

# The status of syntactic ergativity in Kaqchikel

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## Abstract

This study investigates the nature of syntactic ergativity in the Mayan language Kaqchikel. Drawing on data from two production tasks, one designed to elicit relative clauses and the other to elicit *wh* questions, we show that despite its portrayal in the literature, Kaqchikel is not uniformly syntactically ergative with respect to A-bar extraction. Rather, its *wh* questions have ergative syntax, while its relative clauses exhibit nominative-accusative syntax. These findings contribute not only to the study of Mayan languages, but also to an understanding of the typology of ergativity in general.

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## 1. Introduction

It is frequently observed that ergativity can manifest itself in a variety of ways. An obvious example of this involves the familiar distinction between morphological ergativity, which is manifested in a language's system of case marking and/or agreement, and syntactic ergativity, whose effects are observed in phenomena other than inflection (e.g., Dixon, 1979, 1994; Comrie, 1989; Aldridge, 2008, *inter alia*). As noted by Aldridge (2008), a very widely manifested feature of syntactic ergativity is the restriction against 'A-bar movement'<sup>1</sup> of the subject of a transitive clause. The effect of this constraint can be most directly observed in relativization and *wh* movement, which cannot apply directly to the subject of a transitive verb. Instead a detransitivization strategy must be employed, converting the ergative agent into an absolutive. In the Mayan language Tz'utujil, for instance, relativization of the subject of a transitive verb almost always requires use of the 'agent focus' construction illustrated in (1). (We use a gap [ ] to indicate the underlying position of the moved argument; the underlying order in Kaqchikel (as in Tz'utujil) is VOS; see Koizumi *et al.*, 2014 and Duncan, 2003).

(1) Relativization of the agent argument after detransitivization:

Jar aachi [ja x-Ø-ch'ey-**o** Aa Keel \_] x-Ø-b'e  
 FOC<sup>2</sup> man REL COMPL-3SG.ABS-hit-**AF** CL Miguel \_ COMPL-3SG.ABS-go  
 'The man who hit Miguel left'

(Dayley, 1985:231)

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<sup>1</sup> Descriptively speaking, A-bar movement is an operation that moves an argument (e.g., a subject or a direct object) to a non-argument position. In Principles-and-Parameters theory, that position is located outside the minimal clausal projection, usually in the projection of the complementizer (CP) or some other higher functional head.

This construction is morphologically intransitive since it cross-references a single argument via absolutive agreement prefixes; however, it does not require the demotion or omission of the theme argument, as would an antipassive (e.g., Aissen, 1999). By contrast, no detransitivization of any sort is necessary for the relativization or questioning of the object of a transitive verb, as shown in (2), which maintains ergative agreement for its subject and absolutive agreement for its direct object.

(2) Relativization of the theme argument (no detransitivization necessary):

Jar aachi [ja x-Ø-uu-ch'ey \_ Aa Keel] x-Ø-b'e  
 FOC man REL COMPL-3SG.ABS-3SG.ERG-hit \_ CL Miguel COMPL-3SG.ABS-go  
 'The man who Miguel hit left'

(Dayley, 1985:231)

Recent work suggests the need for a further refinement in the typology of ergativity, as some syntactically ergative languages are reported to treat relativization and *wh* movement in different ways. One such language is Chukchi (Paleo-Siberian), in which the agent argument of a transitive verb can be directly questioned, but can be relativized only with the help of antipassivization (Polinsky, in press).

(3) a. Relativization (antipassivization required)

[ \_ mælgr-epə **ine**-kune-lʔ-ən] ənpənačg-ən  
 \_ gun-ABL AP-buy-PTCP-ABS old.man-ABS  
 'The old man that bought a gun'

(Polinsky, in press, ex. 24)

b. *Wh* movement (no antipassivization)

Mikəne [ \_ milger kun-nin]?  
 who.ERG \_ gun.ABS buy-AOR.3SG.SUBJ.3SG.OBJ  
 'Who bought a/the gun?'

(Polinsky, in press, ex. 16)

Based on facts such as these, Polinsky suggests that relativization is the most reliable test of syntactic ergativity.

A possible challenge to this proposal comes from the K'ichean Mayan language Kaqchikel. Uncontroversially ergative, Kaqchikel has long been assumed to require detransitivization (in the form of agent focus) in contexts that call for the agent argument of a transitive verb to be relativized or questioned (García Matzar and Rodríguez Guaján, 1997; Dayley, 1981:16–17). As illustrated below, the agent focus pattern employs absolutive agreement morphology, signaling detransitivization.

(4) a. Relativization with agent focus<sup>3</sup>:

Ri retal k'o pa ruwi' ri ala' [ri n-Ø-q'et-**en** ri xtän \_]  
 DET sign be PREP top DET boy REL INCOMPL-3SG.ABS-hug-**AF** DET girl \_  
 'The arrow is above the boy who is hugging the girl'

b. *Wh* movement with agent focus:

Achike [n-Ø-q'et-**en** ri xtän \_]?  
 WH INCOMPL-3SG.ABS-hug-**AF** DET girl \_  
 'Who is hugging the girl?'

However, observations by the first author suggest that, contrary to the traditional view, direct relativization of the agent argument of a transitive verb may in fact be possible, even though no such option is available for *wh* movement. Thus the relative clause in (5a) differs from the *wh* question in (5b) in being acceptable, even though both are fully transitive, as shown by the presence of ergative agreement morphology (boldfaced) for the subject and of absolutive agreement for the direct object.

(5) a. Relativization without detransitivization:

Ri retal k'o pa ruwi' ri ala' [ri Ø-**ru**-q'et-**en** ri xtän \_]  
 DET sign be PREP top DET boy REL 3SG.ABS-**3SG.ERG**-hug-PERF DET girl \_  
 'The arrow is above the boy who is hugging the girl'

<sup>2</sup> 1 = 1st person; 2 = 2nd person; 3 = 3rd person; ABL = ablative; ABS = absolutive; AF = agent focus; AOR = aorist; AP = antipassive; CL = animate gender/animacy/age classifiers; COMPL = completive aspect; CONT = continuous; DET = determiner; DIM = diminutive; DIR = directional; ERG = ergative; FOC = focus particle; IMP = imperative; INCOMPL = incomplete; OBJ = object; OBL = oblique; PASS = passive; PERF = perfect; PL = plural; POS = possessive; PREP = preposition; PTCP = participle; REL = relative marker; SG = singular; SUBJ = subject; TV = transitive verb suffix; WH = *wh* word.

b. *Wh* movement without detransitivization:

\*Achike [n-Ø-u-q'et-ej] ri xtän \_]?

WH INCOMPL-3SG.ABS-3SG.ERG-hug-TV DET girl \_

'Who is hugging the girl?'

(acceptable only when interpreted as a direct object question, with the interpretation 'Who is the girl hugging?')

Our goal in this paper is to use an elicited production task to investigate the possibility of an ergativity-related difference in the syntax of Kaqchikel relative clauses and *wh* questions. The use of this research strategy, common in work on experimental linguistics, has at least three advantages.

First, in contrast to the elicitation of grammaticality judgments, which is not an every-day linguistic activity, the production task that we use provides native speakers with an opportunity to create relative clauses and *wh* questions in the sorts of contexts in which they would be used in natural speech. Speakers are not asked to judge the acceptability of sentences created by others or to translate sentences from another language into Kaqchikel.

Second, production tasks can be designed to target the structures and lexical items that are needed to make very specific comparisons (e.g., relativization of a singular animate subject of a transitive activity verb versus *wh* movement in exactly the same clause type). Data consisting of naturalistic speech samples are unlikely to permit such direct comparisons, especially in the case of patterns that do not occur frequently to begin with.

Finally, our production task allows speakers to create and produce structures with properties that may not have been anticipated in advance by the researcher. This in turn can reveal the effects of language attrition, language change, and language contact that might otherwise go unnoticed.

We will use the data from our production task to address the following questions:

- Do speakers of Kaqchikel routinely relativize the agent arguments of transitive verbs? Are there alternative strategies to which they sometimes have recourse in these situations?
- Do they routinely avoid *wh* movement in the case of agent arguments of transitive verbs? If so, what alternative strategies do they use to question the agent argument of a transitive verb?

Our paper is organized as follows. We begin, in the next section, by reporting on the experiment that we conducted on subject and direct object relative clauses. Section 3 focuses on a parallel experiment that we carried out, after an interval of 1 year, on the corresponding types of *wh* questions. Section 4 presents a general discussion and some concluding remarks.

## 2. The relative clause experiment

### 2.1. Participants

Thirty-two speakers of Kaqchikel participated in this study, ranging in age from 20 to their mid 70s, with the majority in their mid to late thirties and forties.<sup>4</sup> Four participants were subsequently excluded due to their failure to follow instructions or understand the experiment. Data were collected over a 6-week period (Table 1).

Table 1  
Participants by age.

Age group	# Participants
20–30	8
31–40	8
41–50	10
51+	2
Total	28

Participants, who were recruited through personal contacts, were from eight different Kaqchikel-speaking towns in Guatemala: Tecpán, San Juan Comalapa, Santa María de Jesús, Sololá, Patzún, Patzicía, San Andrés Itzapa, and San José Poaquil.<sup>5</sup>

<sup>3</sup> Unless otherwise stated, all Kaqchikel examples are drawn from utterances produced by participants in the study on which we will be reporting.

<sup>4</sup> Exact ages were not available for some participants, who preferred to give an approximate age.

<sup>5</sup> Each town has its own dialect, but we found no dialect-related differences in participants' responses to the target structures.

E k'o ka'i' ala-b'o, jun xtän, jun k'oy. Achike ala' k'o ri retal pa ruwi'?  
 3pl be two boy-PL one girl one spider.monkey WH boy be DET sign PREP top  
 'There are two boys, a girl, and a spider monkey. Which boy has the arrow above him?'

Targeted response: 'The arrow is above the boy who is hugging the girl'

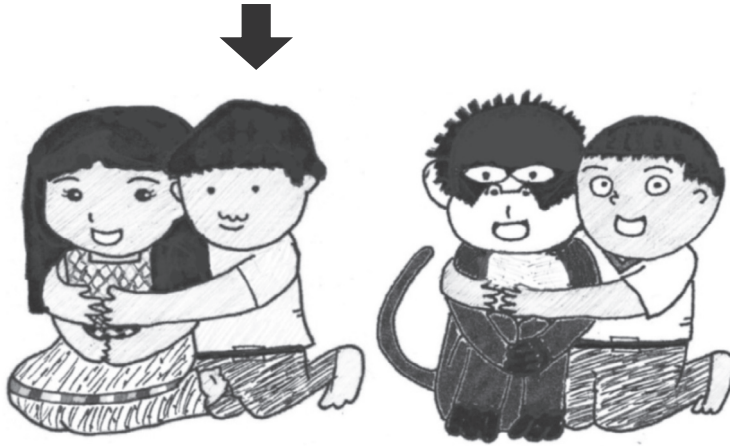


Fig. 1. Sample item to elicit a subject relative clause.

All participants were bilingual in Spanish and Kaqchikel, and all reported using both languages in their daily lives. The participants aged 40 and older are all first-language Kaqchikel speakers, as they did not learn or actively use Spanish until they went to school at about age 9. The younger participants grew up bilingual, and some are more comfortable in Spanish. Although the proficiency of the younger speakers in Kaqchikel was not tested by any independent measure, all who participated in this study were considered competent, fluent speakers by their communities and regularly use the language in public domains.

## 2.2. Method and materials

Our study used a picture description task similar to the one employed by Montag and MacDonald (2009). Each picture consisted of two panels depicting the same action, but with different participants. A lead-in prompt, presented by an experimenter, was then used to create the conditions under which the participant would be likely to produce a relative clause. Figs. 1 and 2 provide examples of test items used to elicit subject and direct object RCs, respectively.<sup>6</sup>

There were a total of 20 test items, 10 designed to elicit subject relative clauses and 10 designed to elicit object relative clauses. Half of each subset of test items contained an animate direct object, and half contained an inanimate direct object, creating the four conditions summarized in Table 2. (AA = animate subject and animate direct object; AI = animate subject and inanimate direct object; SRC = subject relative clause; ORC = direct object relative clause).

The 20 stimuli were each arranged in two lists (A and B), which were identical except for the placement of the arrow, which appeared over a participant in the right-hand picture in one list and in the left-hand picture in the other. Half of the participants were shown the stimuli in list A, the other half list B. The stimuli were presented in blocks, each consisting of all five test items from a particular condition, arranged as follows.

<sup>6</sup> Many pictures used in both experiments came from Tanaka et al. (2014), and were modified by the first author to more accurately reflect Mayan culture, environment, and people, e.g. with respect to clothing, hair color, the way that dishes and clothes are washed, etc. Other pictures were drawn by the first author and Connor Heaton, and one animate image was modified and used from the Story-Builder project (<http://www.story-builder.ca/>). In order to discourage participants from focusing on extraneous identifying characteristics such as items of clothing, rather than the relevant action, only black-and-white pictures were employed.

K'o ka'i' kotz'i', chuqa jun ala', jun xtän. Achike kotz'i'j k'o ri retal pa ruwi'?  
 Be two flower also one boy one girl WH flower be DET sign PREP top  
 'There are two flowers, a boy, and a girl. Which flower has the arrow above it?

**Targeted response: 'The arrow is above the flower that the girl is picking'**

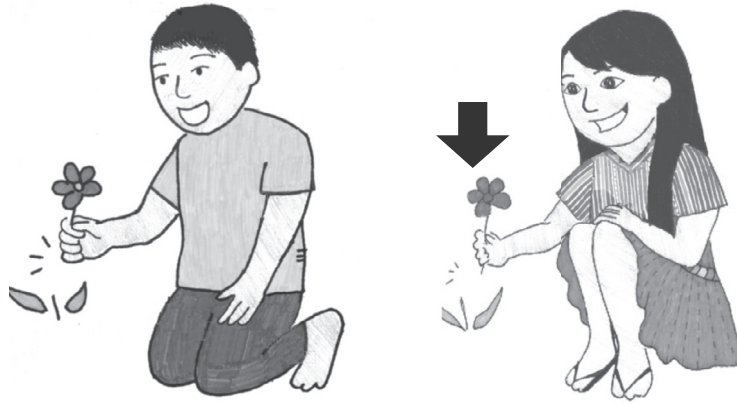


Fig. 2. Sample item to elicit a direct object relative clause.

Table 2  
Test conditions.

	Matching animacy	Mismatched animacy
Subject RCs	AA SRCs	AI SRCs
Object RCs	AA ORCs	AI ORCs

List A:      List B:  
 1. AI ORCs    1. AI SRCs  
 2. AI SRCs    2. AI ORCs  
 3. AA ORCs    3. AA SRCs  
 4. AA SRCs    4. AA ORCs

In both lists, the stimuli with an inanimate direct object argument (AI) were presented first, as patterns of this type have been found to be easier than their counterparts with two animate arguments (AA).

Each session began with a brief introduction in which participants were told that they were going to be shown pictures with people or objects in them, and that they would be asked to describe a person or object that had an arrow above it. Several test items were briefly shown (but not described), to illustrate the various arrow positions. We planned to use two training stimuli, but these were discarded when the first few participants reported that they were not similar enough to the actual task to be useful. Fortunately, however, the goal of the task was clear to the vast majority of the participants, who did not hesitate to produce relative clauses in response to our prompts.

The experiment was conducted in Guatemala, usually in the participant's home or place of work. Only Kaqchikel was used in the test sessions; the task took between 7 and 15 min to complete.

### 2.3. Results

We focus on three primary response types for the items designed to elicit subject relative clauses, as exemplified below.

#### (6) Primary response types for subject relative clauses

##### a. Transitive clause with subject gap:

Ri retal k'o pa ruwi' ri achin [ri n-Ø-u-tij]  
 DET sign be PREP top DET man REL INCOMPL-3SG.ABS-3SG.ERG-eat  
 ri wotz'otz' \_]  
 DET pork.rind \_  
 'The arrow is above the man who is eating pork rinds'

## b. Detransitivized agent focus pattern with subject gap:

Ja la xtän [ri n-Ø-k'ay-in la q'anatz'ub' \_] ja la  
 FOC DET girl REL INCOMPL-3SG.ABS-sell-AF DET mango \_ FOC DET  
 k'o retal  
 be sign  
 'It is the girl who is selling mangos that has the arrow'

## c. Detransitivized antipassive pattern with subject gap:

Ja ri ala' [ri Ø- q'et-ey-on r-ichin ri k'oy \_]  
 FOC DET boy REL 3SG.ABS-hug-CONT-AP/PERF 3sg.POS<sup>7</sup>-OBL DET spider.monkey \_  
 'It is the boy who is hugging the spider monkey'

Of these, only the first is fully transitive, as shown by its use of ergative agreement morphology for the subject and absolutive agreement for its direct object. By contrast, the agent focus and antipassive patterns are both morphologically intransitive: absolutive agreement morphology is used for the subject in (6b) and (6c), and the verb's second argument does not trigger agreement at all. Table 3 summarizes our results for the test items that targeted subject relative clauses.

Table 3  
Responses to test items designed to elicit subject RCs.

Response type	AA condition	AI condition
Transitive subject RC	119 (85%)	104 (72.1%)
Agent focus	8 (5.7%)	8 (5.7%)
Antipassive	3 (2.1%)	1 (0.07%)
Other <sup>a</sup>	10 (7.1%)	27 (19.3%)
Total	140	140

<sup>a</sup> The majority of the "other" responses (26 of 37) involved the production on an intransitive RC by making use of intransitive participles and positionals in lieu of transitive verbs, or attempting to identify the correct character in the picture by location, physical traits, or relationship to the object, as opposed to the action taking place in the picture.

The dominant response type in both conditions consisted of a fully ergative transitive relative clause with a subject gap, as exemplified in (6a). Eighty-five percent of all responses in the AA condition and 72.1% in the AI condition were of this type. (There were no significant age effects or animacy effects with respect to response type.<sup>8</sup>) Fewer than 10% of the responses in either condition involved detransitivization—either an agent-focus pattern or an antipassive. Moreover, in response to queries after the experiment was concluded, the few speakers who had employed detransitivization strategies reported that use of a transitive pattern would have been equally acceptable. This pattern of results is inconsistent with syntactic ergativity.

Responses by participants to the items designed to elicit direct object relative clauses also militate against syntactic ergativity in Kaqchikel relative clauses. The two response types exemplified below are of particular interest.

## (7) Primary response types for direct object relative clauses

## a. Transitive clause with direct object gap:

Ri letet k'o retal pa ruwi' [ri Ø-ru-k'wa-n \_ ri ala']  
 DET bicycle be sign PREP top REL 3SG.ABS-3SG.ERG-ride-PERF \_ DET boy  
 'The bicycle that has the arrow over it is [that which] the boy is riding'

## b. Passive clause with subject gap:

K'o ri retal pa ruwi' ri xtän [ri n-Ø-tz'ub'-äx  
 be DET sign PREP top DET girl REL INCOMPL-3SG.ABS-kiss-PASS  
 r-oma ri ixöq \_]  
 3sg.POS-OBL DET woman \_  
 'The arrow is above the girl who is being kissed by the woman'

<sup>7</sup> Relational nouns with an obligatory possessor function as oblique markers in antipassive and passive constructions in Mayan languages. The possessive markers are homophonous with ergative ("Set A") agreement markers in the verb.

<sup>8</sup> Significance was calculated using a mixed effect logistic regression which includes subjects and items as random effects.

Table 4  
Responses to test items designed to elicit direct object RCs.

Response type	AA condition	AI condition
Transitive object RC	34 (24.3%)	90 (64.3%)
Passive subject RC	71 (50.7%)	5 (3.6%)
Other	35 (25%)	45 (32.1%)
Total	140	140

The pattern in (7a) exemplifies a direct object relative clause with an object gap. In contrast, example (7b) is a subject relative clause, created with the help of passivization—a common strategy for avoiding direct object relatives in accusative languages, as we will see in more detail below (Table 4).

The key finding here is the relatively low rate of production for direct object relative clauses—especially in the AA condition, where just 24.3% of responses involved a transitive clause with a direct object gap. In contrast, 85% of all responses to the comparable subject RC items involved the production of a transitive pattern (see Table 3). No individual participants were more successful in their production of direct object relative clauses than transitive subject relative clauses.

If Kaqchikel relative clauses had an ergative character, one would expect the opposite result: resistance to the relativization of the subject of a transitive clause, not the direct object. Indeed, the avoidance of direct object relatives, especially those with animate direct objects, as seen in the large proportion of passive sentences in the AA condition (50.7%), is commonly observed in *accusative* languages, including English, Japanese, Spanish, and Serbian (Gennari and MacDonald, 2008; Montag and MacDonald, 2009; Gennari et al., 2012).

A further sign that Kaqchikel relative clauses lack syntactic ergativity comes from two types of telling responses that our participants made when attempting to produce direct object relative clauses: of the 80 responses in the ‘other’ category in the AA and AI conditions, 67.6% involved the erroneous production of a subject relative clause in lieu of a direct object pattern, either by infelicitously choosing the agent as the head of the relative clause, as in (8),<sup>9</sup> or by substituting an intransitive or positional verb, as in (9). In contrast, a mere 2.6% of responses involved the production of a direct object relative clause in lieu of a subject relative clause.<sup>10</sup>

- (8) a. Targeted direct object relative clause:  
 (Ja)<sup>11</sup> ri xtän [ri Ø ru-q'et-en \_ ri ala']  
 (FOC) DET girl REL 3SG.ABS 3SG.ERG-hug-PERF \_ DET boy  
 ‘[It is] the girl who the boy is hugging’
- b. Subject relative clause that was produced instead:  
 Ja ri ala' [Ø ru-q'et-en ri ti xtän \_]  
 FOC DET boy 3sg.abs 3sg.erg-hug-PERF DET DIM girl \_  
 ‘It is the boy who is hugging the girl’
- (9) a. Targeted direct object relative clause:  
 ri wotz'otz' [ri n-Ø-u-tij \_ ri ixöq]  
 DET pork.rinds REL PRS-3SG.ABS-3SG.ERG-eat \_ DET woman  
 ‘The pork rinds that the woman is eating’
- b. Subject relative clause that was produced instead:  
 ri wotz'otz' [ri \_ k'o r-ik'in ri ixöq]  
 DET pork.rinds REL \_ be 3SG.POS-with DET WOMAN  
 ‘The pork rinds that are with the woman’

<sup>9</sup> There were 27 instances of the response type in (8) and 27 instances of the response type in (9), both of which appeared regularly in both AA and AI conditions.

<sup>10</sup> The remaining responses involved attempts to identify the correct character in the picture by location, physical traits, or relationship to the object. These included possessive constructions and other relational noun phrases, responses consisting only of a single noun, and several ungrammatical responses.

<sup>11</sup> It was common for the head of the relative clause to be additionally focused by *ja*. This is best captured by a cleft-like translation, even though Kaqchikel does not have a separate cleft structure.



In sum, our participants' production of relative clauses showed no signs of syntactic ergativity. Not only do Kaqchikel speakers produce fully transitive subject RCs with ergative agreement morphology, they are far more likely to use these patterns than their detransitivized counterparts. In addition, participants exhibited a preference for passives in lieu of object relative clauses when both arguments were animate, adopting a practice that is common in accusative languages.

It is true that participants sometimes responded by using AF or antipassive versions of subject RCs (6–8% of the responses were of this type; see Table 3). However, this cannot be interpreted as a sign of ergativity: the AF and antipassive patterns were an infrequent option, not a required construction as would be the case in a language that prohibited the relativization of the subjects of transitive verbs.

### 3. The *wh* question experiment

We turn now to the second of our research questions: do Kaqchikel speakers routinely avoid *wh* movement in the case of agent arguments of transitive verbs, as syntactic ergativity would require?

#### 3.1. Participants

The *wh* question experiment was conducted approximately one year after the relative clause study. The participants were 28 native speakers of Kaqchikel with the age distribution summarized in Table 5.

Table 5  
*Wh* question experiment participants by age.

Age group	# Participants
20–30	11
31–40	5
41–50	11
51+	1
Total	28

Fourteen of the participants from the relative clause experiment also took part in the *wh* question experiment, but the remaining fourteen were unavailable and were therefore replaced by new participants. As was the case in our first experiment, all participants were bilingual in Kaqchikel and Spanish, actively used both languages in their daily lives, and were considered fluent speakers of Kaqchikel within the community. In addition to the towns represented in our first experiment, the *wh* question study included participants from Santiago Sacatepéquez and Alotenango. Neither hometown nor participation in the previous experiment had any discernable effect on participants' responses.

#### 3.2. Method and materials

The *wh* question experiment used an elicited production task modeled after Yoshinaga (1996). Each test item consisted of a drawing that depicted a transitive action in which one of the two participants was almost entirely hidden behind a superimposed rectangle. Participants were instructed to ask the researcher about the identity of the unknown party, which typically led to the production of either a subject or an object *wh* question. Sample test items are illustrated in Figs. 3 and 4.

As in the relative clause study, there were 20 test items, 10 targeting subject *wh* questions and 10 targeting object *wh* questions; half of each subset of test items contained an animate direct object and half had an inanimate direct object, giving a total of four conditions. There were five items for each condition, which were presented in blocks. Half of the participants were presented with the items in the order given in List A, while the other half were tested using List B. As in the relative clause experiment, the test items containing inanimate theme arguments were presented first:

List A	List B
1. AI object <i>wh</i>	1. AI subject <i>wh</i>
2. AI subject <i>wh</i>	2. AI object <i>wh</i>
3. AA object <i>wh</i>	3. AA subject <i>wh</i>
4. AA subject <i>wh</i>	4. AA object <i>wh</i>

The experiment was conducted in the participant's home or in a public area in Guatemala, and took 3–10 min to complete. Although there were no training items, the explanation of the task, combined with a brief look at the items, was sufficient for all participants to perform the task appropriately. After participants had completed the task, they were asked



Jun winäq n-Ø-u-wüx xkoya'. Rîn Ø-w-etama-n  
 one person INCOMPL-3SG.ABS-3SG.ERG-harvest tomato 1SG 3SG.ABS-1SG.ERG-know-PERF  
 achike. T-Ø-a-k'ut-uj pe ch-we!  
 WH IMP-3SG.ABS-2SG.ERG-ask-TV DIR PREP-1SG  
 'Someone is picking tomatoes. I know who. Ask me!'

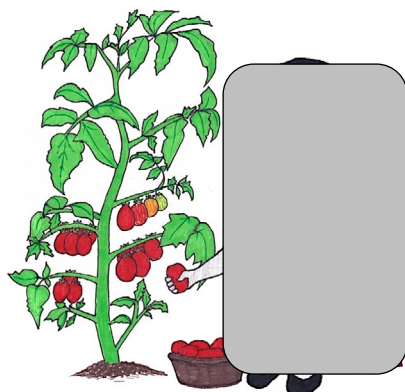


Fig. 3. Sample test item to elicit a subject *wh* question.

Ri ixöq n-Ø-u-nīm jun winäq. Rîn Ø-w-etama-n  
 DET woman INCOMPL-3SG.ABS-3SG.ERG-push one person. 1SG 3SG.ABS-1SG.ERG-know-PERF  
 achike. T-Ø-a-k'ut-uj pe ch-we!  
 WH IMP-3SG.ABS-2SG.ERG-ask-TV DIR PREP-1SG  
 The woman is pushing someone. I know who. Ask me!

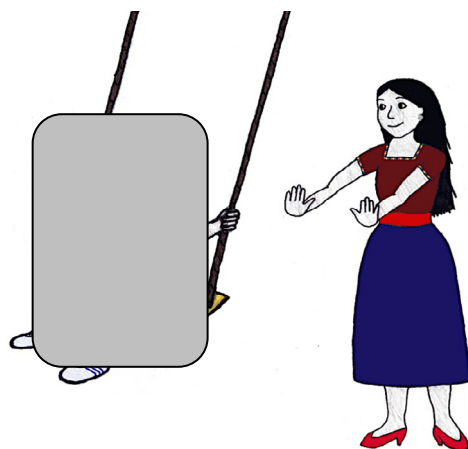


Fig. 4. Sample test item to elicit an object *wh* question.

about the relative acceptability of particular examples of subject *wh* questions, with and without detransitivization. All interactions and discussion took place in Kaqchikel.

### 3.3. Results

As in the relative clause experiment, three potential response types are of special interest for the test items that were designed to elicit a subject *wh* question: transitive clauses such as (10a), with ergative agreement for the subject and absolutive agreement for the direct object; agent focus patterns such as (10b), with absolutive agreement for the subject and no agreement at all for the verb's second argument; and antipassives such as (10c), with absolutive agreement for the

subject and oblique marking on the second argument. Of these three patterns, only the first is considered to be fully transitive.

(10) Primary response types for subject *wh* questions

a. Transitive clauses:

Achike [Ø-ru-ch'el-en ri xtän \_]?  
 WH 3SG.ABS-3SG.ERG-carry.in.arms-PERF DET girl \_  
 'Who is carrying the girl?'

b. Agent focus clauses:

Achike [n-Ø-nim-ø ri ala' \_]?  
 WH INCOMPL-3SG.ABS-push-AF DET boy \_  
 'Who is pushing the boy?'

c. Antipassive clauses:

Achike [n-Ø-k'as-on r-ichin la ti ala' \_]?  
 WH INCOMPL-3SG.ABS-wake-AP 3SG.POS-OBL DET DIM BOY \_  
 'Who is waking up the little boy?'

Our results are summarized in Table 6.

Table 6  
 Responses to test items designed to elicit subject *wh* questions.

Response type	AA condition	AI condition
Transitive subject <i>wh</i> Q	24 (17.1%)	30 (21.4%)
Agent focus	95 (67.9%)	105 (75.0%)
Antipassive	21 (15.0%)	5 (3.6%)
Total	140	140

As can be seen here, participants manifested an overwhelming preference for detransitized constructions to express subject *wh* questions: just 17.1% of responses on the AA condition and 21.4% on the AI condition contained a transitive verb with ergative agreement morphology, as in (9a). The remainder were either agent focus patterns (67.9% of all responses in the AA condition and 75% in the AI condition) or antipassives. This avoidance of subject *wh* questions with transitive clauses points toward the ergative character of *wh* questions in Kaqchikel.

As in our relative clause results, the animacy of the theme argument had no significant effect on participants' willingness to produce transitive clauses when the subject was questioned. However, it did have an effect on the choice of detransitivization strategy: the antipassive was used 21 times in the AA conditions, compared to just 5 times in the AI condition.

The effect of age was highly significant ( $\beta$ : 14.19  $\pm$  2.04,  $p < 0.0001$ ), reflecting the fact that all transitive clause responses were produced by speakers under age 40. Indeed, as illustrated in Fig. 5, the vast majority of the transitive patterns (48 out of 54) came from participants aged 30 or younger.

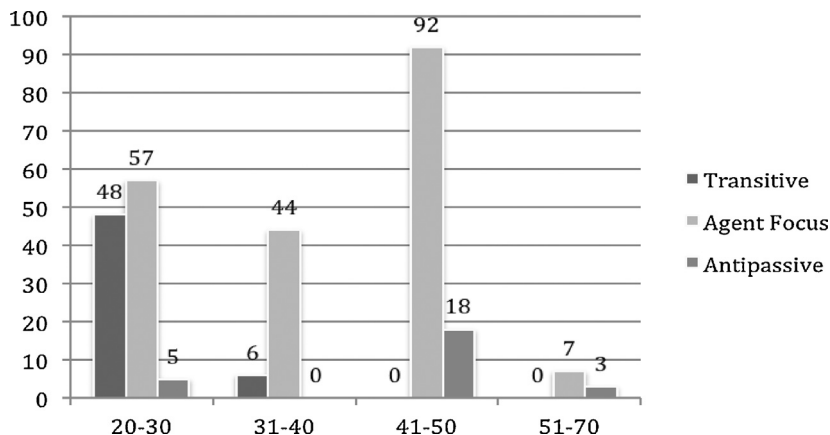


Fig. 5. Instances of transitive vs. detransitive constructions in subject *wh* questions by age.

In a post-test interview, 5 of the 11 participants in the youngest group and one in the second youngest group categorized subject *wh* questions with fully transitive verbs as acceptable. In contrast, no speaker over the age of 40 ever produced a transitive subject *wh* question and none categorized such patterns as acceptable in the post-test interview. This presumably reflects the fact, noted in Section 2.1, that speakers 40 and older were raised in an environment where Kaqchikel was their sole first language.

Turning now to direct object *wh* questions, our findings are straightforward, as virtually all responses involved the fully transitive pattern exemplified in (11).

(11) Primary response types for direct object *wh* questions

Achike [n-Ø-u-tz'ub-aj] \_ ri ixöq]  
 WH INCOMPL-3SG.ABS-3SG.ERG-kiss-TV \_ DET woman  
 'Who is the woman kissing?'

Table 7 reports our results.

Table 7  
Responses to test items designed to elicit direct object *wh* questions.

Response type	AA condition	AI condition
Transitive object <i>wh</i> Q	136 (97.1%)	140 (100.0%)
Passive subject <i>wh</i> Q	1 (0.7%)	0 (0.0%)
Other	3 (2.1%)	0 (0.0%)

In sharp contrast to our findings for relative clause patterns, there is no tendency to err in the choice of the item that is to be questioned or to have recourse to passivization when a direct object question is called for. Instead, we see only a near-ceiling rate of successful production.

In sum, there is every reason to think that the syntax of *wh* questions in Kaqchikel is organized along ergative lines, especially for speakers older than 30. As we have noted, participants in this age group rarely produce subject *wh* questions with a transitive verb (and speakers over 40 never do so). Instead, speakers they rely on detransitivization when they produce subject *wh* questions, usually through the use of an agent focus pattern or, occasionally, an antipassive. At the same time, all participants manifest a very high rate of success in the production of direct object *wh* questions, which include a fully transitive verb and a gap in the direct object position.

#### 4. General discussion and conclusion

As stated at the outset, our goal has been to use the technique of elicited production to explore a fundamental issue in the syntax of relative clauses and *wh* questions in Kaqchikel: do either or both of these patterns show signs of syntactic ergativity? Our findings were robust, permitting a strong conclusion for each pattern.

On the one hand, we found little evidence of syntactic ergativity in the case of relative clauses. Although a detransitivization strategy was sometimes used to relativize the subject argument of a transitive verb, participants showed an overwhelming willingness to produce subject relative clauses that contained a transitive verb with ergative agreement morphology. The fact that this tendency was evident in all our participants, regardless of age, suggests that the accusative character of relativization is firmly established in the language.

On the other hand, we found very strong evidence for syntactic ergativity in the case of *wh* questions. There, only younger speakers produced subject *wh* questions that contained a transitive verb with ergative agreement morphology. Speakers 40 and older invariably had recourse to a detransitivization strategy that involved either an agent focus pattern or antipassivization—classic signs of syntactic ergativity.

It is unclear how and why Kaqchikel has reached this point. At least some other Mayan languages seem to manifest a similar asymmetry, including Mam (England, 1983:214–216), Ixil (Ayres, 1983:31–33), and Sipacapense (Barrett, 1999:244, 266), all of which belong to the Eastern branch of the Mayan family. Beyond Mayan, however, the only other instance of split syntactic ergativity involving A-bar movement appears to be the mirror image of what we have reported for Kaqchikel: as reported by Polinsky (in press), Chukchi shows signs of ergativity in its relative clauses, but not in its *wh* questions.

Taken together, the data from Kaqchikel and Chukchi raise new questions for the study of ergativity. Most obviously, they call into question the possibility, noted in Section 1, that relative clause patterns might offer a criterial test for whether a language is syntactically ergative. In contrast to Chukchi, syntactic ergativity in Kaqchikel is manifested in *wh* questions,

but not in relative clauses. This in turn raises questions about which, if either, of the two options is more common and why splits of this sort occur in the first place. The answers to these questions are far from evident, of course, but it is reasonable to think that their pursuit will be enhanced by the use of experimental techniques to probe the intricacies of Kaqchikel and other ergative languages.

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