

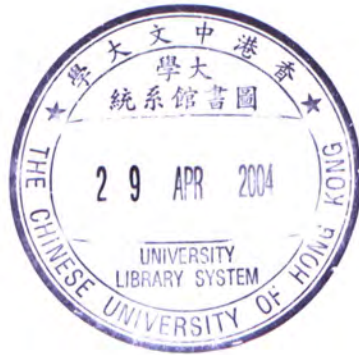
Verb Agreement in Hong Kong Sign Language

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Abstract

Verb agreement is generally perceived to be a relation holding between the verb and its arguments in terms of phi-features (i.e. person, number and gender) in studies on spoken languages. The present study aims at exploring how the verb agrees with its arguments in terms of person in Hong Kong Sign Language (HKSL). In the literature on signed languages, there is a controversy on the notion of verb agreement. While some linguists agree that the notion of verb agreement in American Sign Language (ASL) is the same as that in spoken languages, others argue that it refers to a relationship between verbs and the spatial locations of referents. This controversy results in confusion about the number of person distinctions (i.e. three-way distinction Vs two-way distinction) and the role of space (i.e. whether the space has grammatical function) in signed language grammar. This thesis argues that this confusion can be resolved when we exclude spatial locations from verb agreement and analyse verb agreement as an abstract grammatical notion in terms of person, number and gender. Within this framework, the current project focuses on person.

In our study of HKSL, we divide data into three groups: (i) data without location marking and role shift, (ii) data with location marking and (iii) data with role shift. When we eliminate the influence of location marking and role shift in the first set of data, we observe a three-way distinction instead of a two-way distinction. The second set of data deals with location marking. In this set of data, we suggest person marking is suppressed when location marking occurs. As for the third set of data, it is observed that role shift, being a discourse device, does not affect the number of person values overtly marked on the verbs. Apart from person distinctions, optionality is another issue that is worth consideration. In earlier studies on verb agreement in ASL, it was pointed out that the subject agreement marker could be omitted (Padden 1983, 1988). Yet, Bahan (1996) argues that the subject agreement marker is not omitted, but replaced by a neutral marker. As a result, there is no optional person marking at all. In HKSL, most instances demonstrate that person marking may or may not be marked on the verbs. This contrasts with spoken languages where agreement marking is obligatory, but in line with signed languages (e.g. Italian Sign Language (LIS)), which demonstrates optional agreement marking. We suggest that this may be due to the modality effect.

To account for the agreement patterns in HKSL, we propose that agreement features in HKSL are generally strong and thus verb raising takes place. With respect to the optionality of agreement marking, we suggest that there is a null morpheme attached to the verb. As a result, feature checking is a means to capture the agreement patterns among different types of verbs.

摘要

動詞一致關係 (Verb agreement) 在口語中表示動詞與論元在一致關係特徵 (agreement features) 上相互呼應的一種的關係，即人稱、數和性別。本研究旨在發掘香港手語中的動詞如何跟其論元在人稱上達成一致關係。在手語研究中，不同的手語語言學家對動詞一致關係有不同的闡釋。有的認為手語中的動詞一致關係跟口語的沒有分別，有的認為它是動詞與論元在指稱對象 (referents) 的位置 (location) 上的關係。所以它跟口語的動詞一致關係不一樣。由於不同的手語語言學家對動詞一致關係的定義有不同的看法，他們對於手語中人稱的特徵和空間與語法的關係都有著不同的意見。在人稱方面，究竟人稱可分為第一人稱，第二人稱和第三人稱或是分為第一人稱和非第一人稱？在空間與語法的關係方面，人稱是否可以在手語空間 (signing space) 中顯示出來？本研究提出了一個解決上述爭議的方案，就是把指稱對象的位置從動詞一致關係中剔除。鑑於指稱對象的位置會錯誤影響對動詞一致關係的了解，我們在香港手語的研究中，不會把指稱對象的位置視為動詞一致關係的一部分。

在研究中，我們把語料分成三組：(一) 沒有位置標誌 (location marking) 和角色轉換 (role shift) 的影響，(二) 受位置標誌的影響，(三) 受角色扮演的影響。在第一組語料中，我們發現人稱可分為第一人稱，第二人稱和第三人稱，而非分為第一人稱和非第一人稱。另外，在第二組語料中，人稱標誌並不存在。至於第三組語料，我們看到角色轉換 (role shift) 並沒有影響動詞的人稱標誌。除此之外，任意性 (optionality) 也是值得關注的。在早期的美國手語研究中，Padden (1983, 1988) 指出主語一致關係標誌 (subject agreement marker) 是可省去的。但是 Bahan (1996) 提出主語一致關係標誌 (subject agreement marker) 並非省去，而是被中性標誌 (neutral marker) 所代替。故此，人稱標誌在美國手語中是必要成份 (obligatory)，而非任意成份 (optional)。但在香港手語中，我們發現在大部分的語料中人稱標誌是任意的。這跟口語的情況不一樣，卻跟某些手語 (如意大利手語) 一樣。我們認為這或許是因為口語跟手語的表達形式 (modality) 有別。

鑑於香港手語的動詞一致關係的考慮，我們認為人稱標誌屬於強性特徵 (strong features)，所以引致動詞上升 (verb raising)。至於任意性 (optionality)，我們的分析認為有一零語素 (null morpheme) 可標誌動詞的人稱。由此可見，核查理論 (checking theory) 是能夠解釋香港手語的動詞一致關係的分佈。

List of Abbreviations

1	- first person	TRI	- trial
2	- second person	ASL	- American Sign Language
3	- third person		
AGR _o /AGR-O	- object agreement	LIS	- Italian Sign Language
AGR _s /AGR-S	- subject agreement	Auslan	- Australian Sign Language
BH	- both hands		
DIR	- directional	DSL	- Danish Sign Language
DU	- dual	IPSL	- Indo-Pakistan Sign Language
eg	- eyegaze		
EXCL	- exclusive	JSL	- Japanese Sign Language
F	- feminine		
FUT	- future	FSL	- Finnish Sign Language
GPL	- greater plural	SSL	- Swedish Sign Language
htn	- head turn		
IMP	- imperative	ISL	- Israeli Sign Language
INCL	- inclusive	SLN	- Sign Language of the Netherlands
LH	- left hand		
LOC	- locative	DGS	- German Sign Language
M	- masculine		
mult	- multiple		
N	- neuter		
neu	- neutral marking		
O	- object		
PAST	- past tense		
PAUC	- paucal		
PERF	-perfective/ completive		
PL	- plural		
PROG	- progressive		
Q	- question marker		
QUAD	- quadruple		
RH	- right hand		
rs	- role shift		
S	- subject		
SG	- singular		
TRANSN	- transnumeral		

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Chapter One

Introduction

1.0 Introduction

Verb agreement is defined as a syntactic relation between a verb and its arguments (i.e. subject and object) in terms of agreement features (i.e. person, number and gender, they are also known as Φ -features) in the present study. This relation could be reflected by overt agreement marking on the verbs. Agreement marking includes change of verb form or affixation according to the agreement features of the arguments.¹ For the second type of agreement marking, the affixes involved are named as agreement affixes. Verb agreement has been widely studied in signed languages (i.e. Padden's (1983, 1988) studies of American Sign Language (ASL), Meir's (1998) analysis of Israeli Sign Language (ISL), among others) and more so in spoken languages (Bybee 1985, Pollock 1989, Corbett 1991, 2000, Chomsky 1991, 1993, 1995, among others). In spoken languages, it is noted that not all spoken languages demonstrate verb agreement. For instance, Chinese verbs are not marked overtly for agreement (Huang 1982). However, in signed languages, verb agreement occurs in all well-studied signed languages (e.g. ASL, ISL, etc.). This thesis will be devoted to a discussion of verb agreement in HKSL. The next section will present the focus of the current study. Sections 1.2 and 1.3 are descriptions of the methodology and notational conventions used in this thesis. The thesis outline will be given in the Section 1.4.

1.1 Research Focus

Verb agreement has been much discussed in both spoken languages and signed languages. It is generally agreed that person, as an agreement feature, is usually

¹ Nichols' (1986) typological study reports that agreement is marked on verbs in head-marking languages, but on the arguments in dependent languages. We will focus on head-marking languages in the present study.

realized by agreement affixes in spoken language.² But debate on person marking is keen in studies on signed languages. Many signs consist of two components: (i) a manual component and (ii) a non-manual component in signed languages. The manual component involves the location, orientation, handshape and movement of the hands. The non-manual component consists of facial expressions, head movement and body movement. Earlier studies on verb agreement focus on the manual component. There are three main questions that are commonly addressed in these studies, as listed in (1) below:

- (1) a. Are the spatial loci in the signing space associated with agreement features like person in personal pronouns and verb agreement?
- b. How many person distinctions are there?
- c. Is agreement marking obligatorily marked?

Concerning above, while Padden (1983, 1988), Lillo-Martin (1991) and Meier (1990) propose that the spatial loci in the signing space mark person in personal pronouns and verb agreement, Liddell (2000) argues that the signing space does not serve as the grammatical basis for verb agreement in ASL.³ Even though Padden (1983, 1988) and Meier (1990) agree that space plays a role in person marking, the former proposes that person has three distinct values (i.e. first, second and third) while the latter argues for only two values (i.e. first and non-first). This controversy corresponds to the question stated above. In addition, ASL demonstrates optionality of subject-verb agreement (Padden 1983, 1988, Meier 1982, Supalla 1992). This raises the question above, that is, whether agreement marking is obligatory in signed languages. While Supalla (1992) and Pizzuto (2002) both report that optional agreement marking occurs in different signed languages, Bahan (1996) argues that there is no optionality because the apparent absence of agreement marker is observed to be a neutral agreement marker. We will discuss this issue in more detail in Chapter

² We will discuss this shortly in Chapter Two.

³ Ahlgren (1990) also reports that the spatial loci on the horizontal plane mark person in personal pronouns in Swedish Sign Language. This may be universal among signed languages.

Three. Recently, non-manual marking has also been considered as an agreement marker (Bahan 1986). Bahan (1996) proposes head tilt and eye gaze are agreement markers for person. For these non-manual agreement markers, spatial loci are also involved to denote person. So, spatial loci, at least in ASL, are indicators of person in both manual and non-manual marking under Bahan's (1986) analysis.⁴

This thesis will focus on person agreement⁵ in HKSL. So we will only discuss person, but not number and gender because these are too complex for adequate treatment in the scale of the present study. To study person agreement in HKSL, we will address the following research questions:

- (2) a. Is there person agreement in HKSL? If yes, how is it marked?
- b. Does the signing space play a role in person agreement?
- c. Is there any optionality in person agreement?

For (2a) above, we will investigate whether person agreement is present in HKSL. In particular, attention will be paid to whether marking for person agreement in HKSL and that in other signed languages is similar. In ASL, spatial loci in both personal pronouns and verb agreement mark person. Thus, we will examine both personal pronouns and verb agreement in HKSL so that we can get a fuller picture of the function of spatial loci. We will also investigate whether a three-way (i.e. first, second and third) or a two-way (i.e. first and non-first) distinction is adopted in person agreement in HKSL. As for (2b) above, how space relates to person agreement in HKSL will be studied. Specifically, we will examine whether location marking and person marking can be separated.⁶ There is an asymmetry in the way of marking agreement in spoken and signed languages. Spoken languages demonstrate

⁴ Further discussion about manual and non-manual marking will be discussed in Chapter Three.

⁵ Person agreement is one type of verb agreement. Specifically, it is a relation between verbs and their arguments in terms of person (Bybee 1985).

⁶ In ASL, it is common for the signers to assign locations of the subject and object NPs in previous utterances. Then the signer would refer back to these locations when executing the verb sign. These kinds of utterances are believed to be evidence to verb agreement in ASL. The author argues that location marking and verb agreement could be separated. See Chapter Three for a more detailed discussion on this issue.

an obligatoriness in agreement marking. That is, either the verbs are consistently marked with an overt affix or consistently unmarked with any agreement affix under the same circumstances. But subject-verb agreement is optionally marked in ASL. The verbs in ASL may be marked at one time, but unmarked at another time for subject-verb agreement in the same construction. We will examine whether HKSL demonstrates the same kind of optionality.

1.2 Methodology

Empirical evidence on verb agreement in HKSL was collected from two deaf informants. Only two deaf adults were invited as informants because there was a limited access to deaf people and only few deaf people we know were willing to join the present study. These two deaf informants were asked to take part in two tasks: (i) picture narration and (ii) free conversation. Picture narration allows us to elicit the target structure with relatively more ease but the data cannot reflect the condition where the target structure occurs. Free conversation can be a supplement to this problem and therefore the second task is also conducted in the present study. Then, two more deaf consultants were invited to judge the production of HKSL of the two informants. The bio-data of the deaf informants and deaf consultants are given in Table 1.1 below:

Table 1.1 Bio-data of deaf informants and deaf consultants

Signers	Gender	Age	Degree of Deafness	Deaf Family Members
Informant A	M	23	Profound	Parents and an elder sister
Informant B	F	51	Profound	Husband
Consultant A	F	17	Mild to profound	Parents and an elder sister
Consultant B	F	27	Profound	Parents and a younger sister

The data were collected through picture narration and free conversation. The picture narration involves 120 comic strips either drawn by the author, or selected from *Cowboy* (《牛仔》) and *San Mao Liu Lang Ji: Xuan Ji* (《三毛流浪記:選集》).⁷ Note

⁷ Sample stimuli of the picture narration are provided in Appendix 1.

that only conventional verbs are selected for investigation.⁸ The selected verbs are commonly occurring in a daily conversation with the informant, as shown in Table 1.2 below:^{9,10}

Table 1.2 Verbs elicited from the picture narration

	Agreement verbs	Spatial verbs	Plain verbs
One-place predicate		GO WALK	COUGH CRY ESCAPE RUN SWIM
Two-place predicate	ASK BITE CATCH FEED HELP HIT KICK KISS LOOK PUSH SAY SCOLD SEDUCE SEE STAB SPEAK-ILL-OF THROW TOUCH		TEACH BRING ¹¹ BUY DISLIKE LIKE LOOK-AFTER LOOK-FOR LOSE MAKE MISS-SOMEBODY-DEEPLY SAVE WAIT
Three-place predicate	INTRODUCE BORROW GIVE SEND		SELL

From Table 1.2, verbs are divided into one-place predicates, two-place predicates and three-place predicates in order to examine agreement between (i) the verbs and the

⁸ The exclusion of classifier predicates is a limitation of the present study. The author observes that a classifier predicate do not show any overt marking and some of it includes the arguments as part of the sign. Further research is required for confirmation to this preliminary observation.

⁹ For illustrations of the citation forms of these verbs, see Appendix 2.

¹⁰ Verbs in signed languages, specifically ASL, are divided into three groups (i.e. agreement verbs, spatial verbs and plain verbs) according to their overt morphological marking. We will explain the formation of these three kinds of verbs further in Chapter Three.

¹¹ A reviewer points out to me that *BRING* could be a three-place predicate rather than two. However, according to the signers, it is impossible for *BRING* to take three arguments, for instance, both *INDEX_{pro 1} BRING INDEX_{pro 3} BOOK* 'I bring him a book.' and *BOOK, INDEX_{pro 1} BRING INDEX_{pro 3}* 'Book, I bring him.' are ungrammatical. If three arguments are involved, another verb *GIVE* will be added, for instance, *COMIC_BOOK, INDEX_{pro 2} TOMORROW BRING₂ GIVE₁ REMEMBER* 'Remember to bring your comic book and give it to me tomorrow.' As *BRING* cannot take three arguments, it is classified as a two-place predicate. The same logic applies to the verb *BUY*.

subjects, (ii) the verbs and the direct objects and (iii) the verbs and the indirect objects.¹² We will also consider how person marking is realized in different verb types (i.e. agreement verbs, spatial verbs and plain verbs). Note that the author has not come across (i) any agreement verb which is also a one-place predicate, (ii) any spatial verb that is a two-place or three-place predicate. So the author did not design comic strips for these areas. This limitation is represented by the grey boxes in Table 1.2.

The second batch of data was elicited from a free conversation. In this task, two informants are asked to talk to each other about their childhood in front of three cameras for half an hour. One camera points at both informants so as to get a full picture of the whole conversation. The remaining two cameras record the two informants individually. Recording the two informants individually enables us to view (i) the spatial loci involved in personal pronouns and verb agreement and (ii) the non-manual marking that might possibly take part in personal pronouns and verb agreement. The verbs selected from the free conversation are given in Table 1.3 below:

¹² We divide the verbs into one-place, two-place and three-place predicates in HKSL on the basis of the number of potential arguments (i.e. subject, direct object or indirect object) a verb selects. For instance, when a verb can select three arguments, we classify it as a three-place predicate.

Table 1.3 Verbs selected from the free conversation

	Agreement verbs	Spatial verbs	Plain verbs
One-place predicate		COME ARRIVE GO WALK	DEVELOP
Two-place predicate	SEE LOOK SAY FORCE FARE-MORE-THAN ¹³ ADMIRE		DISLIKE TEACH
Three-place predicate	GIVE DONATE		

Table 1.3 shows that 15 verbs that selected from the free conversation. These verbs are selected because (i) they are also tested in picture narration (e.g. *SEE*, *GIVE*, etc.), (ii) the verbs are suspected to involve overt marking of person agreement (e.g. *FARE-MORE-THAN*, *ADMIRE*) and (iii) they are or spatial verbs or plain verbs that could be contrast to the agreement verbs (e.g. *DEVELOP*, *ARRIVE*). Like the picture narration, one-place predicates, two-place predicates and three-place predicates are all involved. This allows us to investigate agreement of the verbs with subjects, direct objects and indirect objects. Note that Table 1.3 also shows a similar phenomenon presented by Table 1.2: first, we observe that there are no agreement verbs which are also one-place predicates; second, no spatial verbs which are also two-place or three-place predicates are observed. Unlike the verb list in the picture narration, no plain verbs which are also three-place predicates are observed. There may be relatively small number of plain verbs which are also three-place predicates in HKSL. Further research is needed to verify this speculation.

Apart from verbs, we also examine personal pronouns in HKSL. Person in personal pronouns can also be indicated by spatial loci in signed languages. In other

¹³ The verb *FARE-MORE-THAN* does not have any direct translation to English. This verb is glossed as *FARE-MORE-THAN* instead of *FARE-BETTER-THAN* because *FARE-MORE-THAN* does not have any sense of 'better'. For instance, the signer may sign *POOR* ₁*FARE-MORE-THAN*₂ to mean 'I am poorer than you'. So *FARE-MORE-THAN* instead of *FARE-BETTER-THAN* is chosen to gloss the sign, though the latter can be perceived in an easier way.

words, spatial loci¹⁴ can mark person for both personal pronouns and verbs. To examine the properties of spatial loci on person agreement, we also include personal pronouns in this thesis. Personal pronouns are in the form of index signs. However, not all index signs function as personal pronouns. In the present study, only index signs that can replace the full NPs and refer to participant roles (i.e. speaker, addressee or a third party) are classified as personal pronouns. In the next section, a description of the notational conventions used in this thesis will be given.

1.3 Notational Conventions

Manual signs are translated into English and are presented in capital letters in this thesis. Some lexical items have to be translated into a series of English words. They would be linked by a hyphen (e.g. *LOOK-FOR*). When two or more signs in sequence express one meaning, they are linked by an underscore (e.g. *WORK_PERSON*¹⁴).

In all the examples presented in this thesis, the manual signs are put in three tiers: RH (i.e. right hand), LH (i.e. left hand) and BH (i.e. both hands). Signs are put in these three tiers according to the hand(s) used in the sign. If a sign is articulated with a right hand, it is put in the RH tier. For signs that are articulated with the left hand, they are put in the LH tier. Signs articulated with both hands are put in the BH tier. Consider the following example:

- (3) Context: Mother's birthday was coming. Her daughters made a cake for their mother.

RH	TWO-OF-THEM	FEMALE	PREPARE	
LH				
BH			MAKE	CAKE

'The two girls prepare to make a cake.'

In (3), the first three signs *TWO-OF-THEM*, *FEMALE* and *PREPARE* are executed with the right hand and thus these signs are put in the tier for RH. For *MAKE* and

¹⁴ Confirmation on whether this sign is a compound or not requires further studies. Interested readers may review Newport and Bellugi's (1978) study on the properties of compounds in ASL.

CAKE, they are both two-handed signs and so they are put in the BH tier. As no signs are executed with only the left hand in this example, we leave the LH tier blank.

We observe two types of two-handed signs in HKSL. The first type is a conventional sign and it is put in the BH row. But if the two-handed sign is a doubled form of a one-handed sign, it is put in both LH and RH rows. For instance:

- (4) Context: Cowboy and Cowboy's father went for a walk.

RH	COWBOY	FATHER	TWO-OF-THEM	WALK	WALK
LH					WALK
BH					

'Cowboy and Cowboy's father walk.'

In (4), the last sign *WALK*, a one-handed sign, is doubled to a two-handed sign to mean 'two people walk'.

- (5) Context (free conversation): The signer said that sign language was more popular than speech. Even the teachers at the deaf school knew this.

RH		TEACHER	KNOW	
LH				
BH	REAL			SIGN-LANGUAGE

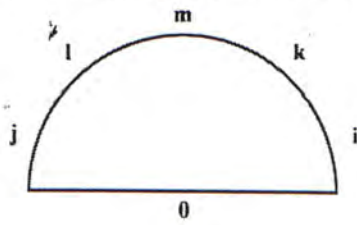
RH	_{3i} FARE-MORE-THAN _{3j}	SPEECH	_{3i} FARE-MORE-THAN _{3j}	KNOW
LH				
BH				

'In fact, the teacher knows that sign language is more popular than speech.'

Then the sign is put in both RH and LH rows. In (5), *REAL* and *SIGN-LANGUAGE* are conventional two-handed signs and so they are put in BH row. This example involves glossing of the spatial loci (i.e. subscripts 3_i and 3_j). We will explain this glossing shortly below.

We propose that space also has grammatical function in HKSL. Consider the spatial arrangement in HKSL in Figure 1.1 below:

Figure 1.1 Spatial Arrangement in HKSL



The area near the signer is represented by locus-0. Loci-*i/j/k/l* represent the spatial loci on both sides of the signer. Locus-*m* refers to the spatial locus directly in front of the signer. In subsequent chapters, we will examine whether these spatial loci denote different person values. As one of the main focuses of the present study is to investigate person agreement by splitting the location marking from person marking, there is a need to make the transcriptions for location marking and person marking distinctive. So the transcriptions of spatial loci in the present study deviate from previous studies where only alphabet letters *i, j, etc.* are used to represent the spatial loci involved in the person agreement. When the spatial loci mark locations (but not person), they will be indicated by subscripts *i, j, k, l, m, 0*. For instance, when the verb sign *WALK* is marked with spatial loci that denote location, it is glossed as ${}_iWALK_j$. But if the spatial loci mark person values, they are represented by subscripts *1, 2* or *3* to mean first, second and third person. For example, the verb *GIVE* is marked with spatial loci that denote person, the verb is represented as ${}_1GIVE_3$. When the subject and object are both third person, we will gloss the spatial loci involved in the verb signed in order to distinguish the marking for person of the subject and of the object. For instance, when both subject and object of the verb *GIVE* are third person, we will not gloss the verb as ${}_3GIVE_3$, but ${}_3{}_iGIVE_3{}_j$. This is also illustrated in example (5) above. As noted, the subject agreement marker is not consistently marked on the verb in signed languages. For this kind of data, the verb is represented as *GIVE*₃ in contrast to a fully inflected verb ${}_1GIVE_3$.

Non-manual marking, head turn and eye gaze, are observed to mark role shift. A line extending over the manual signs marks the extent of non-manual markings. The

labels for head turn is ‘htn’ and that for eye gaze is ‘eg’. For these non-manual markers, locus markers (i.e. loci-i/j/k/l, locus-m, locus-0) may be added to these labels when necessary, for instance:

- (6) Context: A boy went home after school. On his way, he met a bad guy. The bad guy asked him for money. But the boy didn’t have any money. Then the bad guy hit the boy. In the end, the boy went home and told his mother about it.

			htn _k
			eg _k
RH	INDEX _{pro 3}	ANGRY	₃ HIT ₁
LH			
BH			

‘He is angry, (he) hits (me).’

In (6), the utterance is accompanied with head turn and eye gaze which are both direct to locus-k. Thus the non-manual markings are marked with subscripts *k*. Note that non-manual markings that are irrelevant to the discussion (e.g. affective non-manual marking) are omitted.¹⁵

Some vertical dotted lines are added to separate clauses (e.g. example (6) in Chapter Four). In our investigation of clause boundary in HKSL, eye blink may be an indicator of sentence boundary in the picture narration. But in the free conversation, eye blink does not appear to be a reliable marker of the clause boundary. To separate utterances into clauses in the free conversation, we rely much on the signers’ judgment.

1.4 Thesis Outline

The thesis is organized in the following way. Chapter Two presents how person is represented in personal pronouns and verb agreement in spoken languages. Theoretical explanations of verb agreement in spoken languages will also be addressed. This chapter provides a basis for us to study the notion of verb agreement

¹⁵ In Chapter Four, we will show that no particular non-manual marking functions as agreement marker for person. For the examples that show this generalization, the non-manual markings are represented by the full description of the non-manual marking. For instance: furrowed brow

in natural languages which include both spoken and signed languages. Chapter Three is devoted to a description of previous studies on verb agreement in signed languages. Controversies on person distinction, the role of space and optionality in person marking are of particular interest. We will also compare the way of marking person in languages of different modalities (i.e. spoken languages and signed languages). On the basis of the background provided in Chapter Two and Chapter Three, we will examine the agreement facts of HKSL in Chapter Four. The number of person distinctions, the differences between location marking and person marking, and optionality are the focuses of examination of this chapter. Chapter Five is theoretical explanation of verb agreement in HKSL. Chapter Six presents some concluding remarks and implications for further research. Some additional information is given in the Appendices. Appendix 1 presents sample comic strips used in the picture narration. The citation forms of verbs studied and figures of some of the examples illustrated in Chapter Four are provided in Appendix 2 and Appendix 3 respectively. Further illustrations on number in ASL are given in Appendix 4. Appendix 5 presents some remarks on plural personal pronouns in HKSL.

Chapter Two

Verb Agreement in Spoken Languages

2.0 Introduction

Before we go into the details of verb agreement in HKSL, we would like to present some general facts about verb agreement in spoken languages and signed languages. Reviewing the agreement facts in both spoken languages and signed languages allows us to see whether verb agreement behaves differently when the modality is different. This chapter focuses on the system of agreement. Theoretical explanations of verb agreement in spoken languages are also provided. The description of the system of agreement and respective analyses of signed languages will be given in Chapter Three.

As stated in the previous chapter, verb agreement is known as the relation between a verb and its arguments in terms of agreement features (i.e. person, number and gender). In spoken languages, these agreement features are observed in both nominals (i.e. nouns and pronouns) and verbs. In this thesis, we will only investigate the agreement marking on personal pronouns and verbs because they are common in most languages, for example English, French, Pirahã, Fijian, etc. In the next section, we will show how the agreement features are marked on these two grammatical categories in spoken languages. In Section 2.2, we will summarize the properties of agreement markers. We will also address the formal approaches that account for these agreement markings in Section 2.3.

2.1 Realizations of agreement features

As stated in Chapter One, the set of agreement features are person, number and gender. Although the focus of this thesis is on person agreement, we will provide a review that includes person, number and gender marking to assist the readers in appreciating the intricate grammatical relations between these grammatical features in natural languages. As for person agreement, it usually has three distinct values:

first, second and third.¹ First person refers to the speaker; second person refers to the hearer/addressee; and third person denotes non-participant(s). As for number, six distinct values are observed: singular, dual, trial, paucal², plural and greater plural³ (Corbett 2000).⁴ Gender is less frequently marked and it usually has three distinct values: feminine, masculine and neuter (Bybee 1985). In the following sections, we will examine how the three agreement features are realized in personal pronouns and verbs.

2.1.1 *Personal Pronoun*
Person marking

Among the three agreement features, person and number are two features that occur more commonly in personal pronouns. When person is compared with number, person is more prominent than number in the sense that the former can occur alone in personal pronouns while the latter cannot. Consider the following example (Everett 1986:280, cited in Corbett 2000:50):

Table 2.1 Personal pronouns in Pirahã

1	2	3
ti	gixai	hiapióxió

Table 2.1 shows that the personal pronouns in Pirahã, a language spoken in Brazil, are marked overtly for three distinct person values (i.e. first, second and third). In other words, the personal pronouns in this language demonstrate a three-way distinction. These personal pronouns do not mark number overtly. Consider example (1) below (Everett 1986:282, cited in Corbett 2000:51):

¹ In Algonquian, Navajo and Eskimo, a fourth person is identified (Anderson 1985:197). An anonymous reviewer points out that fourth person is also present in O’odham (formerly called Papago). Interested readers may refer to the relevant literature.

² Paucal means “a small number of” and it “is similar to the English quantifier ‘a few’ in meaning” (Corbett 2000: 22). For instance, in Bayso, *luban-jaa* ‘a few lions’ contains a paucal morpheme *-jaa* to denotes the number of lions (Corbett 2000:11).

³ Greater plural usually refers to “excessive number” (Corbett 2000:30). As the main focus of this thesis is person, interested readers may refer to (Corbett 2000) for further details.

⁴ The number values mentioned here are observed to occur in personal pronouns and/or verbs. Corbett (2000) points out that quadral, as a number value, is present in the emphatic pronouns in Sursurunga. As no evidence shows that this number value is observed in personal pronouns and/or verbs, the following discussion will exclude this number value.

- (1) a. hiapióxió soxóá xo-ó-xio
 3 already jungle-LOC-DIR
 ‘He already went to the jungle’
- b. hiapióxió soxóá xo-ó-xio
 3 already jungle-LOC-DIR
 ‘They already went to the jungle’

Example (1a) and (1b) show that as number is not marked overtly on the personal pronouns, the same form of a third person pronoun is used for both sentences.

While person is the only agreement feature observed in personal pronouns in Pirahã, many languages demonstrate both person and number in personal pronouns. In addition, some languages show inclusive/exclusive distinction for first person plural pronouns. When the pronoun is inclusive, it includes “speaker and hearer and may or may not include a non-speech act participant”; when the pronoun is exclusive, it refers to “the speaker and a non-speech act participant, but excludes the hearer” (Payne 1997:45). Consider the following example from Malagasy (Anderson and Keenan 1985: 264-5):

- (2) a. H-andeha iza hay
 FUT-go we (EXCL)
 ‘We (but not you) will go’
- b. H-andeha isika
 FUT-go we (INCL)
 ‘We (including you) will go’

In (2a) and (2b), different first person plural pronouns are used to denote the inclusiveness or otherwise of the addressee. So plural value in this language has a finer distinction in terms of inclusive/exclusive. Note that number does not distinguish singular and plural only. We will study other number values in the following discussion.

Number marking

Number is another common agreement feature. As mentioned at the beginning of this section, there are six distinct number values (i.e. singular, dual, trial, paucal, plural and greater plural) observed in the world languages (Corbett 2000). However, the number distinctions are usually up to four in a language, as can be seen in table

2.2, 2.3 and 2.4 below:

Table 2.2 Fijian subject pronouns (Anderson and Keenan 1985:263)⁵

Person Number	1		2	3
	(inclusive)	(exclusive)		
SG	au		iko	koya
DU	kedaru	keiru	kemudrau	rau
TRI	kedatou	keitou	kemudou	iratou (eratou)
PL	keda	keimami	kemuni	ira (era)

Table 2.3 Yimas first and second person pronouns (Foley 1986:74)⁶

Person Number	1	2
SG	ama	mi
DU	kapa	kapma
PAUC	paŋkit	paŋkit
PL	ipa	ipwa

Table 2.4 Mokilese personal pronouns (Harrison 1976:88, cited in Corbett 2000:34)

Person Number	1		2	3
	(inclusive)	(exclusive)		
SG		ngoah, ngoahi	koah, koawoa	ih
DU	kisa	kama	kamwa	ara, ira
PL	kisai	kamai	kamwai	arai, irai
GPL	kihs	kimi	kimwi	ihr

Fijian subject pronouns have a four-way distinction: singular, dual, trial and plural (See Table 2.2). Yimas distinguishes singular, dual, paucal and plural (See Table 2.3) while Mokilese differentiates singular, dual, plural and greater plural (See Table 2.4). These examples show that different languages have different combinations of number values in personal pronouns.

Gender marking⁷

Other than person and number, gender can also be realized in personal pronouns. According to Bybee (1985), the realizations of gender are relatively rare when compared to person and number. Generally speaking, gender usually has three distinct values: feminine, masculine and neuter. Consider the following examples

⁵ Anderson and Keenan (1985) did not give any explanation for the third person trial and plural pronouns. So it is unclear whether the forms in the brackets are allomorphs or free variants.

⁶ Foley (1986) does not give any examples of the third person pronoun(s) in Yimas. As we only want to show different number values in Table 2.3, the absence of third person pronoun(s) in the table does not pose a problem for our illustration.

⁷ An anonymous reviewer points out to me that gender in noun classes has more than three values in languages like Swahili and Navajo. We will not discuss noun classes as the scope of the present study is restricted to personal pronouns and verbs. Interested readers may refer to Corbett (1991) for further discussion of gender in spoken languages.

from Nagla, an Ndu language, and German in Table 2.5 and 2.6:

Table 2.5 Nagla personal pronouns (Laycock 1965, cited in Foley 1986:80)

Person/gender Number	1		2		3	
	M	F	M	F	M	F
SG	win	nyin	min	yin	kir	yin
DU	əyn		bin		(ki)bir	
PL	nan		gwin		rər	

Table 2.6 German subject personal pronouns (Bock, Eisfeld, Holthaus and Schütze-Nöhmke 1985:7)

Person/ gender Number	1	2	3		
			M	F	N
SG	ich	Sie (formal) du (informal)	er	sie	es
PL	wir	Sie (formal) ihr (informal)	sie		

Nagla in Table 2.5 has two gender distinctions (i.e. masculine and feminine) in the personal pronouns when the person value is singular. But when the person value is non-singular, no overt marking for masculine and feminine is observed. As for German in Table 2.6, the gender distinctions (masculine, feminine and neuter) are restricted to third person singular value only. Clearly, gender marking occurs less frequently than person and number marking in the pronominal system.

2.1.2 Verb Agreement

We have seen person, number and gender marking in personal pronouns. In this section, we will show how change in verb form marks agreement features of the subject(s) and/or object(s). Note that the agreement marking in verb agreement is different from that in personal pronouns. Agreement marking on a verb reflects the properties of its arguments, but agreement marking on personal pronouns shows the properties of the personal pronouns per se.

2.1.2.1 Subject-verb agreement

Person marking

In spoken languages, person in verb agreement usually has three distinct values: first, second and third (Bybee 1985). In other words, person agreement in spoken

languages usually demonstrates a three-way distinction. When a verb is inflected for a person agreement marker of its arguments, it is known as person agreement (Bybee 1985, Anderson 1985, Payne 1997). See example (3) below:

- (3) a. He kicks the ball.
 b. I kick the ball.
 c. *He kick the ball.
 d. *I kicks the ball.

From (3a) through (3d), the English verb *kick* has to be overtly marked for third person singular subject *he* but not first person singular subject *I*. Thus, the sentence in (3c) is ungrammatical because the verb is not overtly marked for the third person singular subject with the agreement affix ‘-s’.⁸ (3d) is also ill-formed due to third person singular marking on the verb when the subject is first person singular. In other words, person and number must be overtly marked on the verb when the subject is third person singular in English. Note that person agreement marking and number agreement marking are fused into one affix ‘-s’ (or ‘-es’) in English. One single affix can represent two agreement features, person and number. Apart from English, many languages demonstrate rich agreement morphology. Consider Chitimacha, an isolate language of the Southeast in North America (Swadesh 1946:317, cited in Helmbrecht 1999:290) and Italian (Rohrbacher 1999:206) in Table 2.7 and 2.8 below:

Table 2.7 Chitimacha *get-* ‘to beat’

	Person	1	2/3
Number			
SG		get-ik	get-i
PL		get-nuk	get-na

Table 2.8 Italian *parl-a-re* ‘to speak’ in indicative present tense

	Person	1	2	3
Number				
SG		parl-o	parl-i	parl-a
PL		parl-iamo	parl-a-te	parl-a-no

⁸ Some English verbs (e.g. *watch*) are marked with ‘-es’ instead of ‘-s’. Both affixes ‘-es’ and ‘-s’ are both third person singular markers in English. But due to limit of space, only ‘-s’ is discussed above.

Table 2.7 and Table 2.8 illustrate that one morpheme is used to indicate both person and number of the subject. Chitimacha verb *get-* ‘to beat’ in Table 2.7 also shows that second and third person are not necessarily indicated by two different morphemes.⁹ As for the Italian verbs, they are inflected for all three distinctions on person and two distinctions on number. In both tables, one can also observe a distinction between the singular and plural values. Similar to personal pronouns, verbs can be marked for number values other than singular and plural. We will discuss this in the following section.

Number marking

For number in subject-verb agreement, the verbs can be marked for singular, dual, paucal and plural. In English, we only distinguish singular and plural. In other languages with a richer morphology, other number values are observed. Consider the following examples from Bayso and Amele (one of the Papuan languages):

- (4) Bayso (Corbett 2000:182)¹⁰:
- | | | |
|----|-----------------------------------|--------------|
| a. | kimbír | hudurte |
| | bird-SG.F | slept-SG.F |
| | ‘a single/particular bird slept.’ | |
| b. | kimbir-jaa | hudureene |
| | bird-PAUC.F | slept-PAUC.F |
| | ‘a few birds slept.’ | |
| c. | kimbir-jool | hudure |
| | bird-PL.F | slept-PL.F |
| | ‘birds slept.’ | |

⁹ Meier (1990) argues that second and third person are not distinguished in personal pronouns and verb agreement in ASL. Thus he proposes that person is divided into first and non-first, instead of first, second, third. So the Chitimacha data presented here may support Meier’s (1990) proposal. As we have not presented data from signed languages yet, we will leave the discussion on this issue until Chapter Three.

¹⁰ Corbett (2000) does not indicate number marking on the verbs in these examples, but he has mentioned the verb forms with respect to number/gender. To have a simple and clear picture of the number marking of Bayso, the present author adds the number values in the glossing.

- (5) Amele (Corbett 2000:137)¹¹:
- | | | |
|----|---------------------|-------------------------|
| a. | Dana (uqa) | ho -i -a |
| | man 3SG | come -3SG -TODAY'S.PAST |
| | 'The man came.' | |
| b. | Dana (ale) | ho -si -a |
| | man 3DU | come -3DU -TODAY'S.PAST |
| | 'The two men came.' | |
| c. | Dana (age) | ho -ig -a |
| | man 3PL | come -3PL -TODAY'S.PAST |
| | 'The men came.' | |

The Bayso verb, *kimbír* 'bird', in (4) is a feminine noun. So the verbs in (4a), (4b) and (4c) agree with the subject in terms of both number (i.e. singular, paucal and plural) and gender (feminine). The affixes, '-i', '-si' and '-ig' in (5) serve as verbal agreement markers for third person singular, third person dual and third person plural subject respectively. A single morpheme represents both person and number in this example. Note that the three distinct gender values in personal pronouns are also observed in subject-verb agreement. We will present this in the next subsection.

Gender marking

Apart from person and number, gender can also be realized in verbs. For instance, Russian has three distinct markers '-∅', '-α' and '-o' for the three distinct gender values, masculine, feminine and neuter, respectively (Corbett 1991:110):

- (6) a. žurnal ležal-∅ na Stole
 magazine lay-M on Table
 'the magazine lay on the table.'
- b. kniga ležal-α na Stole
 book lay-F on Table
 'the book lay on the table.'
- c. pis'mo ležal-o na Stole
 letter lay-N on Table
 'the letter lay on the table.'

From (6a) through (6c), the verb *ležal* 'lay' is attached to different markers to denote the different gender values of the subject. The subject *žurnal* 'magazine' in (6a) is a

¹¹ Corbett (2000) does not indicate what the gloss TODAY'S means. The present author guesses it may be one type of tense in the language. As the focus of this thesis is verb agreement, we will leave this issue open.

masculine noun and hence the verb is inflected for ‘-Ø’, a masculine marker. The same verb is inflected for gender of the subject *kniga* ‘book’ (feminine) and *pis'mo* ‘letter’ (neuter) by the feminine marker ‘-α’ and the neuter marker ‘-o’ in (6b) and (6c) respectively. Note that the translation of the verb *ležal* ‘lay’ is a past tense form. One might question whether the gender markers presented above also mark the tense. Corbett’s (1991) does not mention the tense marking in the example. So, whether the verb *ležal* ‘lay’ involves tense or the gender marker also marks tense is open for further investigation.

2.1.2.2 Subject-verb agreement and verb-object agreement

While subject-verb agreement occurs in most languages, no spoken languages studied so far demonstrate verb-object agreement solely.¹² That is, verb-object agreement always implies the presence of subject-verb agreement (Croft 1988). Additionally, as no gender marking in verb-object agreement is observed in our study of spoken language, we will only discuss person and number agreement in this section. Note that this will be shown to contrast with the agreement patterns in signed languages that will be discussed in the next chapter.

Person and number marking

Verbs in some languages can be marked for person/number of both subject and object. Consider Georgian in Table 2.9 below (Carmack 1997:315):

¹² Greville G. Corbett (personal communication) also points out to me that no languages studied so far demonstrate verb-object agreement solely.

Table 2.9 Georgian *xedav-s* 'see' in present tense

		1		2		3
		SG	PL	SG	PL	
1	SG			g-xedav 'I see you'	g-xedav-t 'I see you'	v-xedav 'I see him/them'
	PL			g-xedav-t 'We see you'	g-xedav-t 'We see you'	v-xedav-t 'We see him/them'
2	SG	m-xedav 'You see me'	gv-xedav 'You see us'			xedav 'You see him/them'
	PL	m-xedav-t 'You _{pl} see me'	gv-xedav-t 'You _{pl} see us'			xedav-t 'You _{pl} see him/them'
3	SG	m-xedav-s 'She sees me'	gv-xedav-s 'She sees us'	g-xedav-s 'She sees you _{sg} '	g-xedav-t 'She sees you _{pl} '	xedav-s 'She sees him/them'
	PL	m-xedav-en 'They see me'	gv-xedav-en 'They see us'	g-xedav-en 'They see you _{sg} '	g-xedav-en 'They see you _{pl} '	xedav-en 'They see him/them'

The Georgian verb *xedav-s* 'see' is inflected for person and number of both subject and object (See Table 2.9). The agreement affixes for the person/number of the subjects and objects are summarized in Table 2.10 below (Carmack 1997:317):

Table 2.10 Agreement affixes in Georgian

Prefix	Value	Suffix	Value
v-	1SG subject	-s	3SG subject
m-	1SG object	-en	3 PL subject
gv-	1PL object	-t	PL subject or object
g-	2SG object		

From Table 2.10 above, Georgian is shown to be a complex language in the sense that both prefix and suffix can denote agreement features for subjects or objects. For instance, while the prefix *v-* marks for first person singular subject, the prefix *m-* denotes first person singular object. So we cannot equate prefix to subject agreement marker and suffix to object agreement marker in Georgian.

Whereas Georgian involves different agreement marking on the subject and object, other languages use the same affix for both subject and object. For instance, Yup'ik, an Eskimo dialect, has a single affix for person/number of both subject and object, as illustrated in Table 2.11 below:

Table 2.11 Yup'ik agreement morphemes (Reed, Miyaoka, Jacobson, Afcan and Krauss 1977:139, adapted in Griffith 1996:35)^{13,14}

Object Subject		1		2		3	
		SG	PL	SG	PL	SG	PL
1	SG			-mken	-mci	-ka	:nak
	PL			-mtegggen	-mceci	+put	-put
2	SG	+penga	+pekut			:n	-ten
	PL	+pecia	+pecikut			+ci	ci
3	SG	anga	akut	aten	aci	a	i
	PL	atnga	itkut	atgen	iceci	at	it

Table 2.11 demonstrates both person and number marking in Yup'ik. Both person and number are represented by a single morpheme in this language. So different agreement features are not necessarily marked by separate morphemes.

Apart from singular and plural, other number values like dual, trial also occur in subject-verb agreement and verb-object agreement. For instance, overt marking on the verbs for singular, dual, paucal and plural are observed in both subject-verb agreement and verb-object agreement in Yimas. Consider the different inflected verb forms in Yimas in example (7) (Foley 1986:132-133):

- (7) a. na- kay- tu-r-iŋkit
 3SG O- 1PL S- kill-PERF-PAUC
 '(We few) killed (him).'
- b. impa- ka- tu-t
 3DL O- 1SG S- kill-PERF
 '(I) killed (two of them).'
- c. pu- ka- tu-r-iŋkit
 3PL O- 1SG S- kill-PERF-PAUC
 '(I) killed (few of them).'
- d. pu- nan- tu-t
 3PL O- 2PL S- kill-PERF
 '(Two) killed (them).'

From (7a) through (7d), the verb *tu* 'kill' illustrates how it is marked for both person and number of the subject and of the object. While the first affix indicates the

¹³ Table 2.11 is re-arranged from Griffith (1996) for the sake of clearer illustration. Besides, it is noted that Griffith (1996) has omitted the dual forms in the paradigm. Yet, as we only want to show that one single affix can mark for two agreement features from this example, her omission of dual forms does not affect our description.

¹⁴ The '-', '+', ':' are diacritics used in Reed, Miyaoka, Jacobson, Afcan and Krauss' (1977) analysis. '-' marks affixes that result in deletion of the final consonant of the verb stem; '+' represent affixes that do not cause deletion of the final consonant of the verb stem; ':' marks the velar dropping of the verb stem (Griffith 1996).

person/number of the object, the second affix denotes that of the subject. Note that agreement marking for paucal is different from other number markings. In (7a) and (7d), the plural affixes (i.e. ‘*kay-*’ in (7a) and ‘*pu-*’ in (7d)) and a distinct suffix *tu-r-ihkit* mark paucal together.

From our discussion above, we have shown languages where overt marking for agreement features is present. However, not all languages are marked overtly for agreement. For instance, agreement morphology is absent in Cantonese¹⁵:

Table 2.12 Cantonese *sik* ‘eat’

Person Number	1	2	3
SG	sik	sik	sik
PL	sik	sik	sik

Table 2.12 shows that Cantonese verb *sik* ‘eat’ does not vary according to different values of person or number. Thus, Cantonese is not overtly marked for agreement features (i.e. person, number and gender).

2.1.3 Summary

We have presented agreement marking in both personal pronouns and verb agreement. In particular, we observe that verb-object agreement cannot occur independently of subject-verb agreement in spoken languages. We may either have subject-verb agreement only or both subject-verb agreement and verb-object agreement. Additionally, agreement marking either involves agreement affixes or changes of verb forms. In the next section, we will briefly discuss the properties of agreement markers in spoken languages.

2.2 Properties of agreement markers

In the previous section, we have shown that verbs are usually marked with agreement markers to denote person, number and gender. In this section, we will

¹⁵ This is also true for Mandarin Chinese. See Huang (1982) for details.

generalize three properties of agreement markers in spoken languages. Agreement marking is classified as belonging to grammatical inflection¹⁶ (Anderson 1985, 1988, 1992, Bybee 1985, Spencer 1991, Aronoff 1994, Payne 1997, among others). It is generalized that grammatical inflection, including agreement marking, is bound, predictable and obligatory (Bybee 1985, Payne 1997, among others).

By boundedness, we mean that a morpheme cannot stand alone. It must attach to the verb. For instance, '-s' (or '-es') is an agreement morpheme for third person singular subject in English. It is bound because it cannot stand alone to mean anything. This morpheme can only denote third person singular when it attaches to verbs.

Predictability refers to the fact that the lexical meaning of the inflected verb is not different from that of the non-inflected verb. That is, any attachment of agreement markers to the verb does not result in a change of the lexical meaning of the verb. In this way, the meaning of the verb is predictable.

Obligatoriness is another criterion that determines whether a marker is an inflection. In the spoken language literature, if a language has overt agreement inflection for person of the subject, the verb must be inflected for person of the subject in all instances. Thus, English have third person singular marking for the subject on the verb on every occasion in present tense. As we have seen above, if the English verb is not inflected for agreement inflection in the present tense, the sentence is ill-formed. So, verbs must be overtly marked for agreement features if the language shows overt marking of verb agreement. One may argue that even English verbs are not obligatorily marked for agreement, for example, the verb of the embedded clause *come* in the sentence "He proposed that the meeting come to an end" is not marked for a third person singular affix '-s'. It is true that the verb *come*

¹⁶ Number markers in Diegueño, a language of the California Native American tribe, represents an instance of the derivational morphology. However, number marking is usually an instance of inflectional morphology among natural languages (Bybee 1985). In other words, agreement morphology, specifically, number, in this language is unusual among natural languages.

is not marked. However, the unmarked verb here is to indicate the subjunctive mood in English. When verbs do not show the subjunctive mood, they must be overtly marked for third person in present tense. But when the verbs are in an embedded clause that indicates subjunctive mood, they must be unmarked. So obligatoriness tells us that the verbs are either marked or unmarked in a structure in all occurrences. It also implicitly tells us that verbs cannot be marked in one occurrence, but not in another occurrence in the same structure. That is, it is impossible to have an English sentence “He loves Mary” in one occurrence, but “He love Mary” in another occurrence; nor can we have “He proposed that the meeting come to an end” at one time, but “He proposed that the meeting comes to an end” at another time. Note that obligatoriness is generalized from agreement markers in spoken languages only. This property does not seem to be true for agreement markers in signed languages. We will discuss this issue further in Chapter Three.

2.3 Formal Approaches to Verb Agreement

One of the aims of the present study is to explain verb agreement in HKSL so as to contribute to the theory of agreement. This section is therefore required to serve as a reference to our theoretical analysis of verb agreement in HKSL.

Earlier studies in generative grammar propose that the Inflectional Phrase (IP) contains both tense features and agreement features. This is because both of them are realized by inflectional affixes. However, Pollock (1989) challenges this view on the relationship between the features and maximal projection. He argues that the IP analysis cannot account for the differences in the following French/English sentences (Pollock 1989:367) in example (8) and (9):

- (8) a. *Jean souvent embrasse Marie.
 ‘John often kisses Mary.’
- b. Jean embrasse souvent Marie.
 ‘John kisses often Mary.’

(9) a. John often kisses Mary.

b. *John kisses often Mary.

In (8) and (9) above, French verbs can precede the adverb *souvent* 'often' while English prohibits the verb from preceding the adverb. The structure of the French sentence in (8b) and the English sentence (9a) under the IP analysis are shown in Figure 2.1 and Figure 2.2 below:

Figure 2.1 Tree Structure of sentence (8b)

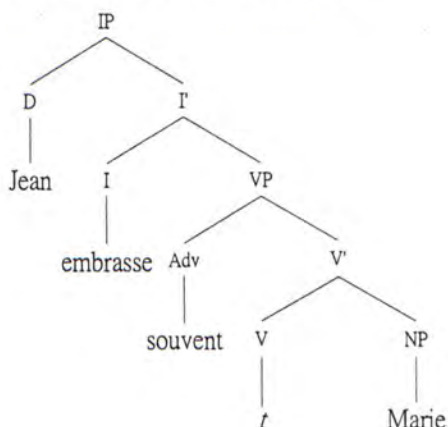
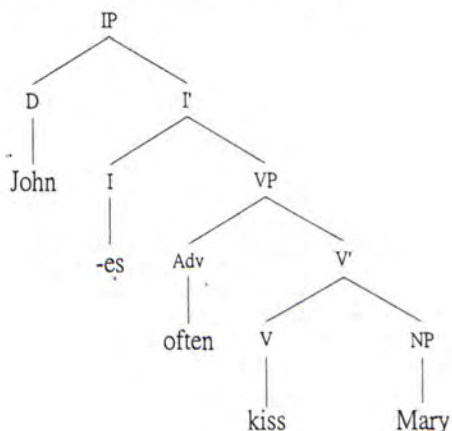


Figure 2.2 Tree Structure of sentence (9a)



The French verb *embrasse* 'kiss' in Figure 2.1 can move up to I for agreement and hence the verb precedes the adverb at the Surface Structure. As for the English tree structure in Figure 2.2, the verb *kiss* should move to I for the agreement affix *-es*. However, if the verb moves, an ungrammatical sentence (9b) would be formed. If the verb does not move up, the affix would be stranded at I and the sentence would also be ungrammatical:

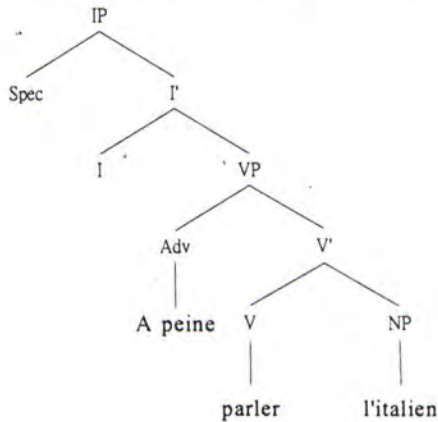
(10) *John es often kiss Mary.

With reference to these English/French sentences, Pollock (1989) argues that IP analysis is not a good way to capture verb movement in the two languages. He further proposes that there is a need to split the IP into Tense Phrase (TP) and Agreement Phrase, (AgrP). Consider the following French sentences (Pollock 1989:377-378):

- (11) a. A peine parler l'italien après cinq ans d'étude denote
to hardly speak Italian after five years of study denotes
un manqué de don pour les langues.
a lack of gifts for languages
- b. Parler à peine l'italien après cinq ans d'étude denote
Speak to hardly Italian after five years of study denotes
un manqué de don pour les langues.
a lack of gifts for languages

(11) illustrates that the adverb *à peine* can be preverbal or postverbal. The structural position of the preverbal adverb can be explained with an IP analysis, as shown in Figure 2.3 below:

Figure 2.3 Tree Structure of *A peine parler l'italien...*



The infinitive *parler* does not move up to I because it does not need to attach to any inflectional affixes at I. In this case, we obtain *A peine parler l'italien* in (11a). However, how can IP analysis capture the structural position of the infinitive when it precedes the adverb *à peine* as in (11b)? For *parler* to precede the adverb, either the

adverb lowers or the verb raises. The first option is prohibited because lowering of any constituent would leave an unbound trace. As any unbound trace is not allowed, the first option is not the right way to explain (11b). Another option is that the verb raises. Verb, being the head of VP, has to move into a head position because of the Structure Preservation Constraint.¹⁷ Then the verb has to move into I, which is a higher head position. However, I is [+finite] while the infinitive *parler* contains [-finite]. As the tense feature does not match, the verb cannot move into I. When the infinitive *parler* cannot move into I, how can we obtain the structure in (11b)? Based on this piece of evidence, Pollock (1989) proposes that the IP should be split into Tense Phrase (TP) and Agreement Phrase (AgrP). With TP and AgrP, the infinitive *parler* can move into TP which can accommodate both [+finite] and [-finite].

While TP accounts for the structural position of French infinitives, AgrP is responsible for explaining verb movement. In Minimalist Program (MP), Chomsky (1995), deviating from Pollock's (1989) analysis¹⁸, proposes that verb agreement is reached by checking the agreement features of the verbs and that of the arguments. Before we discuss the details of Chomsky's (1995) study on verb movement, it is necessary to go through some of the assumptions made in MP. In MP, there are only two interfaces: Phonetic Form (PF) and Logical Form (LF).¹⁹ The former is responsible for phonetic representation while the latter is for semantic interpretation. It is also assumed that all lexical items are just bundles of features. These features may be interpretable or uninterpretable, strong or weak. Interpretable features are those that give semantic content to the lexical items while uninterpretable features do not. For strong and weak features, the former triggers overt movement while the latter triggers covert movement. Due to the principle of Full Interpretation, any

¹⁷ Structure Preservation Constraint states that "Maximal projections can only move to Specifier positions; heads can only move to head positions" (Roberts 1997:35).

¹⁸ Pollock (1989) attempts to account for the differences between the French/English sentences with opacity to θ -role assignments. Readers may refer to his paper for further details.

¹⁹ In earlier studies, there are four interfaces: Phonetic Form (PF), Logical Form (LF), Deep Structure (DS) and Surface Structure (SS).

uninterpretable features results in LF clash. Thus, all uninterpretable features must be checked off in a checking domain (i.e. Spec-head configuration) before the representation reaches LF. When the two sets of features for checking are not in a checking domain, the operation Move²⁰ is involved to bring the matching features together. So, unlike the IP analysis, the verb moves because the uninterpretable features it contains need to be checked off.

Concerning verb agreement, Chomsky (1995) proposes that Agreement Projections (AgrSP and AgrOP) are the checking domain of the uninterpretable agreement features that the verbs contain. As mentioned earlier, features may be strong or weak. For verb agreement, if the features are strong, the verb will move overtly to check off its agreement features with the corresponding features of the arguments. For instance, French verbs contain strong agreement features and therefore the verb moves overtly to AgrS, as illustrated in Figure 2.4 below:

Figure 2.4 Jean embrasse Marie.²¹

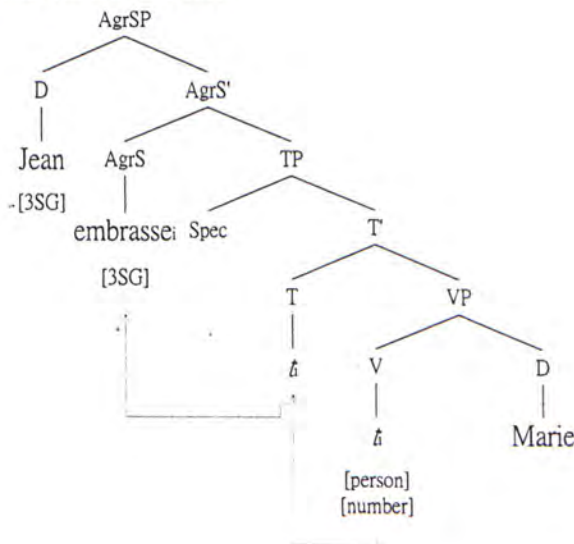


Figure 2.4 shows that the agreement features of the French verb *embrasse* are unspecified at V. The verb has to move to T for specification of its tense feature and then to AgrS to specify its agreement features. Why does the verb have unspecified

²⁰ In MP, there are two operations, Merge and Move. Merge is an operation that forms a phrase structure in a binary fashion.

²¹ The indices in the figure mark the binding relation between the moved item and its trace.

features at V? The MP does not explicitly state the reason. But it suggests that the Lexicon contains lexical entries with idiosyncratic properties which are not predictable from derivations. Tense and agreement features of the verb are predictable because one could identify them in the syntactic operation. We therefore propose that these features remain unspecified in the Lexicon, but become specified in the derivations. But why does the specification of these features take place at the functional categories instead of the VP? Verb emerges with unspecified feature at V. If we assume that the verb has its features specified at V, we would implicitly suggest that formal features of V are already specified once we select the verb from the Lexicon. If this is the case, this contradicts with our assumption that lexical items, including verbs, contain idiosyncratic properties and unspecified formal features in the Lexicon. The Lexicon would then be too heavy. So V should not be a place for feature specification. Instead, functional categories like AgrP and TP are more suitable place. First, functional categories are like clues that stick the verb and its argument to form an event. The way of sticking the verb and its argument together is feature checking at these functional categories. As verb emerges with unspecified features, the features of the verb do not match those of the arguments. Therefore, we suggest that one more operation, feature specification of the verb, needs to be done at the functional categories prior to feature checking. After specifying the agreement features of the verb, checking of agreement features of the verbs can be done because the verb *embrasse* and the subject *Jean* are in a spec-head configuration in the AgrSP.

When the verbs contain weak agreement features, as in English, no overt verb raising can take place. Consider the sentence in the example (12) below:

(12) John kisses Mary.

Though the English verb *kisses* is inflected for the third person singular subject, it is predicted that no verb raising has taken place under MP. Consider the tree structure

in Figure 2.5 below:

Figure 2.5 Tree structure of (12) under MP analysis

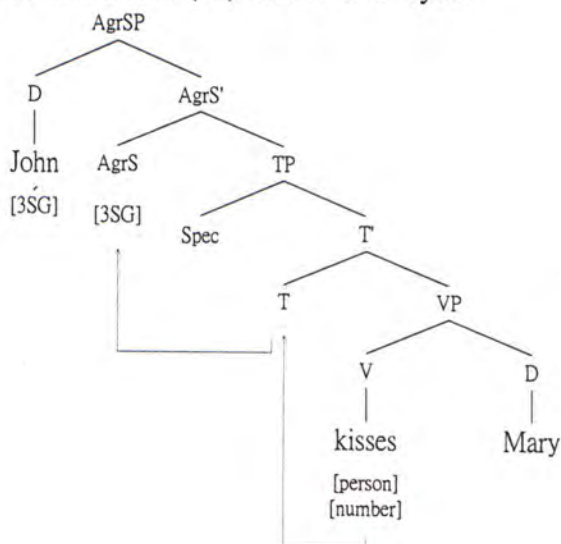


Figure 2.5 illustrates that the English verb *kisses* does not raise overtly to AgrS to check off its agreement features. This is because a verb possessing weak features does not have any power to move upward. However, feature checking still needs to be completed, otherwise the representation will clash at LF. To save the representation, only the agreement features move up to AgrS for feature checking. This process is known as percolation. In this way, English main verbs do not raise overtly, but covertly. Note that the verb *kiss* is inflected with third person singular morpheme ‘-es’ at V because it is assumed that verb emerges in their fully inflected form though the features remain unspecified. We will see how this assumption helps us to capture the differences of verb movement in both French and English below.

In the previous section, it was pointed out that IP analysis fails to account for the English sentence in the presence of adverbs like *often*. Under MP analysis, the difference between French verbs and English verbs can be more fully explained. Recall the French sentences and English sentences, repeated as (13) and (14) below:

- (13) a. *Jean souvent embrasse Marie.
‘John often kisses Mary.’
- b. Jean embrasse souvent Marie.
‘John kisses often Mary.’

- (14) a. John often kisses Mary.
 b. *John kisses often Mary.

Under MP analysis, (13b) and (14a) are represented in Figures 2.6 and 2.7 below:

Figure 2.6 Tree structure of (13b) under MP analysis

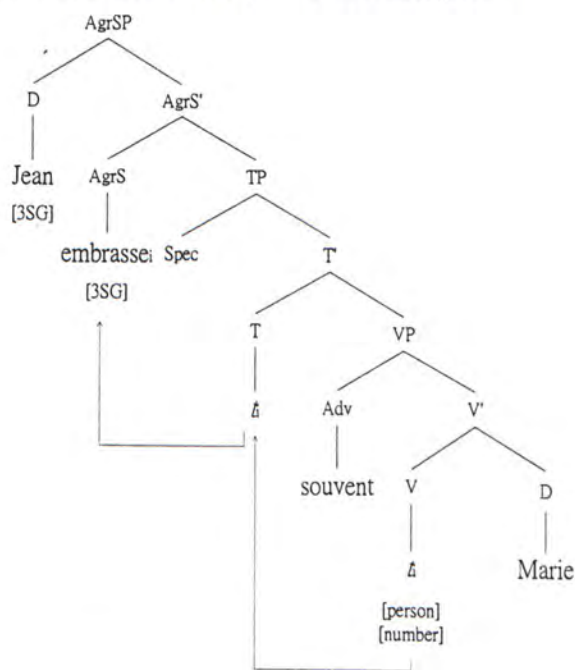
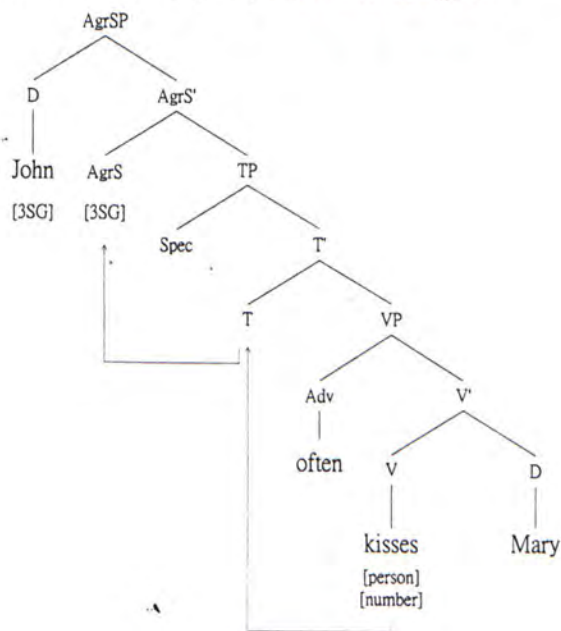


Figure 2.7 Tree structure of (14a) under MP analysis



In Figure 2.6, the French verb *embrasse* moves up because it has strong uninterpretable features, resulting in a sentence where the verb precedes the adverb *souvent* 'often'. As for Figure 2.7, the English verb *kisses* does not raise to AgrS

because it has weak uninterpretable features. As a result, the verb *kisses* follows the adverb *often* in the English sentence. As mentioned above, it is assumed that verb emerges in its fully inflected form under MP. With this assumption, the ungrammatical sentence in (10) cannot be formed. MP analysis has the explanatory power over sentences like example (10) which cannot be explained under the IP analysis.

From our discussion above, we have shown that Agreement Projections emerge on the basis of the empirical evidence from French and English. However, a number of linguists question whether we should put agreement into the phrase structure (Speas 1991, Mitchell 1994, among others). In Chapter Five, we will discuss further whether agreement should be projected as a maximal projection.

2.4 Chapter Summary

With reference to spoken languages, it is observed that agreement features can be realized in personal pronouns and verbs. However, agreement marking of personal pronouns denotes their property while that for verb agreement marks the property of the arguments instead of the verbs. For personal pronouns, the agreement features (i.e. person, number and gender) describe the properties of the pronouns. However, as for verbs, they are attached to some agreement markers to denote person, number and gender of the arguments, instead of the verbs themselves. These agreement markers in spoken languages have to be bound, obligatory and predictable. We will next see how agreement markers in signed languages are similar to or different from those in spoken languages. As noted, the present study will attempt to explain verb agreement as a linguistic phenomenon. We have therefore presented a general review of the theoretical explanations (IP analysis and AgrPs under MP analysis) that will be adapted for a background to our analysis. Further discussion of these theoretical issues will be provided in Chapter Five.

Chapter Three

Verb Agreement in Signed Languages

3.0 Introduction

The previous chapter presents the system of agreement in spoken languages. In particular, we have mentioned that boundness, predictability and obligatoriness are generalized as three main properties of agreement markers in spoken languages. Additionally, we have discussed the theoretical explanations of verb agreement in generative grammar. We will shift our focus now to the system of agreement in signed languages in this chapter. This will provide us with the background to an investigation of verb agreement in HKSL. Specifically, we will examine the controversy between a three-way and a two-way person distinction and the debate on whether the signing space has grammatical function. We will also study the optionality of verb agreement in signed languages, contrast with the obligatoriness of agreement marking in spoken languages. Confusion of person marking is suggested to be the result of the various roles of space. Role shift, a common phenomenon in signed languages, uses a great deal of space. We will therefore investigate the effect of role shift in agreement marking as well. Lastly, we will compare agreement marking in spoken and signed languages in order to have a better understanding of the notion of verb agreement.

3.1 Agreement features in personal pronouns

We will discuss agreement marking observed in signed languages in this section. As we observe that personal pronouns in signed language, specifically ASL, do not involve non-manual marking, our discussion below only involves manual marking (MacLaughlin 1997).

3.1.1 Person

Similarly to spoken languages, person usually has three distinct person values in

most signed languages, as illustrated in Table 3.1 below (McBurney 2002):

Table 3.1 Person Distinctions in Signed languages

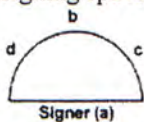
ASL	LIS	Auslan	DSL	IPSL	JSL ¹
1	1	1	1	1	1
2	2	2	Non 1	2	2
3...	3...	3...		3...	3...

Table 3.1 shows that most signed languages distinguish three person values, first, second and third. Note that ‘3...’ means that third person value can be represented by more than one spatial locus. According to Padden (1983, 1988), this is not unusual in spoken languages. Note that her argument is based on the system of agreement in Southern Tiwa where the verbs can be marked for three kinds of third person marker (c.f Allen and Frantz 1978). Thus her argument can only parallel the person marking in verb agreement, instead of personal pronouns, in ASL with those in Southern Tiwa. If no spoken languages have more than one third person pronoun, the infinite number of third person pronouns demonstrates one of the uniquenesses of signed languages. Another point worth noting is that DSL identifies only two distinct person values (first and non-first). This signals the controversy of a three-way and a two-way distinction in ASL which will be discussed shortly below. Apart from these signed languages, Israeli Sign Language (ISL) also has a three-way distinction for person (Meir 1998) but British Sign Language (BSL) demonstrates a four-way distinction (Kyle and Woll 1985).²

As mentioned earlier, it is generally agreed that there is a three-way distinction

¹ While Fischer (personal communication) and McBurney (2002) point out that JSL has a three-way person distinction, Mathur (2000) reports that a two-way distinction (first and non-first) is present in JSL. As Mathur (2000) does not give any examples of the two-way distinction, we will follow Fischer’s and McBurney’s description of person distinctions in JSL.

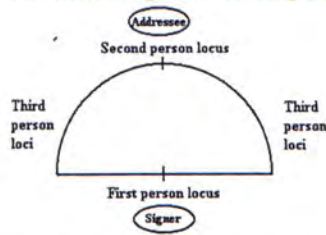
² The signing space in BSL is illustrated in the figure below:



According to Kyle and Woll (1985), locus-a denotes first person; locus-b the second person; locus-c third person and locus-d fourth person. At first glance, this spatial arrangement is similar to that observed in ASL where three distinct person values are identified. So BSL may also have a three-way distinction for person if both locus-c and locus-d mark third person. As the present author does not know BSL, we will leave this issue open.

in the traditional analysis of person in ASL. Different spatial points in the signing space represent different person values (Friedman 1975, Klima and Bellugi 1979, Bellugi and Klima 1982, Padden 1983, 1988³):

Figure 3.1 Traditional spatial arrangement for person distinctions in ASL



Personal pronouns are articulated by 1-handshape (ϕ) in ASL. By pointing at different spatial loci, different person values are encoded. According to Padden's (1983, 1988) and Cormier's (2002) examples, first person pronouns involve contact with the signer's chest. But it is not clear whether contact is obligatory. For the second person pronouns, the signer points at the addressee. As for the third person pronouns, the signer directs the signs towards the spatial loci on either the left or right side of the signing space. ASL then resembles the three-way distinction in most spoken languages because it also has first, second and third person.

Though earlier studies⁴ in ASL agree with Padden's (1983, 1988) study on person, Meier (1990) argues that a two-way distinction (i.e. first and non-first), instead of a three-way distinction, should be adopted. He agrees with Padden (1983, 1988) that there is a first person value. Yet, he proposes that there are no second and third person values, but a non-first person value. To argue for first and non-first person in ASL personal pronouns, he lists out five arguments: (i) overlapping of second and third person loci, (ii) eye gaze at addressee, (iii) lack of first person form, (iv) dual use of the second person pronoun and (v) insufficiency of third person value.

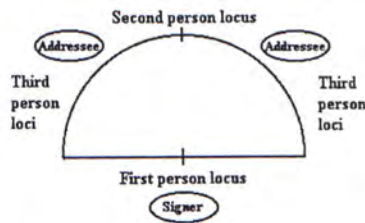
For point (i), he notes that there are two situations where the second person

³ Padden (1983, 1988) does not discuss personal pronouns in detail. But from her data, she has made a correlation between spatial loci and distinct person values in ASL.

⁴ For instance, Lillo-Martin's (1991) work on null arguments follows Padden's (1983, 1988) description of person.

locus overlaps with the third person locus. The first situation is when there are two addressees in front of the signer, then the signer cannot help pointing at the third person loci when referring to the addressee, as illustrated in Figure 3.2 below:

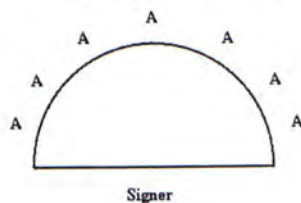
Figure 3.2 The presence of two addressees in the signing space



There are two addressees in front of the signer and they are located at the third person loci on the horizontal plane in Figure 3.2. When the signer uses second person pronoun to address the intended participant, he/she does not direct to the second person locus, but the third person loci on the two sides. Clearly, there is an overlap of second person locus and third person loci.

Another situation is when there are a number of addressees. Consider the following figure:

Figure 3.3 The presence of many addressees in the signing space



'A' in Figure 3.3 represents the spatial locations of the addressees. The addressees are occupying both second person locus and third person loci in the signing space. In this case, the articulation of second person pronoun certainly involves pointing at the third person loci. These two situations show that second person loci and third person loci do overlap when a number of referents are present. If Meier's (1990) description is accurate, the traditional analysis requires refinement.

One may argue that non-manual marking (i.e. body movement and facial expression) may be able to distinguish the second person pronoun from the third person pronoun when manual pointing cannot in signed languages. However, Meier

(1990) points out that eye gaze cannot denote person of personal pronouns (cf. point (ii) made on the previous page). When a signer articulates a second person pronoun, he/she may not gaze at the addressee. Even though he/she gazes at the addressee in some instances, this is only a property of conversation. So gazing at the addressee is not a non-manual marker for second person. This argument is reinforced when there are instances showing the second person pronoun and third person pronoun are accompanied with the same form of eye gaze, as shown in (1a) and (1b) below (Meier 1990:187)⁵:

- (1) a. To girl: $\frac{\text{gaze } k}{\text{INDEX}_{A/k}}$ $\frac{\text{gaze } j}{\text{INDEX}_{P/j}}$ $\frac{\text{gaze } k}{\text{GO-TOGETHER V-I}} \text{ Q}$
 ‘You_k and he_j went to the Virgin Islands together?’
- b. To both: $\frac{\text{gaze } k}{\text{INDEX}_{A/k}}$ $\frac{\text{gaze } j}{\text{INDEX}_{A/j}}$ $\frac{\text{gaze } j+k}{\text{GO-TOGETHER V-I}} \text{ Q}$
 ‘You_k and you_j went to the Virgin Islands together?’

In both (1a) and (1b), the eye gazes on the second person pronoun $\text{INDEX}_{A/j}$ (in (1b)) and third person pronoun $\text{INDEX}_{P/j}$ (in (1a)) are both directed toward locus-j. As a result, second and third person cannot be differentiated and only non-first person is needed to describe the person distinctions in ASL. Up to this point, Meier (1990) has provided strong evidence against the traditional analysis on the basis of the arguments that involve plural pronouns. However, Cormier (2002:1) reports “multiple entities results in a loss of indexicality”. If her observation is true, then Meier’s (1990) argument cannot refute the traditional analysis on person because Meier’s (1990) argument involves plural objects. Another problem in Meier’s (1990) proposal is that his arguments involve real referents that are spatially located. Then person marking in personal pronouns involves real locations. Liddell (2000) argues that the pointing at real referents only associates the form with meaning, instead of marking person. If Liddell’s (2000) line of thought is correct, Meier (1990) cannot

⁵ Meier (1990) does not give any description of the abbreviations in example (1) above. For the A and P, we suggest that they denote addressee and participant respectively. For Q, we guess it is a question marker. As for j and k, we suggest that they denote the locations involved.

prove conclusively whether a two-way distinction is true or not because the evidence he gives involves real referents.⁶

As for point (iii) on page 35, Meier (1990) points out that some agreement verbs (e.g. *PAY-ATTENTION-TO*, *FINGERSPELL-TO*, *SEE*, *RUIN* and *PRAISE*) in ASL do not have first-person object form while no agreement verbs lack either second-person form or third-person form. Hence, he argues that first person is a distinct person value. However, we do not see why this argument can support only the two-way distinction.

Concerning point (iv) on page 35, he argues that, as the second person pronoun in the traditional analyses can refer to both real addressee and hypothetical addressee, what is known as second person pronoun in traditional analyses is just deixis. Yet, no further elaboration on this argument is given. Hence, it is unclear why this point serves as an argument for first and non-first person values only. For (v) on page 35, Meier (1990) points out that the third person value cannot differentiate the deictic reference of two non-addressed NPs in the signing space. Meier (1990) proposes further that it is not necessary to distinguish second and third person because the referential properties of the pointing signs in ASL are enough to mark the referents. However, we argue that the last two arguments cannot justify an only two-way distinction for person agreement in ASL. These two arguments just point out that both second and third person pronouns in the traditional analyses are deixis. According to Lyons (1977:637), personal pronouns have deictic properties. In other words, even if the second and third person pronouns defined in Padden's (1983, 1988) analysis are deictic, this should be taken as the intrinsic property of personal pronouns. In other words, this cannot be an argument against the three-way distinction in Padden's (1983, 1988) analysis.

Engberg-Pedersen (1993:134) also proposes a two-way person distinction (first and non-first) in DSL. She points out that a first person pronoun is distinguishable

⁶ In the next section, we will show that location and agreement marking can be separated.

because (i) it is “the only form in which the manual articulator makes contact with something, namely the signer’s body as representing the referent” and (ii) only first person pronoun is more flexible with the handshapes, that is, it can be articulated with an index handshape, a loose index handshape, a loose flat hand or the same handshape of a following verb. Engberg-Pedersen (1995) further points out that there is no second person pronoun in DSL. For this argument, she provides two pieces of evidence. First, though eye gaze is associated with second person pronoun in this language, eye gaze is regarded as discorsal rather than grammatical. If eye gaze does not have any grammatical function here, it cannot be a means to distinguish second person pronoun from third person pronoun. This is because eye gaze, being a discourse device, can occur on second person pronoun, third person pronoun and other lexical items. So, like Meier’s (1990) second argument discussed above, eye gaze cannot differentiate second and third person in DSL. Consequently, there is non-first person, but not second and third person.

Another piece of evidence supporting a two-way distinction in DSL is that “it is not possible to use a pointing gesture directed at the actual receiver to refer to the original receiver in reported speech” (Engberg-Pedersen 1993:137). That is, if there is a second person pronoun in DSL, it must refer to the addressee, but not other referents. She points out that this contrasts with the second person pronoun in spoken languages where the second person pronoun can refer to other referents. For instance, one can say, “On a rainy day, you won’t go on a picnic” where *you* does not refer to the addressee, but ‘people’ in general. In other words, second person pronouns in spoken languages may have a generic use. Engberg-Pedersen (1993) argues that DSL does not behave in this way and therefore there is no second person. However, this point is not true because, as pointed out by an anonymous reviewer, some spoken languages like French and German do not have the impersonal second person pronoun and these languages do show a three-way distinction instead of a two-way distinction. As a result, Engberb-Pedersen (1993), like Meier (1990), does not clearly

show why the two-way distinction should replace the three-way distinction.

3.1.2 Number

Apart from person, number is also marked on personal pronouns in signed languages. A summary of number distinctions in various signed languages is given in Table 3.2 below:

Table 3.2 Number Distinctions in signed languages⁷ and spoken languages⁸

Number values	Signed languages						Spoken languages
	ASL	LIS	Auslan	DSL	IPSL	BSL	
SG	✓	✓	✓	✓		✓	✓
DU	✓			✓	✓		✓
TRI	✓			✓	✓		✓
QUAD				✓			
PAUC							✓
PL	✓	✓	✓			✓	✓
GPL							✓
TRANSN					✓		

Table 3.2 demonstrates that number distinctions in personal pronouns are slightly different from those observed in spoken languages. In signed languages, at least two number distinctions (i.e. singular and plural in LIS, Auslan and BSL) and at most four number distinctions (i.e. singular, dual, trial and plural in ASL and singular, dual, trial and quadruple in DSL) are identified. There is also a number value that is distinctive to IPSL only. IPSL has the transnumeral form (TRANSN) which is not specified for number no matter whether the person value is first, second or third (Zeshan 1998, 1999, cited in McBurney 2002).⁹ As for the spoken languages, six number values are observed: singular, dual, trial, paucal, plural and greater plural, though not all of them appear in one language (see Chapter Two for details). In particular, paucal and greater plural are absent in signed languages. So, the number values in signed languages vary slightly from those in spoken languages and from

⁷ This table is modified from McBurney's (2002) typological study on pronominal systems in signed languages.

⁸ Quadral and transnumeral are number values observed in spoken languages as well. However, they are not marked on personal pronouns, but on nouns. Thus we leave the row of QUAD and TRANSN blank for the column of spoken languages.

⁹ McBurney (2002) does not give any examples of TRANSN.

each other.

3.1.3 Gender

Gender, in contrast with person and number, does not appear to be universally marked in personal pronouns of signed languages. But is gender absent in signed languages? The answer is no. The indexical classifiers in JSL mark gender (Fischer and Osugi 2000). Consider the following example:

- (2) TANAKA ^{CL:MALE}KURU
Tanaka come
'Mr Tanaka came.' Fischer and Osugi 1998-9:6)

Example (2) shows that the gender of the subject can be marked with an indexical classifier *CL:MALE* onto the verbs. If this indexical classifier functions like personal pronouns, the pronominal system in signed language may involve gender as well. However, from the translation in (2) above, the indexical classifiers function like a verbal classifier that categorizes the gender of the arguments. If our observation is correct, the pronominal system in signed languages does not involve gender marking.

3.1.4 Summary

This section presents a discussion on person and number distinctions observed in personal pronouns. In particular, we have shown the arguments for the two-way person distinction (i.e. first and non-first). In the next section, we will examine these controversies further with examples of person agreement.

3.2 Verbs and agreement marking

The verb is another grammatical category where agreement features reside. According to Supalla (1992), the most common agreement features observed in various signed languages are person and number, as illustrated in Table 3.3 below:

Table 3.3 Agreement marking as a cross-linguistic phenomenon in signed languages

Agreement types	Signed Languages					
	ASL	BSL	FSL	LIS	JSL	SSL
Four-feature agreement	✓	✓	✓	✓	✓	✓
Three-feature agreement	✓	✓	✓	✓	✓	✓
Two-feature agreement	✓	✓	✓	✓	✓	✓
Zero-feature agreement	×	×	✓	×	×	✓

Note: Four-feature agreement = the verbs are marked for person/number of both subject and object.

Three-feature agreement = the verbs are marked for person of subject and person/number of object.

Two-feature agreement = the verbs are marked for person/number of object.

Zero-feature agreement = the verbs are not marked for person/number of either subject or object.

Table 3.3 demonstrates that the patterns of agreement marking vary among different signed languages. While verbs in most languages (i.e. ASL, BSL, LIS, JSL) can be marked for person/number of subject and of object (i.e. four-feature agreement), person of subject and person/number of object (i.e. three-feature agreement) and person/number of object (i.e. two-feature agreement), verbs in other languages (e.g. FSL and SSL) may not be marked at all (i.e. zero-feature agreement).¹⁰ The pattern of agreement marking appears to be complicated between signed languages. As this study only investigates person marking, the following discussions will be devoted to person marking to a large extent while number and gender marking will only be briefly discussed.

3.2.1 Verb Types

Before we enter our discussion of agreement marking, a description of verb types is in order. Verb types have a correlation with types of agreement marking in signed languages. Thus, this section, which describes verb types classified in the previous studies, is required.

Earlier studies on verb agreement in ASL suggested that there are three classes

¹⁰ Verification is needed to judge whether it is true that verbs in some signed languages allow omission of person marking (i.e. verbs are in their citation form instead of inflected form in some occasions). If this is true, overt agreement marking is optional in signed languages. This contrasts with spoken languages where overt agreement marking will not occur optionally. We will discuss this further in Section 3.3.

of verbs, namely, directional, locational and reversing verbs. There are also some body-anchored verbs that cannot undergo agreement (Fischer and Gough 1978). This early account of ASL verbs was further developed in Padden (1983, 1988). In her analysis, there are three types of verbs, namely, agreement verbs, spatial verbs and plain verbs. Such a classification is also observed to hold in ISL as well (Meir 1998). Note that the verb classifications in signed languages are different from those in spoken languages. In signed languages, verbs are classified according to the morphological markings on the verbs. As for spoken languages, lexical semantics are the common criteria to classify verbs.

Agreement verbs

Agreement verbs are the only type of verbs that can be marked for verb agreement manually. This verb type can be subdivided into regular verbs and backward verbs. These two subclasses of agreement verbs differ in marking person of subject and object. For regular verbs, the initial point marks person of the subject while the end point marks person of the object. For instance, *GIVE* in ASL is a regular verb. Compare Figures 3.4 and 3.5 below:

Figure 3.4 Citation form of *GIVE* (Klima and Bellugi 1979:275)



Figure 3.5



$_i$ INDEX $_i$ GIVE $_j$ BOOK.

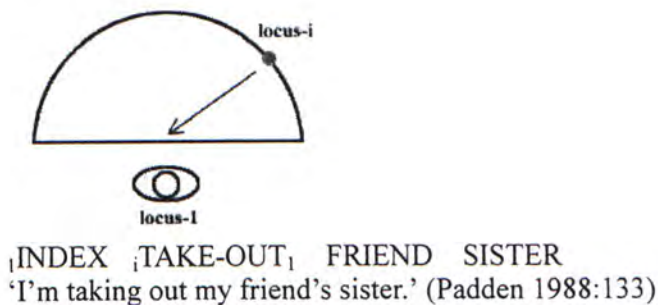
'She gave him the book.' (Padden 1988:59)

The citation form of *GIVE* is articulated in the neutral space. But when the verb *GIVE* takes a third person subject and a third person indirect object, the verb starts at a third person locus (locus-i) and ends at another third person locus (locus-j), as

illustrated in Figure 3.5 above. Padden (1983, 1988) also suggests that some agreement verbs like *ARREST* contain one spatial locus and thus only the person of the object is marked.¹¹

As for backward verbs, the initial point of this type of verb is marked for object while the end point for subject. For instance, *TAKE-OUT* is a backward verb in ASL (Padden 1983, 1988). When the verb *TAKE-OUT* selects a first person subject and a third person object, it will start at the spatial locus that marks third person and ends at the spatial locus that indicates first person. Consider the following example in Figure 3.6 below:¹²

Figure 3.6



This figure shows that the initial point of the verb *TAKE-OUT* marks the person of the object and the end point marks the person of the subject.

Agreement verbs can be marked for number as well. However, the number distinctions remain controversial. While Klima and Bellugi (1979) point out that agreement verbs can mark dual, trial and multiple, Padden (1983, 1988) argues that exhaustive (i.e. each of more than two), instead of trial (i.e. three) is one of the number inflections in verb agreement.¹³ Apart from these analyses, Wilbur (1987) claims that only dual, reciprocal and plural should be regarded as number inflections. As the present study focuses on person, we will not examine further these

¹¹ Padden (1988) does not present any pictures illustrating agreement marking on these kinds of verbs. HKSL also has this kind of verb. We will illustrate how this kind of verb is marked for person in Chapter Four.

¹² As Padden (1988) does not give the artwork of this example, the present author provides a diagram showing the direction of the verb.

¹³ For illustrations on these inflections, see Appendix 4.

controversies on number agreement.

Plain verbs

In contrast to agreement verbs, plain verbs are not inflected manually for person and number of the subject or object. For instance, *KNOW* is a plain verb in ASL:

Figure 3.7 Citation form of *KNOW* (Padden 1988:71)



The verb *KNOW* remains unchanged when the person values of subject and of object vary, as shown in Figure 3.8 below (Padden 1988:71):¹⁴

Figure 3.8

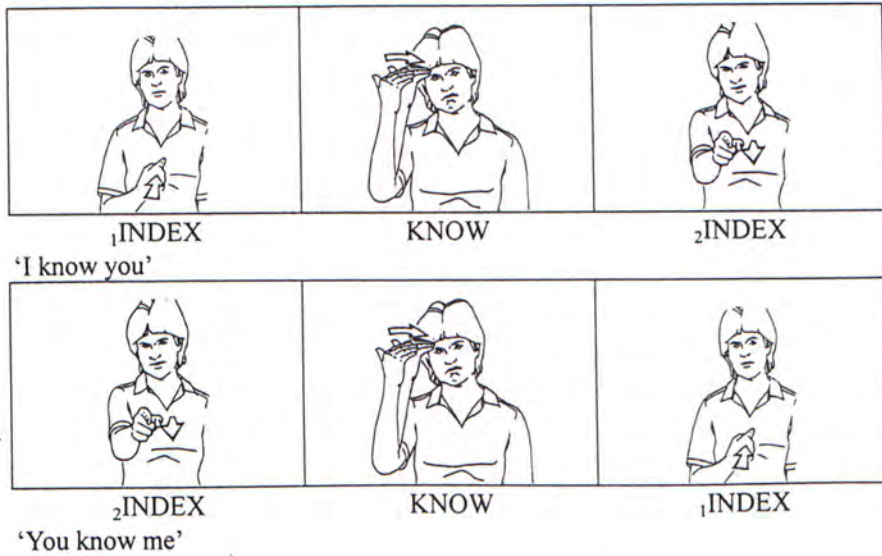


Figure 3.8 shows that the verb *KNOW* does not change at least manually according to the person values of the subject and of the object.¹⁵

Spatial verbs

As for spatial verbs, they agree with the spatial locations of the real or imagined referents of source and goal. Consider the following example in Figure 3.9 below:

¹⁴ Padden (1988) does not present all the pictures for the first sentence. The picture of '₂INDEX' and '₁INDEX' in the first sentence are taken from the second sentence in her picture illustration.

¹⁵ Plain verbs in ASL are not marked for number either. For detail, see Padden (1983, 1988).

Figure 3.9



$_1$ INDEX $_i$ WALK $_j$

'I walked from here to there.' (Padden 1988:74)

The initial point and the end point of the sign only mark the locations instead of person in Figure 3.9. According to Padden (1983, 1988), "the beginning point of the Spatial verb may appear in any location in neutral space although the subject is 1person [i.e. first person], a characteristic not true of Inflecting verbs" (p.43). In other words, while spatial verbs can start in the neutral space, agreement verbs cannot when the subject is first person. Besides, spatial verbs in ASL are claimed to have a wider range of spatial possibilities. For instance, both horizontal sweep movement and vertical sweep movement are possible for spatial verbs while only the former is allowed in agreement verbs. For instance, *GIFT*¹⁶, as an agreement verb, can be inflected through a horizontal path movement to denote the plurality of indirect objects ('them' in the examples in Figure 3.10a below). However, the agreement verb cannot be executed with a vertical movement to mark the plural objects. Consider Figure 3.10 below:

Figure 3.10



$_1$ INDEX FINISH $_0$ GIFT $_i$, mult LETTER
'I already gave them their letters.'



* $_1$ INDEX $_0$ GIFT $_{?i}$, mult FINISH
'I already gave it to them.'

(Padden 1988:69-70)

Yet, both kinds of movement are possible for spatial verbs like *SLIDE*. If the movement is horizontal, it means something slides from one location to another horizontally; if the verb contains a vertical movement, it signifies that something

¹⁶ An anonymous reviewers points out that ASL has two verbs which both means 'give'. One is glossed as *GIVE* while another is glossed as *GIFT* or *GIVE-GIFT*. These two signs are illustrated in Figure 3.4 and Figure 3.10 respectively.

slides down from a higher position to a lower position, as shown in Figure 3.11a and 3.11b below:

Figure 3.11



${}_i$ INDEX ${}_i$ CL:C-SLIDE ${}_j$
 'I slid a small object to the side.'



${}_i$ INDEX ${}_k$ CL:C-SLIDE ${}_i$
 'I slid a small object down.'
 (Padden 1988:78)

While Padden's (1983, 1988) verb classifications are generally accepted in ASL, other linguists doubt if there is a class of spatial verbs. Bos (1989) concludes that the class of spatial verbs is not necessary when there is no clear-cut boundary between inflecting verbs and spatial verbs in SLN. She claims that inflecting verbs and spatial verbs cannot be easily distinguished from each other. For instance, the verb *KIJKEN* 'look at' can be marked as agreement verb or spatial verb. When it is an agreement verb, it means, "who is looking at whom or what" and if it functions as a spatial verb, it refers to "from where is looked at what" (Bos 1989:237)¹⁷. As one single verb can be both spatial verb and agreement verb, she argues that only one class of verb is needed. However, an alternative to this description is that there are two entries of *KIJKEN* in SLN, one is an agreement verb and the other is spatial verb. If this is the case, Padden's (1983, 1988) verb classification is still applicable to SLN.

Apart from SLN, Auslan also has a different system for classifying verbs. In Auslan, it is reported that verbs could be classified into spatially-inflecting signs, non-spatially inflecting signs or signs of motion and location (Johnston 1991). The first type (i.e. spatially-inflecting signs) have two subtypes: (i) those that involve two loci (e.g. *GIVE*) and (ii) those contain one locus (e.g. *CUT*).¹⁸ These two subtypes could be interpreted as agreement verbs that are marked for two arguments and those

¹⁷ Bos (1989) only points out this phenomenon without giving any detailed illustrations from SLN.

¹⁸ *CUT* in Auslan is similar to spatial verbs in ASL because it changes its form according to the spatial locations where the action takes place.

that are marked for one argument only. The second type of verb (i.e. non-spatially inflecting signs) refers to verbs that do not have overt marking (e.g. *LOVE*, *KNOW*). These verbs are like plain verbs in ASL. The third type of verb (i.e. signs of motion and location) is exemplified by *APPROACH* that behaves like a classifier predicate in ASL. Note that classifier predicates are classified as a subtype of spatial verb in Padden's (1983, 1988) analysis. So the third type of verb in Auslan could be termed spatial verbs as well. As a result, Padden's (1983, 1988) verb classification may apply cross-linguistically.

In summary, person agreement marking on verbs in signed languages is different from that in spoken languages. In signed languages, only one type of verb can be marked for person agreement. This is unusual in spoken languages, where all verbs are marked overtly for agreement, if any. In the next section, we will illustrate how agreement features are marked on the agreement verbs.

3.2.2 *Verb Agreement*

Verb agreement is defined as a relation between verbs and their arguments (i.e. subject and object) in terms of phi-features (i.e. person, number and gender) in generative grammar. This definition is generally accepted in spoken languages. As for signed languages, different linguists view the notion of verb agreement differently, as shown in Table 3.4 below:

Table 3.4 The notion of verb agreement in various works on signed languages:

Signed languages	Interpretations of the notion of verb agreement
ASL	Agreement between a verb with the source and goal (Friedman 1975)
	(i) Agreement between an agreement verb and its subject and object
	(ii) Agreement between a spatial verb and the spatial locations in the signing space (Padden 1983, 1988, Meier 1990)
	Agreement with referents (Lillo-Martin 1991)
	Agreement between a verb and nominals (Janis 1995)
	Agreement between a verb and its subject and object (Bahan 1996, Neidle, Kegl, MacLaughlin, Bahan and Lee 2000)
	Verb agreement is captured by a phonological re-adjustment rule (i.e. alignment) (Mathur 2000)
	Space does not mark verb agreement (Liddell 1994, 2000)
SLN	Agreement between a verb and its subject and object (Bos 1993)
ISL	Agreement between a verb and the source and goal (Meir 1998) ¹⁹

Table 3.4 presents a general review of previous analyses of verb agreement in signed languages (i.e. ASL, ISL and SLN). In a well-studied sign language like ASL, verb agreement is much debated. While some linguists view verb agreement in signed languages as a syntactic relation (Bos 1993, Bahan 1996, Neidle, Kegl, MacLaughlin, Bahan and Lee 2000 (hereafter NKMBL 2000)), other linguists argue that verb agreement in signed languages is a relation between verbs and thematic roles of the arguments (Friedman 1975, Meir 1998). In addition, many sign linguists view verb agreement, apart from syntactic relations, as a relation between verbs and locations of referents (Padden 1983, 1988, Meier 1990). There are also linguists who identify verb agreement in signed languages as a relation between verbs and locations of referents only (Lillo-Martin 1991 and Janis 1995).²⁰ Clearly, these differing views on verb agreement are far from what is generally perceived as verb agreement in spoken languages. Though these views are different from those in spoken languages, sign linguists generally agree that space marks agreement, but Liddell (1994, 2000) goes to another extreme in proposing that space does not mark verb agreement.

¹⁹ Meir (1998) proposes that the facing of the verb signs is the case marker in ISL. So the verb does not only encode verb agreement of source and goal, but also morphological case.

²⁰ Though Janis (1995) views agreement as a relation between verbs and nominals, she claims that both non-locative morphemes and locative morphemes are agreement markers. In other words, her work implicitly assumes that location and verb agreement cannot be teased apart.

Recently, Mathur (2000) suggests that a phonological re-adjustment rule can capture the various kinds of agreement marking in ASL. The importance of this analysis lies in his proposal of two spaces in signed languages: articulatory space and referential space. The following sections examine the notion of verb agreement, the relation between location marking and person marking and the confusion of person distinctions from previous studies on verb agreement in signed languages. A more detailed discussion on various analyses will be provided in Section 3.5.

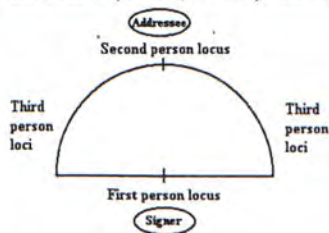
3.2.2.1 Verb Agreement as a relation between the verbs and their arguments – true or not true?

In this section, we will examine whether verb agreement in signed languages is a relation between the verbs and their arguments in terms of agreement features on the basis of both manual and non-manual marking for person agreement.

Manual marking for person agreement²¹

Person has been widely discussed in signed languages. Padden (1983, 1988) proposes that there are three sets of spatial loci in the signing space that can be markers for the three distinct person values, as illustrated in Figure 3.12 (=Figure 3.1) below:

Figure 3.12 Padden's (1983, 1988) three-way distinction



According to Padden (1983, 1988), the first person is marked by signing the verb near the signer's body; the second person by pointing at the addressee and the third person by directing the verb signs to the spatial loci on either side of the signing space. As mentioned in the previous section, "the beginning point of the Spatial verb

²¹ In this section, we follow Padden's (1983, 1988) analysis on person agreement first. As for the controversies on person distinctions in ASL, we will not discuss them until Section 3.2.2.2.

may appear in any location in neutral space although the subject is 1person [i.e. first person], a characteristic not true of Inflecting verbs” (Padden 1988:43). In other words, first person cannot be marked in the neutral space, otherwise, the sentence is ill-formed. Apart from this, second person marker is “variable” (Padden 1988:24). This is because the addressee can be located at any positions where the signer can see the addressee’s signing and then there could be various locations that are associated with second person.²²

For a verb to mark person of both subject and object, it starts and ends at the spatial loci that denote the distinct person values.²³ For instance, when a regular agreement verb *GIVE* takes a first person subject and a second person indirect object, the verb *GIVE* starts near the signer’s body and ends at the addressee, as shown in Figure 3.13 below:

Figure 3.13



₁INDEX ₁GIVE ₂ BOOK.

‘I gave you the book.’ (Padden 1988:59)

The verb is marked for the first person subject ‘I’ and a second person indirect object ‘you’ in Figure 3.13. When the indirect object is third person, the verb directs toward a third person locus that is on either the right or left side of the signer, as in Figures 3.14 to 3.16 below:

²² When second person locus is variable, it is possible for the second person locus and third person loci to overlap, hence supporting Meier’s (1990) two-way analysis. However, the second person locus varies merely with real locations of the referents. If location can be separated from agreement marking, this “variable” second person locus that is associated with location cannot refute the three-way distinction. We will discuss this further in Section 3.2.2.2 and Section 3.2.2.3.

²³ As mentioned earlier in Section 3.2.1, there are a group of verbs that only involve one spatial locus marking person of the object, for instance *ARREST*, in ASL (Padden 1983, 1988). This kind of verb is not marked for person of the subject.

Figure 3.14



$_1$ INDEX $_1$ GIVE $_i$ BOOK.
 'I gave him the book.' (Padden 1988:58)

In a sentence where the subject is second person and the indirect object is third person, the verb *GIVE* starts from the second person locus to a third person locus, as shown in Figure 3.15 below:

Figure 3.15



$_2$ INDEX $_2$ GIVE $_i$ BOOK.
 'You gave her the book.' (Padden 1988:58)

When both subject and indirect object are third person, the verb sign starts from one side to another side in the signing space:

Figure 3.16



$_i$ INDEX $_i$ GIVE $_j$ BOOK.
 'She gave him the book.' (Padden 1988:59)

Note that there is a controversy on third person marking. While Padden (1983, 1988) reports that third person marking for subject can be omitted, Bahan (1996) argues that a neutral person marker, in fact, marks the verb. Consider the following example:

- (3) MEGAN ^{neutral-position}GIVE $_i$ BOBBY $_i$ BOOK
 'Megan gives Bobby a book.' (Bahan 1996:109)

In (3) above, the verb *GIVE* is initially marked with the neutral marker (executed near the first person marking) for the third person subject. This neutral marker occurs only with a third person subject, but not with first person or second person subjects.

So the third person subject markers are not omitted in ASL, but appear in a different form. The theoretical consequence of this suggestion is that signed languages also demonstrate obligatoriness as in spoken languages. Then there is no modality effect on agreement marking. However, there is no clear explanation of why the apparent absence of agreement marker is analyzed as a neutral agreement marker. We therefore suggest that ASL demonstrates optionality in agreement marking instead of obligatoriness. Further discussion will be given in Section 3.3.

As we have discussed, person agreement in ASL appears to be a relation between verbs and arguments. However, when the verbs are accompanied with personal pronouns that refer to real or imagined referents, the verbs must be directed towards the spatial loci corresponding to those contained in the personal pronouns. The verb may be, in fact, directed to the actual locations of the referents, rather than agreeing with the subjects or objects. An alternative is that locations and person values overlap in the signing space. The verbs may therefore be directed to a spatial locus that denotes both person values and locations of the referents.²⁴ Both options show that Padden's (1983, 1988) description involves location. If the spatial locus of the verb only marks locations of referents, Padden's (1983, 1988) examples of verb agreement are mixed with locations. Suppose the spatial locus that the verb points at marks for both person values and locations, Padden's (1983, 1988) illustrations on verb agreement should also contain locations. In this case, Padden's (1983, 1988) notion of verb agreement is not equivalent to that in spoken languages where locations of referents do not play a role.

Apart from the spatial loci contained in the personal pronouns, the verbs may also direct to the spatial loci of the NP established in earlier context. Consider the following examples in (4) and (5) below:

²⁴ We will examine this possibility further in Section 3.2.2.2.

- (4) a. DOG _i BITE_j CAT
 'The dog bite[s] the cat.' (Padden 1988:172)
- b. DOG _i INDEX _i BITE_j CAT
 'That dog there bit the cat.' (Padden 1988:29)
- (5) MEGAN_i GIVE_j BOBBY_j BOOK
 'Megan gives Bobby a book.' (Bahan 1996:109)

In (4a), the agreement verb *BITE* has a different form (which starts from locus-i to locus-j) even when the subject and object are not assigned to any spatial locations in the signing space. This is evidence for verb agreement as a relation between verbs and arguments in terms of agreement features in ASL. However, (4b) and (5) show that verb agreement in ASL may not be like that in spoken languages. In (4b), the index sign *iINDEX* assigns the third person subject *DOG* to locus-i. According to Padden (1988), when the third person subject *DOG* is assigned to a specific location, the verb has to contain the locus that is the same as the one assigned to the NPs. This example can, in fact, be evidence for verb agreement as a relation between the verb and the location (instead of arguments). If this is the case, Padden (1983, 1988) conflates verb agreement with location. In (5), both the subject and the object are assigned to particular locations by finger spelling the proper names at locus-i and locus-j. Then the locus-i and locus-j contained in the verb *GIVE* is referring just to locations of the subject and object. Obviously, example (5) also exemplifies verb agreement as a relation between location and verb. As a result, Padden's (1983, 1988) and Bahan's (1996) description of verb agreement is different from that for spoken languages because their examples involve data showing a conflation of location and verb agreement.

The discussion above has shown that studies supporting verb agreement as a relation between the verbs and their arguments include evidence where location and verb agreement are mixed. Though this is unusual in spoken languages, one could argue that modality causes verb agreement in signed languages to behave in a different way. In fact, some linguists do observe the role of location in verb

Figure 3.17 Marked head tilt in ASL (Bahan 1996:120, reprinted with permission)



Spatial loci also play a role in marking the three person values (i.e. first, second and third) in non-manual marking, for instance as in (7) to (9) below:

- (7) JOHN_i []AGR-S_i []AGR-O_j LOVE MARY_j (Bahan 1996:165)
- $\xrightarrow{\text{head tilt}_i}$
 $\xrightarrow{\text{gaze}_j}$
- ‘John loves Mary.’

- (8) IX-2p_i []AGR-S_i []AGR-O_j SEE_j MARY_j (Bahan 1996:203)
- $\xrightarrow{\text{tilt}_i \text{ (slightly sideways head tilt)}}$
 $\xrightarrow{\text{gaze}_j}$
- ‘You see Mary.’

- (9) WOMAN_i []AGR-S_i []AGR-O_{j=1st person i} GIVE_j MONEY (Bahan 1996:192)
- $\xrightarrow{\text{backward tilt}_i}$
 $\xrightarrow{\text{gaze}_j}$
- ‘A woman gave me money.’

From (7) through (9), head tilt and eye gaze have different functions when the person values of the subjects and objects are different. The different functions of these two non-manual markers are summarized in Table 3.5 below:

Table 3.5 Functions of head tilt and eye gaze in ASL

Subject \ Object	1	2	3
1		Not mentioned	Eye gaze = subject marker; Head tilt = object marker
2	Not mentioned		Not mentioned
3	Not mentioned	Head tilt = subject marker; eye gaze = object marker	Head tilt = subject marker; eye gaze = object marker

Table 3.5 summarizes the distribution of head tilt and eye gaze illustrated in (7), (8) and (9) above. In (7), when both subject and object are third person, the head tilt and eye gaze are markers for person at AgrS and AgrO respectively. The subscripts represent the spatial loci associated with the non-manual markings. But in (8), when the subject is second person and object is third person, the head tilts slightly sideward to mark second person value at AgrS. This head tilt is different from that for third person because it does not direct towards the third person loci in the signing space. However, when the subject is third person and the indirect object is first person (as in (9)), head tilt and eye gaze have different functions. The former becomes a marker for person at AgrO. In contrast with (7) and (8), the head tilts backward to mark the first person value at AgrO in (9). As for eye gaze, it becomes a marker for person at AgrS. From these examples, non-manual marking also varies according to the person values at the AgrS and AgrO. Note that Bahan (1996) does not investigate second person object and first person subject. Whether there are other kinds of non-manual marking for these is open for further research.

Based on the examples above, Bahan (1996) shows that the functions of head tilt and eye gaze may vary according to the person values at the AgrS and AgrO. In addition, he claims that non-manual marking, contrary to the previous analyses, occurs with at least plain verbs (e.g. *LOVE* in (7)) and agreement verbs (e.g. *SEE* in (8) and *GIVE* in (9)). In other words, verb agreement is not restricted to agreement verbs only. However, overt agreement marking is still absent in spatial verbs.

Bahan (1996) also points out that agreement verbs have two ways to mark person agreement: manual and non-manual while plain verbs are marked merely with non-manual marking. Note that spoken languages do not demonstrate any separate markers of agreement features at AgrS. On the surface, we only see the form where feature checking is completed. So this dual person marking is unusual in spoken

languages.²⁹ In our discussion of manual marking for person, we have shown that ASL data can be divided into two groups: (i) data that do not associate with locations and (ii) data that contain locations. From examples (7), (8) and (9), the subjects and objects are marked with spatial locations. At the same time, the non-manual markings are marked with the corresponding spatial locations. These examples, then, also support verb agreement as a relation between verbs and locations.

However, the neutral non-manual agreement marker, like the manual one, shows that verb agreement can be a relation between the verbs and their arguments. Consider the neutral head tilt below in Figure 3.18:

Figure 3.18 Neutral head tilt in ASL (Bahan 1996:120, reprinted with permission)



Bahan (1996) does not explicitly report which person values the neutral head tilt marks. Yet, from Bahan's (1996) illustrations, neutral head tilt marks third person subject only. In contrast to marked head tilt, neutral head tilt is not directed towards any spatial loci for third person. In addition, the neutral non-manual agreement marker marks the third person value of the subject even though the subject is not assigned to any location in the signing space. See the following example:

- (10) JOHN []AGR-S_{neu} []AGR-O_j ^{neu}GIVE_j MARY_j BOOK, IX_i
 'John gave Mary the book.'
 head tilt_{neu}
 gaze_j
 (Bahan 1996:122):

In (10), the subject *JOHN* is not articulated at any spatial loci in the signing space. In this case, both neutral manual and non-manual markers mark the person of the

²⁹ When feature checking is complete, the verb is no longer accompanied with the agreement features. Then how can the agreement features at the both AgrS and V be overtly realized? Bahan (1996) may assume a different agreement mechanism in ASL. We will discuss this further in Section 3.5.

subject.³⁰ Then verb agreement in ASL is like that in spoken languages.

Though Bahan's (1996) analysis appears to be systematic, Thompson and Emmorey (2003) report that Bahan's (1996) proposal for eye gaze is inaccurate. Thompson and Emmorey (2003) conducted a study in which a head-mounted eye-tracking device (SMI™) is used to examine how eye gaze is associated with the three types of verb in ASL. According to Bahan (1996), at least both agreement verbs and plain verbs can be marked with eye gaze for object agreement. However, Thompson and Emmorey (2003) observe that eye gaze behavior is not the same across the three verb types (i.e. agreement verbs, plain verbs and spatial verbs). For eye gaze to be an agreement marker, it must occur consistently across the verb types. When eye gaze behavior is different across the three different verb types, it is doubtful that eye gaze can still be counted as an agreement marker for object agreement in ASL. Additionally, they point out that eye gaze marks direct object of transitive agreement verbs and indirect object of di-transitive agreement verbs. Eye gaze can also mark locative arguments of spatial verbs and it does not mark agreement for plain verbs. This analysis obviously refutes Bahan's (1996) proposal where non-manual marking serves as agreement markers. The theoretical consequence of Thompson and Emmorey's (2003) experiment is that subject-verb agreement in ASL is not obligatorily marked, but optionally marked as suggested by Padden's (1983, 1988). Our data will also show that Padden's (1983, 1988) view is borne out in HKSL research. Further discussion on this will be left until Section 3.3.

In summary, the notion of verb agreement is unclear in ASL as many linguists made no attempt to tease person marking and location marking apart. In the next section, we will examine why location marking is not equivalent to or part of the notion of verb agreement in signed languages.

³⁰ Neutral manual marking is executed near the first person marking; neutral non-manual marking (i.e. neutral head tilt) is in the form of slight upward head tilt, as shown in Figure 3.18 above.

3.2.2.2 Why location marking is not part of agreement marking?

From our discussion on the manual and non-manual marking for person above, we have shown that different sign linguists view verb agreement in different ways. While some linguists equate verb agreement in ASL with that in spoken languages, others view verb agreement as a relation between the verbs and locations of the referents. We argue that location marking and verb agreement should be separated. In other words, location marking should not be viewed as part of the agreement marking.

The first argument is based on the properties of agreement markers in Chapter Two. We have mentioned that agreement markers are bound, obligatory and predictable in spoken languages. As for signed languages, Rathmann and Mathur (2002:398) report that the “two modalities share the same architecture of grammar with respect to verb agreement, with the exception that gestural space does not have the same function in spoken languages and in signed languages”. One may therefore think that the three properties of agreement markers in spoken languages would also be observed in agreement markers in signed languages. However, many signed languages demonstrate optional agreement marking. That is, the verbs could be marked or unmarked for agreement in the same structure (Pizzuto 2002). So obligatoriness does not apply to signed languages. Other than obligatoriness, boundness and predictability are the other two properties of agreement markers in spoken languages and these two also apply to signed languages. First, spatial loci in signed languages are similar to agreement affixes in spoken languages as both could not stand alone to indicate the agreement features.³¹ Predictability is also observed in agreement marking in signed languages. When the verbs change their forms for agreement features of the arguments, the verb meaning does not change and is thus

³¹ Rathmann and Mathur (2002) reports that signed languages express agreement by overt and separate morphology in spite of affixation. However, this view is obviously not true because agreement in many languages may not involve affixation but a change in verb forms. On the other hand, even if spatial loci alone could not be the agreement markers, the part that a verb changes for agreement is also bound because they could not stand alone to mark the agreement features.

predictable. In other words, agreement markers in signed languages are at least bound and predictable.

Why should location marking not be viewed as part of the agreement marker system? This is because location marking does not possess the two properties of agreement markers. Though location marking is also bound, it is not predictable. Consider example (3), repeated as (10) below:

- (11) a. DOG _iBITE_j CAT
'The dog bite the cat.' (Padden 1988:172)
- b. DOG _iINDEX _iBITE_j CAT
'That dog there bite the cat.' (Padden 1988:29)

Locus-i marks third person values of the subject 'the dog' in (11a) and the verb meaning of *BITE* does not change with agreement marking. But in (11b), the noun *DOG* is followed by an index sign *i*INDEX that establishes the spatial location of the noun in the signing space for future reference. When the verb *BITE* starts at locus-i, the person value (i.e. third person) is not encoded in the sign and the locus-i in the verb sign, in fact, indicates the 'dog there'. The verb meaning of *BITE* varies when locus-i does not mark person, but the location of the referent. When the location marker locus-i in (11b) causes a change in verb meaning, the location marker is not qualified for being part of the agreement marker system because predictability does not apply to this locus-i. Note that this third property is a crucial one as it differentiates inflections from derivations. Thus, spatial loci that mark locations of referents should not be conflated with person agreement markers.

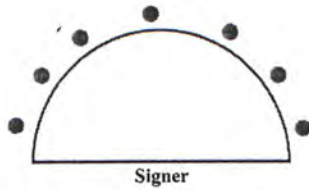
3.2.2.3 Confusion over person distinctions

In Section 3.2.2.1, we have shown that many linguists have overlooked the difference between agreement marking and location marking. As a result, the number of person distinctions becomes controversial.

Padden (1983, 1988), based on data with location marking and data without

location marking, reports that person has three distinct person values. However, as mentioned in Section 3.1, Meier (1990) argues that there are only two distinct person values. Consider Figure 3.19 below:

Figure 3.19 Meier's (1990) two-way person distinction



The area near the signer denotes first person while the grey spots mark non-first person in Figure 3.19. Note that Meier's (1990) main arguments (the first two arguments we presented in Section 3.1) both concern actual referents located in space.³² However, Padden's (1983, 1988) description of person agreement includes both (i) data that involves location marking and (ii) data without location marking. So it is possible for Padden (1983, 1988) and Meier (1990) to describe different sets of data. If this is the case, there should be no conflict at all. Besides, Meier's (1990) analysis may not be accurate because he relies on data where location marking and person marking are mixed. When location marking and person marking are not teased apart, it is difficult to tell the person distinctions.

Though Meier's (1990) arguments may not be able to refute Padden's (1983, 1988) analysis on person, the proposal of a two-way distinction should not be abandoned. Chitimacha person agreement, as mentioned in Chapter Two, may be evidence for the two-way distinction (i.e. first and non-first). Consider Chitimacha paradigm repeated as Table 3.6 below:

Table 3.6 Chitimacha *get-* 'to beat' (Swadesh 1946: 317, cited in Helmbrecht 1999)

Person \ Number	1	2/3
SG	get-ik	get-i
PL	get-nuk	get-na

Table 3.6 illustrates that the verb *get-* 'to beat' is in the same form when the subject

³² We do not consider other arguments here as they are problematic. For details, see Section 3.1.1.

is second person and third person. However, Swadesh (1946) still identifies three person values in Chitimacha.³³ If we consider Table 3.6 again, this set of data echoes what was observed by Meier (1990) in ASL. Then the two-way distinction for person may not be unusual. Additionally, Meier's (1990) two-way distinction analysis should stand if second person and third person cannot be distinguished in data where locations are not involved. As most sign linguists analyze verb agreement on the basis of data with location marking, it is unclear whether a two-way distinction is present in ASL.

Another confusion resulting from the debate on the notion of verb agreement is whether spatial loci in the signing space can mark person agreement. Liddell (2000), similarly to Lillo-Martin (1991), notices the influence of location on agreement marking in ASL. Contrary to Lillo-Martin (1991), he challenges the existence of grammatical space on the basis of the mental space theory. According to this theory, there are said to be three forms of signing space: (i) real space, (ii) surrogate space and (iii) token space. Real space refers to the space where the referents are real. Surrogate space is where the referents are imagined. As for token space, the horizontal plane is like a stage and the signer signs with proforms (i.e. classifiers) that represent the imagined referents on this stage. Based on this theory, Liddell (2000) argues that agreement analyses are inaccurate for two reasons. First, there are too many points that refer to the referents in the signing space and therefore spatial loci may not be rule-governed. Another argument he gives is that pointing of a verb sign to a real entity is not an example of verb agreement. To illustrate this point, he provides the following sentence in (11) below:

- (12) PRO-1 TELL MOTHER
'I told mother.'

According to Liddell (2000), this sentence is articulated in real space. That is to say, the object *MOTHER* involves a real location during the articulation of the

³³ Helmbrecht (1999) does not give any examples of these verbs.

utterance.³⁴ In the previous discussion, we have argued that location marking should not be viewed as agreement marking. In (12) above, location of the real referents are involved. When location marking is present, it is hard to tell whether agreement marking is present. In other words, the best way to identify person is to study evidence that does not involve location. As Liddell's (2000) example in (12) above involves location, it is too weak to argue for the absence of agreement morphology in ASL. In addition, person agreement does exist in ASL because there are instances showing that spatial loci can mark person values. So Liddell's (2000) suggestion does not appear to be confirmed. The present study suggests that the controversies can, in fact, be resolved by splitting location marking from person marking. We will extend this proposal in our investigation of verb agreement in Hong Kong Sign Language in the next chapter. Specifically, we will show that our data in Hong Kong Sign Language refute Liddell's (2000) proposal, but conform to Padden's (1983, 1988) analysis, to a certain extent.

3.2.2.4 Number and Gender marking

In Section 3.2.1, we pointed out that number inflections are also controversial in ASL. As our focus of study is person, we will not discuss the issue in details. However, number marking appears to be evidence for a two-way distinction in ASL. From our discussion above, the three-way distinctions of person only works well with singular subject and object. When the verb is inflected for plural object, it is hard to identify the person values. See for instance the example in Figure 3.20 below:

Figure 3.20 Plural marking of ASK in ASL



Citation form of ASK

ASK_{Plural}

(Klima and Bellugi 1979:283)

³⁴ Liddell (2000) does not mark the spatial location of the real referent *MOTHER* in this example.

In Figure 3.20, when the verb *ASK* in ASL takes a plural object, a sweep arc movement is encoded in the verb sign. The verb sign is then executed along both second person and third person loci. In this case, the distinction between second and third persons is blurred. However, Cormier (2002)³⁵ reports that when the verb is marked with number, person marking is absent in ASL. Then the sweep arc movement only marks for number. So the example in Figure 3.20 cannot be evidence for the two-way distinction of person. This also means that in some signed languages, at least in ASL, person and number marking are in complementary distribution. This contrasts with agreement marking in spoken languages where number marking would not override person marking.

Concerning gender, while most signed languages do not have gender marking in verb agreement, verbs in TSL can be marked for gender of the object. Consider the following example in (13) below:³⁶

(13) INDEX₁ 0HIT_{b-A}
 'I hit him.'

(Smith 1990, cited in Fischer 1996)

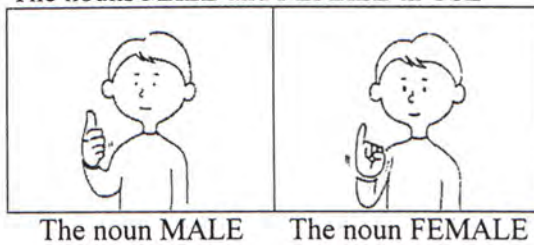
In (13) above, the verb is marked with an A-handshape (in the form of a classifier) that denotes masculine at the non-dominant hand that is articulated at the location (locus-b, a third person locus). Smith (1990) points out that the gender markers (i.e. masculine and feminine) are different from the nouns *MALE* and *FEMALE* in movement. The former is motionless while the latter involves a side-to-side movement. Consider the diagram in Figure 3.21 below:³⁷

³⁵ Cormier (2002) points out that "multiple entities results in a loss of indexicality" (p.1).

³⁶ A=classifier for male, b=arbitrary third person location, 0=no subject agreement, 1=first person object agreement (Smith 1990).

³⁷ Smith (1990) only gives illustrations of the nouns *MALE* and *FEMALE*, but not the gender markers. However, as these two nouns only differ from the two gender markers in movement alone, the illustrations of the two nouns are given here.

Figure 3.21 The nouns *MALE* and *FEMALE* in TSL



(Smith 1990:215)

From this figure, we can see that when the nouns *MALE* and *FEMALE* are motionless, they function as gender markers in TSL. Then, unlike person and number, that are expressed by spatial loci, gender is marked by handshape.

3.2.3 Summary

We have presented various theories about verb agreement in signed languages. In particular, there are controversies on (i) the notion of verb agreement, (ii) person distinctions and (iii) whether person is overtly marked in the signing space in ASL. With respect to these controversies, we argue that location should not be part of verb agreement because it does not have the third property (i.e. predictability) of inflections.

3.3 Optionality of verb agreement in signed languages

We have mentioned one of the differences of agreement marking between spoken languages and signed languages are the contrast of obligatoriness and optionality. This section attempts to identify the notion of optionality in agreement marking in signed languages. Optionality of verb agreement discussed in this thesis refers to optional agreement marking. That is, the verb may be marked or remain in its citation form in the same structure.

The previous chapter reports that obligatoriness, boundness and predictability are some generalizations drawn from observations on agreement marking among

various spoken languages.³⁸ However, as mentioned earlier in this chapter, the agreement marking is not obligatory, but optional in signed languages. The optionality appears in subject-verb agreement. As reported by Padden (1983, 1988), the subject agreement marker is optionally omitted in ASL.³⁹ Apart from subject-verb agreement, Pizzuto (2002) also observes optional subject agreement marking and object agreement marking in various signed languages (i.e. ASL, DSL and LIS). However, no linguists report the condition for the optional agreement marking for person and agreement marking appears to freely occur in signed languages. We will address this issue further in the next chapter.

3.4 Role shift and verb agreement

After having a discussion on several issues related to person marking, we will turn to study the relation between role shift and verb agreement in this section. Previous studies do not correlate these two phenomena though both take up a great deal of space in the literature. This section therefore attempts to analyse the effect of role shift on agreement marking from these previous studies. This will give us better understanding of the signing space.

Role shift, as a discourse device, refers to a phenomenon where the signer plays the role of another participant. Consider example (14) below:

³⁸ Comrie (1981) terms the morphological gaps in first and second person marking in Tangut as optional verb agreement. Obviously, his interpretation of optionality is different from the one used here.

³⁹ As Bahan's (1996) analysis on non-manual marking is proved to be inaccurate and our data coincides with Padden's (1983, 1988) study, we propose that Bahan's (1996) neutral agreement markers (either manual or non-manual) cannot be evidence for obligatory agreement marking in ASL.

(14) [MOTOR LOOK[↓] [L:down, 'motor'] ^{neg}nothing, LOOK SEARCH] body left, gaze down,
 expression of
 concentration

FIND CAP C-A-P CAP tongue protruding
 CAP-OFF CAP-OFF

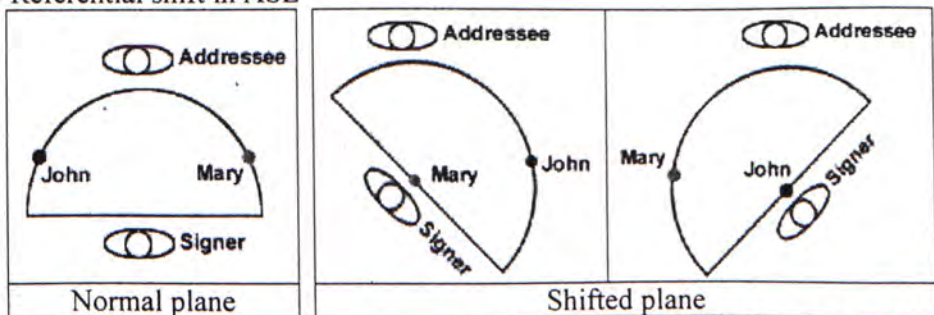
'(He) looked at the motor, but nothing was wrong. (He) looked some more
 and found that the cap was off.'

(Loew 1984:44)

The first line in (14) indicates that the signer is playing the role of the mechanic. He shifts his body to the left and gazes down at the imagined motor with an expression of concentration. In the second line, the signer gazes at the addressee again, marking the end of the role shift. It is clear then that non-manual marking helps to identify role shift. In fact, breaking eye gaze from the addressee is observed to be a reliable marker of role shift in ASL (Loew 1984). Other than eye gaze, head movement and body movement may sometimes occur with role shift as well, but they are not obligatory.

In Lillo-Martin and Klima's (1990) analysis, role shift results in a shift of referents, as illustrated in Figure 3.22 below:

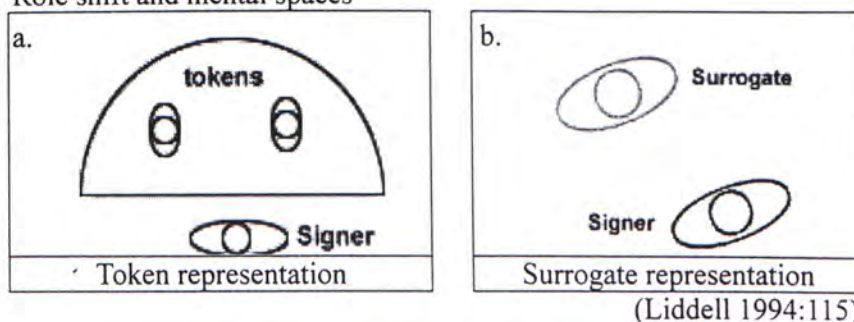
Figure 3.22 Referential shift in ASL



(Lillo-Martin and Klima 1990:195)

In Figure 3.22, role shift is shown to result in referential shift. In the horizontal plane, the referent at first person locus is the signer himself. For the shifted plane, the first person locus does not refer to the signer, but to other participants. However, Liddell (1994) argues that the horizontal plane does not shift. Instead, when role shift takes place, the signer shifts the spaces, as illustrated in Figure 3.23 below:

Figure 3.23 Role shift and mental spaces



(Liddell 1994:115)

The signer first signs the proforms in the token space in Figure 3.23a. When role shift takes place, the signer changes to surrogate space. In surrogate space, the signer signs as if the imagined referent is present. If the imagined referent were tall, the signer would direct the signs upward. Liddell (1994) therefore argues that the signer does not rotate the horizontal plane, but directs to the imagined referents in the surrogate space. Nonetheless, it should be noted that Liddell's (1994) analysis is based on the assumption that spatial loci do not mark person. When there is no horizontal plane for signing in his analysis, it is natural for him to argue that there is no shift of the horizontal plane.

In the signed language literature, the relationship between role shift and verb agreement remains unclear. Bahan (1996) points out that the signer has to mark the verb with first person when role shift takes place. See examples (15) and (16) below:

- (15) JOHN SAY $\langle \text{rs:John} \text{-----} \rangle$
 IX-1p LIKE BILL
 'John said: I like Bill.'

(Bahan 1996:150)

- (16) JOHN SAY IX-3p [] AGR-S_i [] AGR-O_j LIKE BILL_j
 tilt_i
 gaze_j
 'John said he likes Bill.'

(Bahan 1996:151)

When comparing (15) and (16), it is clear that the signer uses the first person pronoun *IX-1p* when he plays the role of *JOHN*, but third person pronoun *IX-3p* when no role shift takes place. Role shift affects person marking on personal pronouns. Yet, it is unclear whether non-manual agreement markers occur when role

shift takes place. Further research is therefore required to find out whether non-manual agreement marking still occurs when role shift is present in ASL.

3.5 Formal approaches to verb agreement in signed languages

In spoken languages, earlier accounts of agreement focus on how a verb raises to the functional head so as to obtain agreement inflections. Since 1995, Chomsky's checking theory is adopted to explain agreement facts. In signed languages, there are various kinds of analyses that aim at capturing the agreement facts. Yet, different linguists may take different approaches, for instance, both the semantic and syntactic approaches. Though semantic and syntactic approaches may view verb agreement differently, both of them assume that the spatial loci in the signing space have grammatical function. Recently, Mathur (2000) attempted to look at verb agreement in signed languages from a phonological point of view. Though his analysis is relatively descriptive, he suggests three significant points in the previous literature on verb agreement. We, therefore, will also discuss his analysis in this section.

3.5.1 Semantic Approaches

In ASL, Friedman (1975) proposes that verbs agree with the NPs that have the semantic roles of source and goal. In this analysis, when a verb is inflected, it starts from the spatial locus of the source NP to the spatial locus of the goal NP. In other words, the initial point of a verb always refers to the source NP while the end point the goal NP. Obviously, such a proposal limits the scope of agreement to transfer verbs only.

Another problem in this analysis, as pointed out by Padden (1983, 1988), is its failure to capture the absence of subject agreement in an economical way. Under this analysis, two rules are required to capture the phenomenon where the verb does not start from the source or goal in some instances:

- (17) a. The agreement marker for the source may optionally be omitted.
 b. The agreement marker for the goal of backwards verbs may optionally delete.

(Padden 1988:137-8)

Padden (1988:139) then argues that only one rule is needed: “The subject agreement marker may optionally be omitted”. Clearly, Padden’s (1983, 1988) syntactic approach captures the agreement fact in ASL in a more economical way.

The third problem of Friedman’s (1975) analysis is that it fails to capture the agreement facts with *FORCE*-type verb.⁴⁰ According to Padden (1983, 1988), a coreferentiality constraint⁴¹ occurs among these *FORCE*-type verbs. See for instance example (18) and (19) below:

(18) $_1$ INDEX $_1$ FORCE $_2$ $_2$ GIVE $_1$ MONEY
 ‘I’ll force you to give me the money.’

(19) * $_1$ INDEX $_1$ FORCE $_2$ $_i$ GIVE $_2$ MONEY
 ‘I’ll force you that he would give you the money.’

(Padden 1983, 1988:140)

From (19) and (20) above, the end point of the verb in the main clause *FORCE* and the initial point of the verb in the embedded clause *GIVE* is shown to be identical. Otherwise, the sentence would be ungrammatical. In the case of backward verbs like *INVITE*, the pattern is different. Consider the following examples in (21) and (22):

(20) $_1$ URGE $_j$ $_i$ INVITE $_j$ SISTER
 ‘I urged him to invite his sister.’

(21) * $_1$ URGE $_j$ $_i$ INVITE $_i$ SISTER
 ‘I urged him that she invite him.’

(Padden 1983, 1988:141)

These two examples show that the backward verb *INVITE* in the embedded clause has to end at the end point of the regular verb *URGE* (i.e. locus-*j*) in the main clause.

⁴⁰ According to Padden (1983, 1988), *FORCE*-type verbs are verbs where “a coreferentiality constraint applies” (p.139). In English, *force* is a control verb. If the *FORCE*-type verbs in ASL are also control verbs, there should be a PRO in between the two verbs. As study on control verbs is out of the scope of this thesis, interested readers may refer to the relevant literature for further details.

⁴¹ The coreferentiality constraint in Padden’s (1983, 1988) analysis means that the manual person marking of the object in the main clause has to share the same spatial locus with that of the subject in the embedded clause.

In other words, the end point that marks the object of the verb in the main clause has to be the same as the end point that marks the subject of the backward verb in the embedded clause. As for the initial point of a verb in the source-goal analysis always indicates the source NP, while the end point makes the goal NP, two rules are needed to capture this phenomenon:

- (22) a. The goal of the matrix verb and the source of the embedded verb must be coreferential.
- b. The goal of the matrix verb and the goal of the embedded backward verb must be coreferential.

(Padden 1988:140-141)

However, according to Padden (1983, 1988), only one rule is needed in her analysis, as shown in (23) below:

- (23) The final 2 [i.e. direct object agreement marker] of the matrix clause and the 1 [i.e. subject agreement marker] of the embedded clause must be coreferential.

(Padden 1988:142)

Obviously, Friedman's (1975) semantic approach fails to capture certain agreement facts in ASL.

Recently, Meir's (1998, 2000) study on ISL also adopts a semantic approach. Following Padden (1983, 1988), Meir (1998, 2000) classified the verbs into agreement verbs, spatial verbs and plain verbs. She reports that agreement verbs and spatial verbs are both marked for agreement, the former with verb agreement and the latter with locative agreement. As for plain verbs, they are not marked for agreement at all. Based on Jackendoff's (1990) lexical-semantic theory, Meir (1998:15) proposes that agreement verbs in ISL are like complex verbs that consists of two parts: (i) TRANSFER and (ii) PATH. TRANSFER is a verb which indicates "causing of a change of possession" while PATH is like those agreement verbs we have seen in ASL in the sense that the initial point marks for source while the end point marks for goal (p.15). Another difference between PATH and TRANSFER is that the

former has agreement properties while the latter does not.⁴² She argues that all verbs involve some kind of transfer. However, it is not clear how “transfer” takes place for verbs of creation like *DRAW*. Though Meir’s (1998) analysis also has problems, like Friedman’s (1975) study, her analysis is still a breakthrough in signed language research as she reports that the facing of the hands is, in fact case markers. In spoken languages, case and agreement are closely related to each other. Yet the former is usually marked on nominals while the latter on verbs. Thus, Meir’s (1998) observation obviously contrasts with that in spoken languages.

In summary, the semantic approaches developed so far do not appear to be good enough to account for verb agreement. Nonetheless, both the analyses we have discussed agree that the inflected verbs are marked for the spatial loci that denote the source NP and goal NP in the signing space. In other words, both analyses grammaticalize the signing space.

3.5.2 *Syntactic approaches*

Padden’s (1983, 1988) analysis is one of the early syntactic approaches in ASL. In addition to dividing verbs in signed languages into agreement verbs, spatial verbs and plain verbs, her analysis also shows overt agreement marking is restricted to agreement verbs only. Apart from person agreement and number agreement, she reports that ASL demonstrates locative agreement between spatial verbs and locations. Padden (1983, 1988) views this locative agreement as one type of verb agreement. However, locative agreement should not be a subset of verb agreement because locative agreement does not have the third property of inflections (i.e. predictability).

Apart from Padden (1983, 1988), Bahan (1996) also attempted to explain verb agreement in ASL from a syntactic perspective. As mentioned in Section 3.2, Bahan

⁴² Meir (2000:430 fn) has omitted TRANSFER because “the notion of transfer can be read off directly from the LCS [Lexical Conceptual Structure, see Meir (1998) for further details] of transfer verbs”. With this modification of her analysis, the redundancy is eliminated.

(1996) observes that manual and non-manual person marking for the subject may be marked or unmarked (i.e. neutral marking). When the verb is inflected for a marked manual person marking, it starts at the spatial loci that denote the person value of the subject. However, if the verb is marked for person by a neutral marker (i.e. unmarked form), it starts in the neutral space that is close to the first person agreement form.⁴³ As for non-manual person marking for the subject, the marked form would direct towards the spatial loci in the signing space. For the unmarked form, the head tilts slightly upward (see Figure 3.19). If Bahan's (1996) observation is accurate, the unmarked manual and non-manual marking may have been overlooked in previous analyses. He further assumes that the subject agreement features can either be unspecified (i.e. unmarked forms) or fully specified (i.e. marked forms) while object agreement features must be fully specified. To account for these phenomena, Bahan (1996) adopts the checking theory. Consider the following tree structure in ASL in Figure 3.24 below:

⁴³ Bahan (1996) does not show whether contact at the signer's chest is contained in the first person marking or the neutral marking or both.

Figure 3.24 Phrase structure in ASL

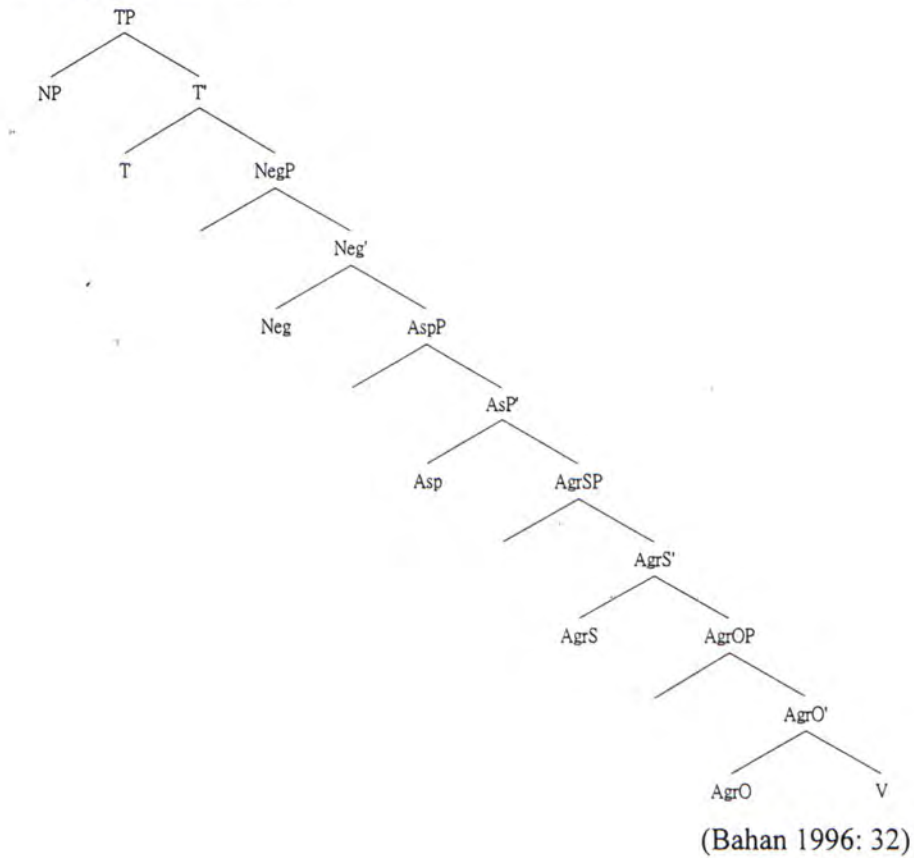


Figure 3.24 illustrates that AgrS is at a higher position than AgrO in ASL. Additionally, V is merged with AgrO via adjunction.⁴⁴ Since object agreement features are fully specified, the verb raises to AgrO to check its object agreement features. But for subject agreement features, they could be fully specified or unspecified. If the subject agreement features are fully specified, the verb raises further to AgrS and overt realizations of person (i.e. manual and non-manual marking) would be observed. When the verbs are not inflected by a subject agreement affix, the subject agreement features in ASL would be unspecified. When it is unspecified, verbs are not motivated to move upward to check these subject agreement features. In other words, the verb just raises to AgrO to check its object agreement features. Thus, feature checking explains why object agreement is always overtly marked while subject agreement is not. However, Bahan's (1996) account does not explain when the verbs can be unspecified for the subject. In the analysis of

⁴⁴ Bahan (1996) does not give any explanation to this operation.

HKSL, we suggest that agreement verbs that are not marked overtly are marked by a null morpheme. Then the so-called optional person agreement does not exist. As this chapter focuses on verb agreement of signed languages in previous studies, we will only examine this analysis of HKSL verb agreement in Chapter Five.

From the discussion above, all the syntactic analyses here agree that the signing space in ASL reflects the morphological realization of agreement markers. Among these analyses, Bahan's (1996) analysis does not only describe the agreement facts, but also explains them within a formal approach.

3.5.3 Mathur's (2000) phonological analysis

Mathur (2000:38) attempts to capture the agreement facts in ASL from a phonological point of view.⁴⁵ He proposes a phonological re-adjustment rule under the framework of Distributed Morphology:

(24) Re-adjustment Rule
Stem \rightarrow Align stem/X_____

where X = agreeing verb

(Mathur 2000:38)

He further names this re-adjustment rule as alignment. Alignment describes the various forms of agreement marking. The focus of this study is on the phonological formation of various forms of agreement, including orientation, path movement and so on. In other words, this study attempts to describe the agreement marking in ASL with alignment (which is a phonological rule). As noted, Mathur (2000) raised three key points about the previous studies on verb agreement in signed languages. These three points relate to the role of space in signed languages.

First, Mathur (2000:38) suggests "the role of space interacts with grammar at the phonological level". He points out that "the referential indices that are assigned to the noun phrases in the grammar may be associated with any locus in the space at

⁴⁵ Though Mathur (2000) includes other signed languages (i.e. DGS, Auslan and JSL) in his study, the main set of data being studied is ASL.

the edge of the phonological component” (p.38). In other words, there is overlapping between grammar and space in signed languages. So Mathur’s (2000) analysis implicitly rejects Liddell’s (2000) proposal that verb agreement is not reflected in the space.

Another point Mathur (2000) raises is that there are two spaces in signed languages: articulatory space and referential space. Articulatory space is the space where a sign is generally articulated. To be more specific, neither spatial loci that represent agreement nor those that indicate spatial locations are observed in the articulatory space. Referential space is where spatial locations, agreement systems and classifiers are involved.

Mathur (2000) observes that many signed languages use the same system for agreement, that is, the signing space. He suggests that an agreement system in signed languages is one of the sign language universal properties resulting from the use of space. That is, so-called verb agreement is related to the use of space, but not necessarily related to linguistic universal principles. We will further discuss these three points with the HKSL data in Chapter Four.

3.6 Differences on verb agreement in spoken languages and signed languages

When we review the previous studies on verb agreement in both spoken languages (as presented in Chapter Two) and signed languages (as in this chapter), we observe a number of similarities and differences in agreement marking. These similarities and differences are summarized in this section which provides us with a basis of our analysis in HKSL.

As mentioned in Chapter One, verb agreement in spoken languages refers to the relation between the verbs and their arguments in terms of person, number and gender. However, the notion of verb agreement is controversial in signed languages. This results in two other controversies on person marking in ASL. First, while Padden (1983, 1988) proposes a three-way distinction (i.e. first, second and third) for

person, Meier (1990) argues that person has a two-way distinction (i.e. first and non-first). On the other hand, Liddell (2000), in contrast to Padden (1983, 1988) and Meier (1990), argues that space cannot reflect person marking in both personal pronouns and verbs. In fact, verb agreement in signed languages, particularly person agreement in ASL, is more complex than that in spoken languages. The differences between verb agreement in signed and spoken languages are summarized in Table 3.7 below:

Table 3.7 Differences in verb agreement between spoken languages and signed languages

Signed languages	Spoken languages
Person and number are marked manually on agreement verbs, but not on spatial verbs or plain verbs (e.g. ASL, ISL, etc.).	Person, number and gender are marked on all main verbs and auxiliary verbs, if any.
It is controversial whether person has a two-way or a three-way person distinction.	For most spoken languages, a three-way person distinction, but not two-way person distinction, is observed.
Spatial loci are markers for person (e.g. ASL, BSL, etc.).	Agreement affixes mark agreement features (i.e. person, number or gender).
<ul style="list-style-type: none"> - Person agreement only involves manual change of the verbs (e.g. ISL). - It is controversial whether non-manual marking serves as agreement markers in ASL. 	No studies on non-manual marking are observed.
Agreement verbs with all person values are marked.	Main verbs and auxiliary verbs with all person values are marked when overt agreement marking occurs.
Optional subject agreement marking means that the verbs may or may not be marked for person of the arguments.	No optional agreement marking occurs.
Following Padden's (1983, 1988) analysis, the agreement verbs are either marked with both subject-verb agreement and verb-object agreement or verb-object agreement.	Cross-linguistically, subject-verb agreement more frequently occurs. Some languages demonstrate agreement marking for both subject and object. Others show subject-verb agreement only. No spoken languages mark verb-object agreement only.

Table 3.7 shows that verb agreement in spoken languages differs from signed languages in certain aspects. In spoken languages, verb agreement is a notion that is

commonly agreed to be a relation between the verb and its arguments in terms of the agreement features (i.e. person, number and gender). As noted in the previous chapter, some languages demonstrate overt agreement marking (e.g. English, Georgian, etc.) while other does not mark agreement overtly (e.g. Chinese). No matter whether the agreement marking is covert or overt, it occurs consistently in the sense that it is either obligatorily present or obligatorily absent in the same structure in a language. This phenomenon, perhaps, motivates Chomsky's (1995) checking theory where agreement features of the verbs are either strong or weak. When the verbs contain strong features, the verbs move upward to the AgrPs overtly. Otherwise, the verbs move upward to the AgrPs covertly. In either case, the verb must move. In other words, Chomsky has assumed that obligatoriness of inflectional marking occurs in all languages. But from our discussion on signed languages above, it is obvious that sign linguists have not reached a consensus on the notion of verb agreement (whether it is the same as or different from that in spoken languages), on the types of agreement markers (whether non-manual marking plays a role in verb agreement) and on the person distinctions (whether there is a two-way or a three-way person distinctions). Another issue overlooked is the optionality of verb agreement among signed languages. In Chapter Five, we will provide a more detailed discussion of this issue. The last point is agreement asymmetry in spoken and signed languages. In signed languages, it is possible to have marking for the object only, but not the subject and it is impossible to have marking for the subject only. In contrast, spoken languages demonstrate the opposite. That is, agreement marking for object must be accompanied with agreement marking for subject. It is impossible for a language to have verb-object agreement only. We suggest this agreement asymmetry in spoken and signed languages may be due to a modality effect.

3.7 Chapter Summary

Some current analyses of verb agreement in ASL were presented in this chapter.

These analyses demonstrate controversies on person distinctions. From our discussion, this may be due to mixing verb agreement with location marking. When verb agreement and location marking conflate, it is hard to tell whether person has a three-way or two-way distinction. Thus we argue that there is a need to separate the two. Besides, we have examined the relation between role shift and verb agreement, optionality of verb agreement and the differences of verb agreement between spoken languages and signed languages. All these will provide a basis for our analysis of HKSL.

Chapter Four

Verb Agreement in Hong Kong Sign Language

4.0 Introduction

In this chapter, we will examine verb agreement in Hong Kong Sign Language vis-à-vis the agreement systems in spoken and signed languages discussed in the previous chapters. Specifically, this chapter presents the morphological realizations of person in HKSL with reference to the three research questions stated in Chapter One, repeated as (1) below:

- (1) a. Is there person agreement in HKSL? If yes, how is it marked?
- b. Does the space play a role in person agreement?
- c. Is there any optionality in person agreement?

Previous studies demonstrate controversies about the notion of verb agreement and person distinctions. With respect to these controversies, we suggest there is a need to separate out all factors that possibly influence the morphological representation of verbs in order to highlight the genuine agreement patterns. In our study of verb agreement in HKSL, we divide the data into three areas: (i) utterances without location marking and role shift and (ii) utterances with role shift¹ and (iii) utterances with location marking. The first area of data will show the genuine agreement pattern in HKSL. The second and third areas will show us how role shift and location marking affects person marking in HKSL. In Section 4.1 and 4.2, we will discuss the first set of data so that we can get a better picture of the agreement patterns in HKSL when location does not intervene. Section 4.3 is devoted to an investigation of person marking when role shift takes place. In Section 4.4, we will study the relation between location and agreement marking in HKSL. Section 4.5 describes how location marking, role shift and person marking interact with one another. Further

¹ As mentioned in Chapter Three, role shift, a discourse device, refers to the phenomenon where the signer signs as if he/she is another participant (Loew 1984). In Section 4.3, a more detailed discussion of the role shift will be given.

discussions related to person agreement will be provided in Section 4.6.

4.1 Person in personal pronouns

In this section, we will show how spatial loci signal person in the HKSL personal pronouns when location marking and role shift are absent. As has been observed in ASL², no particular non-manual marking serves to mark the person values.³ So our discussion below will focus on the manual articulation of personal pronouns. Singular personal pronouns are in the form of index signs in HKSL.⁴ Like other signed languages and as reported in Tang and Sze (2002), index signs in HKSL may either be personal pronouns or determiners forming a [det N] sequence (e.g. *INDEX_{det} FEMALE*). As a result, there is a need to distinguish different grammatical functions of the index signs. In the data, only index signs that serve to replace the full NP and refer to participant roles (i.e. speaker, addressee and a third party) are glossed as personal pronoun *INDEX_{pro}* (*INDEX* refers to the index finger of the pronoun and *pro* means pronoun). For index signs that function as determiners, following MacLaughlin (1997), we distinguish prenominal determiners and postnominal determiners. These two types of determiners are glossed as *INDEX_{det}* and *INDEX_{adv}* respectively.⁵

223 tokens are observed in the first set of data which are collected from both informants (i.e. location marking and role shift are absent). Among these tokens, three personal pronouns are observed: first person pronoun *INDEX_{pro 1}*, second person pronoun *INDEX_{pro 2}* and third person pronoun *INDEX_{pro 3}*. A summary of the

² In ASL, no non-manual marking is observed to be associated with personal pronouns (MacLaughlin 1997).

³ Tang and Sze (2002) report that eye gaze functions as a definite marker in HKSL. Yet, Tang and Sze's (2002) analysis is based on data where location marking is involved. In our case, no non-manual marking for person is observed when location is not involved.

⁴ In HKSL, dual, trial and plural personal pronouns may be in the same form as the singular personal pronouns (See Appendix 5 for a brief introduction of plural pronouns in HKSL). As the focus of this thesis is person, most utterances studied involve singular nominals. For a detailed study of number, further research is required.

⁵ As the main theme of this thesis is person agreement with verbs in HKSL, we will not examine the determiners in HKSL. Interested readers may refer to Tang and Sze (2002) for further details.

number of occurrences of the three distinct personal pronouns is given below in Table 4.1:

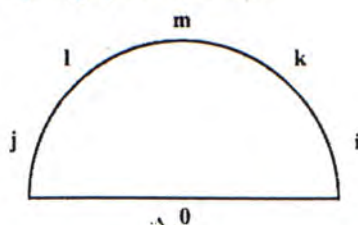
Table 4.1 The number of tokens of personal pronouns in HKSL

Personal Pronouns	No. of tokens (n:223)	% of tokens
1	107	47.98
2	21	9.42
3	95	42.60

Table 4.1 above shows that there are fewer instances of second person pronoun than first and third person pronouns. This is because second person pronouns do not occur frequently in either task. In the picture narration, due to the nature of the task, second person pronouns are almost absent. As for the free conversation, the second person pronouns are only used for questions or confirmation. So only relatively few personal pronouns are second person.

In line with Padden (1983, 1988) and Bahan (1996), person in personal pronouns is represented manually by the spatial loci. That is, the first person pronoun $INDEX_{pro 1}$ always involves a contact at the signer's chest (i.e. locus-0 in Figure 4.1 below). When no contact is involved, the first person pronoun is ill-formed in HKSL. So 'contact' may be a phonological feature for the first person pronoun 'I'. As for the second person pronoun $INDEX_{pro 2}$ and third person pronoun $INDEX_{pro 3}$, the former directs toward the addressee (i.e. locus-m in Figure 4.1) and the latter at the loci on either the right or the left side of the signer (i.e. loci-i/j/k/l in Figure 4.1).

Figure 4.1 Signing space in HKSL



In other words, locus-0 marks first person value; locus-m denotes second person value and loci-i/j/k/l denote the third person value. In the following discussion, we will show how spatial loci denote the three distinct person values of personal pronouns in both subject and object position.

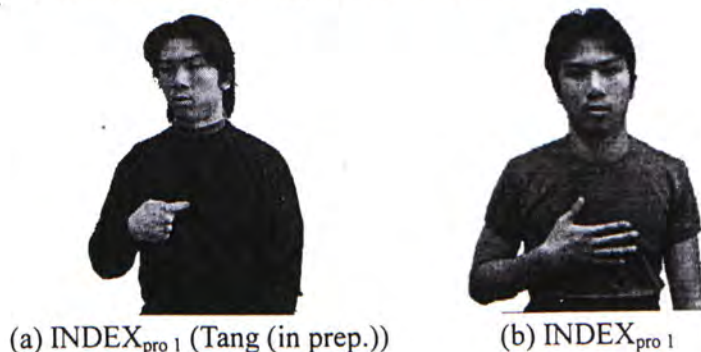
Among 223 tokens, 215 tokens (i.e. 96.41%) are observed in the subject position while the remaining 8 tokens (i.e. 3.59%) occur in the object position.⁶ This may be due to the fact that object pronouns are usually null in the data. By ‘null’, it means that the grammatical element is not phonologically realized. The general result of the three subject person pronouns collected from picture narration and free conversation are summarized as Table 4.2 below:

Table 4.2 Subject personal pronouns in picture narration and free conversation

Personal Pronouns	No. of tokens (n:215)	% of tokens
1	107	49.77
2	21	9.77
3	87	40.47

Table 4.2 above shows the number of instances of first, second and third person pronouns in subject position. The spatial loci consistently denote the three distinct person values of the personal pronouns in subject position. For first person pronoun, two forms are observed. The first one is in the form of an index finger pointing at locus-0 while the second variant is in the form of a B-handshape (B) with the palm directing to locus-0 together with obligatory contact at the signer’s chest, as illustrated in Figure 4.2a and b below:

Figure 4.2 Two forms of first person pronoun in HKSL



Generally speaking, the first form of first person pronoun in subject position is more productive than the second one in both tasks (picture narration and free conversation), as shown in Table 4.3 below:

⁶ As noted earlier, we only present data without location marking and role shift in this section. Personal pronouns with role shift will be discussed in Section 4.3. In Section 4.4, we will show that no personal pronouns occur when location marking takes place.

Table 4.3 The distribution of the two forms of first person pronouns in subject position

	Picture Narration		Free Conversation	
	First form	1/1	100.00%	65/106
Second form	0/1	0.00%	41/106	38.68%

Table 4.3 shows, first, that there is a task variation in the occurrences of the different form of $INDEX_{pro\ 1}$. $INDEX_{pro\ 1}$ seldom occurs in picture narration but it occurs more frequently in free conversation. Second, the first form (1-handshape) occurs more frequently than the second form (β-handshape). Though the two forms differ in handshape, both forms are directed towards locus-0. See example in (2) and (3) below:⁷

- (2) Context (free conversation): The signer talked about the development of the secondary school he attended before. He thought that his secondary school had been developing well.

RH $INDEX_{pro1}$ $_1SEE_3$ GOOD
 LH
 BH

'I see (the school), (its development is) good.'

- (3) Context (free conversation): The signer talked about the days when he was studying at School A. At that time, the signer could study computing in class. The signer complained that the computer lessons were poorly conducted because what they learnt was outdated computer knowledge. Hence, during the computer lesson, the signer ignored the teacher.

RH $INDEX_{pro1}$
 LH
 BH IGNORE

'I ignore (the teacher).'

In (2) above, the first form (i.e. 1-handshape) was observed while β-handshape (another form) was observed in (3).⁸ In these two examples, both forms of the first person pronoun were directed toward locus-0. Note that locus-0 in the first person pronoun cannot be replaced by other spatial loci. Consider the following examples in (4) and (5) below:

⁷ As the focus of this thesis is to investigate person instead of phonological variations of lexical items, we do not distinguish the two forms of first person pronoun in the transcriptions.

⁸ Note that the verb in (1) is an agreement verb marked with first person subject and third person object (represented by the subscripts) while that in (2) is a plain verb that is not marked for person at all. We will return to the discussion of person agreement in Section 4.2 below.

(4) * RH INDEX_i IGNORE
LH
BH

(5) * RH INDEX_m IGNORE
LH
BH

From (4) and (5) above, the first person pronoun cannot be articulated at other spatial loci like locus-i (that marks third person) or locus-m (that marks second person). As a result, only locus-0 marks the first person value.

For the second and third person pronouns in subject position, both of them are in the form of an index sign and it is the spatial loci that distinguish the two values, as illustrated in Figure 4.3 below:

Figure 4.3 Second and third person pronouns in HKSL



By definition, *INDEX_{pro 2}* always points at the addressee (i.e. locus-m in Figure 4.1) as in Figure 4.3a above) while *INDEX_{pro 3}* may direct to either the left or the right side of the signer (i.e. locus-i/j/k/l in Figure 4.1) as in Figure 4.3b and c above. Contrary to Meier's (1990) observations on ASL, HKSL pronouns demonstrate a three-way distinction. Consider the following examples in (6) and (7) below:

- (6) Context (free conversation): In a discussion about the development of a computer lesson at School A, the signer compared her computer knowledge with the addressee's. She told the addressee that her computer knowledge was the poorest, but the addressee's computer knowledge was quite good. She added that she is completely ignorant about computing.

RH	INDEX _{pro 2}	INDEX _{pro 1}	POOREST
LH			
BH	PRETTY-GOOD ⁹		

RH		INDEX _{pro 1}	COMPLETELY-IGNORANT
LH	INDEX _{det}	INDEX _{pro 1}	COMPLETELY-IGNORANT
BH			

'You are pretty good at computer, I am the poorest. I am completely ignorant of it.'

(See Appendix 3, page 196)

- (7) Context (free conversation): The signer talked about her friend who did not know how to read and write.

RH	INDEX _{pro 3}	KNOW-NOTHING-ABOUT	WASTE
LH			
BH	WRITE		

RH	KNOW-NOTHING-ABOUT
LH	
BH	WRITE

'She knows nothing about writing, (she) wastes the time of studying at school, (she) knows nothing about writing.'

In (6) above, the first index sign is glossed as *INDEX_{pro 2}* because this index sign points at locus-m to mark the second person value of the personal pronoun.¹⁰ In (7) above, the third person pronoun *INDEX_{pro 3}* directs to locus-l to denote the third person value. From our observations, *INDEX_{pro 2}* and *INDEX_{pro 3}* are distinguishable in HKSL because the spatial loci of these personal pronouns cannot be reversed, as is

⁹ According to Tang (in prep.), this sign is glossed as *AVERAGE*. Yet, the signer pointed out that the sign here means 'pretty-good' instead of 'average' as usual after the task. So we gloss the sign as *PRETTY-GOOD* instead of *AVERAGE*.

¹⁰ One may argue that first and second person pronoun involves real locations in these data. Thus, these examples cannot prove whether locus-m and locus-0 mark second and first person respectively. Yet, from our data with role shift, it is observed that locus-m and locus-0 also represent second and first person when no real locations are involved. This suggests that these two loci do mark person. We will discuss this further when we discuss data with role shift in Section 4.3.

illustrated in examples (8) and (9) below:

- (8) * RH INDEX_{pro 3} | INDEX_{pro 1} POOREST |
 LH |
 BH PRETTY-GOOD |
- RH INDEX_{pro 1} COMPLETELY-IGNORANT
 LH INDEX_{det} INDEX_{pro 1} COMPLETELY-IGNORANT
 BH
- (9) * RH INDEX_{pro 2} KNOW-NOTHING-ABOUT | WASTE |
 LH |
 BH WRITE |
- RH KNOW-NOTHING-ABOUT
 LH
 BH WRITE

From (8) and (9) above, we see that we cannot replace the second person pronoun *INDEX_{pro 2}* with the third person pronoun *INDEX_{pro 3}* and vice versa. In Chapter Three, we mentioned that Meier (1990) proposes a two-way distinction for person on the basis of the argument that the second person locus and third person locus overlap. Following Meier's (1990) logic, person will have three distinct values only when the second person locus and the third person locus do not overlap. As the examples (8) and (9) above show that second person and third person are two distinct person values, we suggest that HKSL demonstrates a three-way distinction.

Contrary to personal pronouns in subject position, only very few instances of object pronouns (8/223, i.e. 3.59%) are observed. From the data collected from picture narration and free conversation, no first person pronoun and second person pronoun in object position are observed. All of the personal pronouns in object position are third person, as shown in Table 4.4 below:

Table 4.4 Object personal pronouns in the picture narration and the free conversation

Personal Pronoun	No. of tokens (n:8)	% of tokens
1	0	0.00
2	0	0.00
3	8	100.00

Table 4.4 above illustrates that the number of instances of personal pronouns in object position is relatively very small. This is because there is a tendency for the signer to sign an utterance with null object pronouns.¹¹ So the small number of instances does not result from task variation. In both spoken and signed languages, null arguments may occur with (i) verbs that are attached with agreement inflections (e.g. Italian) or (ii) unmarked verbs in topic-comment construction (e.g. Chinese). As for signed languages, Lillo-Martin (1986) and Bahan, Kegl, Lee, MacLaughlin and Neidle (2000) (hereafter BKLMN (2000)) all show that null subjects and objects are common with agreement verbs and plain verbs in ASL.¹² Similarly to ASL, null arguments in HKSL can also occur with both agreement verbs and plain verbs.¹³

From this small set of data on object pronouns, it is observed that there is only one form for third person pronouns in subject and object position in terms of handshape, location, movement and orientation. See examples (10) and (11) below:

(10) Context: There was a pretty girl. Many men liked her.

RH MANY MALE LIKE INDEX_{pro 3}
 LH
 BH

'Many men like her.'

(See Appendix 3, page 196)

(11) Context (free conversation): The signer said that if School A chose sign language as a medium of instruction, School A, like School C, would not be able to get any donations.

RH INDEX_{pro 3} DONATE₃ WON'T
 LH
 BH

'(The sponsors) would not donate money to it (i.e. the school).'

¹¹ The conditions for null arguments to occur and its relation to verb agreement require further research.

¹² Lillo-Martin (1986) and BKLMN (2000) have opposing views on the licensing mechanisms for null arguments in ASL. Yet, they both agree that null arguments occur with agreement verbs and plain verbs.

¹³ The licensing mechanisms of null arguments are controversial in ASL. In HKSL, preliminary observations on null arguments echoes those illustrated in Lillo-Martin's (1986) analyses. However, a detailed analysis requires further study.

In both (10) and (11), $INDEX_{pro\ 3}$ directs to locus-k. In our previous discussion, subject personal pronouns direct to the spatial loci on either side of the signer (loci-i/j/l/k) to mark the third person value. So $INDEX_{pro\ 3}$ in both subject and object position points at loci-i/j/k/l to mark the third person value. In other words, $INDEX_{pro\ 3}$ in object position, is in the same form as those in subject position. Note that the structures in (10) and (11) above are different. In (10), $INDEX_{pro\ 3}$ follows the verb *LIKE*, which is a plain verb. As for (11), the object pronoun $INDEX_{pro\ 3}$ referring to ‘the school’ is articulated first and the end point of the agreement verb $DONATE_3$ agrees with $INDEX_{pro\ 3}$. We propose that this is an example of topic construction. In HKSL, Sze (2000) assumed that the basic word order is SVO. In (11), it is clear that the object is in initial position. Thus, it is suggested that the object may have been moved up to a higher maximal projection. For person distinctions, object personal pronouns also demonstrate a three-way distinction. Examples (12) and (13) below show that the spatial loci for $INDEX_{pro\ 2}$ and $INDEX_{pro\ 3}$ cannot overlap:

(12) * RH MANY MALE LIKE $INDEX_{pro\ 2}$
 LH
 BH

(13) * RH $INDEX_{pro\ 2}$ $DONATE_3$ WON'T
 LH
 BH

From (12) and (13) above, $INDEX_{pro\ 2}$ cannot replace $INDEX_{pro\ 3}$. We therefore suggest that $INDEX_{pro\ 2}$ and $INDEX_{pro\ 3}$ are two distinct grammatical entries. So personal pronouns in HKSL demonstrate a three-way distinction instead of a two-way distinction.

From the discussion above, it is clear that $INDEX_{pro\ 3}$ in subject and object positions share the same form. As for first person pronoun, the author asked the signer to judge the sentence in (14) below in order to find out whether the first person pronoun in object position differs from that in subject position.

- (14) Context: When I was small, I went to a hospital once for an operation. After the operation, I woke up and I saw two doctors looking at me.

RH TWO DOCTOR ₃LOOK₁ (INDEX_{pro 1})
 LH ₃LOOK₁
 BH-

‘Two doctors look at (me).’

(See Appendix 3, page 197)

In (14) above, the signer adopts *INDEX_{pro 1}* in the form of index finger. In addition, the second form of first person pronoun is also possible. In other words, the first person pronouns in HKSL in both subject and object positions are of the same form. Besides, like the first person pronoun in subject position, the spatial locus of first person pronoun in object position cannot be replaced by other spatial loci. Thus, the first person value is distinctive in personal pronouns in HKSL. However, it should be noted that signers prefer null objects, though presence of personal pronouns do not make the sentence ungrammatical. Consequently, signers’ preference for null objects explains why only a very few instances of object personal pronoun are observed.

For second person pronoun, we have an instance obtained from an informal conversation with the signer, as shown in (15) below:

- (15) Context: The author asked the signer why she couldn’t operate the DV recorder a few minutes ago. The signer playfully said that it was because the DV recorder dislikes the author.

RH INDEX_{det} DISLIKE INDEX_{pro 2}
 LH
 BH

‘The DV recorder dislikes you.’

From (15) above, the second person pronoun *INDEX_{pro 2}* in object position, like those second person pronoun in subject position, also points at the addressee to denote second person value. That is, the second person pronoun in both subject and object position are marked by locus-m to denote the second person value. If the pointing directs towards the third person loci, the sentence is ungrammatical. So the second person and third person values in personal pronouns are also distinguishable in object

position. Also the personal pronouns in HKSL do not have different forms in different grammatical positions (i.e. subject position and object position).

At the beginning of this section, we mentioned that non-manual markings do not play a role in the various forms of personal pronouns. In line with Meier (1990), the present author suggests that eye gaze (which has been questioned vis-à-vis its role in marking person) does not take any part in the personal pronoun signing system because eye gaze occurs throughout the sentences in many cases. In addition, it is impossible to have an eye gaze directed to the addressee with a non-m index or vice versa to mark second person in HKSL. Therefore, non-manual marking is not presented in the above examples.

To conclude, personal pronouns in HKSL can be marked manually (but not non-manually) by the spatial loci in the signing space. In contrast to Meier's (1990) two-way distinction, HKSL demonstrates three person values, first, second and third, in personal pronouns by three sets of spatial loci. The personal pronouns cannot be articulated without pointing to the distinctive spatial loci for different person values. Thus, spatial loci are obligatorily attached to personal pronouns to mark different person values (i.e. first, second and third). In addition, similar to ASL¹⁴, personal pronouns do not consist of any non-manual component in HKSL.

4.2 Person marking in verbs

Apart from personal pronouns, the verb is another linguistic category that reflects person. However, in contrast to personal pronouns, person marking on the verbs does not denote person of the verbs per se, but that of their arguments. In ASL, manual realizations of person are restricted to agreement verbs, but not to plain verbs or spatial verbs. For the non-manual marking for person, Bahan (1996) argues that head tilt and eye gaze can unify the agreement systems for both plain verbs and agreement verbs. In HKSL, as mentioned previously, verbs can also be divided into

¹⁴ As noted, no non-manual marking is observed to mark person of personal pronouns.

three types: agreement verbs, plain verbs and spatial verbs according to their spatial modifications. In line with Padden (1983, 1988), only agreement verbs are marked manually for person in HKSL. In our description of person agreement, we divide the first set of data (i.e. where location marking and role shift are absent) into three groups: (i) agreement verbs marked for person of both subject and object, (ii) agreement verbs that indicate person for the object only and (iii) agreement verbs that are not marked for person. As for the non-manual realizations of person, like as we have observed in personal pronouns, no particular non-manual markers appear to be realizations of person in HKSL. In the following section, a brief review of verb types in HKSL is given as background to our discussion on verb agreement. In Section 4.2.2, we will study the three sets of data mentioned above.

4.2.1 Verb Types

In HKSL, in line with Padden (1983, 1988), three types of verbs are classified: agreement verbs, plain verbs and spatial verbs. The distribution of these verbs in the data are given in Tables 4.5 and 4.6 below:

Table 4.5 Number of tokens of the three types of verbs in the picture narration

Verb Types	No. of tokens (n:177)	% of tokens
Agreement Verbs	142	80.23
Plain Verbs	31	17.51
Spatial Verbs	4	2.26

Table 4.6 Number of tokens of the three types of verbs in the free conversation

Verb Types	No. of tokens (n:161)	% of tokens
Agreement Verbs	120	74.53
Plain Verbs	18	11.18
Spatial Verbs	23	14.29

In Tables 4.5 and 4.6 above, most verbs are agreement verbs while plain verbs and spatial verbs contribute to a small portion in both tasks. The lists of verbs studied in the two tasks are given in Tables 4.7 and 4.8 below:

Table 4.7 Verbs elicited in the picture narration¹⁵

Agreement verbs				Plain verbs	Spatial verbs
Regular		Backward			
SV/VO-agr	VO-agr only	SV/VO-agr	VO-agr only		
ASK	HELP	CATCH	BORROW	BRING	GO
BITE	KICK			BUY	WALK
FEED	PUSH			COUGH	
INTRODUCE	TOUCH			CRY	
GIVE				DISLIKE	
HIT				ESCAPE	
KISS				LIKE	
LOOK				LOOK-AFTER ¹⁶	
SAY				LOOK-FOR	
SCOLD				LOSE	
SEDUCE				MAKE	
SEE				MISS-SOMEBODY-	
SEND				DEEPLY	
SPEAK-ILL- OF-SOMEONE				RUN	
STAB				SAVE	
THROW				SELL	
TOUCH				SWIM	
				TEACH	
				WAIT	

Table 4.8 Verbs observed in the free conversation¹⁷

Agreement verbs		Plain verbs	Spatial verbs
Regular			
SV/VO-agr	VO-agr only		
FARE-MORE-THAN ¹⁸	ADMIRE	DEVELOP	ARRIVE
FORCE	DONATE	DISLIKE	COME
GIVE		TEACH	GO
LOOK			WALK
SAY			
SEE			

Tables 4.7 and 4.8 above show that agreement verbs in HKSL, like other signed languages, can be divided into regular verbs and backward verbs. For regular verbs, they start at the spatial locus that denotes the person value of the subject and end at a spatial locus that marks person value of the object. Backward verbs are different from the regular verbs in that it is the initial point that marks person of the object and the end point marks person of the subject. Apart from this, verbs can further be

¹⁵ SV/VO-agr stands for subject-verb agreement and verb-object agreement and VO-agr stands for verb-object agreement.

¹⁶ In HKSL, *SUPERVISE*, *GOVERN*, *MANAGE* and *LOOK-AFTER* all share the same form (Tang (in prep.)).

¹⁷ In the free conversation, not all verbs are studied. As we learn from the picture narration that agreement verbs are the only type of verb that can be marked for person overtly, our focus is on the agreement verbs. In addition, we study some verbs like *FARE-MORE-THAN*, *ADMIRE*, *DONATE*, *FORCE*, *DEVELOP*, *ARRIVE*, *COME* that were not elicited via picture narration.

¹⁸ See Chapter One for the rationale behind the translation of this sign.

divided into (i) verbs that are marked for both subject-verb agreement and verb-object agreement (SV/VO-agreement hereafter) and (ii) verbs that show verb-object agreement only (VO-agreement hereafter). As for spatial verbs and plain verbs in HKSL, they are also parallel to those in ASL in the sense that no manual marking for person is observed for these verbs. In the subsequent sections, we will summarize our observation on these three types of verb.¹⁹

4.2.2 Spatial verbs and plain verbs – absence of agreement marking

In conformity with ASL, plain verbs and spatial verbs are not marked manually for person agreement in HKSL. For plain verbs, when the person values of the subject and object vary, the verbs remain in their citation forms. In other words, these types of verbs are not inflected manually for person. In addition, most plain verbs are body-anchored (i.e. the sign must be articulated on or near the body parts such as the chest, shoulders, etc.). See the example in Figure 4.4 below:

Figure 4.4 CRY in HKSL



(Tang (in prep.))

CRY, as a plain verb, is articulated near the eyes. If the sign *CRY* is not articulated near the eyes, it would be ill-formed. In signed languages, person marking is usually carried out via the signing space. For body-anchored verbs, the space for articulation is restricted to the body's part and the signing space is not used. According to an anonymous reviewer, the New York signers of ASL can sign a spatial verb like

¹⁹ The illustrations of these three types of verbs are given in Appendix 2.

TELEPHONE without body anchoring for agreement.²⁰ This contrasts with many HKSL plain verbs which are consistently body-anchored. That is, plain verbs in HKSL would not be in a form without body anchoring for the sake of agreement. Among the plain verbs, some are one-place predicates; others are two-place predicates. For one-place predicates, the person of the subject is not marked on the verb. As for two-place predicates, the person values of the subject and object are not denoted by any verbal inflections. Consider the verb *DISLIKE*, a sign in i-handshape (✎) with a short path movement directed at the signer's chin, as shown in Figure 4.5 below:

Figure 4.5 Citation form of *DISLIKE* in HKSL



(Tang (in prep.))

DISLIKE, as a plain verb, maintains its citation form in all occurrences in our data. In other words, it is not marked manually for either the subject or the object. See example (16) and (17) below:

- (16) Context (free conversation): The signer expressed his discontent towards the teachers at School-A because they did not try to reflect the real situation to the principal.

RH DISLIKE INDEX_{pro 3}
 LH
 BH

'(I) dislike them'.

²⁰ Location marking and agreement marking are treated as one single language phenomenon in sign language literature. The present author therefore doubts whether the spatial verb like *TELEPHONE* directs to spatial loci that indicate agreement or simply locations of the referents. If this kind of verbs only directs to the locations of the referents, spatial verbs are still verbs that marks for locations, but not agreement, as suggested in Padden's (1983, 1988) analysis. We will discuss this issue further in Section 4.4.

person, but the location of the referents. For instance, *WALK*, a sign in an inverted V-handshape (𐄀) that contains a trilled, wriggling movement of the fingers (see Figure 4.6 below), does not denote person, but the locations of the subject referent involved in the action.

Figure 4.6 Citation form of WALK in HKSL



(Tang (in prep.))

When the person value of the subject differs, the spatial loci of the spatial verb *WALK* remains unchanged. Consider the following examples in (19) and (20) below:

- (19) RH MALE _iWALK_j
 LH CL:TREE-BE-LOCATED-j-----
 BH TREE

‘There is a tree. A man walks towards the tree.’

(See Appendix 3, page 198)

- (20) RH INDEX_{pro 1} _iWALK_j
 LH CL:TREE-BE-LOCATED-j-----
 BH TREE

‘There is a tree. I walk towards the tree.’

(See Appendix 3, page 198)

In (19) and (20) above, the verb sign *WALK* starts at locus-i and ends at locus-j even though the person values of the subject are different in the two utterances. In (19) above, the subject is third person while that in (20) is first person. Clearly, these two loci do not denote third person for either the subject or the object, but the locations of the source and goal. So, like ASL, neither plain verbs nor spatial verbs are marked for person overtly in HKSL. Though person is not overtly marked on plain verbs and spatial verbs, we assume that person, as an agreement feature, is present and it is

covertly marked.²² The presence of person in verb agreement is further supported by the overt morphological realizations of person in agreement verbs. In the next section, we will examine the overt agreement marking on agreement verbs.

4.2.3 Agreement marking on agreement verbs²³

In signed languages, specifically ASL, it is generally agreed that the manual realization of person occurs in agreement verbs only (Padden 1983, 1988). Like ASL, only agreement verbs are marked for person in HKSL. Most instances demonstrate that agreement verbs are marked for person, as illustrated in Table 4.9 below:

Table 4.9 Agreement marking in picture narration and free conversation

Subject-verb agreement	Verb-object agreement	No. of tokens (n:106)	% of tokens
✓	✓	73	68.87
×	✓	12	11.32
×	×	21	19.81

Most instances of agreement marking (68.87%) are with agreement verbs that are marked for person of both the subject and the object. There are also a small number of instances (11.32%) of verb-object agreement. In addition, some instances (19.81%) demonstrate absence of person marking. We further confirmed the instances of verb agreement with the four signers. We observe that the agreement verbs in most instances can be marked or unmarked (i.e. in the citation form) for person. This is in line with ASL, DSL and LIS where optional marking is also observed (Pizzuto 2002).

Table 4.9 is revised as Table 4.10 below:

Table 4.10 Agreement marking in picture narration and free conversation (revised)

	Agreement marking	No. of tokens (n:106)	% of tokens
a.	Obligatory SV/VO-agreement	26	24.53
b.	Obligatory VO-agreement only	2	1.89
c.	Optional SV/VO-agreement	52	49.06
d.	Optional VO-agreement only	16	15.09
e.	Absence of agreement marking	10	9.43

²² We will examine this further in Chapter Five.

²³ As the first piece of research on verb agreement in HKSL, this thesis excludes the classifier predicates that probably behave differently from the verbs we studied here.

Table 4.10 shows that verbs in most instances are marked for person (see rows a-d in the table) and the absence of person marking (9.43% in row e) occurs in a few instances. Note that there are (i) instances where agreement marking is obligatorily marked (i.e. a and b) and (ii) instances where agreement marking is optional (i.e. c and d). Optionality outnumbers obligatoriness of verb agreement in HKSL (i.e. 64.15% to 26.42% respectively). We will attempt to account for this phenomenon in Sections 4.2.3.2 and 4.2.3.3 below.

As in ASL, we observe that the spatial loci in the signing space mark person in verb agreement in HKSL. Consider Figure 4.1, repeated as Figure 4.7 below:

Figure 4.7 Spatial loci observed for marking person in HKSL

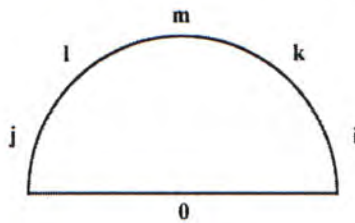


Figure 4.7 shows the spatial loci for marking person in HKSL. Similar to the personal pronouns discussed above, locus-0 marks first person; locus-m marks second person and loci-i/j/k/l mark third person in verb agreement. However, as has been observed in Padden (1983, 1988), third person marking for subject can be omitted (we will discuss this below shortly). In the following discussion, we will study the person distinctions, the issue of obligatory and optional agreement and whether non-manual marking functions as a person marker in SV/VO-agreement and VO-agreement in HKSL.

4.2.3.1 Person distinctions in HKSL

Chapter Two demonstrates that there is a controversy about person distinctions in ASL. While Padden (1983, 1988) reports a three-way person distinction (i.e. first, second and third), Meier (1990) argues that ASL has a two-way person distinction only (i.e. first and non-first). Padden's (1983, 1988) analysis is borne out in the

- (22) Context (free conversation): The signer told the addressee that the secondary school he attended before had developed rapidly even though the school stressed speech instead of sign language.

RH INDEX_{pro 1} ₁SEE₃ GOOD
 LH "
 BH BUT SCHOOL DEVELOP

'But for the development of the school, I see (the school), (its development is) good.'

(See Appendix 3, page 199)

The verb *SEE* in (22) above is marked with locus-0 initially and locus-i finally. The former denotes first person of the subject while the latter indicates the third person of the object, as illustrated in Figure 4.9 below:

Figure 4.9 ₁SEE₃ in example (22) above²⁴

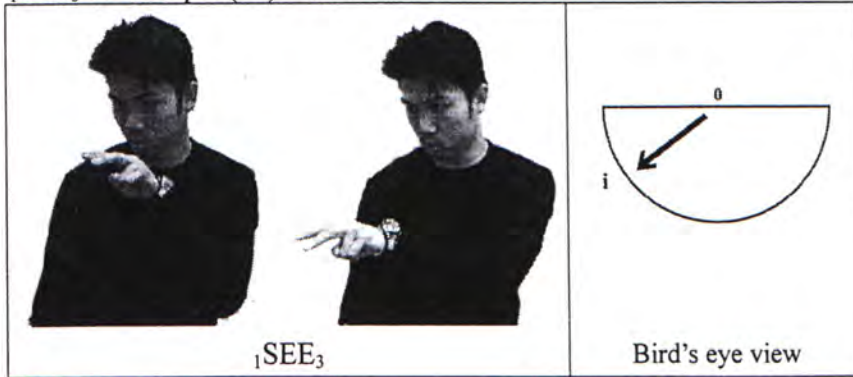


Figure 4.9 shows that the verb *SEE* starts at locus-0 and ends at locus-i when the subject is first person and the object is third person. Contrary to Meier (1990), SV/VO-agreement in HKSL demonstrates a three-way person distinction because the second person locus cannot overlap with the third person loci, as shown in (23) below:

(23) * RH INDEX_{pro 1} ₁SEE₂ GOOD
 LH
 BH BUT SCHOOL DEVELOP

In (23) above, if the verb sign *SEE* ends at locus-m (see Figure 4.9), the sentence would be ill-formed. That is, the third person locus (i.e. locus-i in (22) as illustrated

²⁴ It is observed that *SEE* always associates with eye gaze. We therefore suggest that eye gaze is a non-manual component of the verb *SEE*. Note that we do not suggest eye gaze as a syntactic agreement marker as Bahan (1996) does, because eye gaze does not consistently occur with other verbs.

in Figure 4.9) cannot be replaced by the second person locus. As a result, in contrast to Meier's (1990) proposal for a two-way distinction where the second person locus and the third person loci may overlap, HKSL demonstrates a three-way distinction in accord with Padden's (1983, 1988) studies.

As noted, there is a sub-class of agreement verbs, namely backward verbs. Contrary to regular agreement verbs, it is the initial point that marks person of the object while the end point marks person of the subject. For instance, *CATCH* is a backward verb in HKSL. The citation form of *CATCH* is given in Figure 4.10 below:

Figure 4.10 Citation form of *CATCH* in HKSL



(Tang (in prep.))

From Figure 4.10 above, the citation form of *CATCH* is shown to involve a movement towards the signer's torso. When the verb is marked for person of both subject and object, the initial point and end point of the verb are different from that in the citation form. Consider the following example in (24) below:²⁵

- (24) Context: The author and the signer were using computers in the office. The signer then walked around. It seemed that he was searching for something. The author asked what he was doing. He answered that there was a mosquito and he wanted to catch it.

RH INDEX_{pro 1} WANT ₃CATCH₁
 LH
 BH

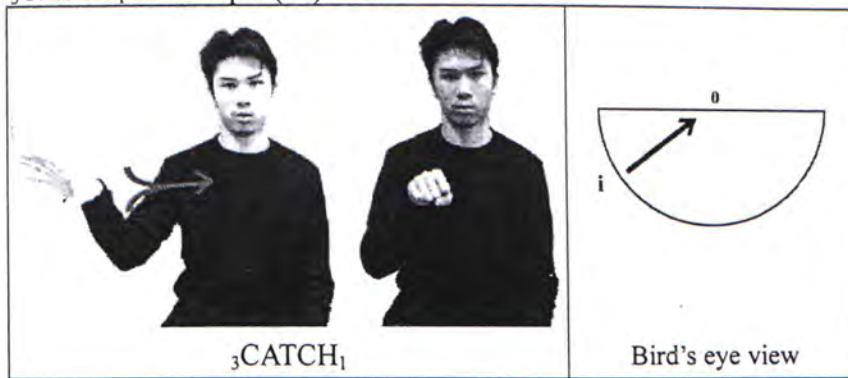
'I want to catch (it).'[^]

In (24) above, the verb *CATCH* is marked for third person object initially (locus-i)

²⁵ As the instances of backward verbs in this set of data (where role shift and location marking does not take place) all involve subject marker omission (which will be discussed below shortly), we present an example obtained from a daily conversation of the author and the signer.

and the first person subject finally (locus-0), as illustrated in Figure 4.11 below:

Figure 4.11 ${}_3\text{CATCH}_1$ in example (24) above



Example (24) can also show that HKSL demonstrates a three-way distinction because the initial point of the verb *CATCH* cannot be marked with the second person locus. Otherwise, the sentence in (24) would be ill-formed. As second person locus does not overlap with the third person locus, example (24) shows that person has three distinct values instead of two.

From the examples above, we have illustrated how two-place predicates change their forms to denote person. Apart from two-place predicates, three-place predicates also vary their forms according to different person values. For subject-verb agreement, the mechanism of agreement marking is the same. That is, the initial point of the verb indicates that the person value of the subject for regular agreement verbs. But the marking of verb-object agreement is different between two-place predicates and three-place predicates. For a two-place predicate, the verb is marked for the person of direct object. When the regular verb is a three-place predicate, the end point denotes the person value of the indirect object. This observation is the same as that in ASL reported in Chapter Three. This agreement pattern may be universal among signed languages. In HKSL, *GIVE* is a three-place predicate that starts and ends in the neutral space when it is in the citation form. See Figure 4.12 below:

Figure 4.12 Citation form of GIVE in HKSL



(Tang (in prep.))

Similarly to ASL, when the verb *GIVE* is marked, the verb starts at a spatial locus that denotes the person value of the subject and ends at a spatial locus that signals the person value of the indirect object, as in example (25) below:

(25) Context: A boy was playing a toy plane. But then a friend gave the boy a toy car.

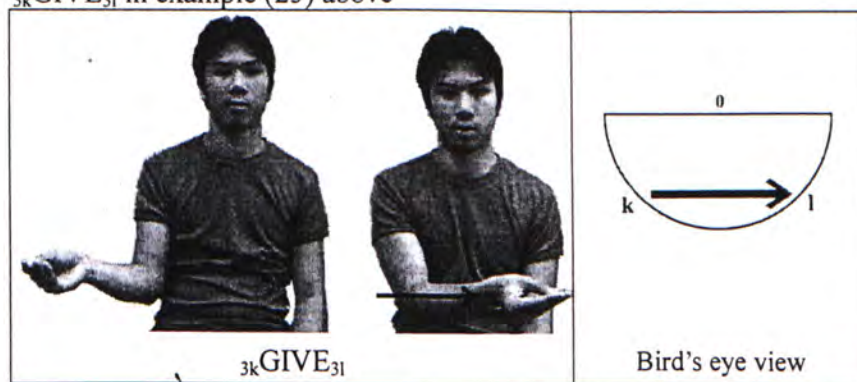
RH BUT $_{3k}$ GIVE $_{3l}$
 LH
 BH FRIEND CAR

‘But a friend gives (him) a car.’

(See Appendix 3, page 199)

The verb *GIVE* in (25) above starts at locus-k and ends at locus-l to mark the third person subject *FRIEND* and third person object ‘the boy’, as illustrated in Figure 4.13 below:

Figure 4.13 $_{3k}$ GIVE $_{3l}$ in example (25) above



If we replace either the initial point or the end point with locus-m (that denotes second person), the sentence would be ill-formed, as illustrated in examples (26) and (27) below:

VO-agreement only,

In Chapter Three, we mentioned that there are some ASL verbs that contain only one spatial locus and they are marked for person of object only. This phenomenon is also observed in HKSL. This kind of agreement verb is different from SV/VO-agreement verbs in the sense that the former are only marked for person of the object, but not for the subject. Similarly to SV/VO-agreement, VO-agreement is also optional in most instances (i.e. in 15.09% of the data).

DONATE is a three-place predicate in HKSL that demonstrates partial VO-agreement because it can be only marked for third person object. Its citation form is given in Figure 4.15 below:

Figure 4.15 Citation form of DONATE in HKSL



In Figure 4.15, the initial point of *DONATE* is body-anchored and it does not mark any person values. But the end point can mark person of the indirect object. Consider the following example in (28) below:

- (28) Context (free conversation): The signer suggested a reason why School-A adopted an oral approach. He thought that it was all because there would be no donation for hearing aids and headphones if the school chose sign language as the medium of instruction.

RH	IF	INDEX _{pro 3}	DONATE	NOT		INDEX _{pro 3}	HAVE-TO
LH							
BH							

RH			DONATE ₃	WON'T		CORRECT
LH						
BH	SIGN-LANGUAGE					

'If they [the sponsors] do not donate any money to School A and if School A uses sign language as the medium of instruction, is it correct?'

In (28) above, *DONATE* in the first row demonstrates optional agreement marking in HKSL which will be discussed in the next section. For *DONATE*₃ in the second row, it ends at locus-1 to indicate the third person value of the indirect object ‘School A’, as shown in Figure 4.16 below:

Figure 4.16 *DONATE*₃ in example (28) above



Note that the verb *DONATE* cannot be marked for person of the subject, as illustrated in examples (29) and (30) below:

(29) RH INDEX_{pro 1} DONATE₃ INDEX_{pro 3}
 LH
 BH

(30) RH INDEX_{pro 2} DONATE₃ INDEX_{pro 3}
 LH
 BH

Examples (29) and (30) show that when the person values of the subject vary (i.e. first person in (29) and second person in (30)), the verb *DONATE* still starts from the signer’s chest. In other words, the verb *DONATE* is not marked for person of the subject overtly. If we force the verb to start from the spatial locus that denotes person, an ungrammatical sentence would be formed, as illustrated in example (31) below:

(31) * RH INDEX_{pro 2} ₂DONATE₃ INDEX_{pro 3}
 LH
 BH

In (31) above, if we force the verb *DONATE* to start from locus-m (that denotes second person of subject), the sentence is ill-formed because the verb *DONATE* must start from the signer’s chest instead of a second person locus (i.e. locus-m). In this sense, *DONATE* only demonstrates overt person marking for VO-agreement.

Agreement verbs that demonstrate solely VO-agreement also support our suggestion that person has three distinct values instead of two. In (31) above, we have shown that the verb *DONATE* is marked finally for third person. This third person locus cannot be replaced by locus-m, otherwise, the sentence is ill-formed, as shown in example (32) below:

(32)	*	RH	IF	INDEX _{pro 3}	DONATE	NOT		INDEX _{pro 3}	HAVE-TO
		LH							
		BH							
		RH			DONATE ₂	WON'T		CORRECT	
		LH							
		BH	SIGN-LANGUAGE						

In (32) above, if the verb *DONATE* is directed toward locus-m, a second person locus, the sentence is ungrammatical. This is because second person locus cannot represent the third person value of the object. When second person and third person value are separable, it is impossible to have a two-way distinction (i.e. first and non-first) in verb agreement. We thus conclude that VO-agreement in HKSL also demonstrates a three-way person distinction.

Summary

To sum up, a three-way person distinction is observed in SV/VO-agreement. In addition, the set of spatial loci that denote person in SV/VO-agreement is the same as that in Padden (1983, 1988), but contrasts with Bahan (1996), as summarized in Table 4.12 below:

Table 4.12 Spatial loci for person marking in HKSL, Padden (1983, 1988) and Bahan (1996)

Types of Agreement	Person values	HKSL	Padden (1983, 1988)	Bahan (1996)
SV agreement	1	Locus-0	Locus-0	Locus-0
	2	Locus-m	Locus-m	Locus-m
	3	Loci-i/j/k/l	Loci-i/j/k/l	Loci-i/j/k/l, neutral marker near locus-0 ²⁶
VO agreement	1	Locus-0	Locus-0	Locus-0
	2	Locus-m	Locus-m	Locus-m
	3	Loci-i/j/k/l	Loci-i/j/k/l	Loci-i/j/k/l

Table 4.12 shows that HKSL agreement verbs are marked with the same set of spatial loci for person as in Padden (1983, 1988). Yet, we do not observe any neutral marker suggested by Bahan (1996). Though spatial loci in HKSL can also mark different person values, they can be omitted in most instances. In other words, HKSL demonstrates optional SV/VO-agreement. This contrasts with spoken languages but is in line with some signed languages (i.e. ASL, DSL, LIS) (Pizzuto 2002). We will describe optional agreement marking in the next section.

4.2.3.2 Optional agreement marking in HKSL

Optionality in verb agreement in signed languages is defined as a phenomenon where the verbs may either be inflected for person or remain in their citation forms in the same structure in the current study. In the first set of data, we observe (i) an omission of subject person markers or of both subject person markers and object person markers in SV/VO-agreement and (ii) an omission of object person markers in VO-agreement. This contrasts with previous studies in ASL where only omission of subject person markers is observed. In the following sections, we will examine the optionality in both SV/VO-agreement and VO-agreement.

²⁶ See Chapter Three for discussion of these neutral markers.

We observe, similar to ASL, that SV-agreement is optionally marked on verbs in HKSL. However, contrary to Padden's (1983, 1988) analysis where subject agreement marker may be omitted for all person values, we observe that only third person subject markers may be omitted when the object is marked overtly in HKSL.

Consider the examples below (for the citation form of *SEE*, see Figure 4.8):

- (33) Context: A man and a woman walked in the street. Then the man saw a pretty woman and he fell in love with her immediately.

RH HAVE ONE MALE SEE₃ ONE PRETTY FEMALE
LH
BH

'There is a man, (he) sees a pretty woman.'

- (34) Context: A man and a woman walked in the street. Then the man saw a pretty woman and he fell in love with her immediately.

RH HAVE ONE MALE ₃SEE₃ ONE PRETTY FEMALE
LH
BH

'There is a man, (he) sees a pretty woman.'

In (33) and (34) above, both the subject *ONE MALE* and the object *ONE PRETTY FEMALE* are third person. When both subject and object are third person, there is a tendency for the signer to omit the marking for the subject, as in (33). Note that a sentence like (34) occurs less frequently in our data. Apart from regular verbs, backward verbs also demonstrate subject marker omission. For instance in example (35):

- (35) Context: Cowboy and his father were walking in a street. Suddenly they saw a frog and tried to catch it. The frog begged them not to catch it. Then the frog escaped. However, a man came by and he wanted to catch the frog.

RH HAVE ONE MALE HAVE-TO ₃CATCH
LH
BH

'There is a man, he needs to catch (the frog).'

(See Appendix 3, page 200)

For backward verbs, the initial point marks person of object while the end point

marks person of subject. Example (35) shows that the end point of the verb *CATCH* is not marked. In other words, the subject marker is omitted.

As for three-place predicates, the subject marker may be omitted in some cases.

Consider the following example in (3b) below:

- (36) Context: Mother was sitting in the living room. Cowboy came over. Mother folded a paper plane and gave it to Cowboy.

RH	MOTHER	PLANE	GIVE ₃
LH			
BH	FOLD		COWBOY

'Mother folds the paper into a plane, (she) gives it to Cowboy.'

(See Appendix 3, page 200)

Both the subject *MOTHER* and the object *COWBOY* in (36) are third person. In this example, the subject marker can be omitted. In other words, only the end point of *GIVE* (which marks person of the indirect object) is marked for third person.

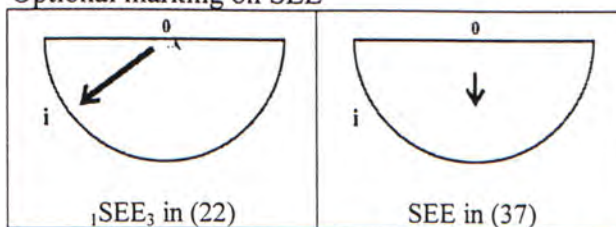
Apart from the subject person markers, the object person markers can also be absent in SV/VO-agreement. The verbs are signed in their citation forms when person of both subject and object is not marked. Consider the following examples in (37) to (39) below:

- (37) Context (free conversation): The signer told the addressee that the secondary school he attended before had developed rapidly even though the school stressed speech instead of sign language.

RH		INDEX _{pro 1}	SEE	GOOD
LH				
BH	BUT	SCHOOL	DEVELOP	

'But for the development of the school, I see (the school), (its development is) good.'

Figure 4.17 Optional marking on SEE

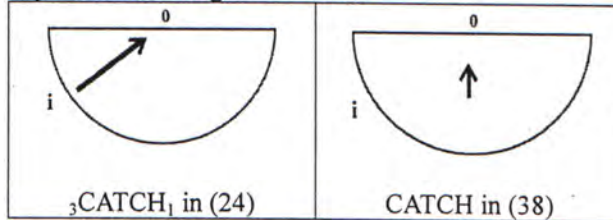


- (38) Context: The author and the signer were using the computers at the office. The signer then walked around. It seems that he was searching for something. The author asked what he was doing. He answered that there was a mosquito and he wanted to catch it.

RH INDEX_{pro} 1 WANT CATCH
 LH
 BH

'I want to catch (it).'

Figure 4.18 Optional marking on CATCH

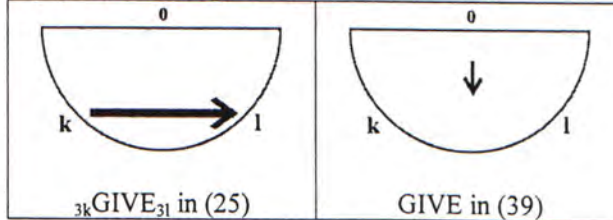


- (39) Context: A boy was playing with a toy plane. But then a friend gave the boy a toy car.

RH BUT GIVE
 LH
 BH FRIEND CAR

'But a friend gives (him) a car.'

Figure 4.19 Optional marking on GIVE



These three examples show that the SV/VO-agreement verbs may not be marked for person, but can remain in their citation forms, as shown in Figures 4.17, 4.18 and 4.19 above.

VO-agreement

VO-agreement verb is also optionally marked in HKSL. Consider (28), repeated as (40) below:

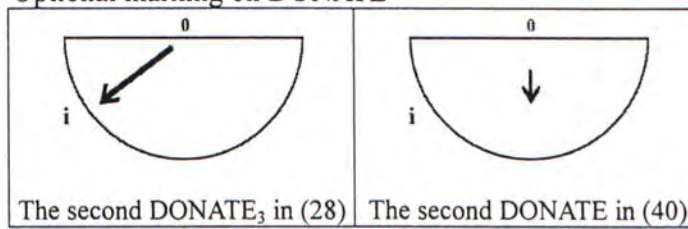
- (40) Context (free conversation): The signer suggested the reason why School-A adopted an oral approach. He thought that it was all because there would be no donation on hearing aids and headphones when the school chose sign language as the medium of instruction.

RH IF INDEX_{pro 3} DONATE NOT INDEX_{pro 3} HAVE-TO
 LH
 BH

RH DONATE WON'T CORRECT
 LH
 BH SIGN-LANGUAGE

'If they [the sponsors] do not donate any money to School A and if School A uses sign language as the medium of instruction, is it correct?'

Figure 4.20 Optional marking on DONATE



The second occurrence of *DONATE* in this example is evidence for optionality of person marking in HKSL. Instead of being marked with a third person locus as in (28), the verb *DONATE* is in its citation form in example (40) above. Obviously, it is possible for the VO-agreement verb to appear in its citation form or inflected form, as illustrated in Figure 4.20 above.

The examples above demonstrate a unique feature in HKSL. That is, the verbs are optionally marked for person agreement. Though the verbs may or may not be marked for person overtly, we assume that person is still there. In addition, we propose that there may be a null agreement morpheme for person in HKSL so that verbs may or may not be marked overtly. This suggestion will be further developed in Chapter Five. We will now continue our investigation of the agreement system in HKSL.

4.2.3.3 Obligatory agreement marking in HKSL

While optional person marking occurs on most verbs, obligatory person

marking occurs in some instances. One deaf consultant thinks that the following examples are also evidence for optional verb agreement. To her, all the verbs investigated here are subject to optional verb agreement. As three other deaf people agree that the following examples are obligatorily marked for person, we propose that examples (41) to (44) demonstrate obligatory agreement marking, as illustrated below:

- (41) a. Context (free conversation): The signer talked about the relationship between fame, donations and the oral approach in deaf schools.

RH	₂ SEE ₃	SCHOOL-B		INDEX _{pro 3}	FAMOUS	HAVE-NOT	
LH							
BH							

RH	POOR	DONATE MANY	SIMPLE	CHANGE			
LH							
BH						COMPUTER	

RH	ANY		ANY	HAVE-NOT		THAT'S-IT	
LH							
BH		AIR-CONDITIONER					

'You see School B. School B has not been famous, but poor. There are no donations for any improvement, any computers, and any air-conditioners. That's it.'

b. * RH SEE SCHOOL-B | INDEX_{pro 3} FAMOUS HAVE-NOT |

LH

BH

RH	POOR	DONATE MANY	SIMPLE	CHANGE			
LH							
BH						COMPUTER	

RH	ANY		ANY	HAVE-NOT		THAT'S-IT	
LH							
BH		AIR-CONDITIONER					

- (42) a. Context (free conversation): The signer talked about School C in the old days. She said that a deaf friend told her that the neighborhood of School C was spacious in the past but School C did not expand its campus.

RH DEAF ₃SAY₁ INDEX_{pro 3} EMPTY HAVE-NOT
 LH
 BH

'A deaf person told me that it (i.e. School-C) is empty, (it) does not (build any additional blocks).

- b. * RH DEAF SAY INDEX_{pro 3} EMPTY HAVE-NOT
 LH
 BH

- (43) a. Context (free conversation): The signer told the addressee about his visit to his secondary school. He saw some younger students at the school.

RH
 LH INDEX_{pro 1} ₁FARE-MORE-THAN₃ SECONDARY-FOUR
 BH

'I am older than the secondary four students.'

- b. * RH
 LH INDEX_{pro 1} FARE-MORE-THAN SECONDARY-FOUR
 BH

- (44) a. Context (free conversation): The signer told the addressee about the literacy of deaf students at School-A.

RH ILLITERATE
 LH
 BH WRITE MANY | CONTRARY SCHOOL-B

RH ANY ₃FARE-MORE-THAN₃ | LOSE-FACE
 LH
 BH

'Many students at School A are illiterate, on the contrary, School B and other deaf schools have fewer illiterate students. It is shameful.'

- b. * RH ILLITERATE
 LH
 BH WRITE MANY | CONTRARY SCHOOL-B

RH ANY FARE-MORE-THAN | LOSE-FACE
 LH
 BH

From examples (41) through (44), the verbs *SEE*, *SAY* and *FARE-MORE-THAN* must

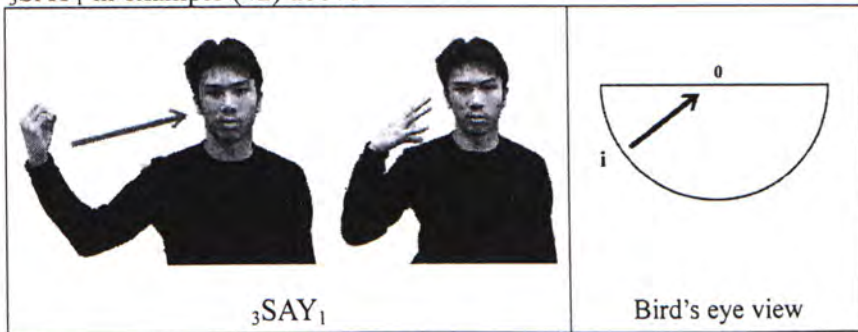
be marked for person of both subject and object. In (41a) above, when the subject is second person and the object is third person, the verb *SEE* must be marked initially for second person and finally for third person, as in Figure 4.21 below:

Figure 4.21 ${}_2\text{SEE}_3$ in example (41) above



Otherwise, an ungrammatical sentence is formed as in (41b) above. In (42a) above, the verb *SAY* is also obligatorily marked for third person subject and first person object (see Figure 4.22).

Figure 4.22 ${}_3\text{SAY}_1$ in example (42) above



If the verb remains in its citation form as in (42b) above, the sentence is ill-formed. It seems that when the subject is second person or when the object is first person, the SV/VO-agreement verbs are obligatorily marked. However, (43) and (44) above show that the verb *FARE-MORE-THAN* must be marked even when the subject is not second person or the object is not first person (See Figures 4.23 and 4.24 below).

Figure 4.23 $_1$ FARE-MORE-THAN $_3$ in example (43) above²⁷

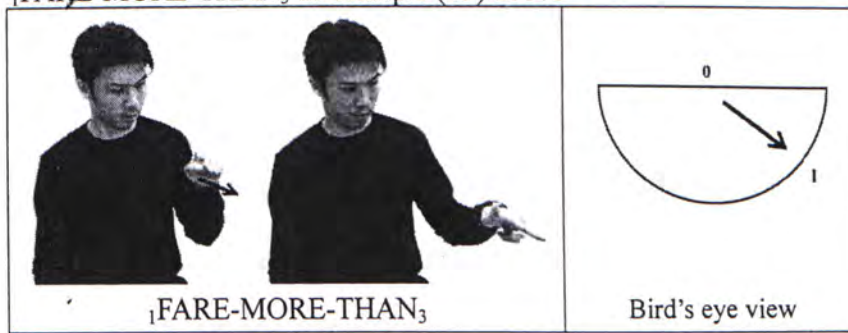


Figure 4.24 $_3$ FARE-MORE-THAN $_3$ in example (44) above



In earlier discussion, it was argued that agreement verbs must be marked when the subject is second person or when the object is first person. Yet this generalization does not apply to *FARE-MORE-THAN*. We therefore suggest that *FARE-MORE-THAN* is a special verb in HKSL because this type of verb does not follow the generalization stated above.

Similarly to the observations on SV/VO-agreement, VO-agreement is optional in most instances. Yet, we also observe two instances of obligatory VO-agreement and these two instances both involve the verb *ADMIRE*. The citation form of this verb is given in Figure 4.25 below:

Figure 4.25 Citation forms of *ADMIRE* in HKSL



²⁷ In this sign, eye gaze also is also observed. However, this eye gaze does not contribute to the person marking because it does not consistently occur.

The verb *ADMIRE*²⁸ is observed to be obligatorily marked in all instances. Consider the following example in (45) below:

- (45) Context (free conversation): The signer told the addressee that Principal C got some donations for computers. The number of computers increased. The signer admired the school for having so many new computers now.

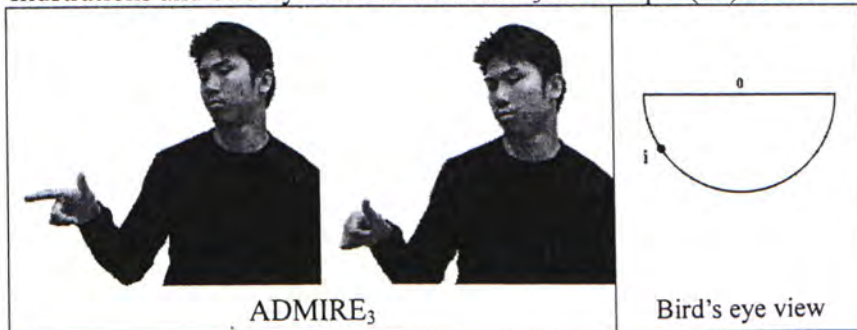
RH INDEX_{det} PRINCIPAL-C SELF DONOR MEET-AND-DISCUSS
 LH
 BH

RH ABOUT TEN ADMIRE₃
 LH
 BH ADD COMPUTER

‘Principal C meets and discusses with the sponsors alone so as to get more computers for the school. Her effort leads to an increase of ten computers in the school. (I) admire (the school for having so many new computers now).’

In (45) above, the verb *ADMIRE* is obligatorily marked for third person of the object, as illustrated in Figure 4.26 below:

Figure 4.26 Illustrations and bird-eye view of ADMIRE₃ in example (45) above²⁸



If the verb were not marked for third person value of the object, the sentence would be ungrammatical, as in example (46) below:

²⁸ In this example, we also observe eye gaze. Though eye gaze appears in some cases, we do not suggest that it is a non-manual person marker because it does not consistently appear on most verbs.

(46) RH INDEX_{det} PRINCIPAL-C SELF DONAR MEET-AND-DISCUSS
 LH
 BH

RH		ABOUT	TEN		*ADMIRE
LH					
BH	ADD			COMPUTER	

As *ADMIRE* is obligatorily marked for person in all instances, we suggest that this verb, like *FARE-MORE-THAN*, is a special verb in HKSL.

4.2.3.4 Absence of person marking

A small number of instances (9.43% of the data) show that the agreement verbs cannot be overtly marked for person. That is, if the verbs in these instances were marked manually for person, the utterances would be less preferred. We suggest that this is due to (i) type of objects and (ii) number of verbs involved. For (i), we observe that when the verb *FORCE* takes a generic object, the signer prefers to sign the citation form instead of an inflected form, as in example (47) below:

(47) Context (free conversation): The signer told the addressee that the teacher forced the students to speak even though sign language was more popular among the deaf students.

RH	INDEX _{det}	TEACHER		
LH				
BH			FORCE	STUDENT

'Those teachers force the students (to speak).'

In (47) above, when the object *STUDENT* has a generic sense, the verb *FORCE* cannot be marked for person. As for (ii), from the picture narration, there are some instances which involve serial verbs. In these instances, the agreement verbs remain in their citation forms. Consider the following examples in (48) and (49) below:

- (48) Context: There was a boy in a room. He wanted to blow a balloon, but he failed. Then the boy asked his brother to help him to blow the balloon.

RH CHILD SAY ELDER-BROTHER
LH
BH HELP BLOW

'The child asks his brother to help him blow the balloon.'

- (49) Context: A girl lost her dogs. Her friend helped her to find the dogs. However, both of them could not find the dogs. Then the girl said she wanted to leave.

RH FEMALE SAY WANT LEAVE
LH
BH

'The girl says (she) wants to leave.'

The agreement verb *HELP* and the plain verb *BLOW* are articulated sequentially in (48) above. As for (49) above, the signer utters the agreement verb *SAY*, the plain verb *WANT* and the spatial verb *LEAVE* one by one. James Woodward (personal communication) has pointed out that these instances resemble the parallel structure in Cantonese. Thus, the lack of inflections here may be due to Cantonese influence.²⁹ Another possibility is the aspect of phonological restriction. That is, when two or more verbs are executed successively, it is easier for the signers to articulate the signs in the absence of agreement inflections. Fischer and Janis (1989) report that only the final verb in the serial verb is marked for aspect in ASL. Then HKSL shows an even greater reduction of inflections because no verbs are marked when they are in a series. Explanations for this issue need further exploration with regard to this kind of construction in signed languages.

4.2.4 Does non-manual marking serve as an agreement marker in HKSL?

Apart from the manual modification of the verb sign in verb agreement, Bahan (1996) proposes that non-manual marking like head tilt and eye gaze serve as person agreement markers for subject and for object respectively in ASL. Does non-manual

²⁹ Hong Kong deaf people are bilingual in HKSL and Cantonese. Thus, it is possible that their utterances show influence from the Cantonese structure. As Cantonese is a language with no agreement inflections, the absence of agreement marking in HKSL may be due to the Cantonese influence.

marking also play a role in person agreement in HKSL? For non-manual marking to serve as an agreement marker, it should occur consistently at least in most instances. In both tasks, we observe head turn, eye gaze, brow raise, cheeks puffed up, lips pushed forward, etc. Nonetheless, none of these non-manual markings consistently appear on the verbs. Consider (33), (41a) and (45), repeated as (50), (51) and (52) below:

- (50) Context: A man and a woman walked in the street. Then the man saw a pretty woman and he fell in love with her immediately.

				<u>htn_i</u>			
				<u>eg_i</u>			
				<u>we</u>			
				<u>br</u>			
RH	HAVE	ONE	MALE	SEE ₃	ONE	PRETTY	FEMALE
LH							
BH							

‘There is a man, (he) sees a pretty woman.’

- (51) Context (free conversation): The signer talked about the relationship between fame, donations and the oral approach at deaf schools.

					<u>lips pushed forward</u>	
					<u>brow raise</u>	
RH	₂ SEE ₃	SCHOOL-B	INDEX _i	FAMOUS	HAVE-NOT	
LH						
BH						

					<u>lips pushed forward</u>	<u>cheeks puffed out</u>
					<u>head tilt up</u>	
					<u>mouth corners down</u>	
RH	POOR	DONATE	MANY	SIMPLE	CHANGE	
LH						
BH						COMPUTER

					<u>htn_k</u>	
					<u>eg_k</u>	<u>lips pushed forward</u>
RH	ANY		ANY	HAVE-NOT	THAT'S-IT	
LH						
BH		AIR-GONDITIONER				

‘You see School B. School B has not been famous, but poor. There are no donations for any improvement, any computers, and any air-conditioners. That’s it.’

- (52) Context (free conversation): The signer told the addressee that Principal C got some donations for computers. The number of computers increased. The signer admired the school for having so many new computers now.

					<u>head tilt upward</u>
				<u>furrowed brow</u>	<u>eg upward</u>
RH	INDEX _{det}	PRINCIPAL-C	SELF	DONAR	MEET-AND-DISCUSS
LH					
BH					

				<u>htn_i</u>
	<u>htn_i</u>	<u>htn_i</u>		<u>eg_i</u>
RH		ABOUT-TEN		ADMIRE ₃
LH				
BH	ADD		COMPUTER	

'Principal C meets and discusses with the sponsors alone so as to get more computers for the school. Her effort leads to an increase of ten computers in the school. (I) admire (the school for having so many new computers now).'

Examples (50) to (52) above illustrate that non-manual marking is present in signing. Yet, none of them consistently occurs on the verbs. Thus, we suggest, similarly to ISL (Meir 1998), that verb agreement is not marked with non-manual markers in HKSL

4.2.5 Summary

Our investigation on verb agreement in HKSL allows us to make the four following observations:

- (53) a. Verbs can be marked for first, second and third person values (i.e. a three-way distinction) if person marking is present.
- b. Both verbs that show SV/VO-agreement and verbs that show VO-agreement only may or may not be marked for person.
- c. A small set of verbs (e.g. *FARE-MORE-THAN*, *ADMIRE*) demonstrates obligatory person marking.
- d. Agreement verbs are marked obligatorily when the subject is second person or the object is first person.

Firstly, verbs (i.e. agreement verbs) demonstrate a three-way person distinction. Another important observation is that verbs generally show optionality which means that the verbs may be signed either in their citation form or inflected form. Some

exceptions are also observed with special verbs like *FARE-MORE-THAN* and *ADMIRE* which maintain obligatory person marking. Obligatory person marking is also required with second person subject or first person object. Note that the optionality generally observed in HKSL is not found in other signed languages. Further discussion on this language phenomenon will be provided in Section 4.6.

4.3 Role shift and person marking

In this section, data involving location marking will not be discussed. In other words, we will only discuss data where role shift (but not location marking) takes place. In fact, some of our data shows that role shift and location marking may co-occur. We will discuss this set of data in Section 4.5.

As mentioned in Chapter Three, role shift, being a discourse device, influences the person marking in ASL. With role shift, the signer assumes the role of the original message initiator in the discourse. In HKSL, role shift also serves as a discourse device that expresses the perspective of a third party. But, in contrast to ASL (where the signer becomes another person in role shift), role shift in HKSL can also express the signer's own perspective in another time and space as well. To mark role shift, the signer will break gaze from the addressee, as what occurs in ASL (Loew 1994). In addition, role shift may also be accompanied with head turn, sometimes with body movement. Based on these markers, we observe a small number of instances of role shift in the data, as illustrated in Table 4.13 below:

Table 4.13 Person marking occurring with role shift in picture narration and free conversation data³⁰

	No. of tokens	% of tokens
Personal pronouns	47/303	15.51
Verb agreement	104/338	30.77

Table 4.13 above illustrates the frequency of person marking for personal pronouns

³⁰ The denominators in this table (i.e. 303 for personal pronouns and 338 for verb agreement) are the total number of instances including (i) data without location marking, (ii) data with role shift and (iii) data with nominal establishment. To include all three sets of data in the denominators allows us to learn about how common role shift is in HKSL.

and verb agreement occurring with role shift in both picture narration and free conversation data.

According to Lillo-Martin and Klima (1990), role shift can affect person marking by shifting the referential framework (i.e. signing space). In HKSL, role shift also influences person marking in the same way. Nonetheless, a three-way distinction for person is still observed. Consider Tables 4.14 and 4.15 below:

Table 4.14 Role shift and person distinctions in personal pronouns

Personal pronouns	No. of tokens (n:47)	% of tokens
1	31	65.96
2	15	31.91
3	1	2.13

Table 4.15 Role shift and person distinctions in verb agreement

Verb agreement	No. of tokens (n:100)	% of tokens
SV/VO-agreement	51	51.00
VO-agreement only	13	13.00

Table 4.14 shows that most personal pronouns (65.96%) are first person and there is only one instance of third person pronoun. In Table 4.15, the denominator is 100 instead of 104 shown in Table 4.13. This is because, first, 4 instances are not marked for person and second, the number of occurrences presented here only refers to agreement verbs as both spatial verbs and plain verbs are not marked overtly for person. Table 4.15 above shows that role shift takes place more frequently with SV/VO-agreement than with VO-agreement only. When role shift takes place, we also observe a three-way person distinction on both personal pronouns and verb agreement. Consider the examples in (54) to (56) below:

- (54) Context: A boy went home after school. On his way, a man approached him. The man asked him for money. Since the boy didn't have any money, this man hit the boy. Finally, the boy went home and told his mother about it. (The signer played the role of the boy)

		htn _k
		eg _k
RH	INDEX _{pro 3} ANGRY	₃ HIT ₁
LH		
BH		

'He is angry, (he) hits (me).'

(See Appendix 3, page 201)

- (55) Context (free conversation): The signer told the addressee about a conversation between herself and her friend. Her friend asked the signer to introduce boy friends to her because she wanted to get married as soon as possible. The signer refused.

		htn _k
		eg _k
RH	NO THANK ₂ ₁ SAY ₂ NO	INDEX _{pro 1}
LH		NO INDEX _{pro 1}
BH		SURRENDER

'No, thanks. (I) say no, I surrender.'

- (56) Context (free conversation): The signer told the addressee that her friend asked her to introduce men to her friend.

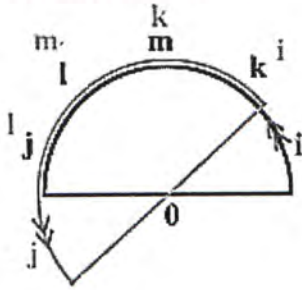
		htn _l
		eg _l
RH		SELF LOOK-FOR
LH	₂ SAY ₁ WHAT	INDEX _{pro 2}
BH		

'(You) tell (me), what? You look for (boyfriends) yourself!'

From (54) through (56) above, role shift is marked by two non-manual markers, head turn and eye gaze. Example (54) is an instance of the first type of role shift where the signer is playing the role of a third party. In this example, the signer is signing as if he is the boy. As for (55) and (56), they exemplify the second type of role shift where the signer does not play the role of a third party, but himself/herself in another time and space. In these two examples, the signer is presenting a conversation between herself and her friend in the past. Though role shift occurs in all three examples, person is still observed in personal pronouns and verb agreement. Nonetheless, person marking is slightly different from the data where role shift is absent. As is

observed in Lillo-Martin (1991), the signing space has shifted under role shift. In other words, the spatial loci that denote different person values are also shifted, as illustrated in Figure 4.27 below:

Figure 4.27 Normal plane and shifted plane in HKSL



Assuming the signer moves to the left under role shift, the normal plane (i.e. the black semi-circle in Figure 4.27) shifts to the left (i.e. to the grey semi-circle in Figure 4.27). While locus-0 that marks first person does not change, the second and third person loci change when the plane is shifted. In addition, locus-m (second person) and locus-k (third person) on the shifted plane overlap with locus-l (third person) and locus-m (second person) on the normal plane respectively. If one did not notice the shifting of plane, the person distinctions between second and third (i.e. locus-l and locus-m) would appear to be unclear. In other words, if we do not consider the influence of role shift, we may wrongly interpret (54) to (56) above as evidence for a two-way distinction.

But, if we take the influence of role shift into consideration, the first, second and third person pronouns can still be identified in (54) to (56) above. In (54), the third person pronoun $INDEX_{pro\ 3}$ points at locus-k (on the grey semi-circle) to mark the person. The personal pronouns direct towards locus-0 and locus-m to mark first person and second person in (55) and (56) respectively.

Concerning verb agreement, a three-way person distinction is also observed. In (54), the initial point and end point of *HIT*, a regular verb that shows SV/VO-agreement, are observed to be at loci-i and 0 respectively, denoting the third person subject $INDEX_{pro\ 3}$ and first person object 'me'. As for (55), it shows that

THANK, a regular verb that allows VO-agreement only, directs to locus-m in the shifted plane to denote the second person value. In (56), *SAY*, a regular verb with SV/VO-agreement, starts at locus-m and ends at locus-0 on the shifted plane. Then the second person value of the subject ‘you’ and first person value of the object ‘I’ is encoded in the verb. Note that a two-way person distinction (i.e. first and non-first) is not allowed as second and third person values do not overlap. For instance see example (57):

(57) RH * INDEX_{pro 2} ANGRY ^{htn_k}₂HIT₁
 LH
 BH

If the person marking on personal pronouns and verbs in (54) are changed to second person, as in (57), the sentence is ungrammatical. In other words, second person is distinguishable from third person in both personal pronouns and verb agreement in HKSL. We therefore conclude that a three-way distinction is still observed when role shift takes place.

In our discussion above, it is shown that the signing plane shifts to the sides as a result of role shift. However, role shift does not always result in a shifted plane to the left or right sides. In some cases, the shifted plane and the original plane both direct to the addressee. See example (58) below:

(58) Context (free conversation): The signer talked about his friend who could talk with hearing people.

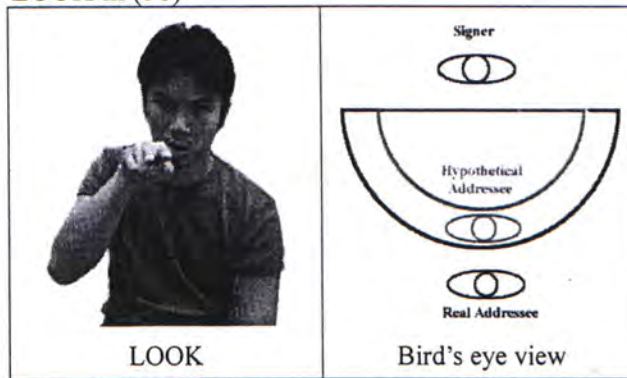
RH ^{cg} LOOK₂ LOOK₂ LIP-READ | THAT’S-IT | TOLERATE |
 LH
 BH

RH ^{cg} LOOK₂ LIP-READ | THAT’S-IT
 LH
 BH

‘(I) look at (you), (I) look at (you) and read your lips. That’s it. (I) tolerate, (I) look at (you) and read your lips. That’s it.’

In (58) above, the signer plays the role of the friend who could talk to the hearing person. As the signer has assigned himself to the friend and the addressee to the hearing person, the subject is first person and the object is second person. The verb *LOOK* remains in its citation form, as shown in Figure 4.28 below:

Figure 4.28 LOOK in (58)



However, the second person object in this example is not the real addressee, but a ‘hypothetical’ addressee (i.e. ‘the hearing person’). By gazing at the frontal plane blankly, the signer shifts the signing space to the front but not to the side. In Figure 4.27 above, the black semi-circle and the grey semi-circle refer to the normal plane and the shifted plane respectively. Under role shift, the signer excludes the real addressee in his signing space. Even though the signer directs the verb sign towards to addressee, he/she is showing the second person value of the hypothetical addressee (i.e. the hearing person), instead of the real addressee who is excluded in the shifted plane.

In Chapter Three, we also mentioned Liddell’s (1994) analysis of role shift. For him, the horizontal plane does not shift at all. Instead, when role shift takes place, the signer changes from the token space to the surrogate space (See Chapter Three for illustrations). His analysis seems to be a good way to account for role shift in signed languages. However, it is built on the assumption that person is not marked overtly in the signing space. From our data, spatial loci do consistently mark person even if role shift takes place. We therefore argue that Liddell’s (1994) proposal cannot capture

the relationship between role shift and agreement marking in HKSL.

It is noted that optional verb agreement and obligatory verb agreement are also observed in data with role shift. As the pattern is the same as we have seen in Section 4.1, we are not going to discuss these phenomena again.

To sum up, the three distinct person values can still be identified in the personal pronouns and verbs when role shift takes place. We therefore suggest that role shift does not affect the person distinctions in HKSL.

4.4 Person marking and Location marking

Signing space, which is the space in front of the signer's torso, is where grammatical information is represented in signed languages. A great number of sign linguists in previous studies agree that space is where verb agreement is marked overtly. In the present study, we also observe that space marks person in both personal pronouns and verb agreement. However, space not only marks person, but also spatial locations of noun referents in real space or imagined space. When space marks both person in personal pronouns and verb agreement and spatial locations of noun referents, it is difficult to tell whether person is really marked in the signing space. For this reason, the present author has attempted to elucidate the genuine number of person distinctions in HKSL by eliminating data that involves spatial locations of noun referents in real space or imagined space. As noted in Section 4.2 above, a three-way person distinction is observed. In this section, we will show how location marking affects the number of person distinctions, resulting in a confusion of person distinctions as reflected in the sign language literature. We will also discuss whether person is covert when location marking occurs. But before we discuss these two issues, an elaboration of location marking is in order.

4.4.1 How do we identify location marking?

Location marking is defined as a phenomenon which is identified with nominal

establishment. In HKSL, nominal establishment can be achieved in three ways: (i) sign the NP at a particular location, (ii) add a locative predicate after the noun or (iii) sign the NP with prenominal or postnominal determiners.³¹ We argue that when the nominal establishment takes place, location marking predominates person marking. Consider the following examples in examples (59) to (61) below:^{32,33}

(59) Context: There were two groups. Both groups play ball by themselves.

RH	HAVE TWO		INDEX _j	SELF
LH				
BH	GROUP GROUP _i GROUP _j			

RH			INDEX _i	THE-SAME SELF
LH				
BH	PLAY BALL			PLAY BALL

‘There are two groups. One group here and one group there. They (the first group) play with a ball. They (the second group) also play with a ball.’

(See Appendix 3, page 201-202)

(60) Context (free conversation): The signer talked about his visit to the secondary school he attended before. When he communicated with his teacher, a deaf student came and spoke to the teacher.

RH				ANY
LH				
BH	STUDENT MEET		STUDENT	

RH	_i CL:PERSON-MEET _m		INDEX _{pro 1}	SEE _m	GOOD
LH	_j CL:PERSON-MEET _m				
BH	CHAT				

‘A student and (the teacher) meet. Any student comes to (the teacher) and then (the student can) chats with (the teacher) in spoken language. I see that (the teacher and the student chat). It is so good.’

³¹ Tang and Sze (2002) report that postnominal determiners in HKSL are ambiguous between a determiner and an adverbial. For further details, readers may refer to their paper.

³² In other signed languages, as location is not separated from agreement, the index signs in (59) are usually viewed as pronouns. However, we argue that this is not true at least in HKSL because the index signs just indicate the locations established in earlier contexts.

³³ The subscripts _{i,j,k,l,m} in the examples presented in this section refer to the spatial locations of the signing space instead of person markers.

(61) Context: A girl rang her friend and asked her out. The girl waited for her friend for a long time and finally her friend came.

RH	INDEX _{det}	COME		SAY	SORRY
LH					
BH	FRIEND				

RH	INDEX _i	VOMIT		THEREFORE	LATE
LH					
BH	SICK				

‘The friend comes and she says sorry to the girl. She tells the girl that she is sick and she vomits. Thus, she is late.’

Three examples of nominal establishment are given from (59) through (61). Example (59) illustrates the first kind of nominal establishment. The sign *GROUP* is signed at loci-i and j to mark the spatial locations of two different groups. The second type of nominal establishment is exemplified with example (60). Locative predicate *CL:PERSON-MEET* indicates the spatial location of the noun phrase *STUDENT ANY* ‘any student’. As noted, pronominal or postnominal determiners can also be tools of nominal establishment. Example (61) illustrates that the pronominal determiner *INDEX_{det}* that points out locus-i so that the noun *FRIEND* is assigned to locus-i.

We suggest that location marking corresponds to nominal establishment. That is, the point that an index signs and that a verb is directed to is the same as the point of the nominal established earlier in the context. In example (59), the index sign *INDEX_j* and *INDEX_i* correspond to the spatial loci of *GROUP* established at the beginning. We therefore call the loci-i and j in the index signs as location marking because the spatial loci are the same as those assigned to the noun in the previous signing. As mentioned earlier, verbs also direct to the spatial loci assigned to the nominal established earlier in the context. This is shown in example (60). The verb *SEE* is said to be marked for location because it directs to locus-m which is the spatial locus of *STUDENT ANY* established with the locative predicate *CL:PERSON-MEET*. We suggest that location marking is different from person marking because location marking does not mark person but the spatial loci of the

referents. In the next section, we will examine how location marking influences person marking, leading to a confusion of person distinction.

4.4.2 How does location marking affect person marking?

As noted in Chapter Three, there is a controversy about person distinction in the previous studies on signed languages. We argue that this is due to the blending of location marking and person marking. In this section, we will offer an illustration of how location marking affects person marking. We argue that there is a need to tease these two phenomena apart. The discussion will start from data on index signs and then to data on verbs.

Personal pronouns are some of the index signs in HKSL. When location marking is present, it is difficult to tell whether the index signs are genuine personal pronouns or locative markers. Consider example (59) (repeated as (62)) and (63) below:

(62) Context: There were two groups. Both groups play balls by themselves.

RH	HAVE	TWO		INDEX _j	SELF
LH					
BH		GROUP		GROUP _i	GROUP _j

RH		INDEX _i	THE-SAME	SELF	
LH					
BH	PLAY	BALL		PLAY	BALL

'There are two groups. One group here and one group there. They (the first group) play with a ball. They (the second group) also play with a ball.'

(See Appendix 3, page 201-202)

(63) Context: There was a book in front of the signer. The signer told the addressee that Felix liked this book.

RH	FELIX	LIKE	INDEX _m
LH			
BH			

'Felix like it [the book]'

In example (62), the index signs *INDEX_j* and *INDEX_i* correspond to the spatial loci of

GROUP established earlier in the context. If one does not consider the possibility that location marking and person marking can be teased apart³⁴, one would be tempted to name these index signs as third person pronouns. However, we argue that these two index signs are not third person pronouns. Third person pronouns, as defined in Section 4.1, are directed to the loci-i/j/k/l to mark third person. These four loci have equal status, that is, pointing at locus-i is the same as pointing at locus-j, locus-k or locus-l. But the loci-j and i in the index signs in example (62) above cannot be changed to other spatial loci. This is because these two spatial loci, loci-i and j, in the index signs refer to the *GROUP_i* and *GROUP_j* in the previous signing. We therefore argue that index signs *INDEX_i* and *INDEX_j* are not personal pronouns, but locative markers of the nominal (which is discursal).

One may argue that our proposal is not sound with example (62) above because one can suggest that there is a conflation of person marking and location marking in the index signs. In other words, person marking is still there because the index signs still point to the same third person loci. Yet, when we consider example (63) above, the picture becomes clear. Example (63) shows that *INDEX_m* refers to a real entity, a book. A book is clearly third person. But the index sign is pointing at locus-m referring to the book. As noted in Section 4.1, locus-m is a spatial locus of second person but not third person. Obviously, locus-m only refers to the spatial locus of the nominal, but not person. As previous studies on signed languages (e.g. Padden 1983, 1988, Meier 1990, among others) do not consider location marking as a separate language phenomenon, confusion about person distinctions has resulted. As a matter of fact, data that involves location marking leads one to propose that there is a two-way person distinction because locus-m seems to refer the third person argument.

³⁴ Fischer and Osugi (2000) report that indexical classifiers also reflect agreement in ASL and Nihon Syuwa. However, the so-called agreement marked on the indexical classifiers is different from the one defined here. The indexical classifiers, in fact, show semantic meanings. For instance, *₁GIVE_{FIRST}* means 'I give the oldest' and *FIRSTGIVE₁* means 'The oldest gives me'. Then the indexical classifiers are only marked for some semantic values of the nominal. This is certainly beyond the scope of the present study and therefore we will not introduce discussion of indexical classifiers.

So the genuine agrément pattern can only be observed in the absence of location marking as in the first set of data discussed in Sections 4.1 and 4.2 above.

Verbs are another grammatical category that can be marked for location of the nominal. Consider (64), (65) and (60) (repeated as (66)) below:

- (64) Context: A dog was standing to the left of the cat. A cat was standing to the right of the dog. They came up to each other. The dog saw the cat, it was angry and wanted to bite the cat. The dog chased the cat. The dog bit the cat on the buttock.

RH			CL:PERSON-STAND _k
LH	CL:PERSON-STAND _l		CL:PERSON-STAND _l
BH	DOG	CAT	

RH			SEE _k ANGRY WANT
LH			
BH	BUMP-INTO MEET	DOG	

RH	BITE _k			BUTTOCK
LH			BITE _k	
BH		CHASE		

'There is a dog here, a cat there. They meet each other. The dog sees (the cat). The dog is angry and (it) wants to bite (the cat). (That dog) chases (that cat) and (the dog) bites the cat's buttock'

(See Appendix 3, page 202-203)

(65) Context: In a clinic, two mothers and their children waited to see the doctor. One mother had a son. Another mother had a daughter. The signer established the loci-i and j to the daughter and the son respectively.

RH HAVE TWO MOTHER CL:PERSON-SIT_i BUT
 LH CL:PERSON-SIT_j-----
 BH

RH INDEX(at left hand at j) HAVE CL:PERSON-SIT_i-----
 LH ----- INDEX(at right hand at i)
 BH SON

RH ----- ;CL:PERSON_WALK_m WANT
 LH HAVE ;CL:PERSON_WALK_m
 BH DAUGHTER PLAY

RH INDEX_{det} MALE ROB³⁵
 LH
 BH TOY CAR FIRST CAR

RH INDEX_{det} FEMALE SAD MALE
 LH
 BH PLAY CAR PUSH_j

RH FEMALE AGAIN SELF
 LH
 BH CL:PERSON_FALL TAKE CAR

RH MALE ANGRY KICK_i
 LH
 BH LEG

‘There are two mothers sitting (in the clinic). One has a son and the other has a daughter. Two children want to play a toy car. The boy first grabs the toy car and plays. The girl is sad and (she) pushes (the boy). The boy falls down. The girl then takes the toy car. The boy is angry and (he) kicks (the girl)...’

(See Appendix 3, page 203-205)

³⁵ According to Tang (in prep.), *CATCH*, *TAKE*, *OBTAIN* and *ROB* all share the same forms in HKSL.

- (66) Context (free conversation): The signer talked about his visit to the secondary school he attended before. When he communicated with his teacher, a deaf student came and spoke to the teacher.

RH		ANY
LH		
BH	STUDENT MEET	STUDENT

RH	iCL:PERSON-MEET _m	INDEX _{pro 1}	SEE _m	GOOD
LH	jCL:PERSON-MEET _m			
BH	CHAT			

'A student and (the teacher) meet. Any student comes to (the teacher) and then (the student can) chats with (the teacher) in spoken language. I see that (the teacher and the student chat). It is so good.'

In (64) above, the two NPs, *DOG* and *CAT* are established at loci-l and k respectively. When we look at ${}_iBITE_k$, an agreement verb that can show SV/VO-agreement, the initial point and end point correspond to the spatial loci of *DOG* and *CAT* established in the previous context. In other words, what loci-l and k refer to are the locations established in the previous contexts. Our observation is also true for VO-agreement verbs, as illustrated in example (65) above. The spatial loci of 'the boy' and 'the girl' are established by the index signs at the beginning of the picture narration (i.e. the second row in the example). Locus-i represents 'the girl' while locus-j indicates 'the boy'. Thus the spatial loci contained in the agreement verbs *PUSH* and *KICK* do not refer to the third person value, but the locations of 'the boy' and 'the girl'. By articulating the verb sign *PUSH* at locus-j, it means 'the girl pushes the boy there'. As for ${}_iKICK_i$, it means that 'the boy kicks the girl here'. As a result, both spatial loci do not mark any person value overtly in the presence of nominal establishment, instead, they refer to the locations of the referents established earlier in the context. As noted, the spatial loci marking location in these verbs coincide with the spatial loci for person and one may argue that the spatial loci of the verbs mark both location and person in these two examples. However, when we consider (66) above, it is obvious that location marking and person marking are separable. The verb ${}_0SEE_m$ in (66) directs towards locus-m where the third person object is located. This clearly

shows that locus-*m* refers to the spatial location of ‘the teacher and the student’ established in the previous context. As a result, we argue that only when we separate location and person can we observe clearly the person distinctions. Otherwise, we would fall into the controversies between two-way and three-way person distinctions as in ASL.

4.4.3 Is person marking covert in the presence of location marking?

The previous section shows that location marking suppresses person marking. That is, when location marking is present, person is not marked overtly. Then is person covertly marked or merely absent? In order to answer this question, one has to find out whether the concept of person is present with location marking. Consider the following example in (67) below:

(67) Context: A girl took two dogs to go for a walk in a park. She met a male friend at the park and chatted with him.

Row 1	RH	FEMALE		TWO			PULL-BY-THE-LEAD	WALK
	LH							
	BH		BRING		DOG			
Row 2	RH	MEET	MALE	OTHER	MALE			THEY-BOTH
	LH							
	BH					MEET		
Row 3	RH	CL:PERSON-SIT _k					TWO	
	LH	CL:PERSON_SIT ₁						
	BH			TALK				DOG
Row 4	RH						THEY-BOTH _k	GO-AWAY
	LH							
	BH	CL:RECTANGULAR-OBJECT _k		TIE				
Row 5	RH	CANNOT		CL:PERSON-STAND _k			THEY-BOTH ₁	FINISH
	LH			CL:PERSON-STAND ₁				
	BH							CHAT

Row 6	RH LH BH	FEMALE	SAY _k	WANT	GO-AWAY		WALK _k	SEE _k		
Row 7	RH LH BH	HAVE-NOT	LOST	THEY-BOTH _k	GO-AWAY		LOST			
Row 8	RH LH BH	FEMALE	SAD		MALE	INDEX ₁	SEARCH		FEMALE	
						HELP				
Row 9	RH LH BH	THE-SAME	HAVE	SEARCH		BUT	HAVE-NOT	CANNOT		
Row 10	RH LH BH	FINISH		FEMALE	SAD		MALE	THINK	HAVE	METHOD
Row 11	RH LH BH	SEARCH	MANY		FRIEND	HELP	SEARCH		TWO	
							DOG			
Row 12	RH LH BH	DOG		FRIEND	SEARCH	SEARCH		SEARCH	HAVE	
						AT-LAST			FINISH	
Row 13	RH LH BH	INDEX ₁	MALE		TWO	GO	FEMALE			
				BRING		DOG			HOUSE	

'A girl brings two dogs, (she) pulls the dogs by their leads and walks. She meets a boy, other boy, (they) meet. The two of them sit down and talk. (They) tie the dogs to a post. The two dogs cannot go away, (the dogs) stand near the post. The boy and the girl talk for a long time. Afterwards, the girl says she wants to leave. (She) walks and sees that the dogs are no longer there. The girl is sad. That boy helps her to find (the dogs). The girl also looks for (the dogs). But (they) cannot (find the dogs). The girl is sad. The boy thinks that (he) can find many friends to help him to look for the dogs, the two dogs. The friends help him to look for (the dogs). At last, they found (the dogs). That boy brings the two dogs to the girl's house. (He) gives (her back the dogs).

FEMALE, 'the girl', is assigned to locus-1 with locative predicate *CL:PERSON-SIT* in the third row of example (67) above. But in row 6, the spatial locus of *FEMALE* shifts from locus-1 to locus-k with the spatial verb *WALK*. The noun *FEMALE* is used in the following signing. At row 14, the verb *GIVE* directs to locus-k for verb-object agreement. One may argue that this locus-k is a location marker. However, this cannot be true because the verb *GIVE* can also direct to loci-i, j or l to mark third person of the indirect object *FEMALE*. If locus-k is a location marker, it cannot change to other spatial loci in the signing space. But what is the relationship between locus-k of *GIVE* and the question of whether person is covertly marked with location marking? This example, in fact, exemplifies that person is covertly marked with locative markers. If the concept of person is absent in the locative markers, the signer may only sign the verb *GIVE* with a location marker. Yet the signer signs *GIVE* with a person marker. We therefore suggest that person is covert, but not absent when location marking is present.

4.4.4 Summary

This section shows that the number of person distinctions becomes blurred with location marking and it is tempting to draw a conclusion that there is a two-way distinction instead of a three-way distinction because the second and third person values seem to be inseparable. This is demonstrated in the sign language literature (i.e. Meier's (1990) account). The present study argues that location marking affects

person marking and therefore there is a need to separate the two language phenomena in order to elucidate the actual agreement pattern in HKSL.

4.5 Person marking, Role shift and Location marking

This section examines a more complex instance where both role shift and location marking are present. In these cases, location marking still suppresses person marking. Consider the following example in (68) below:

(68) Context (free conversation): The signer talked about meeting an old schoolmate at a picnic.

RH	FEMALE	DON'T-KNOW	DON'T-KNOW
LH	INDEX _k		
BH	NAME	NAME	

		br
		htn _i
		eg _i
RH	KNOW	KNOW
LH	kGET-SIGHT-OF ₁	kGET-SIGHT-OF ₁
BH		

		htn _i
		eg _i
RH	INDEX _{pro 1}	HAVE-NOT
LH	SEE _k	
BH		

'I don't know the woman's name. I don't know. She saw me, she saw me. I cannot see her.'

Example (68) above involves both role shift and location marking. The noun *FEMALE* is assigned to locus-k with the index sign *INDEX_k*. Then the signer shifts to the time when she met the woman, as marked by the non-manual marking. Under role shift, the verb sign *GÈT-SIGHT-OF* and *SEE* are both marked for the spatial location of the noun *FEMALE* (i.e. locus-k) established earlier in the context. Obviously, location marking also affects person marking under role shift. In other words, when role shift and location marking are present, person marking is still

suppressed as in the cases where only location marking occurs.

4.6 Interim discussion

The previous analysis has attempted to investigate person agreement in pronouns and verbs. Given the findings described above, we would like to address (i) Linguistic space, (ii) optional person marking and (iii) modalities and verb agreement below.

4.6.1 Linguistic space

As discussed in Chapter Three, whether space is linguistic is controversial. While Padden (1983, 1988) and Meier (1990) both think that space is able to mark person (though the person distinctions they observed are different), Liddell (2000:312) argues, “there is no grammatical basis for an agreement analysis”.

In Sections 4.1 and 4.2, we have shown that both personal pronouns and verbs are marked for three distinct person values in HKSL. This echoes the agreement facts presented in Padden’s (1983, 1988) analysis. However, in Section 4.4, it is illustrated that person marking is suppressed when location marking takes place. This supports Liddell’s (2000) proposal that space cannot denote person values in ASL. From our data, HKSL appears to correspond to the two apparently contradictory analyses in ASL.

Then is space linguistic? With respect to person marking in HKSL, space is linguistic because different sets of person values are realized by the spatial loci in the signing space. But when location marking is involved, it seems that it is more difficult to determine whether space is linguistic. However, as proposed above, person is not absent when location marking takes place. Instead, person, as an agreement feature, becomes covert. The grammatical elements like agreement marking still exist when location marking makes use of the signing space. As a result, we propose that space is linguistic at least in HKSL.

With respect to the three sets of data we have discussed above (i.e. (i) data where location marking and role shift are absent, (ii) data where role shift takes place and (iii) data where location marking occurs), we suggest that the signing space can reflect both grammatical and discursal elements. From a formal perspective, “discourse is viewed as a level of structure higher than the sentence” (Schiffrin 1994:24). While the grammar focuses on the structural relations between different constituents, discourse concerns how information (which may be social or cultural) is organized in propositions. For person marking and role shift, it is clear that the former is part of the grammar while the latter is a discourse device. This is because person marking relates to the changes of forms of pronouns and verbs, which are constituents that form sentences. Role shift is a discourse device because it is a way to present a narration in signed languages.

However, what is the status of location marking? In HKSL, when location marking takes place, the signer is, in fact, setting up a stage to present the propositions. In other words, location marking is a way to deliver a scenario. We thus propose that location marking is another device in organizing discourse in HKSL. Consequently, HKSL demonstrates a phenomenon where discourse would suppress grammatical marking.

4.6.2 Optional verb agreement revisited

In the previous chapters, we have pointed out that optional agreement marking may occur in signed languages, but not in spoken languages. In ASL, optional agreement refers to the fact that subject agreement markers may or may not be marked on verbs (Padden 1983, 1988, Meier 1982, Supalla 1992). Pizzuto (2002) reports that several signed languages (i.e. ASL, DSL and LIS) demonstrate optional agreement marking. That is, the verb may either be in inflected form or in

uninflected form (i.e. citation form).³⁶ However, Bahan (1996) argues that the verb is, in fact, marked by a neutral marker (both manual and non-manual). If Bahan's (1996) analysis is accurate, there is no optionality in person marking in ASL.

HKSL also demonstrates optionality in verb agreement. But in contrast with ASL, optional agreement marking is not restricted to SV-agreement, but both SV-agreement and VO-agreement. Pizzuto (2002) also reports that ASL, DSL and LIS demonstrate optionality. Optional agreement marking may therefore be universal among signed languages.

While optional morphological realizations of person appear in most cases, we observe that some combinations of person values require the verbs to be obligatorily marked. That is, obligatory person agreement occurs with (i) second person subject and third person object, (ii) second person subject and first person object and (iii) third person subject and first person object. We also observe that obligatory person marking appears on two verbs *FARE-MORE-THAN* and *ADMIRE*. From these observations, the patterns of person marking in HKSL are even more complex than in other signed languages. In the next chapter, we will attempt to explain this optionality in the spirit of the Minimalist Program.

4.6.3 *Modalities and verb agreement*

In the previous chapters, verb agreement in spoken and signed languages is shown to be slightly different. For spoken languages, verbs are marked by agreement affixes for person, number or gender. In particular, person distinctions are generally three-way: first, second and third. While most linguists in spoken languages maintain a consensus on the notion of verb agreement, particularly vis-à-vis person distinction, person agreement remains controversial in signed languages. First, debate on whether person has a three-way or two-way distinction is keen. Besides, with the

³⁶ As noted in Chapter Three, Pizzuto (2002) does not give any examples of optional marking because her focus is on language acquisition.

introduction of Liddell's (2000) analysis, it is questionable whether the spatial loci really mark person for verb agreement. Does verb agreement behave differently when the modalities are different? We may look at this issue from four perspectives: (i) the distribution of person agreement, (ii) the number of person distinctions, (iii) the means of marking person agreement and (iv) the optionality in person agreement, as illustrated in Table 4.16 below:

Table 4.16 Summary of differences in verb agreement between HKSL, spoken languages and other signed languages

	Signed languages		Spoken languages
	HKSL	Other signed languages	
I	Person is marked on agreement verbs, but not on spatial verbs or plain verbs.	Person ³⁷ is marked on agreement verbs, but not on spatial verbs or plain verbs (e.g. ASL, ISL, etc.).	Person, number and gender are marked on all main verbs and auxiliary verbs.
II	A three-way person distinction is observed.	There are two controversies: (i) whether person has a two-way or a three-way person distinction (ii) whether spatial loci mark person (e.g. ASL).	For most spoken languages, a three-way person distinction is observed.
III	Spatial loci are markers for person.	Spatial loci are markers for person (e.g. ASL, BSL, etc.).	Agreement affixes mark agreement features (i.e. person, number or gender).
IV	Person agreement only involves manual inflections	For some signed languages (e.g. ISL), person agreement only involves manual inflections. For other signed languages (e.g. ASL), it is controversial whether non-manual marking serves as person agreement markers.	There are no studies reporting non-manual marking for agreement.
V	Agreement verbs are (i) in citation form with first person subject and second person object, (ii) obligatorily marked with (a) second person subject and first person object (b) second person subject and third person object (c) third person subject and first person object (iii) optionally marked elsewhere	Agreement verbs are optionally marked for person/number in several signed languages (i.e. ASL, DSL and LIS).	Main verbs and auxiliary verbs are obligatorily marked for person, number or gender in the same structure if overt agreement marking occurs in the language.

³⁷ Number is another agreement feature that is marked on agreement verbs in signed languages.

Table 4.16 shows that HKSL is similar to other signed languages in terms of row I, II³⁸, III and IV³⁹, but that it contrasts with spoken languages in all aspects except for row II⁴⁰. Obviously, person marking in the audio-vocal modality is different from that in the visual-gestural modality. In the signed language literature, location marking has been fused into verb agreement. This mixing results in a keen debate on the person distinctions and the linguistic substance in space. The mixing, in fact, is due to the visual-gestural modality for signed languages. In signed languages, space plays an important role in the grammar. Yet, the grammatical space can blend with the gestural space in many cases (cf. Emmorey 2002). Thus, it is difficult to discern the exact agreement patterns unless one eliminates the modality effect. In the current study, we attempt to elucidate the genuine agreement patterns by eliminating the influence of location marking (as well as role shift). By doing this, we observe clearly that three distinct person values occur in both personal pronouns and person agreement in HKSL. To conclude, we propose that one can only demonstrate the genuine agreement patterns in signed languages if one takes the modality effect into account.

4.7 Chapter Summary

In this chapter, we have presented person marking in personal pronouns and verb agreement in HKSL. It is noted that a three-way person distinction is observed when location marking does not occur. This further supports our suggestion that controversies about person in ASL are due to mixing of person marking with location marking. In addition, we observe that person agreement is optionally marked in HKSL. As optional agreement marking is also observed in other signed languages, we suggest that may be due to the modality effect.

³⁸ HKSL demonstrates a three-way distinction for person that is in line with Padden (1983, 1988).

³⁹ Person agreement in HKSL is the same as that in ISL. That is, agreement verbs are only marked manually for person.

⁴⁰ For row III, as spatial loci optionally mark person in HKSL, we suggest that they are different from the agreement affixes that are obligatorily marked on verbs in spoken languages.

Chapter Five Towards an Explanation

5.0 Introduction

In Chapter Four, we examined person, agreement in both personal pronouns and verbs. The agreement facts in HKSL are summarized as (1) below:

- (1) a. Only agreement verbs, but not plain verbs and spatial verbs, are manually marked for person.
- b. Three distinct person values are identified: first, second and third.
- c. No non-manual person markers for agreement are observed in HKSL.
- d. Optionality in person agreement (i.e. an agreement verb may or may not be marked for person) is observed.
- e. Location marking and person marking can be separated.

We will attempt to account for these agreement facts in the spirit of the Minimalist Program (MP). In the next section, we will present some theoretical backgrounds to our analysis of HKSL. In Section 5.2, we will present our analysis on the agreement facts in HKSL.

5.1 Theoretical background

In this section, we will first present an overview of MP. We will also examine different types of feature and consider whether agreement can be projected in phrase structure. Finally, we will study how feature checking functions as an agreement mechanism in both spoken and signed languages.

5.1.1 *The Minimalist Program (MP)*¹

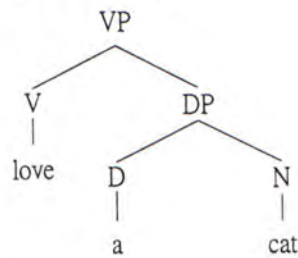
The Minimalist Program (MP) is a program that aims at explaining the language component in human brains (Chomsky 1988). The core idea of this program is

¹ The outline of MP in this section is mostly based on the 1995 version. Recently, the MP has undergone rapid development. As this thesis aims at explaining the agreement facts in HKSL, the details of the development of MP will not be discussed. Interested readers may refer to Chomsky (2000, 2001a, 2001b).

‘economy’. According to this program, the number of interface levels, operations and economy principles are kept to the minimum. In the Government and Binding (GB) framework, there are four interfaces: LF, PF, DS and SS. But in MP, there are only two interfaces, LF and PF, which account for our production of language utterances.² LF is responsible for semantic interpretation while PF accounts for the sounds of a language expression. At both interfaces, there is a principle, named Full Interpretation, that rules out “non-standard” representations.

In the derivation, there are, basically, two operations, Merge and Move. By means of Merge, constituents are merged in a binary manner to form a phrase structure. For example, the Verb Phrase is represented in Figure 5.1 in MP.³

Figure 5.1 Verb Phrase (VP)



The determiner (D) *a* merges with the noun (N) *cat* to form a determiner phrase (DP) in Figure 5.1 above. The DP *a cat* merges with the verb (V) *love* to form a VP. At each level, at most two elements are merged to form a phrase. In this sense, the phrase structure is binary.

Move, it is a more costly operation. Thus, a constituent does not move if it is not necessary. In the derivation, there is a point that determines whether Move, as an operation, influences the phonological representation. This point is known as Spell-Out. If Move takes place before Spell-Out, the phonological representation will be affected by the operation Move. If Move takes place after Spell-Out (i.e. at LF),

² Chomsky (2001b) introduces Phon and Sem as the two interfaces. Basically, it is assumed that LF no longer exists. As this thesis does not focus on explaining theoretical detail of the MP, we will not address the issues here. Interested readers may refer to Chomsky (2000, 2001a, 2001b) for details.

³ Note that the subject is originally located at a specifier position of VP. However, for a clearer illustration of the operation Merge, we do not project the V'.

the phonological representation will not be affected because the derivation is covert.

Move is governed by several economy principles: Shortest Move, Procrastinate, Greed and Enlightened Self-Interest. The term Shortest Move means that a constituent can only move the shortest possible distance. This results in successive cyclicity. Movement of *wh*-words in Belfast English is subject to this principle. For details, the reader may refer to Radford (1997: 284-5). The principle Procrastinate states that movements are preferred to take place as late as possible. Nonetheless, this principle only accounts for weak features, but not strong features.⁴ Thus, Procrastinate can be violated when the features are strong. The Greed principle states that a constituent moves for the sake of its own requirements. For example, a verb moves because its uninterpretable features need erasing so that it can be interpreted at LF. With the Enlightened Self-Interest principle, the constituents move for the sake of the other constituents instead of for themselves. For instance, *wh*-words in English move up to Spec of CP for the interest of Q at the head of CP (but not for its own sake). In addition to these assumptions, it is proposed that all lexical items are bundles of features in the Lexicon. In the next section, we will examine these features in detail.

5.1.2 *The nature of features*

In MP, features are the smaller units that form a lexical entry. Yet, why do we need to break lexical items into features? In the spirit of the MP, things are kept to a minimum so that we can explain the rapidity of language acquisition. By breaking lexical items into features, we can group the lexical items in a more economical way in the Lexicon. Under MP, a feature generally has two properties. First, a feature may be strong or weak. Second, a feature may be interpretable or uninterpretable. In the following discussion, we will first study how interpretable/uninterpretable features

⁴ We mentioned in Chapter Two that strong features motivate overt movement while weak features covert movement.

relate to lexical items and syntactic operations. Then we will examine how strong/weak features relate to morphological realizations and movement.

In MP, interpretable features contain semantic content while uninterpretable features do not. In other words, the former contributes to the lexical meaning while the latter does not. Different interpretable features may combine to form a lexical item. For instance, *woman* is a combination of the interpretable features [human], [adult] and [female]. The features [human], [adult] and [female] all contribute to the lexical meaning of *woman*. But some lexical items may be composed of both interpretable and uninterpretable features. For example, *he* contains interpretable features like [male] and uninterpretable features [nominative]. The [male] feature contributes to the lexical meaning and thus it is an interpretable feature. As for the case feature [nominative], it does not give any lexical meaning to *he*. Instead, the case feature determines that the pronoun *he* has to be in a subject position. Though case features do not contribute to the lexical meaning of *he*, they provide structural information about a lexical item. Apart from case features, tense and agreement features are two more uninterpretable features. Neither tense nor agreement features contribute to the meaning of a lexical item. Tense features provide information on the time when an action takes place. As for agreement features (i.e. person, number and gender), they are interpretable when they appear in nouns, but uninterpretable when they appear in verbs. For instance, the noun *books* contains [number] which contributes to the meaning of the noun *books*.⁵ Thus, agreement features that form nouns are interpretable. But when [number] is in a verb, it is uninterpretable. Consider example (5) in Chapter Two, repeated as (2) below:

⁵ The affix '-s' marks plural of the noun *books*.

- (2) Bayso (Corbett 2000:182)⁶:
- | | | |
|----|-----------------------------------|--------------|
| a. | kimbír | Hudurte |
| | bird-SG.F | slept-SG.F |
| | 'a single/particular bird slept.' | |
| b. | kimbir-jaa | hudureene |
| | bird-PAUC.F | slept-PAUC.F |
| | 'a few birds slept.' | |
| c. | kimbir-jool | Hudure |
| | bird-PL.F | slept-PL.F |
| | 'birds slept.' | |

In (2) above, all the verbs are marked for number and gender. The number on the verbs does not affect the verb meaning (i.e. sleep). Thus, number, as an agreement feature for the verb, is uninterpretable. Then agreement features demonstrate an asymmetry as they are interpretable for nouns, but uninterpretable for verbs. These contrasts with tense features and case features that are consistently uninterpretable.

As mentioned earlier, features may be strong or weak in MP. Feature strength of uninterpretable features is, in fact, closely related to morphological realizations. According to Radford (1997), the richness in morphology determines feature strength. When the morphology is rich, features are strong. But if the morphology is weak, features are weak. Feature strength is also closely related to syntactic operations like movement. That means that, when features are strong, overt movement is observed. If features are weak, covert movement takes place. Obviously, feature strength, morphology and movement are closely related to one another.⁷

Apart from the two properties we have seen above, different features have different sets of values. For instance, [singular] is a value of number (one of the agreement features). We may call [singular] specified number feature. Note that we assume that features in the Lexicon are not specified (otherwise the Lexicon could be too large). When are features specified for values? In MP, features are only specified when they enter the derivation. Note that uninterpretable features must be identified

⁶ Corbett (2000) does not indicate number marking on the verbs in these examples, but he has added a table on the verb forms with respect to number/gender. To have a simple and clear picture of the number marking of Bayso, the author adds the number marking onto the verb.

⁷ In our discussion on feature checking, we will further examine the relationship between feature strength, morphological realizations of features and movement.

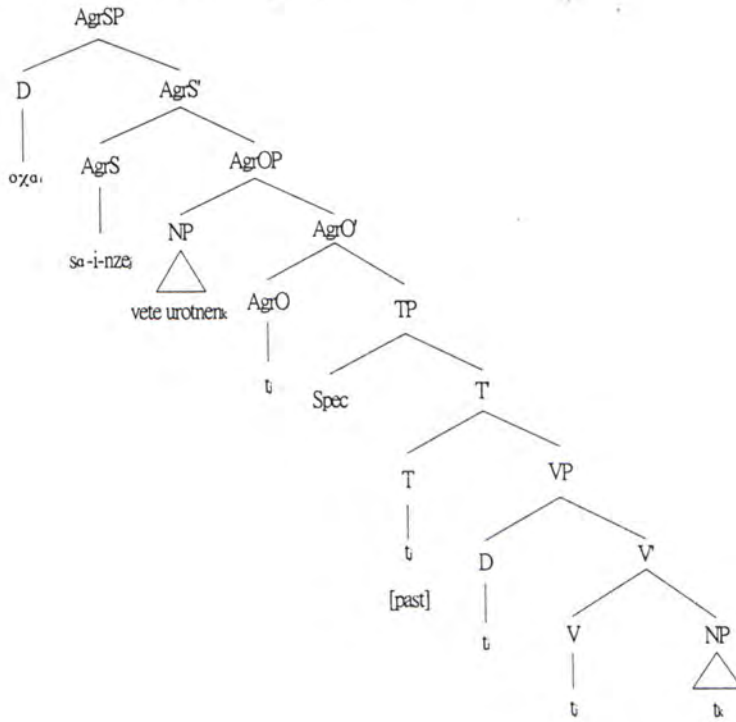
before feature checking. In other words, specifications of uninterpretable features are a prerequisite to feature checking. As feature checking for uninterpretable features is obligatory in the derivation, specifications of uninterpretable features (being the prerequisite) are also obligatory. In other words, we do not expect unspecified features to exist after syntactic operations. We will examine this further when we discuss feature checking below.

It is proposed that lexical items can also be decomposed into features in signed languages. Bahan (1996) observes that person, one of the agreement features, is marked on verbs in ASL. In other words, uninterpretable features also exist in signed language. Though no sign linguists have mentioned interpretable features, semantics is assumed to be universal and thus we expect that interpretable features also exist in signed languages. Apart from this, Bahan (1996) also suggests that it is impossible to determine feature strength in ASL. In our previous discussion, we mentioned that feature strength is related to morphological realization and movement.⁸ Yet, as mentioned in Chapter Three, he reports that there is a correlation between specified/unspecified feature, morphological realizations and movement. In signed languages, specifically ASL, there are two kinds of subject agreement markers, marked and unmarked (i.e. neutral markers). Based on this observation, Bahan (1996) suggests that there are specified and unspecified features. The former are represented by manual or non-manual agreement markers that direct towards the spatial loci which mark person in the signing space; the latter are realized by the neutral agreement markers (manual or non-manual) which do not direct to any particular spatial loci in the signing space (See Chapter Three for illustrations). This contrasts with spoken languages where unspecified features are not realized overtly. But how do these features relate to movement? Bahan (1996) proposes that only specified features would initiate movement while unspecified features would not. In our

⁸ As mentioned in Chapter Three, Bahan (1996) reports that there are no intervening materials (e.g. negators, modals, etc.) between AgrPs and VP. Thus there is no way to determine whether verb movement is overt or covert in signed languages.

that proposes that morphological derivations must directly reflect syntactic derivations (and vice versa). In other words, the morpheme ordering must be the same as the syntactic ordering. However, Mirror Principle is violated when AgrPs are involved. Consider the phrase structure of the Erza sentence in example (3) below in Figure 5.2:

Figure 5.2 Phrase structure of example (3) above



As morphological fusion occurs in this language, Siegel (1978) postulates that AgrSP and AgrOP are adjacent to each other. On the morphological level, agreement morphemes of subject and object are adjacent to each other. But the syntactic ordering is SVO, that is, subject and object are not adjacent. Obviously, Baker's (1985) Mirror Principle is violated when AgrPs are present. Mitchell (1994) therefore argues that agreement projections should not be projected. However, if the Mirror Principle predicts wrongly, Mitchell's (1994) argument is also inaccurate. As Mitchell (1994) strongly follows the Mirror Principle, we would suggest that this argument is not strong enough to reject the AgrPs.

Apart from Mitchell (1994), Speas (1991) also argues against the existence of agreement projections. Speas (1991) argues that agreement is just a relationship of

the specifier and the head because (i) Agr is different from other functional heads like Tense, Aspect, Mood and Negation, (ii) some languages demonstrate agreement marking on both auxiliaries and the main verbs, (iii) Tense and agreement morphemes are commonly fused together and (iv) morphological processes take place in the Lexicon. As for the first argument, Speas (1991) points out that while Tense, Aspect, Mood and Negation usually occur once in any clause while Agr does not. However, Agr is the same as other functional heads in the sense that it also describes some functional information relating two constituents in the clause. If Agr is not a functional head, how could we represent the relationship between the verbs and the arguments in terms of person, number and gender? In this sense, we argue that this point could not disprove the existence of AgrPs.

Speas' (1991) second argument is based on empirical evidence. She points out that AgrP should not be projected because some languages demonstrate agreement marking on both auxiliaries and main verbs. Consider Hindi in the following example (4) below:

- (4) Hindi
 Raam roTii khaataa rahtaa thaa
 Raam (M) bread eat (IMP:M) PROG (IMP:M) be (PAST:M)
 'Raam used to keep on eating bread.'
(Speas 1991:412)

In (4) above, the auxiliaries *rahtaa*, *thaa* and the main verb *khaataa* 'eat' are marked for gender of the subject (i.e. masculine). When both auxiliaries and main verbs have to be marked overtly, it is suggested that more than one AgrSP has to be projected. Speas (1991) therefore suggests that Agr is not a functional head. However, MP does not prohibit multiple projections of AgrPs. When AgrPs can have multiple projections, the Hindi sentence in (4) above could be accounted for. Then Speas' (1991) reasoning against agreement projections does not refute the existence of agreement projections.

Speas' (1991) third argument is similar to Mitchell's (1994) in the sense that

both argue against AgrPs because of morphological fusion. Speas (1991) points out that tense and agreement morphemes are, in many cases, fused together. Thus, AgrP could not stand alone as a functional projection. Though tense and agreement are commonly fused into one morpheme in many languages, this does not suggest agreement should not be projected. First, morphological fusion is observed on the surface while AgrPs are the domain for syntactic operations to take place in. Even though we have fused morphemes on the surface, this does not suggest that AgrPs do not function as the domain for syntactic operations. In addition, Pollock's (1989) empirical evidence (i.e. based on French infinitives) strongly proves that AgrPs do exist.

Speas' (1991) last argument assumes that morphological processes take place in the Lexicon and therefore AgrPs are not necessary. When morphological processes occur in the Lexicon, AgrPs have no function at all and thus agreement should not be projected. However, this argument is merely an assumption and further verification is needed.

From Pollock (1989), Mitchell (1994) and Speas (1991), we observe that different linguists, based on different empirical evidence, discuss whether agreement is a structural relation between the verb and its arguments. This discussion calls for a reconsideration of the nature of agreement. Is it truly a structural relation? Can we ask whether we can project agreement as a functional projection? Generally speaking, lexical entries can be divided into functional categories and lexical categories. When functional categories are projected as a maximal projection, they are known as functional projections. This is also true for lexical categories. However, what are the differences between lexical categories and functional categories? Lexical categories are said to refer to content words⁹ like nouns, verbs and so on (Roberts 1997). As we can always add new entries to the lexical categories, we also view lexical categories

⁹ There is a keen debate on the nature of word in morphology. As our main concern is the nature of agreement, we will not go into detail on the nature of word here. Interested readers may refer to the relevant literature.

an as open class. Functional categories refer to grammatical words like complementizer, tense markers and so on. These lexical entries do not allow new entries and thus they are known as a closed class. Based on these definitions, agreement markers should belong to the functional categories. First, agreement markers are grammatical words, but not content words, because agreement markers do not have their own meaning. Besides, they behave like tense markers and complementizers that no new entries can be added to the category. However, one may argue that agreement is not a structural (or syntactic) relation because it does not give any information about the structural position of the subject and object. Among grammatical words, it is clear that only case can mark the structural position of the arguments. Other grammatical words like complementizer, tense markers and agreement markers do not have such a function at all. So, if we restrict functional projections as projection of lexical items that denote structural position, we can only project case into a maximal projection. Complementizer, tense and agreement are all disqualified. If this is the case, how can we accommodate grammatical markers like tense markers, complementizers and so on into a phrase structure when these grammatical markers are clearly different from the content words? In this sense, we argue that agreement can still be projected as a functional projection because agreement is like a glue that sticks a verb and its arguments together, forming an event.

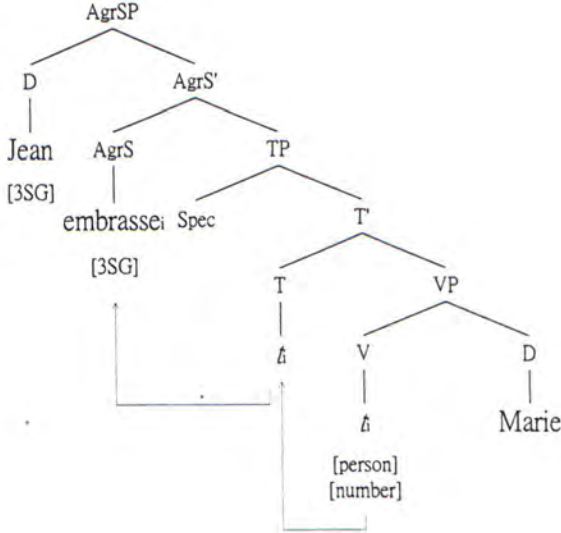
5.1.4 Feature checking as an agreement mechanism

In this section, we suggest that feature checking is an agreement mechanism for both spoken languages and signed languages. Under MP, it is assumed that verbs contain uninterpretable agreement features that need to be checked off with those interpretable agreement features contained in the arguments. For feature checking to take place, the features for checking have to be in a spec-head relation. As mentioned above, the Inflectional Phrase (IP) is split into Agreement Phrases (i.e. AgrSP and

AgrOP)¹⁰ and a Tense Phrase (TP). As the subject would of AgrSP to check off its case feature (i.e. nominative case move up to AgrS so that the subject and the verb can be in a for feature checking. Thus, AgrPs become the checking d agreement features as well. When the verbs check off their uni features with the corresponding features contained in the arguments, verb agreement is reached. In this sense, feature checking functions as an agreement mechanism.

As mentioned in Chapter Two, feature checking can be achieved via two possible operations, (i) verb raising and (ii) percolation. The former is associated with strong agreement features while the latter with weak agreement features. While French main verbs undergo verb raising, English main verbs only allow percolation. Consider Figures 2.4 and 2.5, repeated as Figures 5.3 and 5.4 below¹¹:

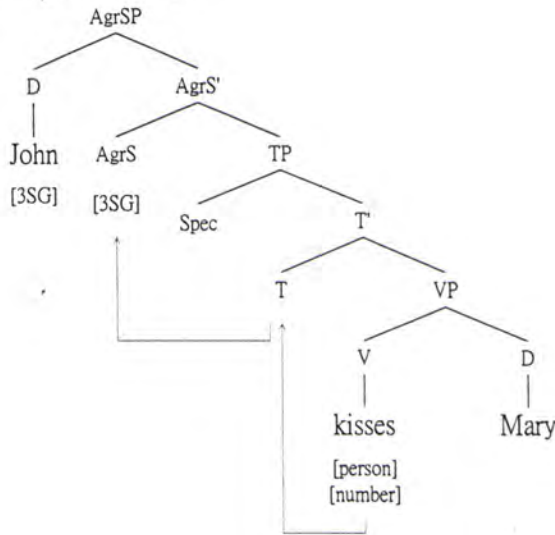
Figure 5.3 Jean embrasse Marie.



¹⁰ AgrS and AgrO are also responsible for case marking. The former is for nominative case while the latter is for accusative case. As a matter of fact, Chomsky (1993, 1995) makes use of AgrPs to unify both agreement and case. Yet, we will not discuss case in detail as our focus is person agreement in HKSL.

¹¹ The subscripts are the indices representing the binding relation between the moved item and its trace.

Figure 5.4 John kisses Mary.



In Figures 5.3 and 5.4 above, the French verb *embrasse* and the English verb *kisses* are in the form of a set of features, including the unspecified person and number (See Chapter Two for the discussion of feature specification). As the French verbs contain strong agreement features, the verb *embrasse* and its agreement features for subject (i.e. third person singular) move upward first to T for tense feature¹² and then to AgrS to specify the person/number values. But for English, the verbs contain weak agreement features and so only the agreement features percolate to specify the person/number values. In both phrase structures, once the person values contained in the verbs are specified at AgrS, the verb can agree with the subjects that is located at the Spec of AgrSP¹³ by checking off the corresponding features. So both strong and weak agreement features move up because of the principle of Greed.

Based on the examples from French and English above, it is shown that feature checking is an operation for syntactic agreement which contrasts with Speas' (1991) assumption (which states that Lexicon is where morphological processes take place). In other words, feature checking is an agreement mechanism in spoken languages. We would like to argue that checking does not only function as an agreement

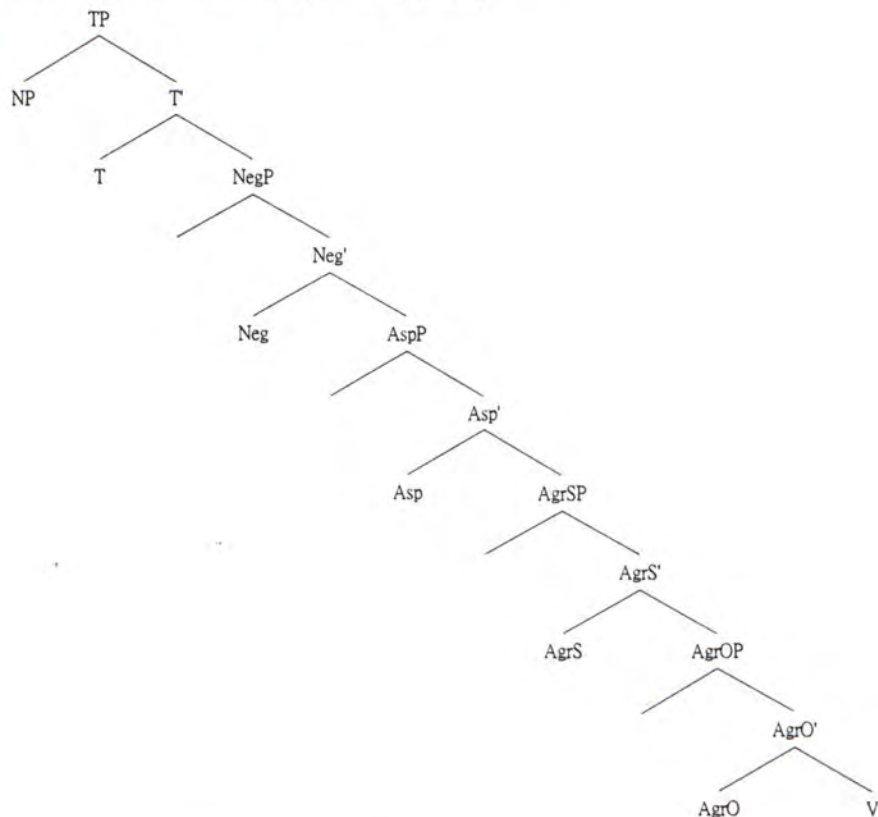
¹² As our focus is on feature checking in verb agreement, checking of tense features are not discussed in details here. Interested readers may refer to Radford (1997) for further details.

¹³ According to the VP-internal Subject Hypothesis, subjects are base-generated at the Spec of VP. To obtain case, subjects move upward to Spec of AgrSP.

mechanism for spoken languages, but also for signed languages. Bahan (1996) attempts to analyze the agreement facts in ASL with feature checking. In ASL, it is generally agreed that only agreement verbs are marked for agreement overtly. Yet, Bahan (1996) extended his analysis to include plain verbs as well. Nonetheless, the agreement system for spatial verbs is still unclear. In the following discussion, we will show how Bahan (1996) accounts for the overt agreement marking on both agreement verbs and plain verbs in ASL.

Bahan (1996) proposes, similarly to the phrase structure in Erza above, that AgrSP and AgrOP are adjacent to each other in ASL, as illustrated in Figure 3.23, repeated as 5.5 below:¹⁴

Figure 5.5 Phrase structure in ASL (Bahan 1996:32)¹⁵



From Figure 5.5 above, AgrSP and AgrOP are seen to be adjacent to each other. As “there is no intervening materials [e.g. adverbs, modals or negator] between the AGR

¹⁴ Bahan (1996) does not give any reason why AgrSP and AgrOP are adjacent to each other.

¹⁵ The phrase structure in Figure 5.4 above presents several functional projections: TP, NegP, AspP and AgrPs. As this thesis focuses on syntactic agreement only, the explanation for the position of these functional projections is not included.

heads and the verbs”, there is no way to test whether the verbs move overtly or covertly (Bahan 1996:243).¹⁶

As mentioned in the Section 5.1.2 above, Bahan (1996) introduces a different set of features to capture the agreement system in signed languages. In his analysis, features of the heads of AgrPs and VP (i.e. AgrS, AgrO and V) can be overtly marked through non-manual and manual marking respectively. While non-manual marking like head tilt and eye gaze marks person (as an agreement feature) of AgrS and AgrO, heads of AgrPs, manual inflections on the verbs mark the feature of V, the head of VP. Additionally, person of both AgrS and V can be either fully specified or unspecified. If person is fully specified, the non-manual markers (i.e. head tilt and eye gaze) direct towards the spatial loci that marks first, second or third person of the arguments. But when person is unspecified at AgrS, the non-manual marker is in its neutral form (see Chapter Three for illustrations).¹⁷ As for V, when person is fully specified, the manual signs would direct towards the spatial loci that mark first, second or third person of the arguments, as described in Padden (1983, 1988). But when person is unspecified for subject, the manual signs would start at a point in the neutral space that is close to the first person marking. According to Bahan (1996), when person of V is unspecified, AgrS may contain either fully specified or unspecified person feature. If person at V is fully specified, person of AgrS must also be fully specified, as illustrated in Table 5.1 below:

Table 5.1 Combinations of person features at AgrS and V in ASL

		AgrS (where person is realized by non-manual markers)	V (where person is realized by manual markers)
1.	OK	Unspecified	Unspecified
2.	*	Unspecified	Fully specified
3.	OK	Fully specified	Unspecified
4.	OK	Fully specified	Fully specified

(Bahan 1996:219)

¹⁶ In Chapter Two, we have studied how adverbs function as a test on verb raising. Another two tests not presented here are modals and negators. Note that these items can only test whether verb raising takes place when they are in the position between the AgrPs and V.

¹⁷ Person of the objects is always fully specified in ASL. So no neutral manual/non-manual markers for person of the object are observed.

In Table 5.1 above,² the person features of AgrS and that of V can be combined in three ways (i.e. combinations 1, 3 and 4 in the table). When the AgrS contains unspecified person feature (and thus marked with neutral head tilt), the verbs must also contain unspecified person feature (marked by articulating the verb sign in the neutral space).¹⁸ Nonetheless, Bahan (1996) does not state how can one distinguish neutral person marking from the absence of person marking in ASL. The present author suggests that Bahan (1996) cannot refute Padden's (1983, 1988) observation of optionality because Bahan (1996) cannot clearly prove there is no absence of person marking, but neutral person marking in ASL. Table 5.1 also suggests the verbs are always inflected for marked or unmarked agreement markers in ASL. It is noted that this interpretation of specified feature and unspecified feature in ASL is different from that described in the MP. In MP, when the person feature is specified, the values (i.e. first, second or third) are identified. When the person feature is unspecified¹⁹, the values are not yet identified. Only when the person feature reaches AgrS can it be identified with a particular person value. Identification of person values is obligatory because person is an uninterpretable feature and it must be checked off with the corresponding feature in AgrPs. As identification of person values is a prerequisite of feature checking between the verb and its argument, it is impossible for person values to be unspecified once they reach the heads of AgrPs. In other words, Bahan (1996) has assumed a different mechanism of feature checking in ASL because, in his case, non-manual marking is shown to be evidence of overt marking of the agreement features at AgrSP.

Based on this different interpretation of the fully specified/unspecified features, Bahan (1996) suggests that verbs move up to AgrO and AgrS for feature checking when they are fully specified for person of both subject and object. But when the

¹⁸ Bahan (1996) does not explicitly point out which person values the neutral marker denotes. Yet, we observe that these neutral manual/non-manual markers are only associated with third person subject. We therefore suggest that this neutral marker is a third person marker.

¹⁹ It is unclear on what occasions the person feature can be unspecified.

verb is unspecified²⁰ for subject, the verb would only raise to AgrO and would not proceed further to AgrS. So the motivation for the verb to move upwards in signed language is whether the feature is fully specified or not in Bahan's (1996) analysis. But for spoken languages, verbs move for the sake of checking off their uninterpretable features (i.e. movement is driven by the principle of Greed). However, Thompson and Emmorey (2003) have pointed out that eye gaze is not an agreement marker in ASL.²⁰ In other words, it is doubtful whether Bahan's (1996) analysis can account for the agreement facts in ASL or other signed languages.

From our discussion above, feature checking is shown to be a means to account for verb agreement in both spoken languages and signed languages. However, some of the details of feature checking in signed and spoken languages are different, as summarized in Table 5.2 below:

²⁰ See Chapter Three for a description of Thompson and Emmorey's (2003) analysis.

Table 5.2 Differences of feature checking in signed and spoken languages

Spoken languages	Bahan (1996)
Agreement features (i.e. person, number and gender) in the main verbs are usually represented by agreement affixes. ²¹	Agreement features, particularly person, can be represented by manual agreement markers. ²²
Only when the verb moves overtly from V to AgrS can person be overtly marked.	Person at both AgrS and V can be overtly marked through manual and/or non-manual markers.
Specified features mean identified person values (e.g. [3SG]) while unspecified features mean non-identified person values (e.g. [person])	Fully specified features mean that the verb is marked manually and/or non-manually for the three sets of spatial loci (suggested by Padden (1983, 1988)) so as to mark first, second and third person. Unspecified features mean that the verb is neutrally marked manually (i.e. spatial loci near the first person marking) and non-manually (i.e. neutral head tilt).
Features are either strong or weak.	Whether the verbs contain strong or weak agreement features is not mentioned.
Verb raising occurs either overtly or covertly, depending on the feature strength.	Verbs do not raise to AgrS when they carry unspecified person for subject. But it is unclear whether the verb raising is overt or covert.
Feature checking is obligatory because no uninterpretable features can survive at LF.	Feature checking is not obligatory as verbs with unspecified person for subject do not need to raise to AgrS.

Table 5.2 above shows that feature checking in ASL behaves differently from that in spoken languages. In particular, there are two phenomena that are unique to ASL. First, specification of features is not obligatory for ASL. This contrasts with the phenomenon in spoken languages where specification of features is a requirement. Second, ASL demonstrates dual person markers for agreement verbs. Why do signed languages need two markers (i.e. manual and non-manual) to mark the same information? In spoken languages, no overt markers for agreement features at AgrPs are observed. We thus deduce that agreement features at AgrPs could be marked

²¹ As noted in Chapter One, Nichols' (1986) typological study reports that agreement is marked on verbs in head-marking languages, but on the arguments in dependent languages. As the languages we have studied so far are head-marking languages, agreement affixes are associated with the verbs.

²² It is controversial whether non-manual marking marks person agreement. See Chapter Three for details.

either overtly or covertly. For signed languages like ASL, non-manual marking would be the overt realization of agreement features at AgrPs. But for spoken languages, as no markers are observed to function as realizations of agreement features at AgrPs, we speculate that the agreement features at AgrPs are covertly realized. As for HKSL, the current study proposes an analysis of verb agreement in the spirit of MP. See Section 5.2 for further details.

5.1.5 Optionality in MP

Optionality is one of the core issues of the present study. In the previous chapters, we have defined optionality as optional marking of person agreement in the same construction. In other words, optionality is observed in surface syntax. Does optionality at the surface form entail optionality in the derivation?

In the spirit of MP, “[c]hoice points will be allowable only if the resulting derivations are all minimal in cost” (Chomsky 1995:146). For instance, French infinitival constructions demonstrate optionality in derivation:

- (5) a. n'être pas heureux
 ne be NEG happy
 ‘not to be happy’
- b. ne pas être heureux
 ne NEG be happy
 ‘not to be happy’

(Chomsky 1995:144)

Example (5) above shows that the verb *être* ‘be’ may or may not move over NEG in a phrase structure. Both utterances in (5) are acceptable in French. Then one would ask why the verb may or may not move. This is because both constructions involve one rule application. The verb *être* ‘be’ in (5a) has move upward. The verb in (5b) does not move upward, but remains in situ. Chomsky (1995:144) further points out that “I lowering to [*être* – Agr], leaving no trace but [*e*]. This is permissible on the assumption we are now considering: that [-finite] is deletable, playing no LF role” in (5b). In other words, the verb in (5b) also undergoes one rule application. As both

options have the same cost, it is possible for the verb to move (as in (5a)) or not to move (as in (5b)). In the case of French infinitival construction, optionality in the surface form entails optionality in derivation.

In the case of verbal inflections for person, spoken languages do not demonstrate optionality in the surface form, though verbal inflections for person may be irregular. For instance, regular English verbs are marked for past tense with ‘-ed’ (e.g. *kiss* → *kissed*) while other English verbs may be marked with a change of the verb (e.g. *go* → *went*) or even no change of the verb form (e.g. *put* → *put*). Under MP, an abstract tense morpheme [past] can capture all changes of the verbs. All verbs, including those that do not change their verb form with tense, have to move upward to TP for feature checking. So optional marking for tense does not entail optionality in derivation. However, agreement marking in signed languages appears closer to the French infinitival constructions. Does optional agreement marking in signed languages entail optionality in verb movement? We will investigate this on the basis of HKSL below.

5.2 Analysis of HKSL person agreement

In this section, we will explain the agreement facts stated in (1), repeated as (6) below:

- (6) a. Only agreement verbs, but not plain verbs and spatial verbs, are manually marked for person.
- b. Three distinct person values are identified: first, second and third.
- c. No non-manual person markers are observed in HKSL.
- d. Optionality in person agreement (i.e. an agreement verb may or may not be marked for person) is observed.
- e. Location marking and person marking can be separated.

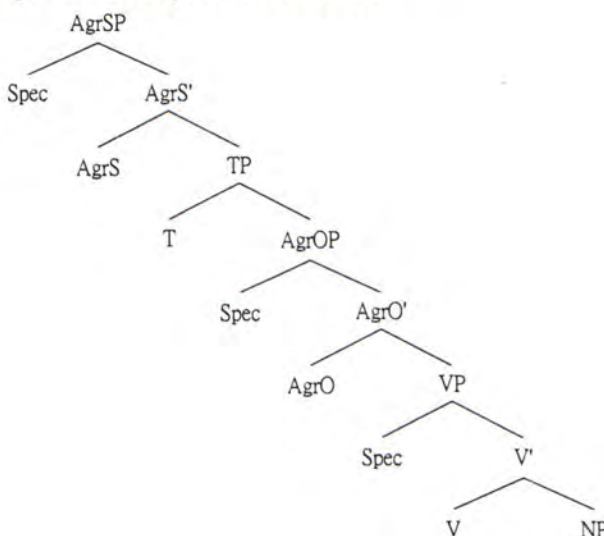
As for (6a), (6b) and (6c), we will study these within the framework of the Agreement Projections and feature checking. As for (6d), we will examine whether the optionality observed in person agreement is constrained or not. Note that we will

not account for (6e) with tree structure because location marking is, in fact, a discourse device.

5.2.1 Agreement projections in HKSL

To account for the agreement facts stated above, we propose that agreement projections are present in HKSL. Consider the preliminary phrase structure in HKSL below in Figure 5.6:

Figure 5.6 Agreement Projections in HKSL

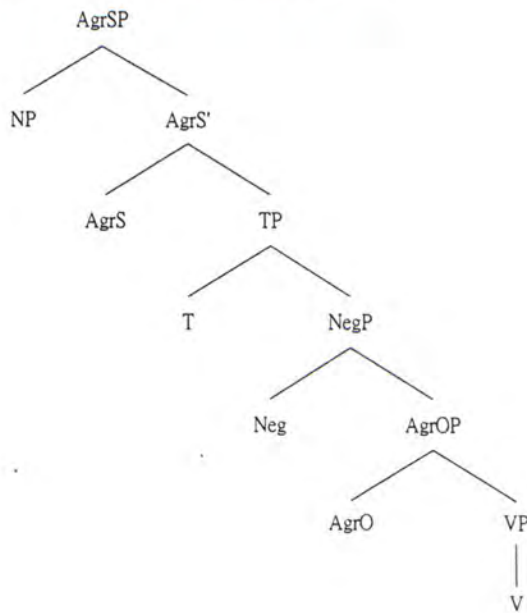


As illustrated in Figure 5.6 above, heads of AgrPs and VP are initial in HKSL. According to Sze (2000), HKSL generally demonstrates a SVO word order. With this word order, the verb, as the head, precedes the object that serves as the complement. As far as we know, the head precedes the complement in HKSL, so we propose that the phrase structure in HKSL is head initial.²³ Similarly to the phrase structure in both spoken languages and ASL, AgrSP and AgrOP are above the VP. In MP, the hierarchical ordering of the agreement projections, AgrSP and AgrOP, may not be the same in different languages. Though the positions of the AgrPs may vary between different languages, it is assumed that they are always above VP. This is because lexical items do not lower, but raise. So the agreement projections, being the

²³ There is a need to confirm this with further research on sentence structure in HKSL.

checking domain for verb agreement, cannot be below VP, otherwise, the verbs need to be lowered.²⁴ But why is lowering prohibited? This is due to the fact that trace has to be properly governed. Any moved items would leave a trace behind. These traces have to be bound by their moved lexical items. For a trace to be bound, its moved item has to be higher than the trace in the phrase structure (Reinhart 1976). As a result of this condition, only when the agreement projections are located at positions higher than the VP can the verb raise upwards. When the agreement projections are below VP, the verb would have to be lowered to the AgrPs. And if the verb moves downward to the AgrPs, it cannot bind its trace. Hence, agreement projections have to be higher than the VP in the phrase structure. This is also true for both spoken languages and ASL. Consider Figures 5.7 and 5.8 below:

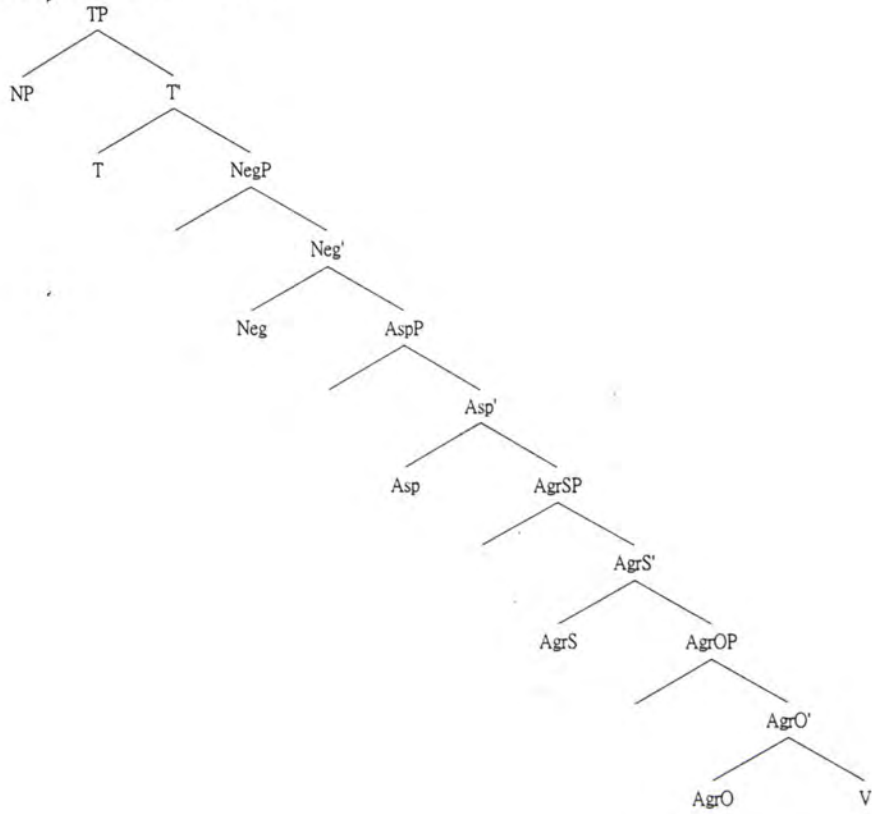
Figure 5.7 Agreement Projections in English



(Lasnik 1999:100)

²⁴ Subjects and objects that move to AgrPs for morphological case would also need to be lowered if the agreement projections are below the VP.

Figure 5.8 Phrase structure in ASL



(Bahan 1996:32)

In both figures above, the AgrPs are above the VP. In ASL, AgrPs are adjacent to each other because there are no intervening elements such as negators, modals or adverbs observed between VP and AgrPs. But in English, TP and NegP are located between AgrSP and AgrOP. In HKSL, we suggest that AgrSP is above AgrOP because we have SVO as basic word order. As for TP, we stipulate that it is between the AgrSP and AgrOP. In our study of HKSL, no overt tense markers are observed and thus we cannot derive the structural position of TP from the data. Instead, we assume a default structural position of TP as proposed by Chomsky (1995). Nonetheless, it is noted that the phrase structure of HKSL proposed here is preliminary and further research is needed to confirm the structural positions of AgrPs.

5.2.2 Feature checking in HKSL

The present study illustrates two issues which are of particular interest in signed

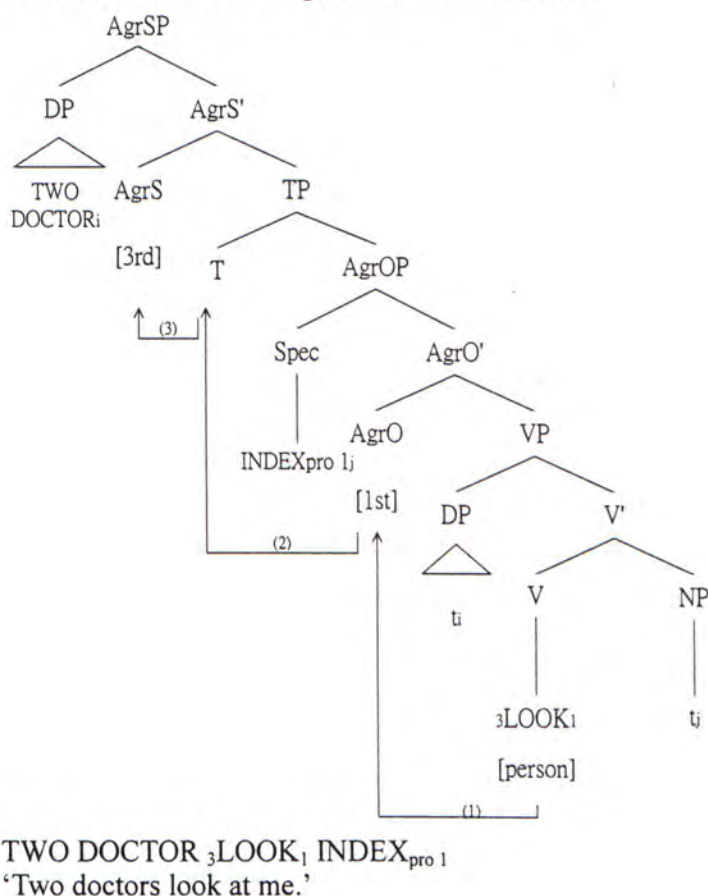
languages. First, only agreement verbs, but not plain verbs or spatial verbs, can be overtly marked for person in HKSL (as in other signed languages). Second, agreement marking in HKSL, in contrast with ASL, demonstrates optionality in both subject-verb agreement and verb-object agreement. In this section, attempts will be made to account for the first issue in the spirit of MP. The second issue, optionality, will be examined in Section 5.2.3.

To account for the apparent irregularities of agreement marking in different verb types, we may assume the presence of an abstract person feature in all verb types. The next step is to investigate the nature of this abstract feature so that we can deduce the verb movement in signed languages.

As person marked on the verbs only reflects the relation between the verbs and their arguments in HKSL, we suggest that person is an uninterpretable feature. Apart from being uninterpretable, we also need to determine whether person, as an agreement feature, is strong/weak as in spoken languages or fully specified/unspecified as in Bahan's (1996) analysis. Though HKSL and ASL share the same modality, we do not follow Bahan (1996) in suggesting that person can be subdivided into fully specified and unspecified in HKSL. In ASL, the reason why Bahan (1996) proposes fully specified/unspecified feature is that neutral manual and non-manual agreement markers are observed. In HKSL, we observe no neutral markers. In other words, there is no motivation for us to suggest that person can be either fully specified or unspecified. In our previous discussion, we also mentioned that feature strength correlates with overt agreement inflections in spoken languages. In HKSL, only agreement verbs can be marked manually for person. That is, spatial verbs and plain verbs are not marked for person overtly. We may thus suggest that agreement inflections in HKSL are rather impoverished because only agreement verbs, but not spatial and plain verbs are marked for different sets of person values of the arguments (i.e. person agreement). This is slightly similar to the agreement facts in English where verbs are marked for restricted number of person values. When

agreement inflections in HKSL are impoverished, following Radford (1997), one could deduce that person is weak in HKSL.²⁵ When the agreement features are weak, percolation takes place.²⁶ Consider the following examples in Figures 5.9 to 5.11 below:

Figure 5.9 Percolation of inflected agreement verbs in HKSL



²⁵ Though agreement verbs in HKSL appear to be richly marked, plain verbs and spatial verbs are not marked for agreement overtly. In other words, HKSL generally demonstrates impoverished agreement inflections among different types of verbs. We therefore suggest that HKSL verbs contain weak person features in general. Note that different surface forms do not necessarily mean different derivation. In the case of English, different verbs may be marked for tense differently, but the derivation is still the same.

²⁶ In HKSL, it is still unclear whether there are intervening elements (e.g. modals, negators and adverbs) between the VP and AgrP. However, our discussion on location marking and agreement marking below will support person as a weak feature in HKSL.

Figure 5.10 Percolation of plain verbs in HKSL

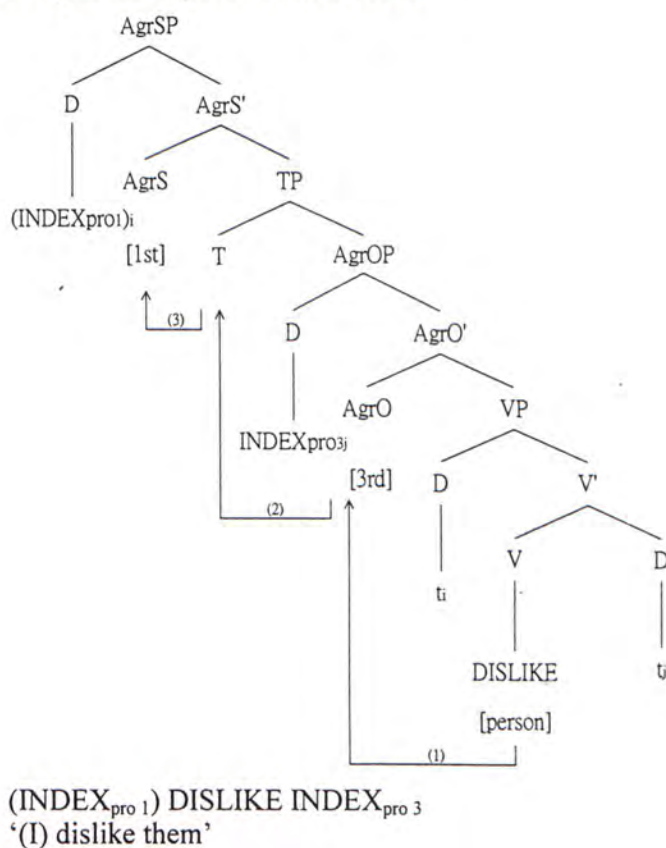
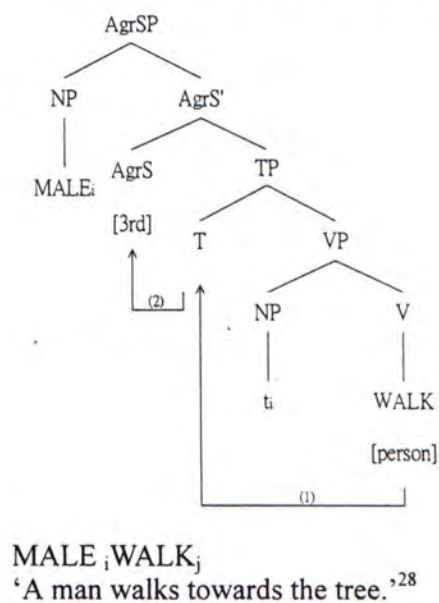


Figure 5.11 Percolation of spatial verbs in HKSL²⁷



Figures 5.9 to 5.11 above show that percolation takes place with inflected agreement verbs (i.e. ₃LOOK₁), plain verbs (i.e. DISLIKE) and spatial verbs (i.e. WALK) respectively. In Figure 5.9, the agreement verb ₃LOOK₁ occurs with a third person

²⁷ To avoid confusion of co-indices and spatial locations, only co-indices are represented in the phrase structure.

²⁸ Locus-*j* of the tree is established in the previous context.

subject *TWO DOCTOR* and a first person object *INDEX_{pro 1}*. As the verb contains weak agreement features, it cannot move upward to AgrPs for feature checking. Thus, we suggest that, similarly to English verb agreement, only the agreement features (i.e. person) percolate upward to AgrO and then to AgrS for verb-object agreement and subject-verb agreement, as illustrated by movement (1) and (2) in Figure 5.9. However, when both the subject and the object move up to AgrPs for case checking and when the verb does not move overtly to AgrPs, a SOV sentence would be formed. But the sentence should be in SVO order. So the agreement verb may not undergo percolation in HKSL. This is also true for the plain verbs. In Figure 5.10, both the subject *INDEX_{pro 1}* and the object *INDEX_{pro 3}* move up for nominative case and objective case. If the plain verb *DISLIKE* also contains weak agreement features, the agreement features of the plain verb would percolate upward for feature checking. Then a SOV sentence, instead of a SVO sentence, would be formed. This contradicts the surface structure and therefore percolation may not take part in the derivation. As for the spatial verb *WALK* in Figure 5.11, it is an intransitive verb and thus we only project AgrSP. When the verb *WALK* contains weak agreement features, the verb cannot move up to the AgrS for feature checking. Instead, only the agreement features percolate upward to AgrS for the identification of the values and then check off with those in the Spec of AgrS. For intransitive verb like *WALK*, there is no way to tell whether verbs percolate or not because an object is not involved. Above all, percolation does not seem to be able to account for verb agreement in HKSL unless one assumes that the object does not move up to AgrO. If that is the case, one has to assume that verb assign case to the object within the VP. In other words, percolation requires at least two additional assumptions that might not be the most effective way (i.e. with least cost) to explain verb agreement in HKSL.

Another approach is to assume that person in the verbs is a strong feature in HKSL. Strong feature triggers overt verb movement from the head of VP to the heads of AgrPs. But what motivates the verbs to move upward? In HKSL, we

observe that certain verbs are attached to overt markers to denote different person values. We can therefore conjecture that the AgrPs are affixal in nature and drive the verbs to move upward. This is because affixes are some bound elements that require attachment to other lexical items. Let's see whether verb raising could account for the agreement patterns in HKSL in Figure 6.12 below:

Figure 5.12 Verb raising of inflected agreement verbs in HKSL

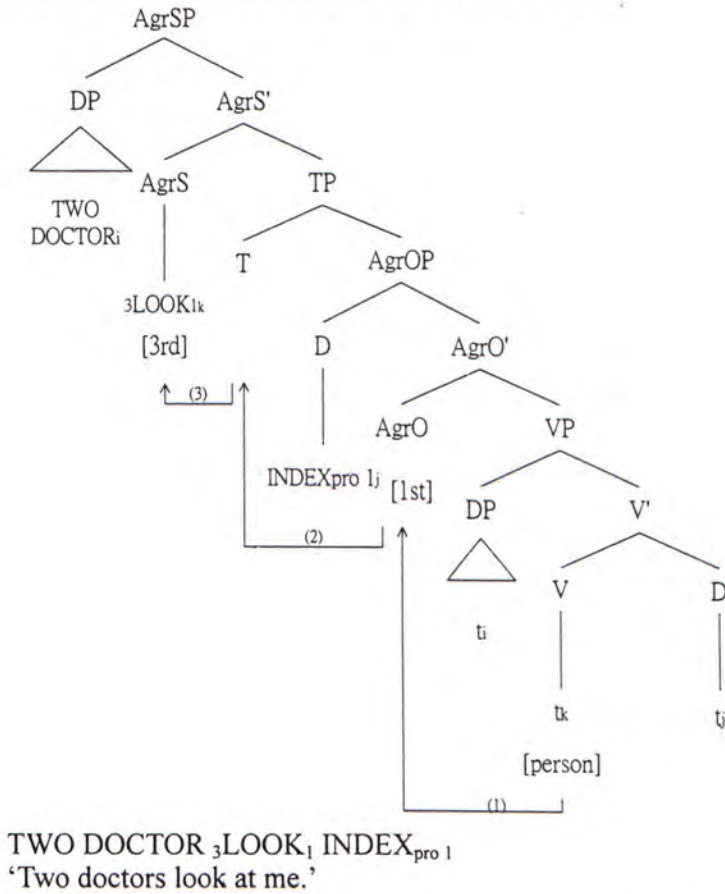
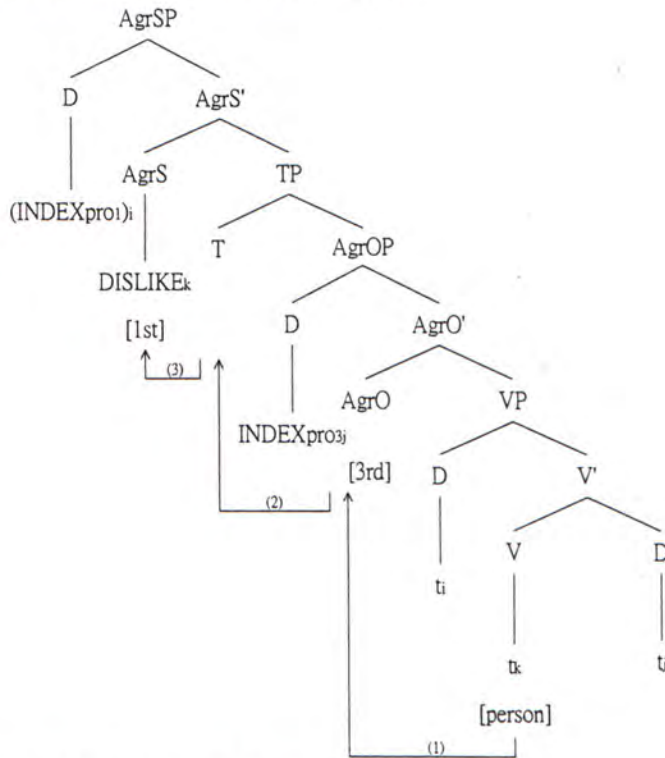


Figure 5.12 above shows the verb raising of an agreement verb *LOOK*. In the derivation, the subject and the object move upward to AgrSP and AgrOP for case. Then the verb *LOOK* moves upward to AgrPs to check off its agreement features (and TP for tense features). Then a SVO sentence is formed. Besides, when the agreement features are checked off, the person is realized overtly as spatial loci. Verb raising appears to work well with agreement verbs. However, plain verbs and spatial verbs do not have overt marking, so one might ask if they also undergo verb raising. We argue that plain verbs and spatial verbs also undergo verb raising (as evidenced

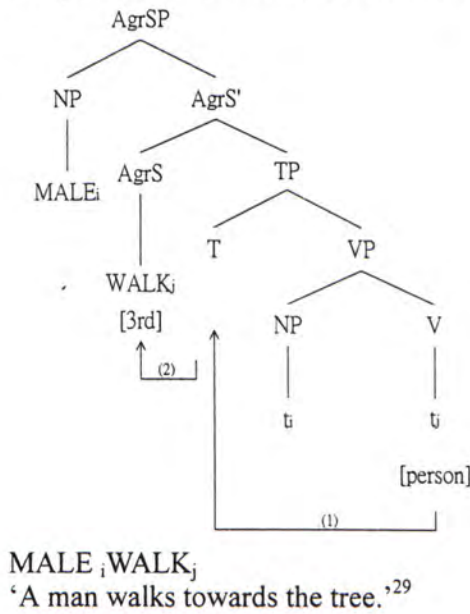
from the agreement facts of agreement verbs). But different from agreement verbs, agreement features of plain verbs and spatial verbs are realized as null morphemes after feature checking. Consider the following phrase structures in Figures 5.13 and 5.14 below:

Figure 5.13 Verb raising of plain verbs in HKSL



(INDEX_{pro1}) DISLIKE INDEX_{pro3}
 '(I) dislike them'

Figure 5.14 Verb raising of spatial verbs in HKSL



Figures 5.13 and 5.14 show that verb raising can also capture the agreement patterns for plain verbs and spatial verbs. Comparing the first and second approaches, it appears that the one with weak agreement features is more ad hoc because two additional assumptions are required. First, the object does not move up to AgrO for case and second the verb assigns case to the object within the VP. We therefore suggest that the verb contains strong agreement features that trigger the verb to raise.

5.2.3 Optionality in person agreement in HKSL

As stated at the beginning of this chapter, HKSL demonstrates optionality in person agreement. By optionality, we mean that the verbs may be marked for person of subject and object or remain in their citation forms. This optionality only appears in certain combinations of person values, as illustrated in Table 5.3 below:

Table 5.3 Distribution of optional and obligatory person marking in HKSL

Object Subject ↘	1	2	3
1		Citation form	Optional
2	Obligatory		Obligatory
3	Obligatory	Optional	Optional

²⁹ Locus-*j* of the tree is established in the previous context.

In Table 5.3, it is clear that obligatory person marking occurs with (i) second person subject and first person object, (ii) second person subject and third person object and (iii) third person subject and first person object. For the remaining combinations (excluding first person subject and second person object), optional person marking takes place. In contrast, spoken languages are obligatorily marked when a language has overt agreement marking. One may ask if this optionality of person marking affects feature checking in person agreement in HKSL.

As noted, one key question associated with optionality in verb agreement in HKSL is whether it entails optional verb movement. In MP, optional movement is possible if the costs of two operations are equal. We therefore suggest that optional verb movement is possible if we observe equal cost of verb movement and percolation. But percolation is assumed to be less costly than verb raising in MP. So optional verb movement does not take place unless we modify our assumptions.

Instead of modifying the assumptions in MP, we suggest that a null morpheme is attached to the uninflected agreement verbs so that we do not see any overt marking on the agreement verbs in some cases which leads us to generalize this phenomenon as optional agreement marking of the surface form. In our discussion of verb movement in all three kinds of verbs above, we have assumed that a null agreement morpheme is associated with both plain verbs and spatial verbs. Uninflected agreement verbs are like plain verbs and therefore we suggest that they are also marked with the null morpheme. We also suggest that uninflected agreement verbs raise overtly to AgrS for feature checking, as illustrated in Figure 5.15 below:

Figure 5.15 Verb raising of uninflected agreement verbs in HKSL

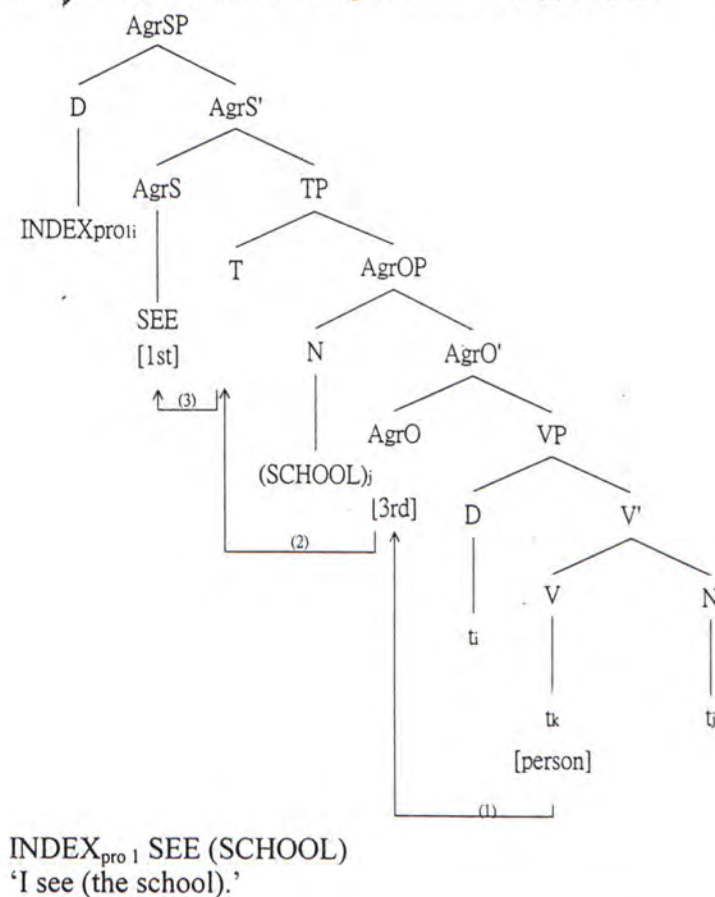


Figure 5.15 above shows that the uninflected agreement verb *SEE* behaves the same way as plain verbs and spatial verbs in the sense that they also have a null agreement morpheme which pushes the verbs to heads of AgrPs for feature checking. As a result, we suggest that optionality at the surface verb forms does not entail optional verb movement in HKSL.

5.3 Reconsideration of the concept of Verb Agreement

Verb agreement is defined as a relation between a verb and its arguments in the present study. Overt agreement marking is viewed as a functional element that links the lexical elements (i.e. verbs, subjects, objects).

Agreement marking in spoken languages and signed languages demonstrate various asymmetries. First, overt agreement marking is not observed for all spoken languages. Some spoken languages involve overt agreement marking (e.g. Italian, French, etc.) while others do not (e.g. Chinese). Overt agreement marking appears to be universal among signed languages. This begs a question above whether the overt changes of verb forms really reflect person or the property of space. The present

study argues that an abstract relation between the verb and its arguments is also observed in verb agreement in signed languages because person can be still identified without location marking (which relies heavily on space).

Another asymmetry is also observed in agreement marking. Agreement marking of subject-verb agreement can be present in the absence of overt marking of verb-object agreement in signed languages. As far as we know, no spoken languages demonstrate verb-object agreement in the absence of overt marking of subject-verb agreement (Croft 1988). In contrast, agreement marking of verb-object agreement can stand independently while subject-verb agreement cannot in signed languages. Whether this phenomenon is due to modality effect requires further research.

Optionality is the third kind of asymmetry between spoken and signed languages. As illustrated in Chapter Two, agreement markers in spoken languages are obligatorily marked or obligatorily unmarked in the same construction. So the English verb will not be inflected for a third person singular morpheme at one time, but not at another time in the same construction. But in signed languages, optionality of agreement marking is observed. Optionality is restricted to subject-verb agreement of agreement verbs only in ASL. But in HKSL, optionality is present for both subject-verb agreement and verb-object agreement of agreement verbs. This asymmetry shows that the properties of agreement markers in spoken languages are not truly universal.

Though there are a number of asymmetries of agreement marking in spoken and signed languages, the present study is an attempt to unify the spoken and signed languages with a theoretical explanation in the spirit of MP.

5.4 Chapter Summary

This chapter attempts an explanation for the agreement facts in HKSL in the spirit of the MP. From our discussion above, we have shown that the distribution of person marking (i.e. only agreement verbs are marked for person overtly) can be explained by assuming person contained in all verbs is weak. In this way, feature checking can be a means to unify the agreement mechanisms for all types of verb. In addition, we propose that the optionality in HKSL is restricted to the surface forms only.

Chapter Six

Conclusion

In this thesis, we have examined person, an agreement feature, in both personal pronouns and verb agreement in HKSL. In particular, we addressed three questions concerning person marking, as summarized as (1) below:

- (1) a. Is person divided into a two-way (i.e. first and non-first) or three-way (i.e. first, second and third) distinction in personal pronouns and verbs?
- b. Is space linguistic?
- c. Is agreement marking optional?

For (1a) we have shown that the controversies over person marking in other signed languages, specifically ASL, can be resolved by identifying location marking that takes place in real space or after nominal establishment. From our discussion above, verbs in HKSL may be marked for (i) person agreement or (ii) location. When a verb is marked for person of the subject and of the object, a three-way distinction is observed. If location is marked on the verbs, person marking becomes covert. This usually occurs when the signers have assigned the entities to the locations involved in an utterance. From these two sets of data, it is argued that a three-way distinction occurs when location marking does not take place. But when locations are taken into account, it is unclear whether second person and third person marking can be distinguished. In ASL, the confusion of person marking comes from data in real space where location marking usually occurs. Lillo-Martin (1991) suggests that verb agreement, contrasted to that in spoken languages, is agreement between the verb and its referents. Besides, Meier's (1990) proposal for two-way distinctions of person is also based on data in real space. Liddell (2000) argues that space does not provide a grammatical basis for verb agreement with evidence from real space. Clearly, the influence of location marking on verb agreement has been overlooked. But if we consider the fusion of location marking and agreement marking, we discover a way

to establish the genuine agreement pattern.

(1b) above in another question we addressed in this thesis. In the sign language literature, there is a controversy over whether space is linguistic. While some linguists (Padden (1983, 1988), Meier (1991), Bahan (1996), among others) report that space is where grammatical information like verb agreement is presented, Liddell (2000) argues that space does not serve as the grammatical basis for verb agreement. We suggest that this controversy results from the fusion of person marking (which is grammatical) and location marking (which is discorsal). When location marking and person marking are mixed, it is hard to tell whether space takes part in the grammar. But if we tease them apart, we observe that the signer makes use of the space to present person when location marking is absent. This is strong evidence suggesting that space is linguistic.

Optionality in verb agreement is commonly observed in signed languages. HKSL also demonstrates optional agreement marking in both SV/VO-agreement and VO-agreement. In SV/VO-agreement, the verb may be optionally marked for person of the subject (but not the object), or person of both subject and object are optionally marked (i.e. the verb is represented in its citation form). In VO-agreement, when person of the object is optionally marked, the verb may be either marked for object or in its citation form.

In Chapter Five, attempts are made to explain the agreement facts in HKSL. We assume that all verb types have an abstract person feature in order to unify the various agreement forms. Also we suggest that while inflected agreement verbs are marked with overt person markers in the signing space, uninflected agreement verbs, plain verbs and spatial verbs are marked with a null agreement morpheme. This allows us to capture the apparent irregularities and optionality on the surface. To account for the agreement facts in HKSL, we also assume that the agreement features are strong in HKSL and therefore verb raises overtly to the heads of AgrPs for feature checking.





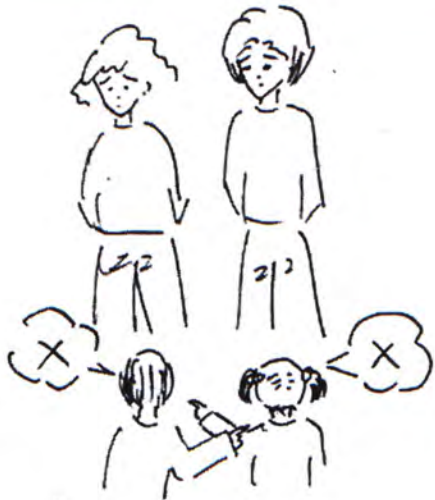

As the first attempt to investigate person agreement in HKSL, the present study is limited in scale and scope. In terms of scale, the number of verbs investigated is still small. The agreement system of classifier predicates is not studied. There are also a number of issues that are worth exploring. First, whether there is any relation between verb semantics and verb classifications or not remains unclear from the present study and further research on this will give us better understanding of the verb and its relation with its arguments. Second, in spoken languages, verb raising can usually be identified with the presence of adverbs, negators and modals. These categories can test whether the verb raises or not because they are located between AgrPs and VP. In signed languages, specifically ASL, when AgrPs and VP are adjacent to each other, adverbs, negators and modals cannot serve as a means to identify verb raising. In HKSL, the position of adverbs, negators and modals in the phrase structure remains unknown. So it is unclear whether they can be a test for verb raising. To confirm whether HKSL verb undergoes percolation, research on these categories is necessary.

In addition, we have mentioned that person and number marking are in complementary distribution in ASL in Chapter Three. In HKSL, our data basically focuses on singular NPs. Whether number marking overrides person marking remains unclear. Note that number is another agreement feature that commonly occurs in both spoken and signed languages. A study on number marking will certainly give us a better understanding of verb agreement in HKSL.

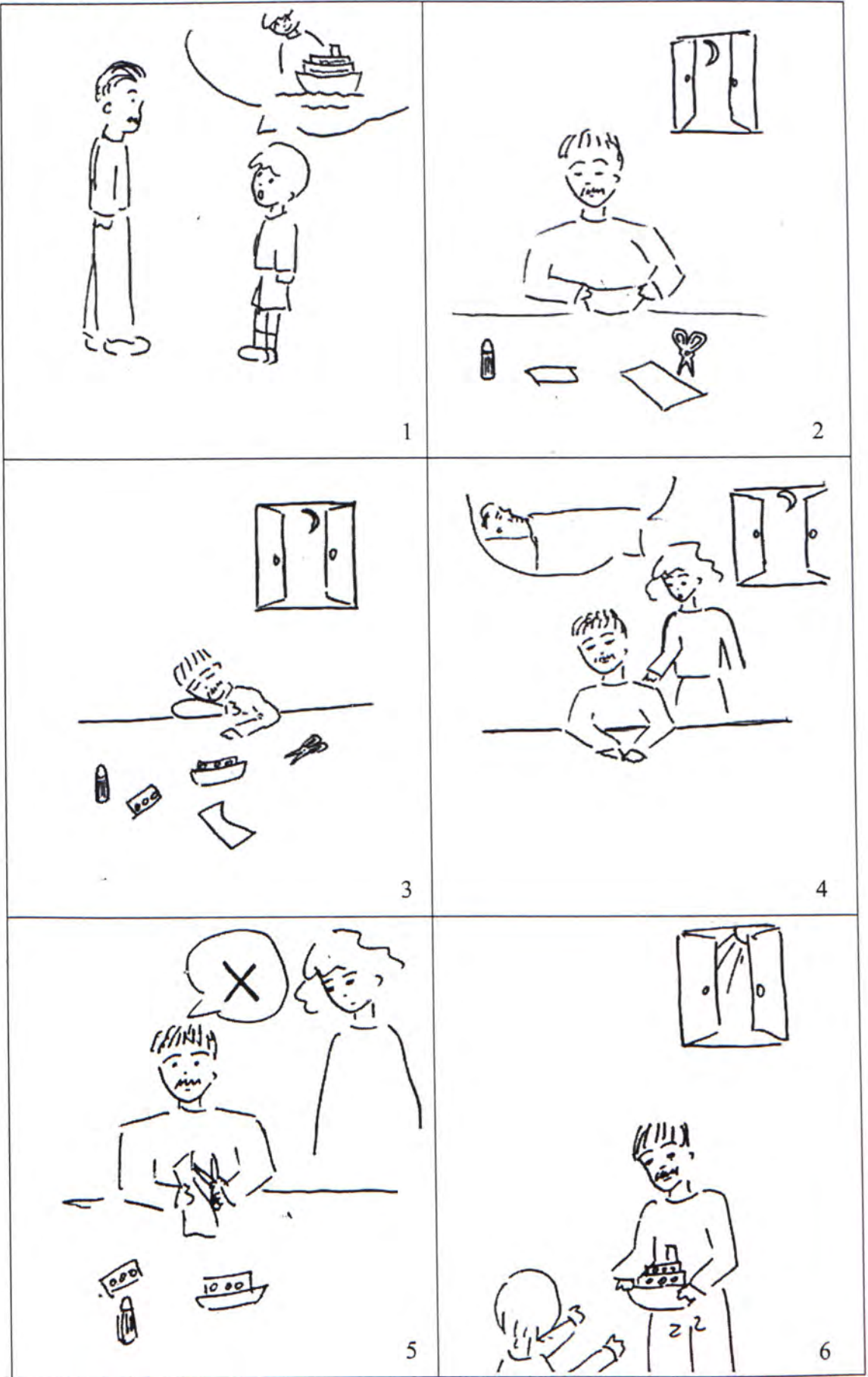
Appendices

1. The Toy Car

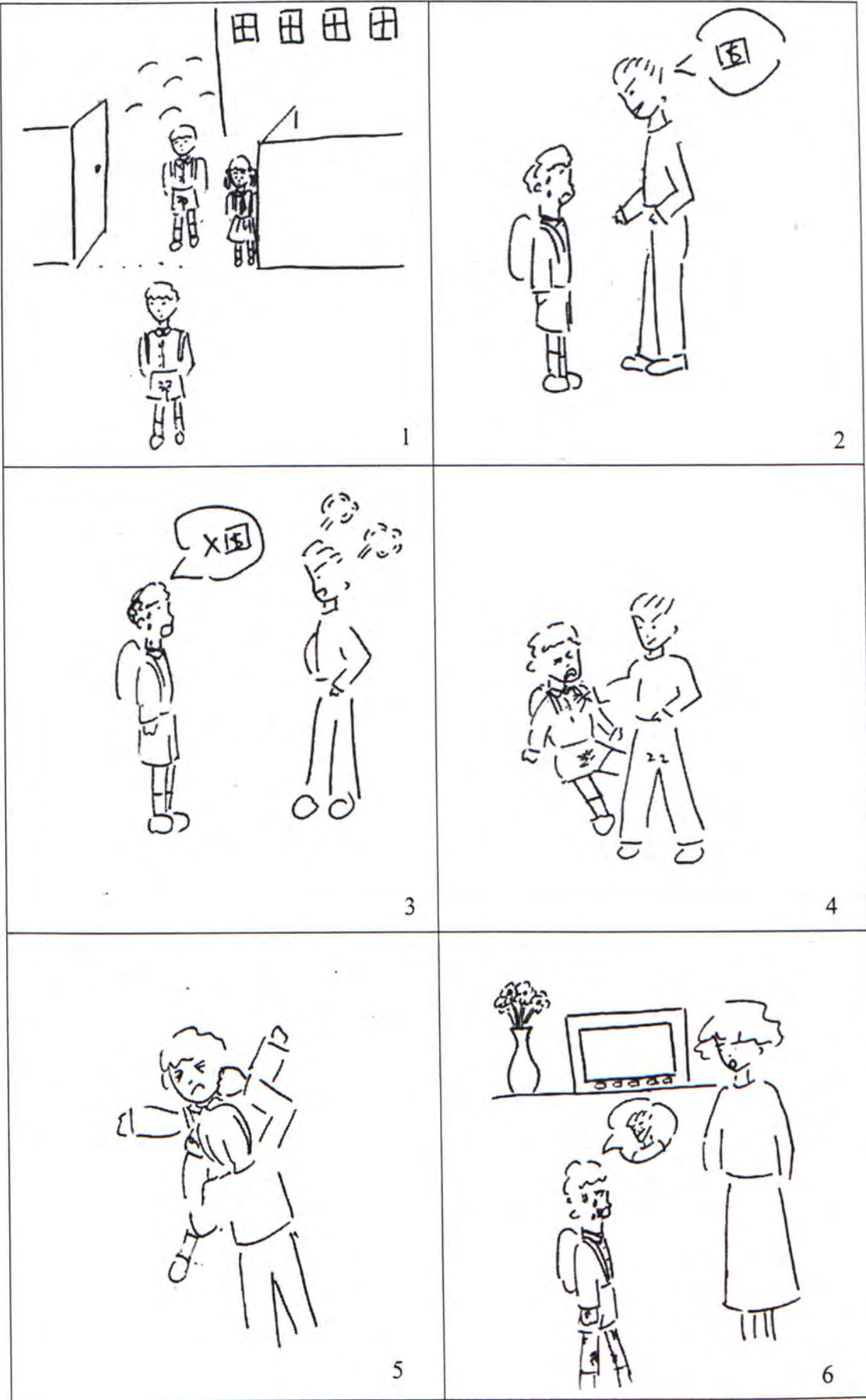


 <p>7</p>	 <p>8</p>
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 <p>11</p>	 <p>12</p>












2. Father and son



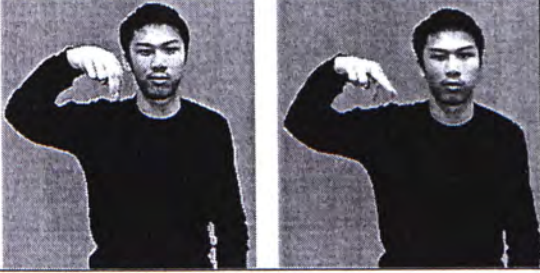









3. A Bad Guy



Agreement verbs











		
<p>ADMIRE (Tang (in prep.))</p>	<p>ASK</p>	
		
<p>BITE (Tang (in prep.))</p>	<p>BORROW (Tang (in prep.))</p>	
		
<p>CATCH (Tang (in prep.))</p>	<p>FARE-MORE-THAN (Tang (in prep.))</p>	
		
<p>DONATE (Tang (in prep.))</p>	<p>FEED (Tang (in prep.))</p>	
		
<p>FORCE (Tang (in prep.))</p>	<p>GIVE (Tang (in prep.))</p>	<p>HELP (Tang (in prep.))</p>

	
<p>HIT (Tang (in prep.))</p>	<p>INTRODUCE</p>
	
<p>KICK</p>	<p>KISS</p>
	
<p>LOOK (Tang (in prep.))</p>	<p>PUSH (Tang (in prep.))</p>
	
<p>SAY (Tang (in prep.))</p>	<p>SCOLD</p>
	
<p>SEDUCE (Tang (in prep.))</p>	<p>SEE (Tang (in prep.))</p>

<p>SEND</p>	<p>SPEAK-ILL-OF (Tang (in prep.))</p>
<p>STAB</p>	<p>THROW</p>
<p>TOUCH</p>	

Plain verbs

<p>BRING (Tang (in prep.))</p>	<p>BUY (Tang (in prep.))</p>	<p>COUGH</p>
<p>CRY (Tang (in prep.))</p>	<p>DEVELOP (Tang (in prep.))</p>	











		
<p>DISLIKE (Tang (in prep.))</p>	<p>ESCAPE (Tang (in prep.))</p>	
		
<p>LIKE (Tang (in prep.))</p>	<p>LOOK-AFTER (Tang (in prep.))</p>	<p>LOOK-FOR (Tang (in prep.))</p>
		
<p>LOSE (Tang (in prep.))</p>	<p>MAKE (Tang (in prep.))</p>	
		
<p>MISS-SOMEBODY-DEEPLY (Tang (in prep.))</p>	<p>RUN (Tang (in prep.))</p>	
		
<p>SAVE (Tang (in prep.))</p>		

<p>SELL</p>	<p>SWIM (Tang (in prep.))</p>
<p>TEACH (Tang (in prep.))</p>	<p>WAIT (Tang (in prep.))</p>

Spatial verbs





<p>ARRIVE (Tang (in prep.))</p>	<p>COME (Tang (in prep.))</p>	<p>GO (Tang (in prep.))</p>
<p>WALK (Tang (in. prep.))</p>		

Example (6), page 89

			
INDEX _{pro 2}	PRETTY-GOOD		INDEX _{pro 1}
			
POOREST		INDEX _{det}	INDEX _{pro 1}
			
COMPLETELY-IGNORANT			






'You are pretty good at computer. I am the poorest, I am completely ignorant of it.'


Example (10), page 91

			
MANY	MALE	LIKE	INDEX _{pro 3}

'Many men like her.'








Example (14), page 93

				
TWO	DOCTOR		3LOOK ₁	


(INDEX _{pro 1})

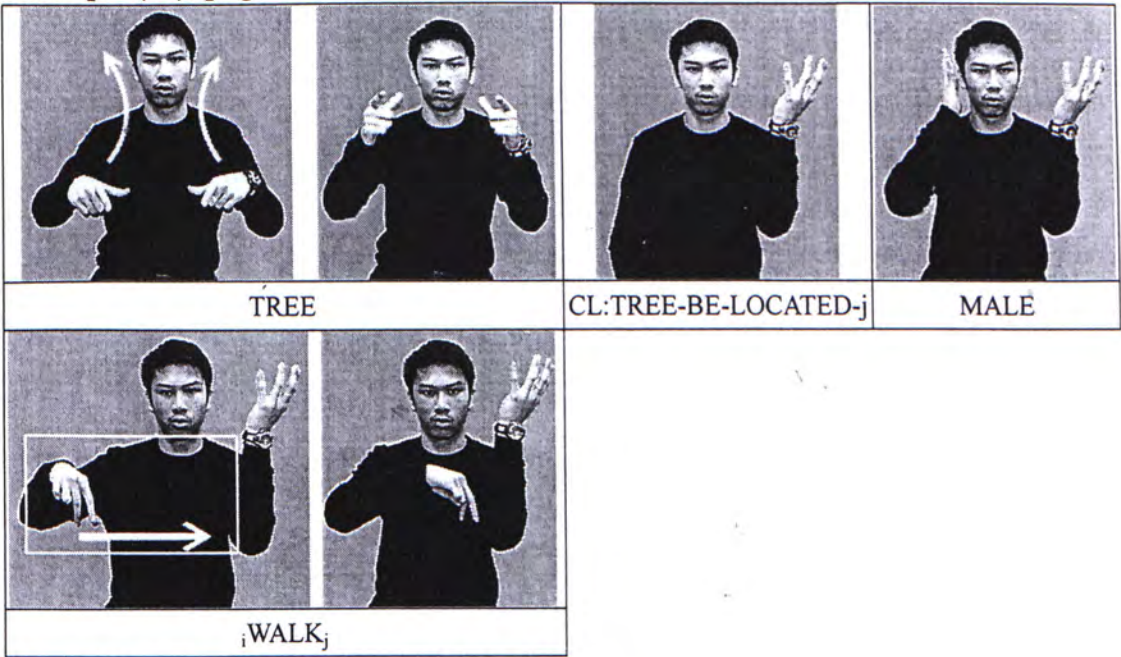
'Two doctors look at (me).'

Example (17), page 99

				
HAVE	ONE	MALE	SAD	
				
DISLIKE	STUDY			

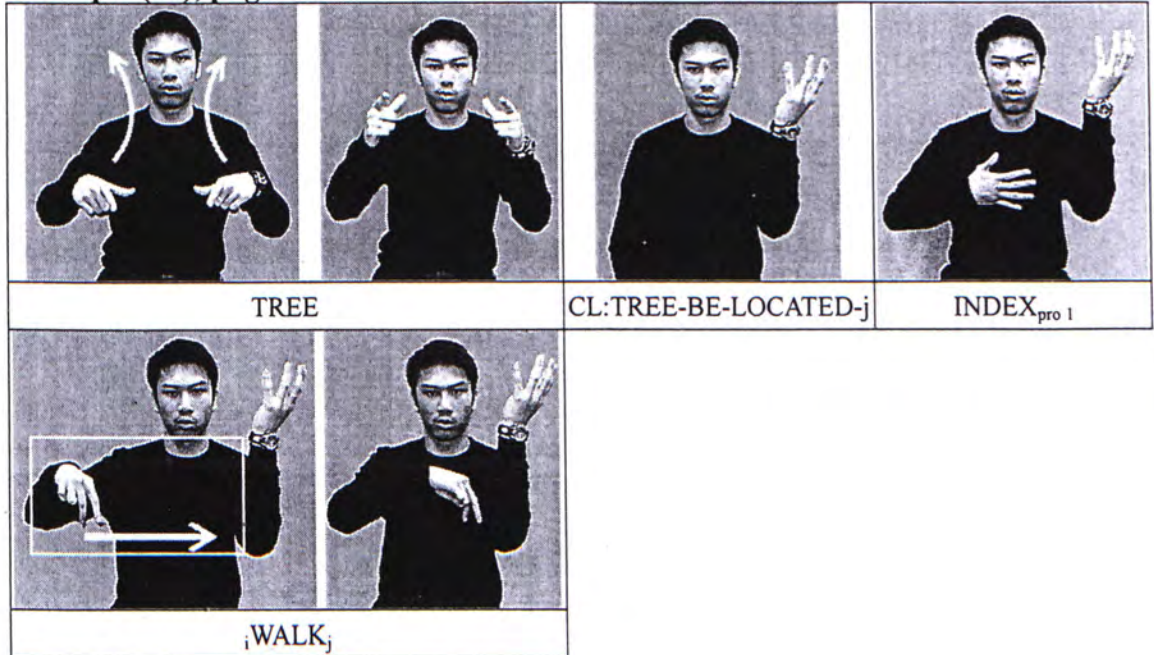
'There is a boy, (he) is sad, (he) dislikes studying.'

Example (19), page 100









'There is a tree. A man walks towards the tree.'

Example (20), page 100




'There is a tree. I walk towards the tree.'

Example (22), page 104

			
BUT		SCHOOL	
			
DEVELOP			INDEX _{pro 1}
			
1SEE ₃		GOOD	







'But for the development of the school, I see (the school), (its development is) good.'

Example (25), page 107

			
BUT		FRIEND	
			
3kGIVE _{3l}		CAR	








'But a friend give (him) a car.'

Example (35), page 113

			
HAVE	ONE	MALE	HAVE-TO
			
₃CATCH			

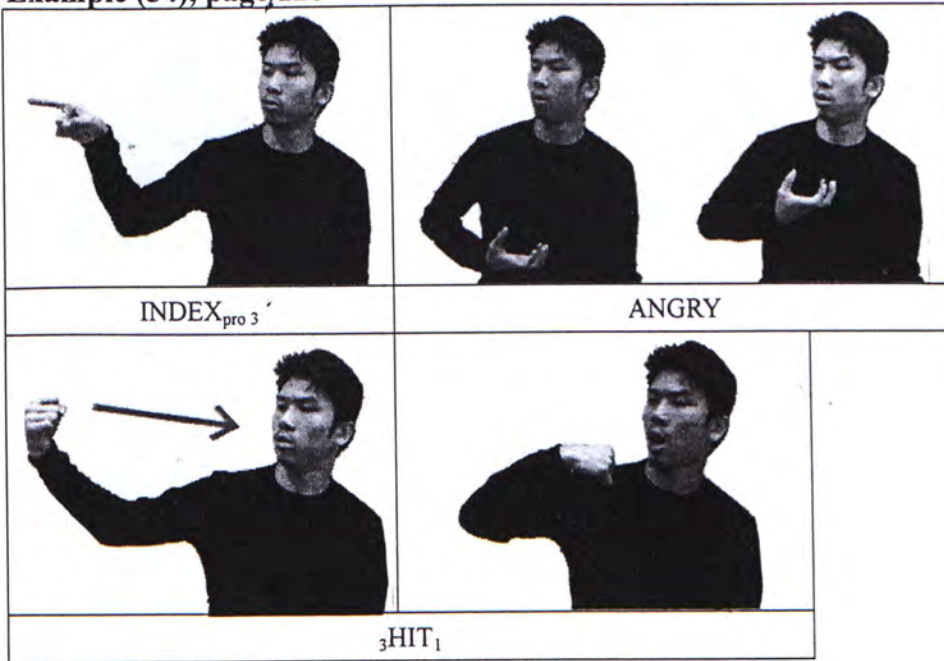
'There is a man, he needs to catch (the frog).'

Example (36), page 114

			
MOTHER	FOLD		PLANE
			
GIVE ₃		COWBOY	

'Mother folds the paper into a plane, (she) gives it to Cowboy.'






Example (54), page 128



'He is angry, (he) hits (me).'


Example (59), page 133 (=Example (62), page 135)







			
INDEX _i	THE-SAME	SELF	PLAY
			
BALL			

'There are two groups. One group here and one group there. They (the first group) play with a ball. They (the second group) also play with a ball.'

Example (64), page 137

			
DOG	CL:PERSON_STAND _i	CAT	
			
CL:PERSON_STAND _{k/l}	BUMP-INTO	MEET	
			
DOG	SEE _k		ANGRY
			
			WANT

		
BITE _k	CHASE	_i BITE _k
		
BUTTOCK		










'There is a dog here, a cat there. They meet each other. The dog sees (the cat). The dog is angry and (it) wants to bite (the cat). (That dog) chases (that cat) and (the dog) bites the cat's buttock.'

Example (65), page 138

			
HAVE	TWO	MOTHER	CL:PERSON_SIT _{ij}
			
BUT	INDEX _j	INDEX _i	HAVE
			
SON	INDEX _i	HAVE	HAVE

DAUGHTER		$ijCL:PERSON_WALK_m^1$		
WANT	PLAY	TOY		
CAR	INDEX _{det}	MALE	FIRST	
ROB		CAR	PLAY	
CAR	INDEX _{det}	FEMALE	SAD	

¹ Locus-i refers to 'the boy' while locus-j refers to 'the girl'.

				
PUSH _j		MALE	CL:PERSON_FALL	
				
FEMALE	AGAIN		SELF	
				
TAKE		CAR	MALE	
				
ANGRY		LEG	KICK _i	

'There are two mothers sitting (in the clinic). One has a son and the other has a daughter. Two children want to play with a toy car. The boy first grabs the toy car and plays. The girl is sad and (she) pushes (the boy). The boy falls down. The girl then takes the toy car. The boy is angry and (he) kicks (the girl)...'

Table 4.1 Summary of number agreement markers in Klima and Bellugi's (1979) analysis of ASL







Number markers	Definitions	Forms
Singular	-----	The verb has movement toward a single target locus of the indexical plane
Dual	Specifies action with respect to a dual argument (two recipients or agents)	The inflected verb has movement toward two loci
Trial	Specifies separate actions with respect to a trial argument (three recipients or agents)	The movement of the verb is clearly directed toward three distinct third-person loci
Multiple	Specifies number of recipients, and inflections indicate some, many, or all members of a group.	The multiple inflection has a single movement along an arc on the indexic plane.

Table 4.2 Summary of number agreement markers in Padden's (1983, 1988) analysis of ASL

Number markers	Definitions	Forms
dual	dual	each of the two ¹
	reciprocal	each other
exhaustive	each of more than 2	(i) The verb stem is executed twice with the inflected end point displaced the second time. (ii) The verb stem is doubled to a two- handed form and executed either: (a) simultaneously or (b) twice in sequence.
multiple	them	The double dual form in which the end points of each one-handed form either (a) are adjacent to, or (b) have the same agreement marker as the other's beginning point.
		The verb stem is executed at least three times with the inflected end point displaced.
		The end point marking direct object contains a sweep arc displacement on the horizontal plane.

¹ No definition on dual is given, however, one can deduce the definition of 'dual' from the definition of 'exhaustive' because the latter is the extension of the former.

Figure 4.1 Wilbur's (1987) description on number agreement markers in ASL

Dual	Reciprocal	Plural
		
<p>Citation form of GIVE (Klima and Bellugi 1979:275)</p>	<p>Citation form of LOOK-AT (Klima and Bellugi 1979:280)</p>	<p>Citation form of ASK (Klima and Bellugi 1979:283)</p>
		
<p>GIVE_{dual} (Padden 1988:60)</p>	<p>LOOK-AT_{reciprocal} (Klima and Bellugi 1979:280)</p>	<p>ASK_{plural} (Klima and Bellugi 1979:283)</p>

Appendix 5 Remarks on plural pronouns in HKSL

Person Number	1		2	3
	Inclusive	Exclusive		
SG	1-handshape (𠄎) pointing at locus-0.		1-handshape (𠄎) pointing at locus m.	1-handshape (𠄎) pointing at loci-i/j/k/l.
DU	V-handshape (𠄎) Repeated movement between locus-0 and locus-m.	V-handshape (𠄎) Repeated movement between locus-0 and loci-i/j/k/l.	V-handshape (𠄎) Repeated movement at locus-m.	V-handshape (𠄎) Repeated movement at loci-i/j/k/l.
TRI	W-handshape (𠄎) Circular movement between locus-0 and locus-m.	W-handshape (𠄎) Circular movement between locus-0 and loci-i/j/k/l.	W-handshape (𠄎) Repeated movement at locus-m.	W-handshape (𠄎) Repeated or circular movement at loci-i/j/k/l.
QUAD	4-handshape (𠄎) Circular movement between locus-0 and locus-m.	4-handshape (𠄎) Circular movement between locus-0 and loci-i/j/k/l.	4-handshape (𠄎) Repeated movement at locus-m.	4-handshape (𠄎) Repeated movement at loci-i/j/k/l.
PL	1-handshape (𠄎) and a circular local movement at the wrist directing at locus-0.		1-handshape (𠄎) and a circular local movement at the wrist directing at locus-m.	1-handshape (𠄎) and a circular local movement at the wrist directing at loci-i/j/k/l.

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