

ACQUIRING VERB AGREEMENT IN HKSL: OPTIONAL OR OBLIGATORY?

Gladys TANG,

Scholastica LAM, Felix SZE, Prudence LAU, Jafi LEE ⁱ

Centre for Sign Linguistics and Deaf Studies

Chinese University of Hong Kong

0. INTRODUCTION

Acquisition of verb agreement has been widely studied in spoken languages but few studies have focused on a similar phenomenon in signed languages. For those that have been reported in the literature, omission of agreement marking has been the subject of recent debate. While most studies report on omission of agreement markings (Meier 2002, Morgan et.al. 2006), some recent studies observe few errors of omission with children acquiring ASL and LSB (Quadros and Lillo-Martin 2006). The present study attempts to examine child acquisition of verb agreement in HKSL with data drawn from a longitudinal corpus of a deaf child (2;6.17 – 5;7.20) and experimental studies conducted when he was at age 6. Within the general framework of examining agreement marking in the child's data, we focus on the effect of optionality of verb agreement in the adult grammar on the acquisition of this grammatical area. Following Lam (2003), agreeing verbs may appear in three forms, depending on the interaction between syntactic position and person value: (a) uninflected form, (b) direct to the actual or imaged location of the referent, and (c) inflected for syntactic verb agreement. In what follows, we will first present the literature regarding verb agreement and its acquisition in both spoken and signed languages; then we will present the findings of two studies on the acquisition of verb agreement in HKSL by a deaf child. Our findings reveal that the deaf child's acquisition process shows properties pertaining to late learners of verb agreement, displaying consistently violations of the constraints observed in the grammar of verb agreement in HKSL.

1. VERB AGREEMENT IN SPOKEN AND SIGNED LANGUAGE

1.1. A Typological Account

Corbett (1998) identifies person, number and gender as the three common agreement features in natural languages with typological variation. Russian shows very rich agreement morphology for all the three features; English shows agreement in person and number but not gender and Chinese does not show overt agreement morphology. ⁱⁱ This paper focuses on person agreement. In the spoken

language typology, in addition to subject-verb agreement, there are languages such as Archi (Kibrik 1993) or Chukchee (Muravyova 1998) that require person agreement marking between the verb and the object.ⁱⁱⁱ Adopting a typological perspective, Croft (1998) observes that subject-verb agreement for person is more common than verb-object agreement, and the latter implies the former. Also, marking of verb agreement is predictable, if required. Even with English where verb agreement is not rich, subject-verb agreement is marked consistently in contexts where the subject is third person and singular.

Assuming that agreement is governed by similar universal principles, a venture into research on verb agreement in signed language lends itself to interesting research issues. Verb agreement is common among the signed languages under study so far. It is commonly accepted that, to mark grammatical relations, a verb sign is directed to either a present referent or to a locus in space, and different verb agreement patterns are represented by changes in path movement, accompanied by facing of the hands to agree with the direct or indirect object (Sandler and Lillo-Martin 2006).^{iv} In fact, relying on space for nominal establishment in signed language for purpose of satisfying grammatical relations such as verb agreement is said to be modality dependent (Fischer and Gough 1978, Lillo-Martin 1991). In signed language, agreeing verbs and pronouns share some phonetic, morphological and semantic properties. Both are deictic, expressed by directing a sign to a location in space (i.e. referential locus) in order to refer to a definite and specific referent in a signing discourse, and both use directionality of movement to mark person value.^v Hence, pronominal pointing or directing a verb towards a locus in space allows the encoding of grammatical relations between the subject and object, as well as their person values.

Signed language also differs from spoken language in that signed language allows optionality of agreement marking. In ASL, object agreement is obligatory while subject agreement is optional (Meier 1982, Padden 1988). This observation offers counter-evidence to Croft's generalization. Optional subject agreement is also reported in other signed languages like BSL (Morgan et al. 2006) and ISL (Meir 2002).^{vi} What causes optionality of agreement marking is still subject to debate, namely one between adopting a syntactic or a thematic account (Meir 2002). The phonology of signed language may be another factor as body-anchored signs seldom occur in agreeing verbs. Cormier (2002) also observes that plurality of number may also render verb agreement not to be marked even though in other linguistic contexts it is obligatory.

The seemingly lack of a consistent or 'constrained' realization of verb agreement, in particular, the diverse spatial loci and directions of pointing has led to queries about its linguistic status (Liddell 2000). However, Lillo-Martin (2002) cautions against this outright rejection arguing that there are indeed fixed phonological forms for first person and plural, and person agreement

does interact with the licensing conditions for null arguments in ASL. Meir (2002) suggests that directionality of movement reveals crucial thematic properties of Source and Goal and facing of the hands can be a dative case assigner. Rathman and Mathur (2002) place formal verb agreement and gesture on a continuum and suggest that there are two pathways to the development of verb agreement in signed language. Process of grammaticalization may encourage ‘pointing’ to combine with other elements like handshape, location that are more linguistic in nature, hence the formation of agreeing verbs. On the other end of the continuum, plain verbs may acquire a gestural component of ‘pointing’ and become agreeing verbs. In disputing Bahan’s (1996) claim that verb-object agreement across all verb types in ASL is licensed by eye gaze, Thompson et. al. (2006) through an eye-tracking experiment observe that eye gaze marks syntactic agreement with object only for agreeing verbs, but locative arguments for spatial verbs. They agree with Lillo-Martin (2002) that even though ‘pointing’ is gestural, that fixed phonological forms such as facing and non-manuals such as eye gaze interact with the linguistic realization of syntactic arguments.

1.2. VERB AGREEMENT IN HKSL

Although no systematic analysis has yet been done, Lam (2004) preliminarily observes that HKSL allows null arguments for both the subject and the object, as such, verb agreement through directing a sign to a locus in space or a discourse topic can license null arguments in HKSL, as shown in (1) and (2):

(1) *pro* 2-SEE-3 SCHOOL-B

‘You see School B.’

(2) IX_{det} SECONDARY-FIVE UNDERSTAND *e* CAN.

“These secondary five (students) can understand (these computer softwares).”

Lam (2004) assumes that the empty category in (1) is licensed by agreement morphology of the verb SEE. In (2), it is governed by the verb UNDERSTAND and is licensed by a discourse topic through a binding relation. Following Tang and Sze (2002), an agreeing verb in HSKL is realized by directing the sign through a path movement to a referential locus in space. Hence, the locus has the indices of being specific and definite; otherwise a different phonological form is adopted to mark other referential or semantic properties.^{vii} An agreeing verb such as GIVE in HKSL may be overtly marked for subject and object (3):

(3) KENNY CANDY 3-GIVE-3 BRENDA

“Kenny gives a candy to Brenda.”

[Clip 1 is about here]

HKSL also allows optional subject agreement, like ASL or BSL. In addition to (3), we also observe agreeing verbs in uninflected form, or uninflected for subject but inflected for object like (4a), but not vice versa (4b), suggesting that person inflection for subject implies the same for object, contrary to Croft’s generalization that object agreement implies subject agreement in spoken languages (Croft 1998).

(4a) KENNY CANDY 0-GIVE-3 BRENDA

“Kenny gives a candy to Brenda.”

[Clip 2 is about here]

(4b) *KENNY CANDY 3-GIVE-0 BRENDA

“Kenny gives a candy to Brenda.”

Unlike ASL, object agreement is not entirely obligatory in HKSL (Lam 2003). The data show that uninflected forms (i.e. 0-GIVE-0) are acceptable but agreement marking is required when the subject is second person (5a) or when the object is first person (5b). Hence, the lack of person agreement marking under these conditions will result in ungrammatical sentences like (5c) and (5d).

(5a) CANDY 2-GIVE-3 KENNY.

“You give the candy to Kenny.”

[Clip 3 is about here]

(5b) KENNY CANDY 3-GIVE-1.

“Kenny gives me a candy.”

[Clip 4 is about here]

(5c) *CANDY 0-GIVE-3 KENNY.

“You give the candy to Kenny”

(5d) *CANDY KENNY 3-GIVE-0 IX-1p.

“Kenny gives me a candy.”

Lam (2003) argues further that the spatial modality has an effect on verb agreement in the sense that verbs directed to present referents may obscure syntactic verb agreement. However, evidence may be obtained under specific conditions. One such condition is when the signer introduces a nominal referent into the discourse for the first time. With the referent being potentially third person, the phonological form requires that the sign is directed to a location on either side of the signing space. Another condition is when the signer role shifts to assume the identity of another signer and introduces a referential locus in space that may be either second or third person. Whichever horizontal plane of articulation that the signer shifts to, this way of consistently ascribing person value to a newly established abstract referent in space offers data for us to investigate the verb agreement phenomenon in HKSL. While first person object and second person subject need to be obligatorily marked due to discourse reasons that they typically involve the signer and the addressee, we assume that theoretically they have person features, albeit underspecified.

To sum up, there are three forms of GIVE: (a) uninflected GIVE, (b) fully inflected GIVE, and (c) GIVE uninflected for subject but inflected for object. Their formation is subject to the person values of the subject and object as well as their syntactic position in the sentence.

2. ACQUISITION OF VERB AGREEMENT

2.1. ACQUIRING VERB AGREEMENT IN SPOKEN LANGUAGE

Acquisition of verb agreement has attracted a lot of studies in both spoken and signed language literature. It has been well-documented that children acquiring spoken languages such as English, Danish, Dutch, French or German that are non-null subject languages omit these inflectional elements initially and produce infinitival as well as tensed forms at a subsequent stage of development. This stage of development is referred to as Optional Infinitives Stage (Hyams and Wexler 1993, Wexler 1994). Yet, optional infinitives do not show up in children acquiring languages that show rich agreement morphology and allow null subjects and objects like Italian or Spanish; instead they acquire verb agreement early and accurately (Guasti 2002). These studies show that constraints of agreement in the target language have an effect on acquisition. However, all these languages show subject-verb agreement, but not verb-object agreement. A further example is from Swahili.^{viii} Recently, Deen (2006) reports on an asymmetry in the acquisition of subject and

object agreement in Swahili. He observes that his four longitudinal subjects show omission of subject agreement at a consistently higher rate across four stages but a relatively lower rate as well as a gradual reduction over the stages with object agreement. According to him, ambiguous input results in this asymmetry. In adult Swahili, subject may be omitted in certain discourse contexts; however, object agreement is obligatory when the object is specific. Where the object is non-specific, object agreement is not permitted.^{ix} He proposes that child acquisition of Swahili is subject to specificity condition.

2.2. ACQUIRING VERB AGREEMENT IN SIGNED LANGUAGE

Acquisition of verb agreement has so far covered a number of signed languages such as ASL (Fischer 1973, Meier 1982; Lillo-Martin et.al. 2004), BSL (Morgan, et. al. 2006), LiBrasS (Quadros 1997), SLN (Bogaerde & Baker 1996) and LIS (Pizzuto 2002).^x Most studies found that the average age of acquisition of verb agreement with a present referent can be as early as age 3, and as late as age 5 if the referent is non-present because deaf children have to learn to direct the verb to a referential locus in space. In Meier's (1982) study, his subjects show errors of omission when the referent (subject or object) is second or third person. Morgan et. al. (2006) report that errors of omission are distributed over many agreement patterns in BSL like first to third, second to first, and there are more errors with third person subject and object than other person values. Conflicting results have been reported: Lillo-Martin et. al. (2004) and Quadros et. al. (2006) argue that since ASL and LSB are mixed null subject languages, their longitudinal subjects being exposed to ASL or LSB at an early age do not show substantial omission of agreement or overgeneralization, in support of Guasti's generalization that children learning null subject languages do not go through an optional infinitive stage. However, some of their learners who are exposed to signed language as late as age 6 or above commit these errors substantially, lending support to the critical period hypothesis (Lillo-Martin et al. 2004). This finding is similar to that in reported in Morford's (2003) in which his two adolescent subjects (age 12;1 and 13;7) show a prolonged stage of uninflected verb agreement.

Another research finding is the asymmetry in the learners' development of of subject and object agreement. Using elicited imitation to examine double-agreeing verbs (i.e. inflecting for both subject and object), Meier's (1982) ten deaf children (ages 3;1 to 7;0) show more omission with subject than object agreement.^{xi} That signed language learners prefer to mark object agreement more regularly than subject agreement in ASL is also observed in the two late learners of ASL (Morford 2003).

Some studies examined how deaf children develop verb agreement with non-present referents using story narration as methodology. They report that invoking spatial loci to identify non-present referents for agreement inflection takes longer to acquire, and children by age 5 still show problem of inflecting for subject or object using spatial loci (Morgan 2000; Loew 1983). According to Morgan (2000), even though his subjects are able to mark agreement in space, they fail to identify the arguments in the discourse.

What is seldom discussed in the literature of verb agreement acquisition is the properties of intermediate grammars before the deaf child achieve full competence. In theories of language acquisition, intermediate grammars reveal the underlying grammatical processes the child learner undergoes. Optional infinitives for children acquiring non-null subject languages is one such property. Although not explicitly discussed in the literature, a detailed analysis reveals that there seems to be a link between the co-occurrence of uninflected agreeing verbs but inflected index signs. The deaf child of BSL in Morgan's study produces an inflected index sign to mark first person subject and third person object after the uninflected verb, as shown in (6). (7) is reported in Quardros and Lillo-Martin (2006), it is produced by the child learner Aby at age 1;10.

(6) Mark: BITE ₁IX₃ (2;2)
 'Bite me on it.' (Morgan et. al. 2006)

(7) MOTHER, <1> GIVE <mother> IX <mother>, <1> GIVE <mother>
 "Mother, (I) give (mother), IX_{mother}, (I) give (mother)." (Quardros and Lillo-Martin 2006)

In (7), the sign GIVE is uninflected but an index sign (IX) follows which is directed at the location of the indirect object, <mother>. Meier's (2002) subject also flanks the verb GIVE with index signs, as shown in (8):

(8) POINT_{cameraman} GIVE POINT₂, GIVE.
 "You give (it) to him (cameraman)."

These data show that the relationship between the index signs and the directionality of movement encoded by agreeing verbs is more complex than it has been discussed in the literature. It might be that instead of making person agreement on verbs, index signs that are typically derived from pointing gestures are first adopted to encode grammatical relations between the subject and the object. Also, if assuming that a prerequisite for verb agreement acquisition is knowledge of verb

subcategories in signed language -- plain, agreeing and spatial, it is possible that these learners perceive agreeing verbs as lexical, plain verbs with simplex morphology initially. As such, encoding grammatical relations between the subject and the object will have to rely on other grammatical operations like word order or pronominals realized by index signs. Tang et. al. (2006) also report that deaf children initially mis-analyze classifier constructions as plain verbs and treat them almost like a lexical unit rather than a morpho-syntactic unit.^{xii} In sum, despite some conflicting results, the observation reported here are illuminative of the interaction between components of the intermediate grammar of the child learners.

3. RESEARCH QUESTIONS

Assuming that language acquisition is based on positive evidence, a deaf child exposed to HKSL will come to know that it allows optional subject and object agreement. He will also eventually acquire the constraints associated with verb agreement. This leads to the occurrence of three forms of agreeing verbs: (i) verbs in uninflected form, (ii) verbs that are spatially marked for locative agreement, and (iii) verbs that are syntactically marked for verb agreement. Deen's (2006) study suggests that optionality of subject agreement in adult Swahili due to register or discourse factors may provide an explanation for a higher rate of subject agreement errors. It seems that a similar acquisition phenomenon can be found with learners acquiring HKSL.

In addition, a deaf child needs to acquire the knowledge that spatial loci bear referential indices and some phonological forms to spatial loci are linguistic. In a signing discourse, verbs with either first or second person values are not good candidates for investigating this linguistic property because the signer and the addressee are inherently present in the discourse, blurring syntactic agreement in favor of locative agreement. However, we argue that while directing a verb to a present referent satisfies locative agreement, directing a verb to a non-present referent with a fixed phonological form may be indicative of the intrinsic person value of the referent., satisfying the requirements for syntactic agreement. Does a deaf child of HKSL have this knowledge as part of grammar of verb agreement? How does a deaf child acquire knowledge of this part of grammar in HKSL?

To summarize, we pose the following research questions:

- a. Does a deaf child of HKSL go through an uninflected stage in the acquisition of verb agreement morphology in HKSL? If it does, what causes such a development?
- b. Does a deaf child show evidence of optionality for both subject and object agreement, meaning that both inflected and uninflected verbs may co-exist in the course of acquisition?

- c. Does he know the constraints associated with verb agreement, namely that certain contexts obligatorily require subject and object agreement in HKSL?

In the following sections, we will report on two studies on a deaf child who develops verb agreement morphology in HKSL over a period of about three years. In addition to longitudinal data, we also set up three experiments to examine his state of knowledge of verb agreement. Experiments are useful as previous studies are primarily concerned with longitudinal data on verb agreement involving present referents. In this study, we set up three experiments to examine the acquisition process of verb agreement when the referents are not present in the signing discourse.

4. Study 1: Longitudinal Data on a Deaf Child of HKSL

4.1. The Subject

The subject was a deaf boy “Chun-chun” who was born to a deaf couple but was not exposed to the linguistic input of HKSL until age 1;9.6 when the observation began. During this period, he attended a special childcare centre that emphasized oralism but he was exposed to HKSL when his parents interacted with him after work and when the research team comprised of two native deaf signers visited Chun-chun’s family once or twice a week. His parents were not born of deaf parents and only his father was a fluent signer because he had attended a deaf school at age 6. Chun-chun’s mother was not a native signer and she had attended a hearing school for her education. Therefore, Chun-chun was acquiring HKSL in an acquisition poor environment, both in terms of quantity and quality of input.

4.2. Data Collection & Transcription

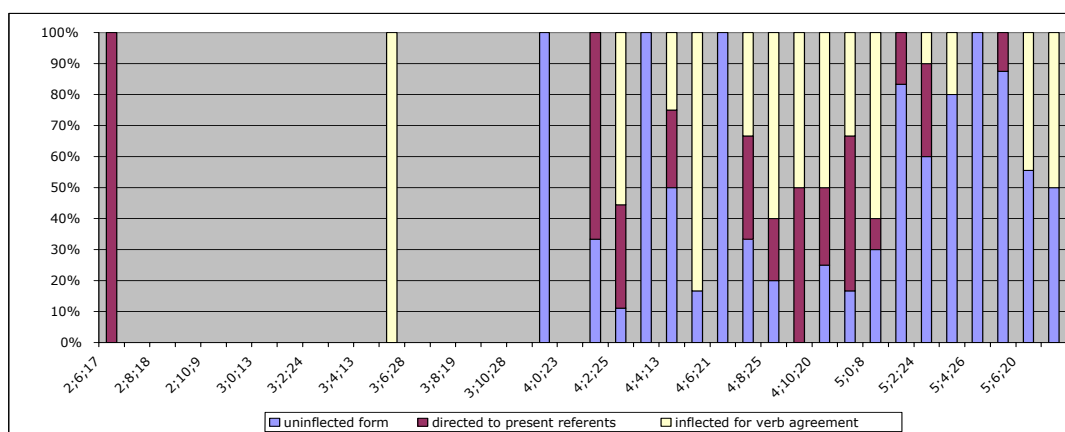
Chun-chun’s naturalistic interactions with either his mother (only for the first few months) or a native deaf signer were filmed for about one hour per week. However, the data for this study were drawn from the monthly transcriptions of the video recordings between age 2;6.17 and age 5;7.20, with a total of around 38 hours of data. The videos were transcribed by trained deaf researchers who were native signers and checked by a team of hearing researchers for accuracy of transcriptions.

In the analysis, we first extracted Chun-chun’s production of GIVE throughout this period and categorized the tokens first according to whether the verb was uninflected, spatially directed to present referents, or inflected for person agreement. For the inflected ones, we identified the agreement patterns to check for optional and obligatory agreement. Last, we checked whether Chun-chun was directing the verb sign to a present or a non-present referent in the signing discourse.

4.3. Results

GIVE is chosen for the analysis because it is a typical double-agreeing verb, enabling the researchers to analyze Chun-chun's development of subject and object agreement and the related asymmetry issue. It is triadic and requires three arguments expressed grammatically in terms of subject, object and indirect object. The 150 tokens of GIVE produced by Chun-chun during this period are categorized into: (i) uninflected GIVE, (ii) GIVE directed to the location of a present referent, and (iii) inflected GIVE for person agreement (i.e. directing the verb via abstract directionality to a spatial locus).

Figure 1. Production of GIVE between age 2;6.17 to 5;7.20



The data show that Chun-chun produces all three forms of GIVE during the period of observation. The first emergence of GIVE uninflected for person agreement or directed to present referent is at age 2;6:17, but it is only until the age of 3;5.23 when Chun-chun produces GIVE systematically. (9) shows that GIVE is inflected for third person object but not for subject.

(9) 0-GIVE-3 ELDER-BROTHER EAT CANDY (3;5.23)

“[Mother] gives elder-brother a candy to eat.”

(Insert Clip 5 about here)

There is a period during which GIVE does not surface in the data. Then, GIVE reemerges in both uninflected and inflected forms. In our analysis, verbs directed to present referents are not unique evidence of syntactic verb agreement because directionality under these circumstances is a function of locative agreement because the referents are present in the discourse. However, for

those cases that locative agreement is called for, there is no evidence showing that Chun-chun directs the signs to an inappropriate argument in the data.

Next, we examine Chun-Chun’s production of GIVE by categorizing the verb according to agreement patterns. The results are presented in Table 1.

Table 1. Production of GIVE in different agreement pattern

	Optional Contexts			Obligatory Contexts			
	1-GIVE-2	1-GIVE-3	3-GIVE-3	2-GIVE-1	2-GIVE-3	3-GIVE-1	3-GIVE-2
Uninflected	5.00% (1/20)	50.00% (9/18)	68.89% (31/45)	0.00% (0/12)	50.00% (1/2)	29.17% (7/24)	0.00% (0/2)
Directed to present referents	65.00% (13/20)	0.00% (0/18)	2.22% (1/45)	75.00% (9/12)	50.00% (1/2)	0.00% (0/24)	100.00% (2/2)
Inflected for verb agreement	30.00% (6/20)	50.00% (9/18)	28.89% (13/45)	25.00% (3/12)	0.00% (0/2)	70.83% (17/24)	0.00% (0/2)

Table 1 summarizes Chun-chun’s production of the different forms of GIVE during the period of observation. As for the contexts of optional agreement in HKSL, the tokens cluster overwhelmingly around the agreement between third person subject and third person object (i.e. 3-GIVE-3). However, about 68.89% of the tokens in this category are uninflected. There are just 18 tokens for first person subject and third person object (i.e. 1-GIVE-3) and they are evenly distributed over the inflected and uninflected forms. Where the object is second person (i.e. 1-GIVE-2), Chun-chun tends to direct the sign to a present referent (65%) who is the deaf researcher. Yet, Chun-chun role shifts to assume first person of another signer (i.e. 1-GIVE-2), hence producing instances of inflected verb agreement for first person subject and second person object, amounting to about 30% of the data.

On the other hand, most tokens for the obligatory contexts involve second or third person subject and first person object (i.e. 2-GIVE-1, 3-GIVE-1). 75% of the tokens in the 2-GIVE-1 contexts involve directing the verb sign to present referents and Chun-chun also produces 25% of instances of 2-GIVE-1 under role shift conditions, implying that he has some knowledge of assigning second person value to an abstract spatial loci. As for the 3-GIVE-1 contexts, 70.83% of the tokens are inflected. If we assume that first and second person may encourage directing the sign to present referents, these findings show that they may serve as an anchor for the child to acquire

subject marking for third person. This is quite different from his production in the optional 3-GIVE-3 contexts where only 28.89% of the tokens are inflected. Yet, Chun-chun still commits a significant percentage of errors of omission, as high as 29.1% of his tokens under the 3-GIVE-1 contexts are uninflected (i.e. 0-GIVE-0). There are very few 2-GIVE-3 or 3-GIVE-2 contexts, the tokens show that Chun-chun either directs the verbs to present referents or leaves them uninflected. Figures 2 and 3 show Chun-chun's production of GIVE in the optional and obligatory contexts over time. Figure 2 shows that there are more tokens of uninflected than inflected GIVE in the optional contexts but less so in the obligatory contexts, as shown in Figure 3. Although Chun-chun is sensitive to the obligatory contexts for person agreement, both figures show that he prefers uninflected to inflected GIVE in the optional contexts and continues to produce uninflected GIVE in the obligatory contexts even at age 5;7; this only suggests that he has not yet fully acquired this grammar and is not sensitive to the constraints involved.

Figure 2. Production of GIVE in optional contexts

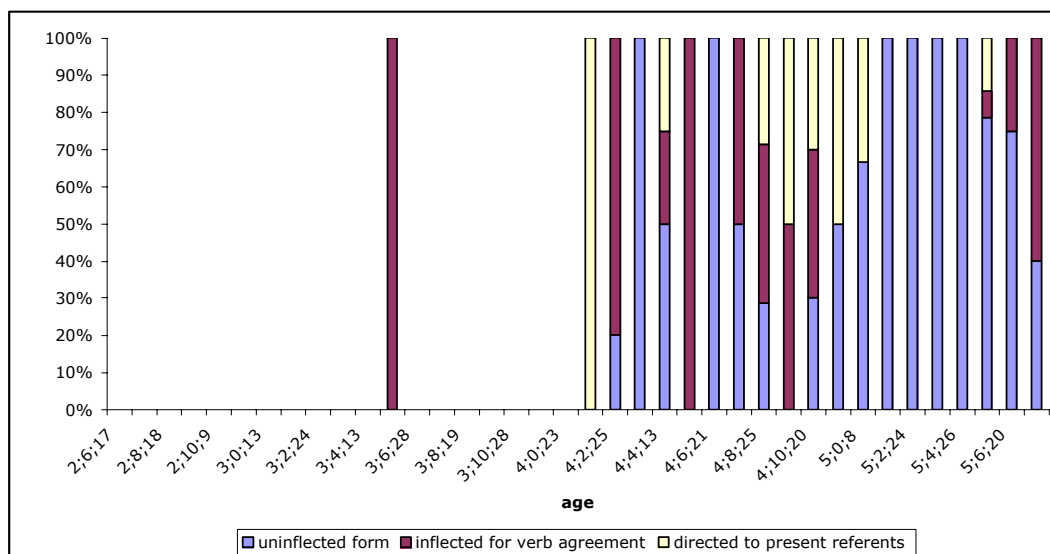
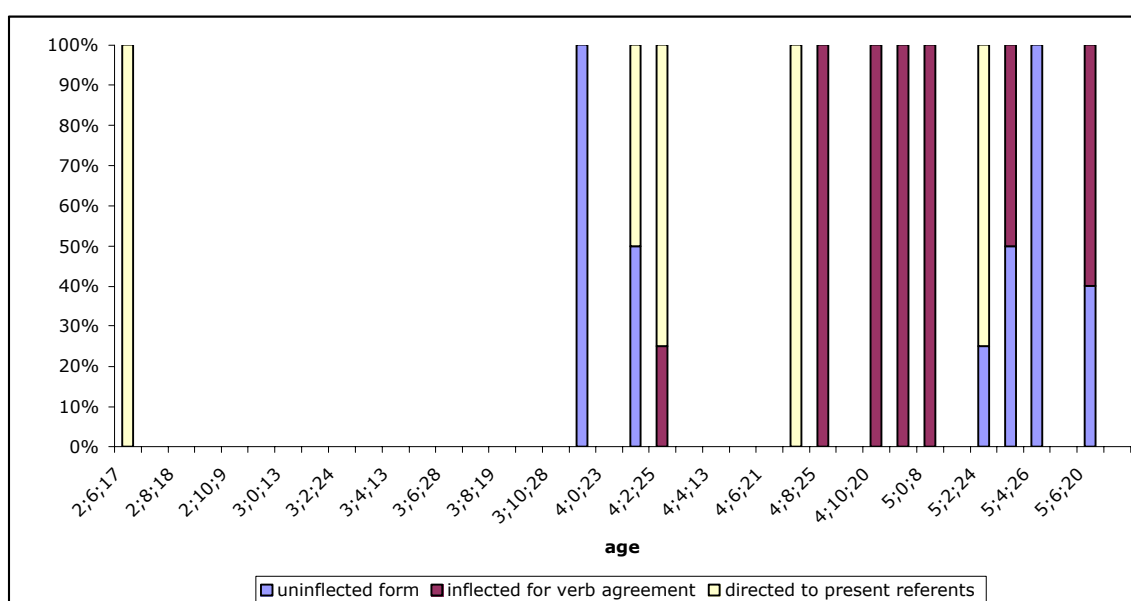


Figure 3. Production of GIVE in obligatory contexts



To sum up, Chun-chun has undergone a stage of uninflected verb agreement (ref. Research Q1). There is evidence of optionality in person agreement in the optional contexts, (ref. Research Q2), but Chun-chun seems to overgenerate optionality to the obligatory contexts, leading to a significant percentage of erroneous production. Despite this, the percentage of inflecting for first person object agreement remains high (ref. Research Q3). There are many instances of directing a sign to a present referent in contexts involving first and second person, but Chun-chun seldom errs even in identifying the referent appropriately in other contexts .

That Chun-chun omits object agreement even in the obligatory contexts over time is a characteristic of the late learners reported in Morford (2003) and Lillo-Martin et. al. (2005). From an acquisition point of view, Chun-chun's age of onset of sign language acquisition and the impoverished input stimuli in his acquisition environment are crucial factors affecting his acquisition of HKSL. Firstly, due to his background, the quantity of input may not suffice to facilitate language acquisition. Also, optionality of verb agreement in the adult grammar may result in ambiguity in the input data. Seen in this light, to claim he has achieved knowledge of optionality akin to that of the native deaf adults' is premature because the data shows that he prefers not to inflect in the optional contexts and overgenerates this knowledge of optionality in the obligatory contexts.

In acquisition terms, such optionality may be extended to how Chun-chun perceives and distinguishes verb types in HKSL. In fact, in the course of acquiring verb agreement, Chun-chun also needs to identify which type of verbs takes the property of verb agreement morphology. The data here do not address the issue of errors of commission, that is, imposing person agreement on plain verbs. However,

we observe that Chun-chun's lack of person agreement is usually compensated not only by pronominal index signs, but also name signs or common nouns in his production. As discussed in the earlier section, proper names or common nouns are inherently third person. To address this issue, we systematically selected 7 sessions with an interval of 6 months in the longitudinal data out of which we identified 27 tokens of GIVE for a closer analysis. The data show that Chun-chun uses a lot of name signs and his index signs are mostly spatially directed to the present referents (first person subject or object), and, on some occasions, towards a spatial locus, as shown in (10a – 10b):

(10a) 1X-1p 0-GIVE-0 YOUNGER_SISTER BOOK.

“I give a book to my younger sister.”

Insert clip (6) here.

(10b) (BRENDA) CL: biscuit_sticks 0-GIVE-0 IX-3p.

“Brenda gives biscuit-sticks to him (Kenny).”

Insert clip (7) here.

Hence, the uninflected forms are usually followed by a common noun or a name, or an IX sign directed to a present referent. This suggests that Chun-chun may initially assume that all verbs are just plain and person is encoded by other grammatical means such as index or name signs until he encounters positive evidence showing that some verbs require person agreement morphology. If our argument is on the right track, knowledge of marking agreement morphology is triggered by specific positive evidence within the obligatory conditions and that makes the child realize that there are verb subcategories in signed language. Errors of commission as reported in previous studies are exemplars of this acquisition process. In order to investigate this issue further, we design a series of experimental procedures to tap Chun-chun's knowledge of verb agreement.

5. Study II : EXPERIMENTAL PROCEDURES

Study II involved three elicitation tasks based on the verb GIVE: (a) Present Referents Task (PR), (b) Story Retelling task (SR), and (c) Truth-value Judgment Task (TJ). For the PR task, we aimed to confirm whether Chun-chun was sensitive to locative agreement with a present referent in the signing discourse. In this task, our deaf researcher performed the task of giving some food to an object located in the room. Chun-chun was asked to describe what the deaf researcher had done, and was enticed to produce utterances like “Connie gives the fish to the cat”. The beneficiaries of GIVE

(i.e. the indirect objects) were placed in various locations in the room and some of which did not conform to the conventional spatial location for person agreement in HKSL, such as placing the indirect object at the back of the child signer. There were four tokens to test Chun-chun's knowledge of directing the sign to present referents in the discourse.

The SR task had the advantages of examining whether Chun-chun's knowledge of using referential loci in space to set up person agreement with the verb. Crucially, story retelling also allowed us to examine how Chun-chun encoded verb agreement in contexts of first-mentioned referents with a third person value, which to us was a litmus test for tapping Chun-chun's knowledge of abstract agreement morphology. Again, we focused on the verb GIVE. In this task, Chun-chun had to watch a story signed by a native deaf researcher A and relate it to native deaf researcher B. The signing was recorded, transcribed by a native deaf researcher, checked for accuracy and scored for verb agreement. The TJ task involved three video-taped events based on GIVE with either optional or obligatory person agreement in HKSL. The events portrayed a simple event of "A gives a candy to B". After watching the video clips, a native deaf researcher signed a series of sentences based on the proposition of the event. Some sentences were grammatical and some were not. For instance, if the event portrayed that "Connie gives a candy to Brenda", a native deaf researcher (Kenny) who assumed an outsiders' point of view would sign sentences like (11a) and (11b) below. While controlling for consistency of propositional content, various agreement patterns were set up to test for grammaticality.

- (11) Episode: Connie gives a candy to Brenda.
 Stimuli: (11a) Kenny: "CONNIE CANDY ₃GIVE₃ BRENDA √
 (11b) Kenny: "CONNIE CANDY ₂GIVE₁ BRENDA x

Chun-chun first viewed the episode shown on the computer, he then judged the sentences for their grammaticality. For each, he indicated his judgment by pressing either a "correct" button or a "wrong" button. For the distracters, we incorporated clips of classifier constructions using verbs of motion showing movement of a person classifier from one location to another in different manner. A native deaf signer was invited to complete the task whose data were used for baseline comparison.

The tasks were administered in the sequence of SR > PR > TJ about five months later. To score the tasks, 1 score was given for the correct production of GIVE with directionality of locative agreement in the PR task. For TJ task, correct responses were given a score of '1' and '0' for an inaccurate one. For the SR task, tokens of verb agreement were collected from Chun-chun and coded for person agreement inflection, use of referential loci, and role-shift as well as markers.

With tokens displaying inflection, they are further categorized into different agreement patterns for further analysis.

6. Results

6.1. STORY RETELLING TASK

In the SR task, there are nine contexts for person agreement in the story. Chun-chun produces 8 tokens of person agreement only under 7 contexts, missing 2. Table 2 presents a qualitative analysis of Chun-chun's production of the person agreement patterns.

Table 2: Analysis of GIVE in Chun-chun's SR Task

Native		Chun-chun	
Context #	Person agreement	Context #	Person agreement
#1 WANT 1-GIVE-3i KENNY BRENDA	1-3 _(locus i)	#1 WANT BUY 0- GIVE-0 KENNY EAT	0-0
#2 CANDY gesture: give_me 3j-GIVE-1 TWO gesture: give_me	2 _(locus j) -1, +role shift +markers	#2 KENNY 0-SEE-1j SAY 2j-GIVE-1 EAT	2 _(locus j) -1 +role shift +markers
#3 CANDY 1-GIVE-2i 1-GIVE-i	1-2 _(locus i) +role shift +markers	#3 CONNIE SAY CAN, 1-GIVE-2j, IX _k IX _p TWO, 1-GIVE-3 _k TWO _j	1-2 _(locus j) +role shift +markers 1-3 _(locus k)
#4 WANT 1-GIVE-3j BRENDA	1-3 _(locus i) +role shift + markers	#4 KENNY WANT 0- GIVE-0 BRENDA	0-0
#5 SEE KENNY CANDY 3i-GIVE-3j BRENDA	3 _(locus i) -3 _(locus j) -no role shift	#5 CL:hold-candy 0- GIVE-0 BRENDA	0-0
#6 KENNY GOOD 1- HELP-3j gesture "give_me" 3j-GIVE-1	2 _(locus i) -1 +role shift +markers	#6 -----	-----
#7 CL:tear_open_wrapper 1-GIVE-3j BRENDA	1-3 _(locus i) +role shift +markers	#7 KENNY CL:open_ wrapper 0-GIVE-0	0-0
		#7b CL:open_wrapper 0- GIVE-3 BRENDA	0-3 _(locus p)
#8 2j-GIVE-3i KENNY	2 _(locus i) -3 _(locus i) -role shift	#8 IX _m DON'T EAT, 0- GIVE-0 KENNY	0-0
#9 3j-GIVE-1	3 _(locus i) -1	#9 -----	-----

*markers include body turn, head turn or eye gaze

Table 2 shows that Chun-chun's GIVE generally inflects more for object than for subject agreement, giving some evidence to support the subject/object asymmetry in verb agreement

acquisition. Also, it seldom inflects for either subject or object when the contexts permit optional verb agreement such as first person subject and third person object (e.g. Context #4), or third person subject and third person object (e.g. Context #5). Yet, on two counts, Chun-chun attempts to “repair” the verbal inflection. One example is Context #7 with data repeated in (12):

(12) KENNY CL:open_wrapper 0-GIVE-0, CL:open_wrapper 0-GIVE-3 BRENDA.

“Kenny unwraps the candy and give (it) to (Brenda), unwraps the candy and gives (it) to Brenda.

(Insert clip 8 here)

In (12), Chun-chun first signs an uninflected GIVE and then switches to 0-GIVE-3 to assign a locus for the indirect object BRENDA. This suggests that Chun-chun has some knowledge, albeit limited, of directing the sign through a conventional phonological form to encode a third person value, hence evidence of syntactic object agreement. Out of the three contexts that require obligatory object agreement (i.e. Contexts #2, #6, #9) presented by the native deaf signer, Chun-chun only creates one (i.e. Context #2) with correct person agreement inflection. However, he errs when the context requires obligatory subject agreement (e.g. Context #8). As for the use of spatial loci for verb agreement, Chun-chun either directs the verb to different loci in space or he consistently adopts one locus for almost all referents. However inadequate, Chun-chun attempts to role shift but he seldom refers to a third person indirect object as the native signer does in most situations in the task. Data show that he either avoids it (Context #7) or role shift to direct a verb sign to a spatial locus for second person subject (i.e. Context #2 & #3). This suggests that Chun-chun has knowledge, albeit limited, of syntactic agreement for second person through establishing an abstract second person locus in space.

The earlier observation from the longitudinal data that Chun-chun resorts to name signs or index signs to obviate the need for person agreement finds further evidence in this task. Table 2 shows that except for one (i.e. Context #7), a name sign follows the uninflected verb in four out of five tokens (i.e. Contexts #1, #4, #5, #8). Proper names are inherently third person in semantic terms. There is one token which shows that a name sign also follows GIVE which is inflected for third person but uninflected for second person (Context #7b), almost identical to that of the native deaf signer.

6.2. PRESENT REFERENTS TASK

Since the stimuli involve grammatical third person subject and third person object, meaning that either the uninflected form or spatially directed form is acceptable. However, Chun-chun prefers to adopt the uninflected form for subject but optionally chooses to direct the verb to the location of the indirect objects

present in the discourse. There are four stimuli in this task and Chun-chun produces a total of seven tokens of GIVE distributed over four indirect objects in the pattern of 3 -1-1-2. None of them show evidence of syntactic verb agreement, they are either in uninflected form or spatially directed to the indirect objects. Out of the seven tokens, four are uninflected forms, as in (13)^{xiii}:

(13) CONNIE MILK 0-GIVE-0 BABY DRINK_MILK.

“Connie gives the baby milk to drink.”

(Insert clip 9 here)

While no tokens show subject agreement, three tokens are spatially directed to the location of the indirect objects, two to the “monkey” located directly in front of Chun-chun and one to the “baby” on the side in front.

Taken as a whole, the task offers some evidence that Chun-chun has knowledge of locative agreement. Unlike the native signer, he does not necessarily adopt locative agreement even though the referents are present. For those that he does, the verb is spatially directed more to the object than to the subject.

6.3. TRUTH-VALUE JUDGMENT TASK

There are three experimental conditions – 3-GIVE-3, 3-GIVE-1 and 1-GIVE-3 – for the TJ task. As mentioned, the sentence stimuli use the verb GIVE to encode the grammatical relation of the subject and indirect object and Chun-chun needs to judge if the agreement pattern is compatible for such a relation. While the proposition remains the same, some of the stimuli sentences use an incompatible agreement pattern that causes the sentences to become ungrammatical. Methodologically, we assume that if Chun-chun has knowledge of optionality of person agreement in HKSL as well as the related constraints, he will accept the uninflected and inflected GIVE under the 3-GIVE-3 and 1-GIVE-3 conditions while he will reject the uninflected form and accept the appropriately inflected GIVE under the 3-GIVE-1 condition. Moreover, Chun-chun will systematically reject those incompatible agreement patterns because they violate the interpretation of the experimental conditions.

The pre-test using the verb SCOLD shows that Chun-chun has no problem comprehending the episodes and the task requirement. Chun-chun’s judgments of the grammatical forms in various conditions are not consistent enough to indicate full acquisition. In the 3-GIVE-3 condition, Chun-chun accepts the uninflected form and the 0-GIVE-3 form but he rejects the appropriately inflected

3-GIVE-3 form. The native deaf signer on the other hand judges these three stimuli sentences to be grammatical. Also, while the uninflected form and the appropriately inflected 1-GIVE-3 form are grammatical according to the native judgments, Chun-chun rejects the uninflected form but accepts the inflected 1-GIVE-3 form. Lastly, Chun-chun accepts the uninflected form for the 3-GIVE-1 context, which is not acceptable according to native judgments. He also rejects the appropriately inflected 3-GIVE-1 form. The results show that Chun-chun’s knowledge of person agreement is variable, meaning that he has not yet fully acquired optionality of subject and object agreement in HKSL as well as the related constraints.

Table 3: Chun-chun’ Performance on TJ Task

A. 3-GIVE-3 Context		Chun-chun	Native
Uninflected	grammatical	1	1
3_3	grammatical	0	1
0_3	grammatical	1	1
2_1	ungrammatical	0	1
3_1	ungrammatical	0	1
B. 1-GIVE-3 Context			
Uninflected	grammatical	0	1
1_3	grammatical	1	1
3_1	ungrammatical	1	1
3_3	ungrammatical	1	1
2_1	ungrammatical	1	1
2_3	ungrammatical	0	1
C. 3-GIVE-1 Context			
Uninflected	ungrammatical	0	1
3_1	grammatical	0	1
3_3	ungrammatical	1	1
2_3	ungrammatical	0	1
1_3	ungrammatical	0	1

Chun-chun’s judgments of the ungrammatical stimuli are most accurate only with the 1-GIVE-3 condition as three out of four items are correctly judged to be ungrammatical. He fails all the ungrammatical items in the 3-GIVE-3 condition and three out of four ungrammatical stimuli in the 3-GIVE-1 condition. Note that when Chun-chun rejects the appropriately inflected form under the 3-GIVE-3 and 3-GIVE-1 conditions, his judgments of the ungrammatical forms for these specific contexts are correspondingly inaccurate.

7. Discussion

The results from the longitudinal and experimental data reveal that Chun-chun's knowledge of person agreement shows great variability. As a whole, the longitudinal data show that Chun-chun produces both uninflected and inflected GIVE for person agreement, and such a pattern is also observed in contexts where the inflected verb is disallowed. The experimental data also show that Chun-chun prefers to use the uninflected form in the PR and SR Task. The TJ Task reveals that Chun-chun's knowledge of person agreement shows variability in both forms of verbs in different conditions. Hence, we argue that although in some contexts where optionality may be the norm in the adults' grammar, Chun-chun's performance seems to reveal that his knowledge of optionality in person agreement may have intrinsic properties that are different from the adults'. As mentioned in 6.3, optionality of verb agreement in signed language is being constrained by either syntactic position, as in ASL or BSL, in the sense that only subject agreement is optional and object agreement has to be obligatory, or an interaction of syntactic position and person value, as in HKSL where second person subject or first person object need to be marked, otherwise, agreement of subject and object is optional. This raises a learnability issue: what makes the child know that optionality of verb agreement in HKSL comes with constraints? We argue that to characterize the adults' grammar with respect to verb agreement, optionality has to be measured against obligatoriness because judgments of native signers show that they have knowledge of which form is optional or obligatory under what conditions. In Lust's (2006) terminology, such knowledge represents some 'tacit' understanding of what is and is not possible in the grammar, the 'end-state' of language acquisition. Although Chun-chun's data consistently show the co-existence of uninflected and inflected forms among the agreement patterns, it is premature to equate such a state of knowledge as having similar epistemology as the native signer's. Note that in the longitudinal data, there are more uninflected than inflected forms of GIVE in at least two agreement contexts, and approximately around 30% of uninflected forms in the obligatory contexts (Table 1). This suggests that Chun-chun's knowledge of optionality in verb agreement in HKSL is not as constrained as that displayed by the native signer's. This result is corroborated by the experimental findings which show that Chun-chun tends to use uninflected GIVE in the SR and PR tasks. This "intermediate knowledge" of optionality surfaces through the TJ task as the results show that Chun-chun has problems judging the uninflected forms in at least two agreement conditions. If language acquisition is based on positive evidence, clearly the input to the deaf child is ambiguous as both uninflected and inflected forms surface in the adults' input, leading to a learnability problem

because he needs to look for specific positive evidence that constrains his grammar in accordance to syntactic position and person value.

What triggers the deaf child to constrain his overgenerated grammar? We predict that it is not data that shows specificity condition, as suggested in Deen's study on the child acquisition of Swahili. In signed language acquisition, as we mentioned in Section 1.2, specific positive evidence may stem from two sources of adult input (a) third person locus for a non-present referent in the 3-GIVE-1 condition because it consistently requires obligatory object agreement, and (b) second person locus under the role shift condition in which the signer needs to shift the plane of articulation and directs the sign to a new spatial locus, denoting a second person. Although verbs directing to the signer and the addressee as present referents have underspecified person value and obscured by locative agreement, a signer directs a verb sign to spatial loci under the first-mentioned condition may give us a clue about syntactic verb agreement. The tokens of role shift in the SR task shows that he has acquired some knowledge of syntactic verb agreement, but he also show violation of constraints of verb agreement.

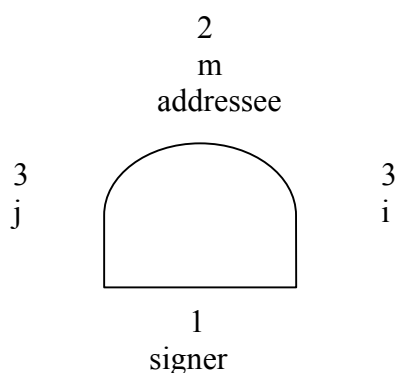
8. Conclusion

In this study, we investigate the acquisition of verb agreement in HKSL by a deaf child, using naturalistic production as well as experimental data to tap the state of knowledge of the deaf child in the acquisition process. The findings reveal that he consistently violates the constraints of verb agreement and over-generates uninflected agreeing verbs during the period of observation. As such, he resembles the late learners of signed language in this aspect of grammatical development, similar to the findings reported in previous studies. Given Chun-chun's background, this study fails to address issues related to early child acquisition, in particular, the lack of error of omission in obligatory contexts of person agreement as evidence to support the hypothesis that learners of null subject languages do not show an Optional Infinitive Stage, as argued by Guasti (2002) on hearing learners of Italian and Lillo-Martin et. al. (2005) on deaf child learners of ASL and LSB. Nonetheless, the study offers the perspective of "intermediate optionality" in the acquisition of verb agreement in signed language, which could be the result of the learners' initial misanalysis that verbs in signed language are morphologically simplex during the early stage of language acquisition, marring the distinction between plain verbs and agreeing verbs, and probably classifier predicates. While naturalistic production data are helpful, experimental data are necessary in order to verify this hypothesis more systematically. The current attempt to tap a deaf child's state of knowledge of verb agreement in HKSL through experimental procedures based on just one verb is rather

exploratory. As research on verb agreement acquisition develops, more agreeing verbs need to be examined with more fine-grained experimental methodology.

NOTATIONAL CONVENTIONS

1. Signs are glossed in capital letter with the closest English translations. Signs which require more than one English word in the translation are linked up with a hyphen (e.g. DRINK_MILK).
2. Agreement marking is glossed as 1 (first person), 2 (second person) and 3 (third person). If an agreeing verb is marked for both subject-verb agreement and verb-object agreement, the verb is glossed as 1-GIVE-3, 1-GIVE-2 or 3-GIVE-1. If an agreeing verb is marked for verb-object agreement only, the sign is glossed as 0-GIVE-3. Locations that agreeing verbs directed to are represented with i, j and m. Chun's production of non-adult directionality is represented as k and p.



3. Classifier predicates are glossed as CL: description of the classifier predicates.
4. Null arguments licensed by verb agreement are glossed as *pro* and null arguments licensed by discourse topic are glossed as *e*.

9 REFERENCES

- Bahan, Benjamin. 1996. *Non-manual realization of agreement in American Sign Language*, PhD. Dissertation, Boston University.
- Casey, Shannon. 2000. *Relationships between gestures and signed languages: Indicating participants in actions*. Unpublished paper presented at the 7th International Conference on Theoretical Issues in Sign Language Research, Amsterdam, Netherlands.
- Corbett, Greville. G. 1998. *Agreement in Slavic (position paper)*. *Workshop on Comparative Slavic Morphosyntax*. Indiana University.
- Cormier, Kearsy. 2002. *Grammaticization of Indexic Signs: How American Sign Language Expresses Numerosity*. Ph.D. dissertation, University of Texas at Austin.

- Croft, William 1998. Agreement vs case marking and direct objects. In *Agreement in Natural Language: Approach, Theories, Descriptions*, ed. Michael Barlow and Charles A. Ferguson, 159-179. Stanford: CSLI
- Deen, Kamil Ud. 2006. Subject Agreement in Nairobi Swahili. In *Selected Proceedings of the 35th Annual Conference on African Linguistics*, ed. John Mugane et al., 225-233. Somerville, MA: Cascadilla Proceedings. Project.
- Fischer, Susan. 1973. The deaf child's acquisition of verb inflection in American Sign Language. Paper presented to the Annual meeting of the Linguistic Society of America, San Diego.
- Fischer, Susan, and Gough, Bonnie. 1978. Verbs in American Sign Language. *Sign Language Studies*: 7: 17-48.
- Guasti, Maria Teresa. 2002. *Language Acquisition: The Growth of Grammar*. Cambridge, Mass.: The MIT Press.
- Hyams, Nina, and Ken Wexler. 1993. On the Grammatical Basis of Null Subjects in Child Language. *Linguistic Inquiry* 24:3 421-459.
- Kibrik, Aleksandr. E. 1993. Archi. In R. Smeets (eds.), *Indigenous Languages of the Causasus*. Vol. 3. North-East Caucasus, Delmar, NY: Caravan Books, pp. 297-365.
- Lam, Wai-size. 2003. Verb agreement in Hong Kong Sign Language. MPhil Thesis. The Chinese University of Hong Kong
- Lam, Wai-size Scholastica. 2004. *Null Arguments in Hong Kong Sign Language*. Paper presented at Annual Research Forum, Linguistic Society of Hong Kong, 12th Dec 2004. The Chinese University of Hong Kong.
- Liddell, Scott K. 2000. Indicating verbs and pronouns: pointing away from agreement. In *The Signs of Language Revisited: An Anthology to Honor Ursula Bellugi and Edward Klima*, eds Karen Emmorey and Harlan Lane, 303-320. Mahwah, NJ: Lawrence Erlbaum Associates.
- Lillo-Martin, Diane. 1991. Universal Grammar and American Sign Language: Setting the Null Argument Parameters. *Studies in Theoretical Psycholinguistics*. Dordrecht: Kluwer.
- Lillo-Martin, Diane. 2002. Where are all the modality effects? In *Modality and Structure in Signed Language and Spoken Language*, eds. Richard Meier, Kearsy Cormier, and David Quinto-Pozos, 241-262. Cambridge: Cambridge University Press.
- Lillo-Martin, Diane; Quadros, Ronice Müller de. 2004. The Structure and Acquisition of Focus in American Sign Language and Brazilian Sign Language. Presented at TISLR 8, Barcelona.
- Lillo-Martin, Diane; Quadros, Ronice Muller de; Mathur, Gaurav; Beck, Stephanie. 2005. The Acquisition of Verbal Subcategories in ASL and LSB. Paper presented at Workshop on Asian Asian Linguistics, Nanfan University, Nagoya, December 3, 2005.

- Loew, Ruth, C. (1983). *Roles and reference in American Sign Language: A developmental perspective*. Unpublished doctoral dissertation, University of Minnesota.
- Lust, Babara. 2006. *Child Language: Acquisition and Growth*. Cambridge, Cambridge University Press.
- Meier, Richard, P. 1982. *Icons, analogues, and morphemes: the acquisition of verb agreement in ASL*. PhD dissertation, University of California, San Diego.
- Meier, Richard, P. 2002. The acquisition of verb agreement: pointing out arguments for the linguistic status of agreement in signed languages. In *Current Developments in the Study of Signed Language Acquisition*, eds. Gary Morgan and Bencie Woll, 115-141. Amsterdam: John Benjamins.
- Meir, Irit. 2002. A Cross-modality perspective on verb agreement. *Natural Language and Linguistic Theory* 20(2): 413-450.
- Morford, Jill. P. 2003. Grammatical development in adolescent first-language learners. *Linguistics* 41: 687-721
- Morgan, Gary. 2000. Discourse cohesion in sign and speech. *International Journal of Bilingualism*, 4, 279-300.
- Morgan, Gary., Barriere, Isabelle & Woll, Bencie. 2006 The influence of typology and modality on the acquisition of verb agreement morphology in British Sign Language. *First Language*, 26, 19-43.
- Muravyova, Irina. A. 1998. Chukchee. In Andrew, Spencer & Arnold. Zwicky (eds) *The Handbook of Morphology*, Oxford: Blackwell, pp. 521-538.
- Neidle, Carol; Kegl, Judy; MacLaughlin, Dawn; Bahan, Benjamin. 2000. *The Syntax of American Sign Language: Functional Categories and Hierarchical Structure*. Cambridge, Mass.: The MIT Press.
- Padden, Carol, A. 1988. *Interactions of Morphology and Syntax in American Sign Language: Outstanding Dissertations in Linguistics*. New York: Garland (Originally distributed as PhD dissertation, University of California, San Diego)
- Pizzuto, James, E. 2002. The development of Italian Sign Language (LIS) in deaf preschoolers. In Gary. Morgan & Bencie. Woll (Eds), *Directions in sign language acquisition*. (Trends in Language Acquisition Research, 2)(pp.77-114). Amsterdam and Philadelphia : Benjamins .
- Rathmann, Christian, and Mathur, Gaurav. 2002. Is verb agreement the same cross-modally? In *Modality and Structure in Signed and Spoken Languages*, eds. Richard P. Meier, Kersy Cormier and David Quinto-Pozos, 370-404. Cambridge: Cambridge University Press.

- Quadros, Ronice Muller de 1997. Aspectos da sintaxe e da aquisicao da Lingua Brasileira de Sinais. [Syntactic aspects in the acquisition of Brazilian Sign Language] . *Letras-de-Hoje*, 32 (4), 125-146.
- Quadros, Ronice Muller de, and Karnop, Lodenir B. 2004. *Lingua de sinais brasileira: estudos linguisticos*. Porto Alegre: Artes Medicas.
- Quadros, Ronice Muller de; Lillo-Martin, Diane. 2006. Gesture and acquisition of verb agreement in sign languages. Paper presented at Boston University Conference on Language Development. Boston, Massasuchettes November, 2006.
- Sandler, Wendy and Lillo-Martin, Diane. 2006. *Sign Language and Linguistic Universals*, Cambridge University Press.
- Tang Wai Lan Gladys and Sze Yim Binh. 2002. "Nominal Expressions in Hong Kong Sign Language: Does Modality Makes a Difference?". *Modality and Structure in Signed and Spoken Languages* ed. by Richard P. Meier; Kearsy Cormier; Daivd Quinto-Pozos. 2002 ed. 26 pgs. Cambridge, United Kingdom.
- Tang Wai Lan Gladys. 2006 Classifiers of Hong Kong Sign Language: Conflation and Lexicalization.' ed. in Emmorey, K. (ed.) *Perspectives on Classifier Constructions in Sign Languages*. Mahwah, NJ: Lawrence Erlbaum and Associates.
- Tang, Gladys, Felix, Sze, Scholastic, Lam. 2006. Acquisition of simultaneous constructions by deaf children of HKSL. In *Simultaneity in Signed Languages Form and function* eds. by Myriam Vermeerbergen, Lorraine Leeson and Onno Crasborn, pp.317-335. John Benjamins Publishing Company
- Thompson, Robin., Karen Emmorey and Robert Kluender. 2006. The Relationship between Eye Gaze and Verb Agreement in American Sign Language: An Eye-Tracking Study. *Natural Language and Linguistic Theory* 24.2: 571-604.
- Bogaerde B. Van der, & Baker, Ann E. 1996. Verbs in the language production of one deaf and one hearing child of deaf parents. Poster presented at the 5th International Conference on Theoretical Issues on Sign Language Research, September 1996, Montréal, Canada.
- Wexler, Kenneth. 1994. Optional Infinitives, head movement and economy of derivation. In *Verb Movement*, ed. Norbert Hornstein and David Lightfoot, p.305-382. Cambridge: Cambridge University Press.

ⁱ We would like to acknowledge the support of The RGC Grant (Project # 210067), the members of the Centre for Sign Linguistics and Deaf Studies: Kenny Chu, Brenda Yu, Connie Lo, Lisa Lo, Zoe Li, Cheng Ka Yiu, and Phippen Wong for participating in this project, rendering their support at different stages. Last but not least, we would like to thank Chun-chun and his family for their endearing support and involvement in the project.

ⁱⁱ Agreement morphology is realized by affixes, with suffixes on the verb being the most common for either subject agreement (e.g. English) or both subject and object agreement (e.g. Russian).

ⁱⁱⁱ Chukchee uses prefixes for subject agreement and suffixes for object agreement.

^{iv} Both Meir (2002) and Sandler and Lillo-Martin (2006) use “facing of the hands” for marking object, a closer examination suggests that it is the palm of the hand that provides this phonetic description.

^v Here we diverge from Meir (2002) who claims that directionality is primarily for the thematic function of marking Source and Goal. We assume that while this is a crucial thematic property, some fixed phonological form embedded in directionality is evident of morphological marking of person value. Directing a sign to a referential locus using a form that is conventionally interpreted as ‘third person’ during first mention of the referent is evident of using directionality for marking person value.

^{vi} Morgan et. al. (2006) also claim that verb agreement morphology in BSL is constrained by aspectuality. Agreement morphology occurs when the verb is transitive eventive (e.g. GIVE, PUSH, BITE), not when the verb is transitive stative (e.g. KNOW, BELIEVE) or intransitive, eventive or stative. This phenomenon is not observed in HKSL where transitive statives can mark person agreement, e.g. IX-1p MARY 0-ADMIRE-3. What causes a verb to fall into this category is a subject for future research.

^{vii} Tang and Sze (2002) observe that non-specific referents adopt a wavy path movement without a hold in space, which is different from a path movement to a specific location in space, denoting a definite referent.

^{viii} Swahili is a SVO language and has prefixes for subject and object agreement in the verbal complex having the sequence: SubA-Tense – ObjA – Verb Root – Mood.

^{ix} Deen identifies three contexts where the objects are inherently specific: (a) personal names, (b) topicalized objects, and (c) first and second person, and he observes that Swahili children reliably produce object agreement in these contexts, as evidence of knowledge of condition of specificity at an early stage.

^x Quite a number of acquisition phenomena have been reported (Meier 2002). In this paper, we will focus on three issues.

^{xi} This result makes Meier (2002) claim that deaf children prefer single agreement marking (i.e. marking object agreement) to double-agreement marking (i.e. marking both subject and object agreement) when they begin to mark agreement on verbs.

^{xii} Quadros and Lillo-Martin’s (2006) subjects are reported to master knowledge of verb sub-categories fairly early.

^{xiii} Among them, 2 tokens of GIVE involve an indirect object (i.e. “the dog” or the “cat”) located at the back of Chun-chun. However, deaf signers usually spatially direct the verb to the present referents but use the uninflected form followed by a name sign when the referent is not present.