

Documenting Mayan Language Acquisition

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Chomsky (1965; 1986) has long stressed the significance of the fact that children can acquire any human language. This linguistic phenomenon is a central motivation in the search for language universals. The claims of generative grammar underline the importance of documenting the full range of language diversity while typologically distinct languages still exist. Such documentation is necessary to understand the nature of children's linguistic accomplishments. The goal of this project is to establish a comparative acquisition database for the Mayan languages to facilitate comparison between processes of historical change and language acquisition. This goal includes the development of resources and procedures for recording and analyzing Mayan acquisition data.

The Mayan language family contains 30 separate languages with over seven million living speakers. The languages fall into five main historical subdivisions: 1) Huastecan, 2) Yucatecan, 3) Greater Q'anjob'alan, 4) Greater Tzeltalan and 5) Eastern Mayan (Campbell & Kaufman 1985; Brown & Wichmann 2004). Mayan languages have a largely agglutinative morphology with an ergative type of cross-referencing verb morphology (Kaufman 1990). The ergative inflections cross-reference the subjects of transitive verbs and nominal possessors. The absolutive inflections cross-reference subjects of intransitive verbs, direct objects of transitive verbs and subjects of stative predicates. There are distinct forms of the ergative markers for words that begin with consonants and vowels. Verbal utterances contain obligatory particles for aspect that coordinate with verbal 'status' suffixes (Kaufman 1990). Nonverbal, stative utterances contain marking for cross-reference but not aspect. The languages generally have a verb-initial underlying word orders. Some languages have a fixed verb, subject, object word order while others have a variable verb, object, subject word order. The underlying order varies with the definiteness and animacy of the subject and object (England 1992). Examples of K'iche' verbs are shown in (1).

(1) K'iche' verbs.

a. x-at-inw-il-o.
COMP-2Abs-1Erg-see-VTR_{status}
'I saw you.'

b. x-at-war-ik.
COMP-2Abs-sleep-VI_{status}
'You slept.'

Mayan languages differ from English and other European languages on almost every linguistic dimension:

Phonology—Mayan languages employ a contrast between plain and glottalized stops in place of the more common contrast between plain and voiced stops. The glottalized stops are ejective in some languages and injective or variable in other languages. Affricates are used more frequently in Mayan languages and some of the Mayan languages have retroflex fricatives and affricates (Kaufman 1990).

Morphology—the language family has both fully ergative and partially ergative cross-referencing systems on verbs (Larsen & Norman 1979). In Mayan languages with partial ergativity, the ergative markers are extended to subjects of intransitive verbs. The splits in ergativity are based on person, aspect or clause type in different Mayan languages. Some Mayan languages extend the ergative markers to produce an Active/Stative cross-referencing system (Danzinger 1996; Vázquez Álvarez 2002). The ergative cross-referencing morphology works in tandem with the verbal suffixes to distinguish the transitive from intransitive verb roots.

Syntax—the languages have an underlying verb-initial word order (England 1992). Some of the languages maintain a fixed word order while other Mayan languages allow the word order to vary depending on the animacy or definiteness of the subject and object. Most of the languages grammaticalize aspect rather than tense which makes the distinction between finite and nonfinite contexts less clear than it is in English. Stative sentences, e.g. ‘The house is white’ are not inflected for tense or aspect. The languages commonly have multiple passive and antipassive constructions (Kaufman 1990) and place syntactically ergative restrictions on their use (Manning 1996). Several languages also have a productive applicative construction (Mora-Marín 2003).

Semantics—Mayan languages have a distinct class of positional roots which refer to the position or disposition of an entity (Kaufman 1990). The verbs in Mayan languages also classify themes more finely than English verbs (Grinevald 2003; Pye et al. 1995). Several Mayan languages have numeral and/or noun classifier systems. The noun classifiers also serve a pronominal function (England 1992). Some of the languages require the use of third person pronouns (Q’anjob’al - partial prodrop), and others do not (K’iche’ - prodrop). Mayan languages use body part terms instead of prepositions as their primary means of spatial location (Levinson 1996). Mayan languages use directional verb particles to derive different meanings, e.g., ‘take’ from ‘carry out’ and ‘bring’ from ‘carry to’.

Discourse—Mayan languages distinguish between topic and focus by means of position, definiteness, voice and morphosyntax (Dayley 1981; England 1992). Focused instrument and locative phrases also have a clitic double in some Mayan languages. Nominal arguments for subject and direct object are only used for emphasis or to disambiguate the reference of the pronominal cross-reference markers on verbs and nouns.

Each of these features bears on fundamental points in theories of linguistics and language acquisition. Ergative languages have long posed significant problems for theories of syntax that assume a distinguished subject relation (Dixon 1979; 1994). No current linguistic theory

successfully accounts for the full range of ergative phenomena found in the Mayan languages (cf. Bittner & Hale 1996, Bobaljik 1992, Chomsky 1995, Manning 1996, Woolford 2000). Acquisition theories which assume a distinguished subject relation face similar difficulties (Bowerman 1989, Pye 1990). Maturation accounts of syntactic development (Wexler & Manzini 1987) must account for the early use of passives and antipassives in K'iche' (Pye & Quixtan Poz 1988). Theories that predict the early use of root infinitives (Wexler 1998, Rizzi 1993/1994) must account for the early use of verb roots in Tzotzil (de León 1999) and status suffixes in K'iche' (Pye 1983). Theories of phonological development that assume a universal set of early phonological contrasts must explain the early use of non-English contrasts evident in K'iche' (Pye, Ingram & List 1987). Finally, theories of cognitive development that assume nouns are easier to acquire than verbs (Gentner 1982, Gentner & Boroditsky 2001) must account for the high frequency of verbs found in early samples of Tzeltal (Brown 1998, 2001).

Current Research on Mayan Language Acquisition

Language acquisition studies typically document language development in a single language or compare language development across unrelated languages. Both approaches have considerable drawbacks. The study of children learning a single language is incapable of distinguishing universal aspects of acquisition from language-specific behaviors. Crosslinguistic studies of unrelated languages cannot control differences which obscure all but the grossest features of the acquisition process. One cannot simply compare word order, voice, vocabulary, finiteness, or verb argument structure between a Mayan and European language since each feature is closely bound to other features in the languages. For example, one could claim to compare the acquisition of agreement in English and K'iche', but such a comparison would ignore the fact that agreement is fused with tense in English, but not in K'iche', agreement is limited to the third person singular form in English, but not in K'iche', the K'iche' agreement system is pronominal in nature and shares certain features with the independent pronouns in English, and most importantly, K'iche' employs an ergative system of agreement (Pye 2001). Such extraneous factors prevent crosslinguistic research from reaching its full potential.

We are developing a new approach to the crosslinguistic study of language acquisition that utilizes the comparative method. While similar to the microparameter approach described by Kayne (2000), the comparative method incorporates the reconstruction of language history into the study of language acquisition. The comparative method provides a common template for the transcription and analysis of child language samples and provides an objective basis for distinguishing universal from language-specific features. To date, we have carried out comparative investigations of the acquisition of Mayan verb inflection (Brown et al. 2002), the Mayan applicative affix (Pye 2002), the role of lexical edges in inflectional acquisition (de León et al. 2005), the development of ergative inflection (Pye & Mateo 2005), Mayan phonology (Pye et al. 2008a), the Mayan status suffix (Pye et al. 2008b), and the acquisition of the Mayan verbal complex (Pye et al. 2008c).

Acquisition studies previously existed in only three of the five main branches of the Mayan languages: Yucatecan, Tzeltalan, and K'iche'an. Supported by NSF grants (BCS-0613120 and BCS-0515120), this research was extended to the Mayan languages Ch'ol, Q'anjob'al and Mam.

Acquisition data from these three additional languages has provided a crucial perspective on the previous studies. Q'anjob'al serves as a key link between the Eastern Mayan languages and the Western Mayan languages, and helped us understand the historical transitions between K'iche' and Tzeltal. Ch'ol serves as a key link between Q'anjob'al and Yucatec. Its addition provides critical information on the increased use of auxiliaries in Yucatec and Tzeltal in comparison to Q'anjob'al and K'iche'. Finally, Mam turned out to be the greatest surprise since it greatly expanded the use of movement verbs which took Mam along a unique pathway of historical development. Figure 1 illustrates the genetic relationships between these languages.

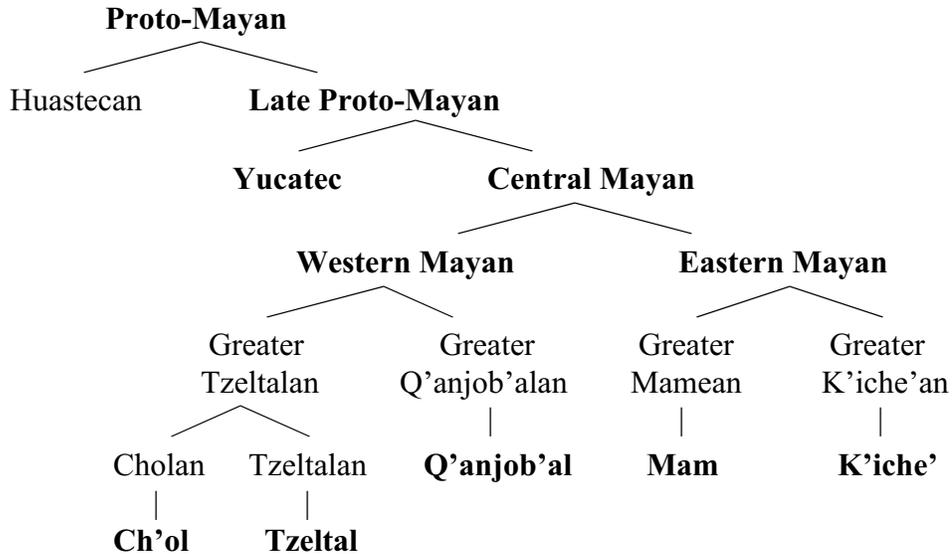


Figure 1. Genetic classification of Mayan languages (Kaufman 1976, 1990)

The data from these languages have led us to an understanding of the role that indicative, nominalized and dependent verb constructions play in the synchronic and diachronic life of each language. These three construction types have distinct features and are found in most Mayan languages. The interesting feature of these construction types is that their functions have changed over time in different Mayan languages. The indicative type is the predominant construction in K'iche' and Q'anjob'al while the nominalized type is predominant in Yucatec and Ch'ol. Mam uses the dependent type most frequently. While the same construction forms are found in each language, their function has expanded or contracted in language-specific ways. Rather than analyzing whether Mayan children produce finite or non-finite verb forms, we can analyze the degree to which Mayan children follow precise language-specific constraints on the contexts of use for the indicative, nominalized and dependent constructions. The following section presents two examples that illustrate the utility of the comparative approach.

Phonology

Table 1 presents the consonant sets for Yucatec, Ch'ol, Q'anjob'al, Mam, K'iche', Poqomchi' and Q'eqchi'. We use the digraphs /tx, tx', ʃx/ to represent retroflex consonants. The glottalized consonants are written with an apostrophe. Mayan languages lack a voiced series of

consonants with the exception of the implosive /b'/ and a few voiced stops in Spanish loan words. The Mayan uvular fricative /x/ also poses a marked contrast to the fricatives /f/, /s/ and /ʃ/ commonly found in the world languages.

Table 1. Correspondence sets for Yucatec, Chol, Q'anjob'al, Mam and K'iche'

| | | | | | |
|------------|--------------------------|--------|------------------|----------------|-------------|
| Yucatec | p p' b' t' t' ts ts' | tʃ tʃ' | k k' | ʔ m n s ʃ | h l w y |
| Ch'ol | p p' b' t' t' ts ts' | tʃ tʃ' | k k' | ʔ m ñ s ʃ | h l w y |
| Q'anjob'al | p b' t' t' ts ts' tx tx' | tʃ tʃ' | k k' q q' | ʔ m n s ʃ ʃx x | h l r w y |
| Mam | p b' t' t' ts ts' tx tx' | tʃ tʃ' | kʷ kʷ' k k' q q' | ʔ m n s ʃ ʃx x | l w y |
| K'iche' | p b' t' t' ts ts' | tʃ tʃ' | k k' q q' | ʔ m n s ʃ | x h l r w y |

Pye et al. (2008a) made a preliminary comparison of the early consonant inventories for children acquiring Yucatec, Ch'ol, Q'anjob'al, Mam and K'iche' using Ingram's method of phonetic inventories and phonological contrasts (Ingram 1981). The data challenged us to invent new analytical procedures to explore the intra- and inter-language variation in consonant use. We found statistically similar consonant inventories for the children acquiring Yucatec, Ch'ol and K'iche', but not for the children acquiring Q'anjob'al and Mam. A linear discriminant analysis produced a function that accounts for 94% of the variation and successfully classifies 14 of the 15 children by language. This analysis suggests that although the children do not produce statistically similar consonant inventories, there are some underlying factors that constrain the children's productions. A measure of adult consonant frequency only correlates with the children's consonant frequencies in Ch'ol and K'iche'. A measure of phonetic complexity only correlates with the children's consonant frequencies in Yucatec.

The Mayan Verbal Complex

Robertson (1992) uses the term "the Mayan verbal complex" to refer to the combination of aspect and cross-reference marking on Mayan verbs. The structure is syntactically complex in that it straddles the boundary between root and embedded clauses in various Mayan languages. Aspectual elements occur in a matrix clause and select indicative, nominalized and dependent types of complement clauses (Pye et al. 2008c). The languages have a long history of pressing verbs and verb particles into service to mark aspectual, modal and even directional distinctions. The intransitive progressive constructions in (2) illustrate some of these features. (Abbreviations: INC - incompletive aspect, PROG - progressive, A - Set A (ergative like) cross-reference marker, B - Set B (absolutive like) cross-reference marker, 1 - first person singular, 3 - third person singular, CL - noun classifier, NOM - nominalizer, IVstatus - intransitive verb status suffix, SUB - complementizer, SUBJ - subjunctive)

2. Progressive Forms of Intransitive Verbs

| Non-raised Form | Raised Form |
|--------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| <p>a. K'iche' (Mondloch 1978:100) k-0-tajin k-uj-wa'-ik INC-B3-PROG INC-B4-eat-IND 'We are eating'</p> | <p>(Kaufman 1990:88) k-in-tajiin chi war-aam INC-B1-PROG prep sleep-NOM 'I am sleeping'</p> |
| <p>b. Poqomchi' (Malchic Nicolás et al. 2000:66) k'ahchi' nu-kaman-iik PROG A1-work-NOM 'I am working'</p> | <p>(Kaufman 1990:89) k'ahchi'-k-iin chi wir-ik PROG-IND-B1 prep sleep-NOM 'I am sleeping'</p> |
| <p>c. Q'eqchi'</p> | <p>(Kaufman 1990:89) yoh-k-at chi war-k PROG-IND-B2 prep sleep-NOM 'You are sleeping'</p> |
| <p>b. Ch'ol (Vázquez Álvarez 2002:108) chonkol k-wäy-el PROG A1-sleep-NOM 'I am sleeping'</p> | <p>(Vázquez Álvarez 2002:110) chonkol-oñ tyi wäy-el PROG-B1 prep sleep-NOM 'I am sleeping'</p> |

The examples in (2) contain a progressive verb in a matrix clause with a complement verb in an embedded clause. The progressive verb is optionally inflected for aspect in K'iche', while the progressive word in the other languages has the form of an aspectless, stative predicate. The examples demonstrate 'raised' and 'non-raised' forms of the progressive. The non-raised progressive in K'iche' selects an indicative complement while the non-raised progressives in Poqomchi' and Ch'ol select nominalized complements. My sources do not record a non-raised form for Q'eqchi'. The raised progressive forms have an absolutive marker on the progressive verb followed by a preposition and nominalized complement verb.

These simple progressive constructions raise profound issues for acquisition theory. Pinker's Semantic Bootstrapping theory (1984) predicts that Mayan children would produce non-nominalized verbs before using nominalized verb forms since verbs rather than nouns should be used to express events. While English also employs nominalized verbs to express events (e.g., 'take a walk'), English lacks the morphology that would show how frequently children use nominalized verbs. The raised forms create a further difficulty in that the argument is cross-referenced by an absolutive clitic on the progressive word which produces an expression with the literal meaning 'I continue at sleep.' We can compare when Mayan children cross-reference the

arguments of abstract verbs such as *continue* with the time they cross-reference the arguments of concrete verbs, e.g. the Ch'ol completive verb *tyi wäy-iy-oñ*, cmp sleep-IND-**B1** 'I slept.'

Mayan children must also acquire constraints on the use of these constructions. The gap in Q'eqchi' is of particular interest since a non-raised form can easily be constructed along the lines of K'iche' or Poqomchi'. Q'eqchi' children could spontaneously produce non-raised progressives, and Poqomchi' children could spontaneously produce the K'iche' type of indicative complement in their non-raised progressives. Since children acquiring Mayan languages frequently omit prepositions in obligatory contexts, it is also possible that they would confuse the raised and non-raised forms of the progressive. This confusion would be evident if the children produced absolutive markers on nominalized verbs.

The non-raised progressive constructions demonstrate a type of mixed ergativity that is found in many Mayan languages (Kaufman 1990). The complement verb in the non-raised progressive in K'iche' cross-references the subject with an absolutive marker while the complement verbs in the non-raised progressives in Poqomchi' and Ch'ol cross-reference the subject with ergative markers. The ergative cross-referencing in Poqomchi' and Ch'ol coordinates with the use of nominalized complements and provides independent evidence of the children's acquisition of nominalized complement constructions in these languages. Mixed ergativity is regular in Mayan languages in the sense that both unergative and unaccusative verbs display the same form of mixed ergative marking. Children acquiring Poqomchi' and Ch'ol must learn to constrain the mixed ergative cross-referencing system in language-specific ways.

The progressive construction with transitive verb complements raises additional issues (3).

3. Progressive Forms of Transitive Verbs

| Non-raised Form | Raised Form |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>a. K'iche' (Mondloch 1978:100) k-0-tajin k-ix-u-kuna-j INC-B3-PROG INC-B5-A3-cure-IND 'S/he is curing you (pl)'</p> | <p>(Kaufman 1990:88) k-in-tajiin chi a-ch'ay-h-iik INC-B1-PROG prep A2-hit-PAS-NOM 'I am hitting you'</p> |
| <p>b. Poqomchi'</p> | <p>(Kaufman 1990:90) k'ahchi'-k-aat w-u'ye-em PROG-IND-B2 A1-wait_for-NOM 'I am waiting for you'</p> |
| <p>c. Q'eqchi'</p> | <p>(Dayley 1981:21) yoh-k-in chi aa-sak'-b'-al PROG-IND-B1 prep A2-hit-PAS-NOM 'I am hitting you'</p> |

b. Ch'ol

(Vázquez Álvarez 2002:108)

chonkol a-mek'-oñ

PROG A2-hug-B1

'You are hugging me'

(Gutiérrez 2005:42)

*chonkol-oñ tyi k-jats'-ety

PROG-B1 prep A1-golpear-B2

'I am hitting you'

The first feature to note about the transitive progressive constructions is that the alternation between raised and non-raised forms is no longer evident. K'iche' is the only language that maintains this alternation with transitive verbs. Constraints on progressive forms are poorly documented for all Mayan languages; Kaufman only provides examples of the raised forms for K'iche', Poqomchi' and Q'eqchi' without discussing whether the non-raised forms also exist in these languages. Other sources repeat Kaufman's observations without discussing constraints (Malchic Nicolás et al. 2000, Caz Cho 2007). Gutiérrez (2005) explicitly rules out the raised form for the progressive in Ch'ol. Since the alternation between raised and non-raised progressive forms occurs for intransitive verbs, Poqomchi', Q'eqchi' and Ch'ol children must learn to restrict the alternation for transitive verbs.

Argument cross-referencing in transitive progressive constructions also creates an interesting puzzle in Mayan languages. In K'iche' and Q'eqchi' the raised clitic cross-references the agent while in Poqomchi' the raised clitic cross-references the patient. Children cannot simply apply the intransitive cross-referencing schema to transitive progressive constructions. The adult grammar forces the choice between agent marking (accusative syntax) and absolutive marking (ergative syntax). The transitive verbs in K'iche' and Q'eqchi' undergo obligatory intransitivization in these constructions. Mayan children must learn when nominalization requires intransitivization (K'iche' and Q'eqchi') and when it does not (Poqomchi' and Ch'ol).

These data raise a logical problem in language acquisition depending on whether the constraints on the progressive constructions form part of the core or periphery of Mayan grammar. Assuming such constraints are part of the periphery, Mayan children could use positive evidence to acquire the specific constraints that apply in their language. In this case, we expect Mayan children would demonstrate language-specific patterns of acquisition influenced, perhaps, by input frequency. The gaps in the Mayan progressive alternation, however, have the same form as gaps in English alternations that have been used to motivate arguments for the innate knowledge of grammar (cf. take a walk vs. *take a sleep). Presumably children would require negative evidence to acquire such constraints (Guasti 2000, Pinker 1989). In this case, we might expect Mayan children to demonstrate relatively error free acquisition of the specific progressive constraints in their language. The key observation is that the Mayan languages provide a natural experiment that allows us to observe how children acquire different constraint permutations.

These two examples illustrate how the close comparison of acquisition patterns in related languages provides a new standard for crosslinguistic research. We have developed uniform methods of data collection and analysis. Acquisition theories can be tested in a controlled fashion across the Mayan languages rather than in one language at a time. Comparison across related languages reveals the range of constraint variation. Acquisition data from the Mayan languages make possible a direct comparison between processes of acquisition and language change (Pye et

al. 2008b).

Research Design

The project records at least three children from Mayan-speaking communities twice a month over the course of two years. We record children between 18 and 20 months old in naturalistic settings in and around their homes. We visit each child twice a month for a period of one to two hours each visit over a two-year period. We are making digital video and audio recordings to insure that we record details of the children's oral and gestural interactions with other family members.

We divide each recording session into two segments. The first segment is devoted to recording the interactions between the target subjects and their families with minimal interference from the investigators. In the second segment, we introduce topics of conversation designed to probe the children's knowledge of the adult grammar. We use traditional Mayan styles of interacting with small children, in particular, a routine that allows outsiders to ask a child if their parents or grandparents are available or what they are doing (Pye 1991). Such questions can make use of Mayan focus constructions that require passive and antipassive verb forms. Additional probes focus on the children's phonological and morphological development using object and picture naming tasks.

The home visits, language probes and language transcriptions are made by members of the children's communities who have some linguistic training. For many years, linguistic projects have been undertaken in Guatemala that provided linguistic training to many Mayan language speakers. We are collaborating with the Guatemalan organization Oxlajuuj Keej Maya' Ajtz'iib' (OKMA) to recruit, train and monitor the consultants. Under the direction of Nikte' María Juliana Sis Iboy and with technical assistance from Dr. Nora England, OKMA is one of the most active linguistics organizations in Guatemala and has taken a leading role in producing and publishing dictionaries, grammars and dialect studies of the Mayan languages spoken in Guatemala. OKMA has many years of experience in training Mayan language speakers in basic linguistic research methods.

Copies of the recordings from each community remain in the community. The investigators retain copies of their recordings and transcriptions. On-line copies of the recordings and transcriptions will be made available on the Adquisición de Lenguas Mayas archive (almaya.org).

Training

The project recruits and trains native speakers of each language to supervise the documentation process. We begin by meeting with the language investigators for a week-long orientation seminar to the project. During this first seminar we discuss the purposes of the project, the recruitment of children and their families, human subjects assurances, the recording of naturalistic interactions with small children, and recording techniques. We train the investigators in the use of digital recording techniques, and show them how to transfer the recordings to a computer for processing. The investigators learn how to use the computer to

transcribe and analyze the language samples with computer programs the PI has written to produce phonological, morphological and syntactic concordances from the transcripts (the Qanform suite). This training initially imposes a steep learning curve on the investigators, who must be trained to recharge batteries, turn on the recorders and microphones, and burn DVDs.

We use videos to train the investigators in interacting with the children and their families. We demonstrate the techniques that previous investigators have used with children, and demonstrate successful as well as unsuccessful interactive styles. The most important lessons we have learned is when investigators should refrain from interrupting the children playing by themselves and how to recognize supportive and nonsupportive families.

We follow the initial training with an additional week of training in each field site. During this week our main priority is on making initial recordings with children, and guiding the investigators through the process of transferring, saving and transcribing the recordings. We help the investigators set up a work space in their own homes and show them how to care for the equipment. This includes protecting the equipment from dust, electrical surges and robbers. We also use this time to recruit and train assistants to help the investigators record and transcribe the data. At the end of the second week in the field we gather the investigators and their assistants together for a final three-day seminar at which time they can share their experiences with one another and with us. We have found that periodic meetings of this sort are useful in solving technical difficulties and renewing the investigators' commitment to the project.

Publications

The Mayan Language Acquisition Project has produced a number of publications in diverse media related to various aspects of the project.

Internet Publications

[Comparative Mayan Grammar wiki](#). This Spanish language wiki provides users with a comparative database of grammatical constructions in the Mayan languages. It currently features sections on complementation, raising, ergativity, tense/aspect/mood, status, negation, voice, applicatives, causatives and nominalization.

The [Adquisicion de Lenguas Mayas](#) (ALMA) website provides an archive for the project transcripts and recordings which users can access from anywhere in the world. Users are asked to register their names and email addresses.

The [Minimal Coding Page](#) provides a description of the minimal coding procedures used in the project as well as the Qanform programs used to analyze the transcriptions.

The [Field Manual](#) written by Pedro Mateo Pedro is a Spanish language guide that provides investigators with step-by-step procedures for recording, transferring and transcribing video and audio recordings. It provides information on the use of Panasonic video cameras and Edirol voice recorders.

The [Equipment and Procedures](#) page provides details on the audio and video recorders we are using as well as the procedures for the transfer and analysis of the data.

Regular Publications

Pye, C. To appear. Cycles of Complementation in the Mayan Languages. In Elly van Gelderen (ed.), *Papers from the Workshop on the Linguistic Cycle*.

Pye, C. To appear. The Acquisition of K'iche' Status Suffixes. *Kansas Working Papers in Linguistics*.

Pye, C., Pedro Mateo, Bárbara Pfeiler, Ana López, Pedro Gutiérrez, Donald Stengel and Charles Pye. 2008. Adquisición de consonantes iniciales en cinco lenguas mayas: un análisis fonológico. *Proceedings of the IX Encuentro Internacional de Lingüística en el Noroeste*, Hermosillo, Mexico.

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- Pye, C., Pfeiler, B., Carrillo Carreón, C. & Mateo, P. 2008. The acquisition of verb inflections in five Mayan languages. International Association for the Study of Child Language, University of Edinburgh, Edinburgh, Scotland. July 28-August 1, 2008.
- Pye, C. 2008. Cycles of Complementation in the Mayan Languages. Linguistic Cycles Workshop, Arizona State University, April 26, 2008.
- Pye, C., Pfeiler, B. & Mateo, P. 2008. The acquisition of status suffixes in three Mayan languages. Paper presented at the Linguistic Society of America meetings, Chicago, January 3, 2008.
- Pye, C. & Mateo, P. 2007. The acquisition of verb complexes in K'iche' and Q'anjob'al. Paper presented at the Mid-America Linguistics Conference, The University of Kansas, October 28, 2007.
- Pye, C., Mateo, P., Gutiérrez, P., López R., A. & Pfeiler, B. 2007. Adquisición de verbos intransitivos en cinco idiomas Mayas. Séptimo Congreso Internacional de Mayistas, Mérida, Yucatán, July 8, 2007.
- Pye, C., Pedro Mateo, Bárbara Pfeiler, Ana López, Pedro Gutiérrez, Donald Stengel and Charles Pye. 2006. Adquisición de la Fonología en Cinco Idiomas Mayas. IX Encuentro Internacional de Lingüística en el Noroeste, Hermosillo, Mexico. November 16, 2006.
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