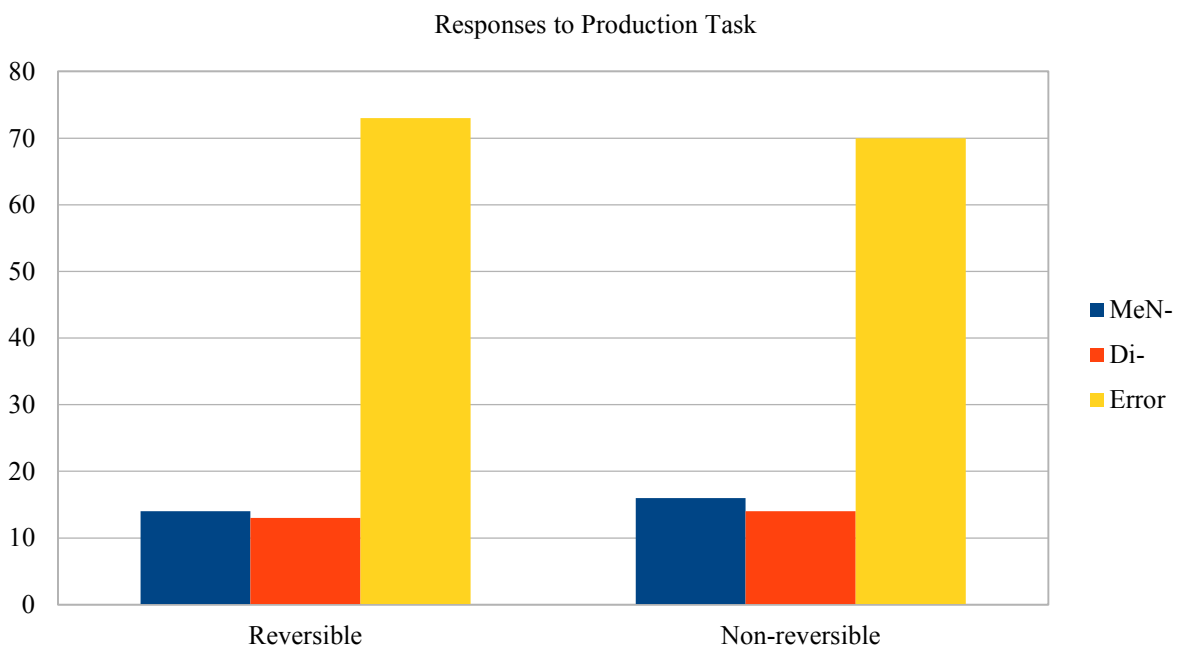
Responses to Production Task

Fig. 1. Responses to production task. N=100 for both conditions.

A large proportion of responses were errors, with slightly more correct responses in the non-reversible condition. If we look at the data on an individual level, we see that the correct responses were accounted for by only 6 of the participants. It is possible then that the high error rate is partly caused by a lack of understanding of the task. For example, one participant aged 8;6 consistently produced declarative sentences describing the correct NP. Nevertheless, among the participants a child as young as 5;1 managed to produce correct responses. This child also produced more correct responses for patient-condition items than agent-condition items.

As the responses varied widely from complete sentences to sentence fragments, a strict criterion for responses was imposed. Only unprompted overt relative-clause responses were taken into account. Of these, head nouns which were selected correctly were marked as targets, while responses with the wrong head noun selected were marked as head errors. Head errors were also divided into whether it was in the wrong or right picture. Reversal errors were those in which the child produced the correct head noun, but reversed the role of the head noun. Responses which were unclear were marked as ambiguous.
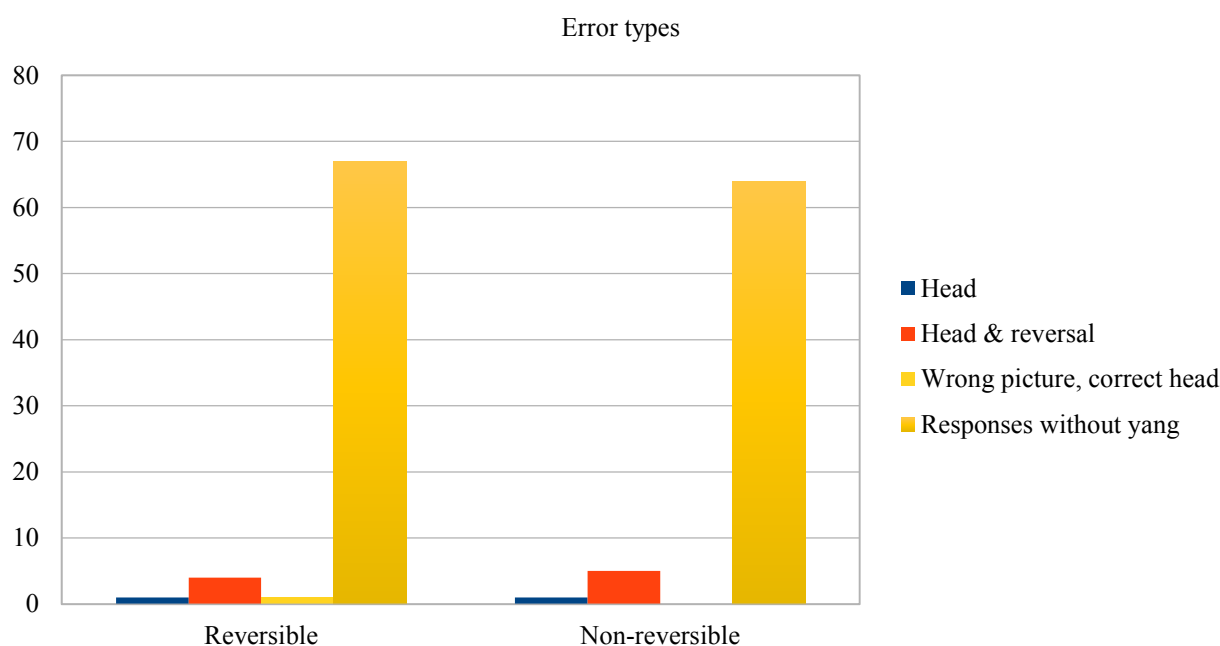

Fig. 2 Error types. N=73 for reversible condition. N=70 for non-reversible condition.

The majority of errors were responses which do not contain relativiser *yang*.

4.1. COMPREHENSION RESULTS. The responses were marked according to the criteria used in the production task. Items which were selected correctly were marked as targets, while items where the wrong head noun was selected were marked as head errors. Head errors were also divided into whether it was in the wrong or right picture. Reversal errors were those in which the child selected the correct head noun, but reversed the role of the head noun. Selections which were unclear were marked as ambiguous.
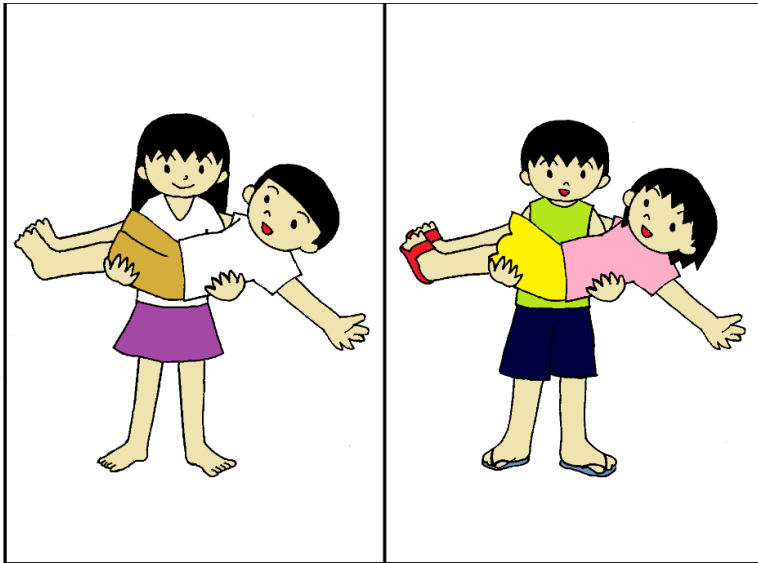
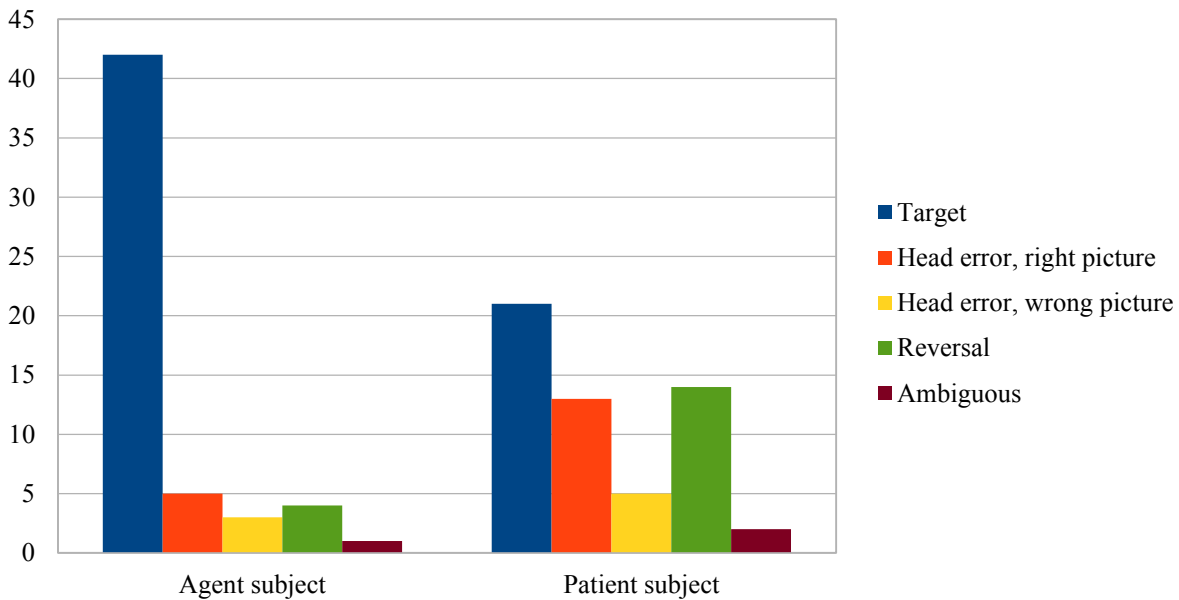13. 'Stick the sticker under the boy carried by the girl.'
Target: boy on left
Head error, right picture: girl on left
Head error, wrong picture: girl on right
Reversal: boy on right

Overall, the children performed much better in the comprehension task relative to the production task, especially in the agent relative-clause condition. In the patient relative-clause condition, target selections were just below chance. A closer look at the individual data revealed that only a few of the children were responsible for the bulk of these target selections. 4 of the children scored at least 4 out of 5 for the patient subject condition, while none of the children aged 6;0 or younger scored more than 2 target responses.

Moreover, reversal errors were far more frequent in the patient relative-clause condition than in the agent relative-clause condition. Such errors involved reversing the role of the head noun. In the patient relative clause condition, this meant that the head noun (the patient) was treated as an agent, such as in (13a) where instead of selecting the boy who was carried by the girl, the child selected the boy carrying the girl. The child therefore

interpreted the relative clause as an agent relative clause. This asymmetry in reversal patterns (where reversals in patient relative clauses were more common than reversals in agent relative clauses) is common among children acquiring a variety of languages, and is typically taken to indicate that the relative clause type with more reversal errors poses a greater processing challenge for children (Arnon 2010). Thus this is a second type of evidence that shows that Malay children prefer relativizing NPs with agent roles.

5. DISCUSSION AND CONCLUSION. While the children did not show any clear preference for relativizing agents or patients in the production data, there is a clear advantage for comprehending agent-role items over patient-role items.

Although older children tended to perform better in both tasks, there were still 8- and 7-year-olds who did not produce any target items in the production task. This is not to say that they could not produce relative clauses, as they might have misunderstood the requirements of the task. They described the intended head nouns by using different methods, such as a series of simple sentences. Nevertheless, children as young as 5;1 produced target responses in production, and all children had at least 1 target response in the comprehension task.

It is also worth noting that even in a language which allows both SRC and ORC, there is a type preference of thematic role within the SRC of that language. Tjung's (2009) claim of non-markedness of Indonesian passives compared to active forms is supported for Malaysian Malay by the production data here. However, comprehension does not appear to follow this pattern.

We therefore conclude that Malay is another language in which an asymmetry in relative clauses can be observed. In Malay, patient relative clauses are more challenging for children than agent relative clauses. While this situation may not seem like a surprising result, it is a noteworthy one, given how strong this tendency is cross-linguistically. The first reason is that this feature has never been documented before for Malay, and so provides a new point of comparison for the field of linguistics. Second, it should be noted that in the context of affixed verbs Malay treats both agent relative clauses and patient relative clauses as morphologically equally complex. That is, neither form is more complex than the other—they both contain one prefix. Moreover, one form cannot be said to derive from the other. Thus morphologically, there does not seem to be a preference for one form or the other, and yet the universally-observed agent relative clause preference is still observed in Malay.

Much work remains to be done on this topic, including questions of whether this preference is exhibited in other related phenomena, e.g., wh-questions, topicalization, etc. Moreover, it is unclear whether this same tendency can be documented in adults, though the dependent measures will likely have to be far more sensitive than those used in this current study. Finally, the properties of Malay child-directed speech needs to be analyzed to see if this tendency might have as its source the frequency of patterns in the input. All of these are intriguing questions, which we retain for future research.

REFERENCES

ADANI, FLAVIA. 2011. Rethinking the acquisition of relative clauses in Italian: Towards a grammatically based account. *Journal of Child Language* 38(1):141–65.

ARNON, INBAL. 2010. Rethinking child difficulty: The effect of NP type on children's processing of relative clauses in Hebrew. *Journal of Child Language* 37(1): 27–57.

BAKAR, NORSOFIAH ABU; ROGAYAH A. RAZAK; and LIM HUI WOAN. 2016. Pemerolehan klausa relatif dalam kalangan kanak-kanak Melayu: Satu kajian awal. *GEMA Online® Journal of Language Studies* 16(3):145–65.

BROOKS, PATRICIA J., and MICHAEL TOMASELLO. 1999. Young children learn to produce passives with nonce verbs. *Developmental Psychology* 35(1):29–44.

CLANCY, PATRICIA M.; HYEONJIN LEE; and MYEONG-HAN ZOH. 1986. Processing strategies in the acquisition of relative clauses: Universal principles and language-specific realizations. *Cognition* 24(3):225–62.

DIESSEL, HOLGER, and MICHAEL TOMASELLO. 2005. A new look at the acquisition of relative clauses. *Language* 81(4):882–906.

FODOR, JANET DEAN. 1989. Empty categories in sentence processing. *Language and Cognitive Processes* 4 (3–4):155–209.

FRIEDMANN, NAAMA, and RAMA NOVOGRODSKY. 2004. The acquisition of relative clause comprehension in Hebrew: A study of SLI and normal development. *Journal of Child Language* 31(3):661–81.

HAWKINS, JOHN A. 1999. Processing complexity and filler-gap dependencies across grammars. *Language* 75(2):244–85 .

HSU, NATALIE CHUN-CHIEH; 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.

KEENAN, EDWARD L., and BERNARD COMRIE. 1977. Noun phrase accessibility and Universal Grammar. *Linguistic Inquiry* 8(1):38–99 .

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

LAU, ELAINE. 2016. Acquisition of relative clauses in Cantonese: A multi-factorial analysis. University of Hawaiʻi at Mānoa PhD dissertation.

MCKEE, CECILE. 1992. A comparison of pronouns and anaphors in Italian and English acquisition. *Language Acquisition* 2(1):21–54.

MIYAMOTO, EDSON T., and MICHIKO NAKAMURA. 2003. Subject/object asymmetries in the processing of relative clauses in Japanese. *Proceedings of the 22nd West Coast Conference on Formal Linguistics*:342–55.

NOMOTO, HIROKI, and ISAMU SHOHO. 2007. Voice in relative clauses in Malay: A comparison of written and spoken language. In *Corpus-based perspectives in linguistics*, ed. by Y. Kawaguchi, T. Takagaki, N. Tominmori and Y. Tsuruga, 353–70. Amsterdam: John Benjamins.

REALI, FLORENCIA, and MORTEN H. CHRISTIANSEN. 2007. Processing of relative clauses is made easier by frequency of occurrence. *Journal of Memory and Language* 57(1):1–23.

TANAKA, NOZOMI. 2015. Tagalog relative clause production: Data from adults and children. *University of Hawaiʻi Working Papers in Linguistics* 46(1).

TJUNG, YASSIR NASANIUS. 2006. The formation of relative clauses in Jakarta Indonesian: A subject-object asymmetry. University of Delaware PhD dissertation.

TJUNG, YASSIR NASANIUS. 2009. Object relatives and ease of passivization in Indonesian. *Congress of Indonesian Linguistic Society*.

petercjl@hawaii.edu