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Susan Lloyd McBurney

REFERENTIAL MORPHOLOGY IN SIGNED LANGUAGES

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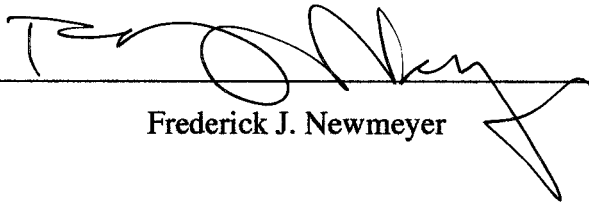
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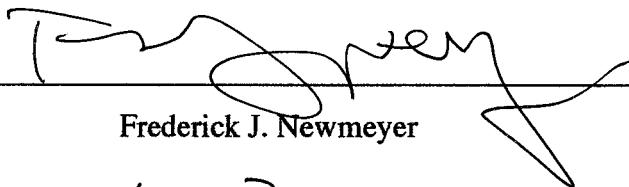
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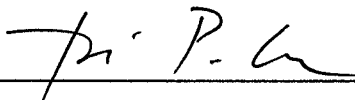


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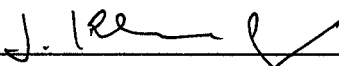
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Abstract

REFERENTIAL MORPHOLOGY IN SIGNED LANGUAGES

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This thesis examines the use of space for reference in signed languages. In American Sign Language, as well as in all other signed languages that have been studied, locations in the signing space are used to represent entities in a discourse. It has been argued that these locations serve to mark person distinctions in both pronouns and agreement verbs. In this thesis I refute this position. Through a detailed comparison of person marking in spoken and signed languages, I highlight and discuss the ways in which sign language reference is quite distinct from person marking in spoken languages. Signed language referential morphology is characterized by the following: nonparadigmatic structuring, typological homogeneity, morphophonological exclusivity, and referential specificity. I argue that sign language reference does not rely on the grammatical category of person, but rather utilizes spatial deictics (i.e. demonstratives) to identify referents in a discourse.

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Notational conventions and abbreviations

BOOK	ASL signs are represented by English glosses, and are presented in all capital letters
FOUR-WEEKS	Hyphenation is used when more than one English word is needed to gloss the ASL sign
fs-ANN	Words that are fingerspelled are preceded by the prefix 'fs'.
SIGN[x]	A sign marked with inflection x
#JOB	A fingerspelled loan sign
TALK+++	The diacritic '+' indicates a repetition in the articulation of a sign.
CL	An ASL classifier
IX ₁	An index that points to the signer
IX ₂	An index that points to the addressee
IX _a	An index that points to location 'a'
fs-MARY _a	The name is fingerspelled at location 'a'.
_a GIVE _b	The sign begins at location 'a' and ends at location 'b'
<u>SIGN SIGN</u>	A line above a sign represents the cooccurrence of a nonmanual marker.
<u> </u> t	topic marker
<u> </u> q	yes-no question marker
<u> </u> br	brow raise
<u> </u> hn	head nod

1	first person
2	second person
3	third person
ADJ	adjective
CLIT	clitic
DAT	dative
DEM	demonstrative
EXCL	exclusive
FEM	feminine
INCL	inclusive
MASC	masculine
PAST PT	past participle
PLUR	plural
POSS	possessive
PRON	pronoun
SG	singular

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DEDICATION

To Michael, Owen, and Nora

1 Introduction

1.1 The language faculty

Language is arguably the most fascinating and complex cognitive ability that human beings possess. A distinctly human endowment, language serves as an instrument for organizing, processing and conveying information. What is perhaps most compelling about language is the extent to which it can serve as a window into the human mind. For researchers, language is a vehicle through which we can explore numerous challenging questions concerning conceptual structure, human thought, and the brain as an information processor. While the precise nature of the relationship between language and thought is the subject of much debate, the relationship itself remains a fruitful area of exploration for linguists, psychologists, neuroscientists and philosophers alike.

Linguistic theory seeks to explain how language as a cognitive system works, to provide an account of how languages are structured, how they are used, and how they change over time. Also of interest to linguists are the domains of language typology and linguistic universals: what types of linguistic patterns are found among individual languages? and what are the more general fundamental properties, principles, and design features that languages share?

1.2 Signed languages as human languages

Until recently, our understanding of human language, its structure, use, and patterning had been exclusively based on the study of spoken languages. Indeed, before the advent of sign language linguistics, language was thought to be intimately tied to the vocal-auditory channel. Language was viewed as distinct from other communication

systems, including the gestural communication systems of Deaf people.¹ As a result, the theories that were developed to account for the structure of language were often couched in terms that excluded visual-gestural languages, and any universals posited were assumed to apply only to spoken languages.

Research over the last half of the twentieth century has revealed that signed languages are complete, autonomous human languages. Contrary to what was believed prior to the 1960s, when the linguistic analysis of signed languages began, we now know that signed languages are complex, rule-governed systems, exhibiting the crucial design features that are universal to all human languages, such as discreteness, productivity, displacement, duality, and learnability.² Research has shown that natural signed languages exhibit the structure and complexity that is characteristic of spoken languages (Stokoe, 1960; Stokoe et al., 1965; Klima, Bellugi et al. 1979, Deuchar, 1984, among many others).³ Signed languages are acquired in a manner quite similar to spoken languages; a deaf child exposed to a signed language from birth will progress through the same stages of language acquisition and progress according to an identical maturational timetable as a hearing child acquiring a spoken language (Hoffmeister and Wilbur, 1980; Newport and Meier, 1987; Meier, 1991). Additionally, research has shown that signed languages are processed in a manner similar to spoken languages (see Emmorey, 2002a for a general discussion). In sum, forty plus years of research has revealed that sign languages are full instantiations of the distinctly human cognitive ability that is language.⁴

¹Following the conventional notation, Deaf (with an uppercase 'D') is used in reference to the community of individuals who share a signed language and culture, while deaf (with a lowercase 'd') refers to the audiological condition of hearing loss.

² See Hockett (1958; 1960).

³ By 'natural', I mean the signed languages that have developed naturally in Deaf communities throughout the world. These languages are distinct from other signed systems used as visual codes for spoken languages (such as the various manual codes for English, or MCEs), as well as signed systems used for communication in unusual circumstances (such as hand signals used for underwater communication). For more on the crucial distinction between natural and 'other' signed systems, see Supalla (1991) and Supalla and McKee (2002).

⁴ For discussion of the historical development of sign language linguistics, see Stokoe (1990), Newport and Supalla (2000), and McBurney (2001).

1.3 Language structure and linguistic modality

Language in the visual-gestural modality presents a unique opportunity to explore fundamental structures of human language. Two of the larger, more complex questions that arise when examining signed languages are the following: how, and to what degree, do the modality and medium of a language affect the structure of that language? In this context, the term *modality* refers to the physical or biological system of transmission on which the phonetics of a language relies. There exist separate systems for perception and production. For spoken languages, perception relies upon the auditory system, while production relies upon the vocal system. Spoken languages can be categorized, then, as being expressed in the auditory-vocal modality. Signed languages, on the other hand, rely on the visual system for perception and the gestural system for production. As such, signed languages are expressed in the visual-gestural modality.

The *medium* of a language can be understood as the channel (or channels) through which a language is conveyed. More specifically, channel refers to the dimensions of space and time that are available to a given language. Defined as such, the medium of spoken languages is *time*, which in turn can be defined as ‘a nonspatial continuum, measured in terms of events that succeed one another.’⁵ Time is both linear and unidirectional. Indeed, all spoken languages unfold in time; speech segments, morphemes, and words follow one another, and the order in which they appear is temporally constrained. This is not to say that all aspects of spoken language are entirely segmental in nature. Autosegmental approaches to phonology (in which tiers comprised of linear arrangements of discrete segments are coarticulated) have proven essential in accounting for certain phonological phenomena (tone spreading and vowel harmony among them). However, the temporal character of spoken languages is paramount, while *spatial* relations play no role (by this I mean the segments of spoken languages have no inherent spatial-relational value).⁶

⁵ The definitions of time and space are taken from Webster’s online dictionary: <http://www.m-w.com>.

⁶ In their paper on the evolution of the human language faculty, Pinker and Bloom (1990) discuss the vocal-auditory channel and argue that ‘language shows signs of design for the communication of

Whereas spoken languages are limited to the temporal medium, signed languages are able to utilize an additional medium, that of *space* – a boundless, three-dimensional extent in which objects occur and have relative position and direction.’ It is certainly not the case that signed languages exist apart from time; like spoken languages, the signs of signed languages are temporally ordered. Additionally, although much of sign language phonology has been argued to be simultaneous (in the sense that the components of a sign – handshape, location, movement, orientation, and nonmanual features – are simultaneously articulated), research suggests that linear segments do exist, and that the ordering of these segments is an important aspect of phonological structure (see Corina and Sandler, 1993, for an overview). Nevertheless, signed languages are unique in that they have access to the three dimensions of space; thus the medium of signed languages is space and time. Significantly, it is the spatial medium, a medium not available to spoken languages, that affords a radically increased potential for representing spatial relationships in an overt manner.

Over the past few decades, linguistic research has revealed strong similarities in the phonological, morphological, and syntactic structure of languages in the two modalities – similarities that likely stem from the general, abstract properties of the language faculty (i.e. Chomsky’s (1980) Universal Grammar). At the level of phonology, we know that signs have internal structure, and the combinatory principles that govern the hierarchical organization of signs parallel those at work in spoken language phonology (Stokoe, 1960; Liddell, 1984; Sandler, 1989, Corina and Sandler, 1993; Perlmutter, 1993; Corina, 1996; Brentari, 1998,). Similarly, signed languages have been found to have rich morphological structure, and the various morphological processes at work in spoken languages (derivation, inflection etc.) are evidenced in sign languages as well (Fischer, 1973; Supalla and Newport, 1978; Klima, Bellugi et al., 1979, Liddell and Johnson, 1986). Finally, at the level of syntax, the rules and principles governing the way signs are combined to form sentences are analogous to

propositional structures over a serial channel’ (p.712). Although their use of the term ‘channel’ appears to cover both modality and medium (as defined in this thesis), their observations seem to fall in line with the observations made here.

those governing syntactic structure in spoken languages (Liddell, 1980; Lillo-Martin, 1991; Neidle et al., 2000).

Despite these fundamental structural similarities, there are some interesting differences between languages in the two modalities. For example, the visual-gestural nature of signed languages leads to a far greater degree of simultaneity at the phonological level; in signed languages, the structural elements that make up a sign (handshape, location, movement, orientation, and non-manuals) are realized simultaneously (Stokoe, 1960). To be sure, sequential structure is also relevant to signed language phonology, but the simultaneous nature of sign formation is paramount.⁷ At the morphological level, it has been observed that signed languages evidence a preference for templatic (or nonconcatenative) morphology over the affixal morphology found in many spoken languages (Klima, Bellugi et al., 1979; Aronoff, Mier, and Sandler, 2000). For example, the inflectional and derivational processes at work in ASL (as well as other signed languages) involve spatial and temporal contrasts that affect the movement parameter of signs.

For signed languages, space constitutes both the medium through which language is transmitted, as well as a fundamental component of the structure of the language. As a result, signed and spoken languages appear to differ rather dramatically in the expression of spatial-relational concepts. Because they are expressed in the visual-gestural modality, and have at their full disposal the expressive capabilities of space, signed languages are uniquely equipped to convey spatial-relational and referential relationships in a more overt manner than is possible in spoken languages. There are two main areas in which the visual-gestural modality and spatial medium of signed languages seem to provide additional expressive capabilities. The first area is classifier constructions – a group of handshape-movement combinations that can be manipulated to show the location, movement, manipulation or shape of objects.⁸ The other area in which potential for modality effects is great is spatial referencing. It is

⁷ For a discussion of sequentiality and simultaneity in ASL, see Sandler (1987).

⁸ See section 2.6.1.1 for a brief description of the way in which classifiers utilize space.

this second area that is the focus of the present work.

1.4 Focus of the thesis: spatial referencing in signed languages

This thesis examines one use of space in signed languages: the use of space for reference. I refer to this use of space as *spatial referencing*. In particular, I focus on how locations in signing space are used for reference to individuals in a discourse (via personal pronouns and verbal agreement markers) and I evaluate the status of these locations in space with respect to the formal grammar of the language(s). In short, I am interested in determining whether these locations in space are linguistic markers of person.

Before proceeding, it is necessary to briefly comment on the typological similarity of signed languages. While the lexicons and certain aspects of structure are distinct across signed languages, all signed languages that have been studied use space for reference to individuals in a similar fashion (to be discussed in Chapters 2 and 5). The typological similarity of signed languages with respect to reference is one of the central issues addressed in this thesis. In fact, I will argue that the typologically homogeneous nature of reference in signed languages is a major factor in support of the notion that signed languages are a distinct linguistic type.

While a detailed description of the use of spatial locations for reference in ASL, as well as several other signed languages, will be presented in Chapter 2, a brief description of spatial referencing in signed languages is in order. To sign *I* or *me*, a signer points (with an index, or ‘1’ handshape) to her own chest. For reference to the addressee, *you*, the signer points to the addressee. As non-present referents are introduced into a signed discourse, each referent is normally associated with a point in the signing space⁹, often referred to as a *referential locus* (*R-locus*). A pronoun referring back to an individual takes the form of an index, or ‘1’ handshape, directed

⁹ The signing space is that space in front of the signer in which all non body-anchored signs are articulated. Signing space extends vertically from the top of the head to just below the waist, and horizontally from the signer’s right side over to the left, roughly as far as the elbows reach.

toward the locus with which the individual has been previously associated. In addition, certain verbs in ASL (agreement verbs) move between these referential loci, marking ‘agreement’ with their arguments.

Most sign language researchers consider these locations in space to be fully linguistic – formal markers of person distinctions (Friedman, 1975; Fischer and Gough, 1978; Klima, Bellugi et al., 1979; Padden, 1983/1988; Meier, 1990, among others). While personal pronouns clearly resemble pointing gestures used in many spoken language communities, most sign linguists treat these pointing signs as grammaticalized gestures that have become part of a fully linguistic system.

However, recent work by Liddell (1990a; 1994; 1995; 1996a; 1998; 2000a; 2000b) has called into question the linguistic status of these locations in space. Drawing on the work of Fauconnier (1985; 1997), Liddell’s analysis of ASL pronouns and agreement verbs utilizes the idea of mental spaces – conceptual structures that speakers (and signers) build up during discourse. Liddell argues that pronouns are directed toward elements of grounded mental spaces (mental spaces whose entities are conceived of as being present in the immediate environment). When a pronoun or agreement verb is directed toward a physically present referent (such as the signer or the addressee), the direction is not lexically fixed, but rather depends on the actual physical location of the referent. For non-present referents, pronouns and agreement verbs are directed at elements (tokens and surrogates) that are conceived of as present in a grounded mental space. For Liddell, pronouns are a combination of linguistic and gestural elements; the linguistic elements (handshape, aspects of orientation, and some types of movement) are describable using discrete linguistic features, but the direction and goal (or end point) of the movement are not linguistic at all, but rather are gestural (Liddell, 1995:26).

In my examination of the use of space for reference in signed languages, I will include both morphologically independent pronouns and the inflectional marking present in the verbal agreement systems of signed languages. In his examination of the relationship between these two primary forms of person marking in spoken languages, Cysouw (2001) points out the diverging views that exist with respect to the status of

pronouns and inflectional marking. On the one hand, Givón (1976) argues that no structural differences exist between the two forms of person marking. His evidence for this is the grammaticalization of person marking from independent pronoun to inflectional person marking (agreement). On the other hand, generative linguists tend to view independent pronouns and inflectional person marking as two separate aspects of linguistic marking. Cysouw posits that what underlies this view is the ‘projection principle’, one of the central principles of Chomsky’s (1981:29) Government-Binding Theory. Cysouw (2001:12) writes:

This principle proposes a strong constraint on syntactic analyses and the intermediate transformations. It implies that at every level of syntactic analysis, the arguments of each predicate are to be present (overt or covert). Independent pronouns are possible instantiations of arguments; inflectional person marking is seen as agreement of the predicate with these arguments. Thus, a regular noun or an independent pronoun has to be present at each level of syntactic analysis.

In this thesis I take no position concerning this issue. The rationale for including both morphologically independent pronouns and inflectional marking in the present study is quite simple; in signed languages, pronouns and agreement markers utilize spatial locations for reference to individuals in a highly similar (if not identical) manner. My goal is to understand the status of these locations in space with respect to the grammar of the language(s). To exclude inflectional marking from this study might lead me to overlook some interesting and relevant facts.

1.5 Organization of the thesis

The central aim of this thesis is to examine the use of spatial locations for reference in signed languages, and to evaluate these structures with respect to their status as linguistic markers of person. The structure of the thesis will be as follows. Chapter 2 presents a broad survey of the grammatical distinctions that are encoded in

pronominal reference and verbal agreement systems across spoken and signed languages. In this chapter I also present some initial typological observations concerning person reference as it plays out in signed and spoken languages. Chapter 3 reviews how spatial locations have been analyzed in the sign linguistics literature thus far. The next three chapters (Chapters 4, 5, and 6) form the core of the thesis; it is in these three chapters that an argument against the existence of person marking in signed languages is developed. Chapter 4 examines the paradigmatic structure of person marking in spoken languages and highlights the cross-linguistic variation that occurs. This review of grammatical person in spoken languages sets the stage for an analysis of spatial referencing in signed languages. The main focus of Chapter 5 is the presentation of a detailed examination of the paradigmatic structure of person marking in one sign language, American Sign Language, although the paradigmatic structure of person marking in other signed languages is also evaluated. In this chapter it is argued that the categories second and third person do not exist in signed languages, and that demonstratives (or spatial deictics) serve those functions. Chapter 6 examines referential identification in spoken and signed language; in this chapter an argument for a unified deictic analysis of sign language reference (where all spatial referencing is accomplished through spatial deictics, not person deictics) is set forth. Chapter 7 explores in greater detail demonstratives in human language and presents evidence in support of a demonstrative analysis of pronouns in ASL. In this chapter, evidence against demonstrative pronouns having been grammaticalized into third person pronouns in ASL is also discussed. Finally, Chapter 8 offers a summary of the thesis and discussion of some of the implications of the findings.

2 An overview of referential morphology in spoken and signed languages

2.1 Introduction

In this chapter I examine personal pronouns and inflectional marking (subject and object verbal agreement) in spoken and signed languages.¹⁰ While the focus of this thesis is the structure and representation of person marking, in this chapter I survey the full range of distinctions that are marked in pronouns and agreement (person, number, gender etc.). By viewing these systems in their entirety, I will be able to make some more general observations regarding reference and how it is accomplished in signed and spoken languages. While I do aim to provide a thorough and detailed description of spatial referencing in signed languages, my treatment of spoken language pronouns and verbal agreement is far less comprehensive. The spoken language data discussed below serve primarily to set the stage for general cross-linguistic, cross-modality comparison of person reference.¹¹

I begin this chapter with a brief discussion of *deixis*, which is central to person reference in both signed and spoken languages. In section 2.3 I examine spoken language pronominal systems, focusing on the range of semantic information that can be encoded. Next, section 2.4 provides an examination of signed language pronominal systems. In section 2.5 I present a general overview of verbal agreement in spoken languages, with a focus on person agreement. This is followed, in section 2.6, by an examination of verbal agreement in signed languages. In the final section of this chapter I summarize the data and then introduce several typological observations concerning referential morphology in signed languages, as compared to referential morphology in spoken languages.

¹⁰ Portions of this chapter appeared in McBurney (2002).

¹¹ For a more complete look at pronominal systems in spoken languages, the reader is referred to Ingram (1978), Wiesemann (1986), Mühlhäusler and Harré (1990), Rhodes (1997), Mühlhäusler (2001), and Cysouw (2003). On verbal agreement in spoken language, see Moravcsik (1978), Barlow and Ferguson (1988), and Corbett (1998).

2.2 Deixis

Stemming from the Greek word for pointing, the term *deixis* refers to ‘those features of language which refer directly to the personal, temporal or locational characteristics of the situation within which an utterance takes place’ (Crystal 1997:107). As such, *deictics* are linguistic elements whose interpretation depends directly upon properties of the extralinguistic context of the utterance in which they occur (Fillmore, 1975/1997; Levinson, 1983; Anderson and Keenan, 1985). Often referred to as indexical expressions, deictics fall into three main categories: spatial deictics (*here/there*), time deixis (*now/then*), and participant, or person, deixis (*I, you*).¹² It is this third category of deixis, person deixis, that is of central concern when examining pronominal reference and verbal inflection in human language.¹³

When a speech act takes place, three salient cognitive categories are involved. The two primary categories are *speaker* (originator of the speech act), and *addressee* (the recipient of the speech act).¹⁴ Following Jespersen (1924), the remaining category, *other*, is generally defined negatively as those participants that are neither speaker nor addressee. The specialized linguistic elements that code these three cognitive categories are called *person markers*.

2.3 Pronominal reference in spoken languages

There exists a wide range of semantic information that can be encoded in the pronominal systems of the world’s languages. Among the types of information encoded are the following: person, number, gender, distance and proximity, kinship status, social

¹² Two additional types of deixis (discourse deixis and social deixis) will not be discussed here.

¹³ However, as this thesis will show, spatial deixis is of central importance in sign language reference.

¹⁴ Here I use the commonly accepted terms speaker and addressee. By strict definition the term speaker would exclude reference to individuals using languages that are not spoken. An analogous term *signer* is used in the sign language linguistics literature. I will use both terms as appropriate throughout the present work; the common principle underlying these two terms (the originator of a speech/sign utterance) should be obvious.

status, case, and tense (Mühlhäusler and Harré, 1990).¹⁵ In this section I briefly examine personal pronouns in spoken languages, paying particular attention to the categories that are present. In the context of this discussion, I use the term *category* to refer to the semantic notions of person, number, gender and so on, while the term *distinction* refers to the distinct markings or values within that category. For example, the pronoun system of a given language might mark a three-way distinction (first, second, third) in the category person.

There is tremendous typological variation among spoken languages in terms of the number and types of semantic contrasts that are encoded in their pronominal systems. For example, (2-1) shows the pronominal system of English for the nominative case.¹⁶

(2-1) English personal pronouns (nominative case)

PERSON	SINGULAR	PLURAL
1	<i>I</i>	<i>we</i>
2	<i>you</i>	
3	<i>he</i> <i>she</i> <i>it</i>	<i>they</i>

In (2-1) we see that English has the common three-way (first, second, third) distinction in the category of person. In the category of number, English distinguishes singular and plural in the first and third persons, but does not mark for number in the second person. Finally, there exists a three-way distinction in gender within third person singular only. This type of distinction has been referred to as ‘natural gender’, whereby all nonhuman referents are neuter, and human referents are either masculine or feminine.

¹⁵ This list is not exhaustive. See Simon (2003) for a discussion of the emergence of ‘respect’ as a grammatical category in the German pronominal paradigm.

¹⁶ In this discussion, I will not be considering distinctions of case within pronominal systems.

Asheninca, a pre-Andine Arawakan language spoken in central Peru, encodes fewer contrasts in the pronoun system.

(2-2) Asheninca personal pronouns (Reed and Payne, 1986:31)

PERSON	SINGULAR	> 1
1	<i>naaka</i> (first exclusive)	<i>aaka</i> (first inclusive)
2	<i>eeroka</i>	
3	<i>irirori</i> (m.) <i>iroori</i> (f.)	

Like English, Asheninca exhibits a three-way distinction in the category of person. However, the only number distinction present in the personal pronoun system is *aaka*; because it is an inclusive pronoun (denoting first person + second person), this pronoun form necessarily involves more than one person. Beyond this, number is not part of the pronoun system. Rather, plural is expressed through morphemes that are regular inflections of verb and noun morphology. Gender is marked only in the third person (singular), and the distinction is two-way, masculine and feminine.

Slightly more extensive number marking is seen in Nagala, a Ndu language spoken in New Guinea. The personal pronouns in Nagala pattern as in (2-3).

(2-3) Nagala personal pronouns (Laycock, 1965, in Mülhäusler and Harré, 1990:83)

PERSON	SINGULAR	DUAL	PLURAL
1	<i>wn</i> (m.)	<i>ɔyn</i>	<i>nan</i>
	<i>ñən</i> (f.)		
2	<i>mən</i> (m.)	<i>bən</i>	<i>gwn</i>
	<i>yn</i> (f.)		
3	<i>kər</i> (m.)	<i>(kə) bər</i>	<i>rər</i>
	<i>yn</i> (f.)		

Here we see three distinctions in number (singular, dual, and plural) carried across all three persons. In addition, Nagala has fairly rich gender marking, in that there is a two-way distinction (masculine/feminine) across all singular forms.

Nogogu, an Austronesian language spoken in the Melanesian Islands, has even richer number marking within its personal pronoun system.

(2-4) Nogogu personal pronouns (Ray, 1926, in Forchheimer, 1953:81)

PERSON		SINGULAR	DUAL	TRIAL	PLURAL
1	excl.	<i>(i) nou</i>	<i>omorua</i>	<i>omotulu</i>	<i>emam</i>
	incl.		<i>orua</i>	<i>otolu</i>	<i>rie</i>
2		<i>i niko</i>	<i>omrua</i>	<i>omtolu</i>	<i>emiu</i>
3		<i>i nikin</i>	<i>rurua</i>	<i>ritolu</i>	<i>i rir, rire</i>

In (2-4) we see a four-way distinction in number (singular, dual, trial, and plural) throughout all three persons, as well as an inclusive/exclusive distinction within the first person. The inclusive form is used when the person addressed is included in the first person plural, and the exclusive form is used otherwise. None of the Nogogu pronouns are marked for gender.

The final language to be discussed in this brief discussion of spoken language pronominal reference is Aranda, an Australian language. The following table presents partial data from the personal pronouns in Aranda.

(2-5) Aranda personal pronouns (Hale, 1966, in Mülhäusler and Harré, 1990:165)

NUMBER	AGNATIC		NON-AGNATIC
	HARMONIC	DISHARMONIC	
DUAL			
1	<i>ili-n</i>	<i>il-ak</i>	<i>il-ant</i>
2	<i>an-atir</i>	<i>mpil-ak</i>	<i>mpil-ant</i>
3	<i>il-atir</i>	<i>al-ak</i>	<i>al-ant</i>
PLURAL			
1	<i>un-ar</i>	<i>un-aki-ar</i>	<i>un-anti-r</i>
2	<i>anj-ariy</i>	<i>ar-aki-r</i>	<i>ar-anti-r</i>
3	<i>il-ariy</i>	<i>in-aki-r</i>	<i>in-anti-r</i>

The Aranda data reveals a three-way distinction in person marking, as well as number marking for dual and plural. What is most unusual about the Aranda pronominal system is the extensive marking of kinship distinctions. Two major distinctions in kinship are encoded throughout the pronominal system: agnatic vs. non-agnatic (where agnatic denotes an individual related through a line of patrilineal descent) and harmonic vs. disharmonic (where harmonic refers to a person from the same generation or a generation that differs by an even number).

Although the data presented above is a miniscule sampling of the world's languages, this brief survey serves to illustrate three points. First, spoken language pronominal systems vary in the categories marked; some languages mark a small number of categories (Nogogu, for example, marks only person and number), while others encode a wider range of categories (Aranda's marking for kinship). Secondly, spoken languages differ in the range of distinctions marked within certain categories; compare, for example, Asheninca (which has a plural pronoun only in the first person)

and Nogogu (which has four distinctions in number – singular, dual, trial, and plural – across all three persons). Finally, there is considerable variation with respect to *how* semantic distinctions are marked in spoken language pronominal systems. In the few languages examined here, we saw semantic distinctions morphologically marked by prefixes and suffixes, but some languages utilize infixes as well.¹⁷ Furthermore, the phonological form of various morphological distinctions varies tremendously from language to language. In the next section I discuss pronouns in signed languages, and focus on whether signed languages exhibit the same range of categories and distinctions.

2.4 Pronominal reference in signed languages

In this section I examine personal pronouns in signed languages, paying particular attention to the morphosemantic categories marked.¹⁸ In presenting data on sign language pronouns (and also sign language verbal agreement in section 2.6), I will begin by providing a detailed account of the phenomena in American Sign Language (ASL). The treatment given the ASL data will be far more complete than that given to data from other signed languages. There are two main reasons for devoting greater discussion to ASL. First, ASL has been studied more extensively than any other signed language, and as a result there is a greater research literature pertaining to pronominal reference and verbal agreement in this particular signed language. Secondly, and more central to the current study, once the specifics of the use of space for reference in ASL have been laid out, similarly detailed treatment of other signed languages would result

¹⁷ For example, in Bahing (a Kiranti language spoken in Nepal), most duals are marked by the addition of a suffix *-si*. However, this suffix appears infixed in the 1+3 dual form *go:su:ku* (Bauman, 1975:267, discussed in Cysouw, 2002:275). I have not come across any languages in which tonal variation serves to mark semantic distinctions in pronouns.

¹⁸ This thesis deals specifically with pronouns and agreement markers that refer to particular entities in a discourse; I will not be considering either bound pronouns or the tracking of referents in longer stretches of discourse. Although very little work has been done in the area of bound pronouns in ASL (or any other signed language), brief discussions can be found in Lillo-Martin (1986) and Lillo-Martin and Klima (1990). On the use of space for reference in lengthy narratives involving multiple characters and/or shifts in perspective, see discussions in Meier (1990), Winston (1995), and Lillo-Martin (1995).

in considerable redundancy. As will be shown below, the pronominal and verbal agreement systems of the world's signed languages (at least those that have been studied) are *highly* similar. This fact is of central importance to the present work, and will be discussed at length in the chapters that follow.

As stated in the introduction, the central aim of this thesis is to examine the use of spatial locations for reference in signed languages, and to evaluate spatial locations with respect to their status as linguistic markers of person. While the linguistic status of locations in space is the object of this study, it is necessary at this point to present the signed language data in a manner that facilitates cross-linguistic and cross-modality comparison and analysis. In this vein, I have chosen to present the data within a framework that views locations in space as markers of person distinctions. In earlier work (McBurney, 2002) I have used the term 'standard analysis' to refer to this framework; it is this analysis of ASL pronominal reference that has been prevalent in the literature from early on (Friedman, 1975; Klima, Bellugi et al., 1979; Bellugi and Klima, 1982; Padden, 1983/1988). My decision to refer to locations in space as markers of person distinctions should not, at this point, be taken as confirmation of the linguistic status of locations. As will be discussed in Chapter 3, the standard analysis is not the only analysis of spatial locations that has been proposed. My use of the standard analysis terminology is motivated by convenience; presenting the sign language data within a framework that utilizes person distinctions facilitates cross-linguistic and cross-modality comparison.

2.4.1 Pronominal reference in American Sign Language

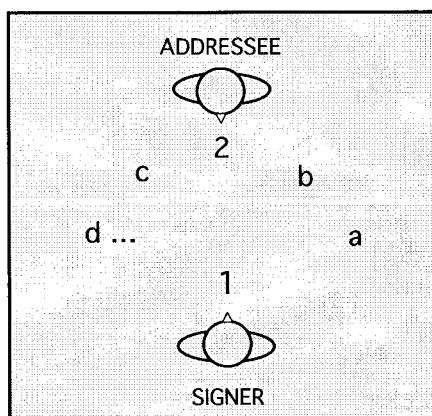
American Sign Language, the language used by Deaf individuals in the United States and much of Canada, is a member of the French Sign Language Group (Woodward, 1978a; 1978b).¹⁹ Like other signed languages, ASL is a visual-gestural

¹⁹ Woodward (1978b) identifies four major sign language families, based on hypothesized relationships between sign language varieties. For more detailed discussion of the history of ASL and its relation to French Sign Language, see Lane (1984).

language that makes extensive use of space for reference to individuals within a discourse.

(2-6) is a two-dimensional representation of signing space as it is used for pronominal reference in American Sign Language.

(2-6) ASL signing space for pronominal reference



I will refer to this basic diagram throughout this chapter (as well as subsequent chapters), and will modify it in the context of discussing the variety of pronominal and verb agreement forms in American Sign Language.

2.4.1.1 Singular pronouns in American Sign Language

In ASL, nominals within a clause are associated with distinct locations in space, referred to in the literature as ‘R(eferential)-loci’. The form of singular personal pronouns in ASL is an index, or ‘1’ handshape (closed hand with the index finger extended), directed toward a point in space (or locus), one that exists along a chest-level horizontal plane in front of the signer.²⁰ For first person reference, the index is directed toward the signer’s chest (number 1 in (2-6)). (2-7) is an example of the first person pronoun, *I*.

²⁰ See Appendix A for illustrations of the handshapes discussed in this thesis.

(2-7) ASL first person singular pronoun, I



For second person reference (reference to the addressee), the index is directed out toward a point in front of the addressee's chest (number 2 in (2-6)). (2-8) is an example of the second person pronoun, *you*.

(2-8) ASL second person singular pronoun, YOU



For referents that are not physically present in the discourse (i.e. third persons), the index is directed toward a point in the signing space that has been previously

associated with that referent (letters a, b, c, d ... in (2-6)).²¹ (2-9) shows a third person pronoun.

(2-9) One possible ASL third person pronoun, HE/SHE/IT



This association of a point in space with a discourse referent has been referred to in the sign language linguistics literature as *nominal establishment* or *localization*.²² When a referent is present (as is the case with both the signer and the addressee), the physical presence of that referent serves to establish her in the signing space. In contrast, non-present referents must be established in the signing space via one of a number of localization strategies.²³ One strategy is to sign the name of the referent and then

²¹While it is widely assumed that the locations chosen for non-present referents are arbitrary, this is not always the case. Padden (1983/1988:29-30) notes that the selection of a location for a third person referent can be influenced by the real or supposed location of that referent. In addition, Engberg-Pedersen (1993:71-79) discusses a number of semantic and formal factors that influence the organization of locations in the signing space. Among them are semantic affinity between referents, comparison between referents, and conventional location.

²² It appears that the phenomenon of localization, the assigning of referents to locations in the signing space, was first pointed out by European researchers. Bergman (1982:83) writes, 'An early discussion of this phenomenon can be found in a paper on the Norwegian Sign Language (Skavlan, 1875) and later in a book by the Danish author Johannes Jørgensen (1910) who was influenced by the former. Jørgensen was also refers to Remi Valades and it may be from Valades that the term originates.'

²³ Non-human referents can also be established at locations in the signing space and referred back to by indexing the respective location. For example, in comparing two colleges, a signer might set up one in the space in front and to the right, and the other in the space in front and to the left. From that point on in the discourse, the two distinct locations in the signing space are used to refer to the associated colleges. See Emmorey (2001; 2002a:113) for a discussion of the use of space and spatial models to represent abstract relations and concepts within signed discourse.

articulate an index toward the point in space at which the referent is being established. For example, a signer might fingerspell the name NORA, then articulate an index toward location 'a' (in (2-6)).²⁴ Once this referent, Nora, has been established at location 'a', further reference to her is through an index directed toward location 'a' in the signing space. A second strategy for establishing a non-present referent in the signing space is signing the name of the referent at a specific location in the signing space. Using this strategy, a signer would fingerspell NORA with her dominant (fingerspelling) hand at location 'a' (in (2-6)). A third method of establishing a non-present referent in the discourse signing space involves the use of a nonmanual gesture, in this case an eyegaze. For example, a signer might sign the name of the referent (NORA), then indicate the location at which the referent is being established with an eyegaze (e.g. sign NORA then look at location 'a'). Finally, a nominal can be established through the use of an agreement verb.²⁵ In these instances, the name of the referent is signed in neutral space and is then followed by an agreeing verb, either the onset or ending location of which is a locus in space that has not already been associated with a different referent. The agreeing verb serves to localize the non-present referent in the signing space, and this referential locus can, from this point on in the discourse, participate in further verb agreement and pronominal reference.

In theory, an unlimited number of non-present referents can be localized to distinct locations in the signing space – locations a, b, c, d ... in (2-6) (Lillo-Martin and Klima, 1990).²⁶ However, it appears that memory and processing constraints limit the number of locations that are actually used within a discourse. I am not aware of any research on specific limitations with respect to spatial locations and pronominal reference in signed languages, but investigations of general cognitive abilities and the

²⁴ See Appendix A for a discussion of the notational conventions adopted in this work.

²⁵ Agreement verbs are one class of verbs in ASL. Agreement verbs are distinct from other verbs in that the form of the verb makes spatial reference to the subject and/or object of the clause. Agreement verbs will be discussed in greater detail below in sections 2.6.1.1 and 2.6.1.2.

²⁶ See Baker and Cokely (1980:223-235) for a review of the various strategies that signers may use for deciding where to set up multiple non-present referents in the signing space. See also Bahan and Petitto (1980) for a similar discussion. Also of interest is van Hoek (1992), which includes a discussion of referential loci as conceptual access points.

capacity of short term or working memory (Miller, 1956) suggest that the limit is somewhere between five and seven units of information. Whichever strategy is used to establish a non-present referent at a location in the signing space, an index directed toward that location is interpreted as a pronoun referring back to that specific referent. In other words, once the non-present referent Nora has been established at location ‘a’, an index back to that location is interpreted as a direct reference to Nora.

The singular pronouns in ASL are considered to be *indexic* in that they point to physically present referents, or to the locations in space that have been associated with non-present referents. In the standard analysis, these locations in space are considered to be part of the grammar of ASL; they form the base of pronominal reference (as well as verbal agreement, cf. section 2.6.1), and play a crucial role in conveying person distinctions throughout signed discourse.²⁷ While all singular pronouns in ASL are indexic, only a subset of the plural pronouns index the locations of the individuals being referred to. I will now turn to the plural pronouns in ASL.

2.4.1.2 Plural pronouns in American Sign Language

ASL has a very rich system of marking for number in its pronouns.²⁸ As was illustrated above ((2-7), (2-8), (2-9)), the singular pronouns take the form of an index directed toward a point along the horizontal signing plane. Some pronouns are marked for plurality by the addition of an arc-shaped, or sweeping, horizontal movement. This

²⁷ While I do not address possessive pronouns in any detail in this thesis, it is nevertheless important to note that the same locations in space which lie at the heart of pronominal and verbal agreement distinctions in ASL are an integral component of possessive pronouns as well. In other words, the same referential locations are used for possessive pronouns. Possessive pronouns are distinguished from personal pronouns mainly by a change in handshape; whereas the latter utilize an index handshape, the handshape that surfaces in the former is an open ‘B’. The central and consistent role that locations in space play in all three of these systems (personal pronouns, possessive pronouns, and verbal agreement) will be discussed below in section 5.2.

²⁸ It should be noted that there is a paucity of data concerning the usage patterns of the various plural forms of ASL pronouns. As is discussed in this section, there are a number of different ways in which ASL marks for number in the pronominal system. Yet, to date, no one has conducted a thorough and extensive usage study that profiles the specific conditions under which the various forms are used.

general plural is used to refer to groups of three or more referents (Baker and Cokely 1980:208). For example, the second person plural pronoun YOU-PL looks as follows.

(2-10) ASL second person plural pronoun, YOU-PL



The third person plural pronoun, THEY, is represented in (2-11). This is similar in structure to the second person plural pronoun; both have a sweeping movement that is added to the index.

(2-11) ASL third person plural pronoun, THEY



Both the second and third person plural pronouns can be indexical in the sense that they can point to the general location of a group of referents (either present, in the case of

second person, or non-present, in the case of third person). For example, if a group of non-present referents has been localized ahead and to the right of the signer, a plural pronoun articulated in that area indexes that specific group of referents.

The most common, general form of the first person plural pronoun, WE, is not indexic in the same sense that the second and third person plural pronouns are. (2-12) illustrates one form of the general plural WE in ASL.

(2-12) ASL first person plural pronoun, WE (no arc)



In this form, the signer points first to one side of her chest, then to the other. Unlike the second and third person plural pronouns (which are largely indexic), the sign WE does not specify the number or locations of the specified referents.²⁹ Baker and Cokely (1980:209) note that the form of WE illustrated above in (2-12) is used when the other referents are not present.³⁰ They contrast this form with a second form of WE, illustrated below in (2-13).

²⁹ For discussion, see Meier (1990) and Cormier (2002).

³⁰ Note that Cormier (2002) provides a different analysis of exclusive distinctions in ASL pronouns, discussed below.

(2-13) ASL first person plural pronoun, WE (with arc)

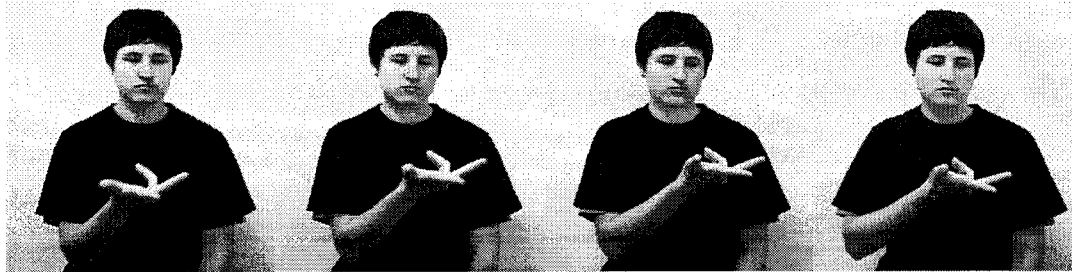


This form of WE, in which the signer contacts one side of the chest then the other, with a small arc between contacts, is used when other referents are present.

A third form of the pronoun WE is directly indexic. In this form, the signer points individually to each referent, including herself. The referents can be either present (the addressee) or non-present (with locations in space associated with each non-present referent).

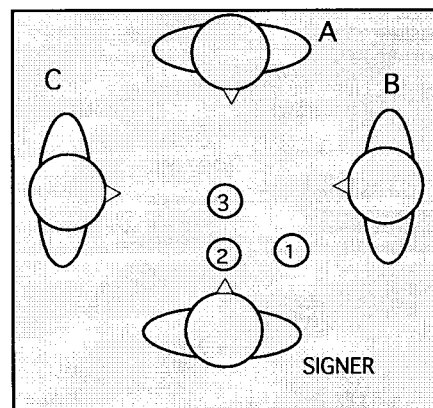
In addition to the singular and plural forms discussed above, ASL appears to have dual, trial, quadral, and quintuple distinctions throughout much of the pronoun system. The trial, quadral, and quintuple forms are formed by replacing the index handshape with a numeral handshape (the handshape for 3, 4, and 5, respectively), changing the orientation from palm downward to palm upward, and adding a small circular movement. If the signer is to be included in the reference (first person reference), then the sign is articulated closer to the signer's body. (2-14) is an example of a trial pronoun.

(2-14) ASL trial pronoun, 3-OF-US



Baker and Cokely (1980:212) provide the following schematic drawing of a signing situation where the trial pronoun might be used.

(2-15) Three possible locations for trial pronominal reference



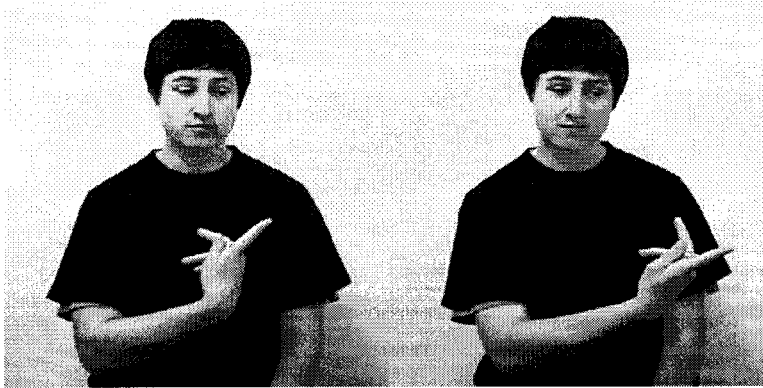
In (2-15) A, B, and C represent three different addressees present in the signing situation. The numbers in circles (1, 2, 3) are three possible locations of the signing hand. A trial pronoun (formed with a '3' handshape, palm oriented upward) articulated at location #1 is interpreted as meaning THREE-OF-US, with the included referents being the signer, addressee B and addressee A. If the signer articulates the trial pronoun at location #2, the included referents shift to the signer, addressee B and addressee C. Finally, a trial pronoun articulated at location #3, farther out in front of the signer, is interpreted as THREE-OF-YOU, with included referents being the addressees A, B, and

C (but not the signer). The various forms of the trial pronoun suggest that it is, at least to some degree, indexic. While the indexing may not be as direct as it is in the case of singular pronouns (where we have an index directed at a specific location), the varying locations at which the trial pronoun is articulated serve to identify the included referents.

The quadral and quintuple pronouns in ASL follow a pattern similar to that described above for the trial pronoun, with (of course) a difference in handshape: the handshape for the numeral four (all four fingers extended and separated, thumb in) in the case of the quadral pronoun, and the handshape for the numeral five (all fingers and thumb extended and separated) in the case of the quintuple. The precise extent to which individual referents can be indexed in these forms is not clear; if several non-present referents have been set up in the signing space (enough to make the use of these forms an option), including certain referents while excluding others can be problematic. At this point I am unable to comment on this issue other than to say it is a question for further research.

The dual pronoun is formationally distinct from the trial, quadral, and quintuple pronouns discussed above. In the dual pronoun, the handshape that surfaces is distinct from the numeral two; whereas the numeral two has the index and middle fingers extending from an otherwise closed fist, the handshape in the dual form is the 'K' handshape (the thumb is extended and placed between the two fingers, and the middle finger is lowered slightly, so that it is perpendicular to the thumb). The movement in the dual is also distinct from that found in the trial, quadral, and quintuple forms; the 'K' handshape is moved back and forth between the two loci associated with the intended referents. In this sense, the dual is highly indexic. (2-16) is an example of a dual pronoun articulated between the signer and a single non-present referent.

(2-16) ASL dual pronoun, TWO-OF-US



The dual pronoun can be articulated between any two locations in the signing space that have been established as R-loci for referents – either actual locations (in the case of signer and addressee) or established locations in the case of non-present referents.

The above discussion highlights the fact that while singular pronouns are directly indexical (they point to their referents), when reference is to more than one individual (i.e. when plurality comes into play) we see a marked loss of indexicality. Cormier (2002) addresses this loss of indexicality in her examination of ASL numerosity, where she develops an analysis of plural pronouns based on a distinction between *lexical* plurals and *ostensive* plurals.³¹ Lexical plurals (including the general plural WE, number incorporated forms 3/4/5-OF-US, the sign A-L-L, as well as the possessive OUR) do not index or point to the locations of individual referents; rather, location has been lexicalized. Ostensive plurals, on the other hand ‘transparently point to the location of each referent’ (p.48). She classifies two plural pronouns as ostensive: the dual form (TWO-OF-US) and the composite first person plural (WE-COMP), which consists of a series of pointing signs that point to each member of a group.

While a few researchers have commented on the presence of an inclusive/exclusive distinction in signed languages (Deuchar, 1984; Wilbur and Patschke, 1998; McBurney, 2002), Cormier (2002) presents evidence for the existence

³¹ In an earlier paper, Cormier (1998) refers to ostensive plurals as *indexical* plurals.

of an exclusive distinction in ASL, but concludes that there is no inclusive marked in ASL. The general location of articulation for lexical plurals can be either central (produced at or near the center of the signer's chest) or displaced (produced slightly left or right of the signer's chest). Cormier reports that in ASL lexical plurals (WE, 3/4/5-OF-US, ALL-OF-US, and OUR), the exclusive can be marked by displacement of the sign. For example, the general plural WE (which is normally articulated with the index touching two points along a horizontal plane at the center of the chest, as in (2-12)) can be displaced slightly to either the right or left side of the chest. This instance of WE, which Cormier glosses as WE-DISPLACED, is marked as first person exclusive, and is interpreted as [+speaker], [-addressee], and [+nonaddressed speech act participant]. Whereas the displaced forms are grammatical in exclusive contexts only, the central (non-displaced) forms of the lexical plurals are grammatical in both inclusive and exclusive contexts. Thus, Cormier argues for a distinct exclusive category for lexical plurals, but concludes that there is no evidence for a distinct inclusive category (2002:52).³² This places ASL in stark contrast to cross-linguistic universals found to be in effect in spoken languages. In his cross-linguistic study of the paradigmatic structure of person marking (to be discussed at greater length in Chapter 4), Cysouw (2003:96) notes that if a language has specialized marking for the exclusive in a pronominal paradigm, then that language will also have specialized marking for the inclusive (cf. Universal 43 from Sokolovskaya, 1980:95).³³

The extensive marking for number evidenced in ASL raises an interesting question: do each of the various plural forms constitute true grammatical number marking (i.e. number marking that is internal to the pronoun system) or are they the result of an independent morphological process that happens to surface in pronouns? I

³² In earlier work, Cormier (1998) discusses distinct inclusive and exclusive forms of the dual pronoun in ASL, forms that are differentiated by whether or not the location of the addressee is indexed in the sign. However, Cormier (2002) revises her analysis of the ostensive plurals (WE-COMP and TWO-OF-US), writing '...it seems inappropriate to posit any sort of inclusive / exclusive distinction, since these forms pick out certain referents but do not particularly include or exclude anyone. These forms include all and only the referents that they point to ... Other referents are 'excluded' only in the sense that they happen to not be included' (p.53).

³³ In Cysouw's study, which includes data from over 400 different languages, there is one exception to this generalization – the Papuan language Binandere, which will be discussed below in fn. 116.

have argued elsewhere (McBurney, 2002) that the dual form is an instance of grammatical number marking, while the trial, quadral, and quintuple forms are not. Three facts of ASL support this interpretation. First, in spoken language grammatical number marking, dual and trial forms are, by and large, not etymologically derived from the numerals in the language (Last, in preparation).³⁴ For example, the morpheme that distinguishes a trial form in a given pronominal system is not generally etymologically derived from the numeral three. In contrast, the morphemes (handshapes) that distinguish the trial, quadral, and quintuple forms in ASL are the very same handshapes that serve as numerals in the ASL number system. The handshake in the dual form, however, is distinct from the numeral two (as described above).

Secondly, the number handshapes that present within the trial, quadral, and quintuple forms of ASL pronouns are systematically incorporated into a limited number of nonpronominal signs in ASL. This morphological process has been referred to as *numeral incorporation*. (Chinchor, 1979; Liddell, 1996b). For example, signs having to do with time (MINUTE, HOUR, DAY, WEEK, MONTH, YEAR) incorporate numeral handshapes to indicate a specific number of time units. The basic form of the sign WEEK is articulated by moving an index, or '1', handshake of the dominant hand (index finger extended from the fist) across the upturned palm of the nondominant hand. The sign THREE-WEEKS is made with a '3' handshake (thumb, index, and middle finger extended from the fist), and the sign for FOUR-WEEKS with the '4' handshake (all four fingers extended from the fist).³⁵ Other signs that can take numeral incorporation include EXACT-AGE, APPROXIMATE-AGE, EXACT-TIME, DOLLAR-AMOUNT, and EIGHT. Numeral incorporation is clearly a productive (though limited) morphological process, one that surfaces in several areas of the language. Significantly, the handshake for the numeral two (as opposed to the 'K'

³⁴ Greville Corbett (p.c.) notes some exceptions in a number of Austronesian languages, where forms indicating 'we-three' and 'we-four' appear to be etymologically related to numerals.

³⁵ The handshapes that can be incorporated into these signs appear to be limited to numerals '1' through '9'. While the number signs for '1' through '9' are static, the signs for numbers '10' and above have an internal (non-path) movement component. These numbers cannot be incorporated because the resulting sign forms would violate phonological constraints in the language (Liddell and Johnson, 1989).

handshape that surfaces in the dual pronominal form) is also involved in this productive morphological process. Thus, the data available suggest that the trial, quadral, and quintuple forms that surface in parts of the pronominal system are instances of numeral incorporation, not grammatical number marking.

The final argument for treating trial, quadral, and quintuple pronominal forms in ASL as something other than grammatical number marking has to do with obligatoriness. Marco Last (p.c.) suggests that in order to be considered grammatical number marking, the marking of a particular number distinction within a pronominal system has to exhibit some degree of obligatoriness. Whereas the dual form appears to be obligatory in most contexts (and therefore can be considered an instance of grammatical number marking), it does not appear that the trial, quadral, and quintuple forms are in any sense obligatory. In other words, the general plural form might be used in certain instances instead of one of these specific number-marking forms. For example, Baker and Cokely (1980:208) comment that ‘if the signer wants to refer to a group of people (three or more) without emphasizing each individual, the Signer can use the “1” handshape and “draw” an arc that includes all the people the Signer wants to talk about.’³⁶

Cormier (2002) provides a slightly different analysis of number-incorporated pronouns in ASL. She recognizes the existence of a distinct grammatical marking for dual, but posits that the number-incorporated pronouns are marked as *cardinal plurals* (with cardinality specified), while the other lexical plurals are simply plural. Thus, Cormier’s overall analysis of numerosity in ASL pronouns posits three number values: singular, dual, and plural. Within the plural category, a pronoun can be simply plural or have its cardinality specified.

³⁶ An additional factor that may be related to the optionality of the trial, quadral, and quintuple forms has to do with articulatory constraints. If a signer wishes to use a trial form (meaning the three of them), this form might be possible only if the loci associated with the three referents are adjacent to each other. For example, if three referents to be included have been localized at ‘a’, ‘b’, and ‘d’ (see (2-6)) it would be impossible to articulate a trial form that could specify which specific referents were included and exclude those that were not. In such circumstances, the plural marking of a pronoun pushes the system in less-indexic directions.

Before leaving this topic, however, one additional point deserves consideration, one that relates to proposed cross-linguistic universals. Ingram (1978) has proposed a ‘universal constraint’ on systems of number, whereby languages fall into one of three categories based on the number of distinctions marked: 1) one, more-than-one; 2) one, two, more-than-two; and 3) one, two, three, more-than-three. If the trial, quadral, and quintuple forms of numeral incorporation within the pronoun system of ASL are interpreted as grammatical number marking, then the ASL data would have to be characterized as marking a greater range of distinctions than has been found in spoken languages (one, two, three, four, five, more-than-five). ASL would thus be in violation of proposed universal systems of number. Of course one should not allow theory to dictate interpretation of the data; if the ASL data showed clear evidence of being true grammatical number marking, then the universal status of the constraint proposed by Ingram would be significantly weakened. However, as the discussion above illustrates, there is reason to believe that certain aspects of the number marking (trial, quadral, quintuple) are not part of grammatical number.

As far as other semantic contrasts that can be encoded within personal pronoun systems are concerned, American Sign Language pronouns do not show distinctions in gender, animacy, distance, proximity, kinship status, or tense. Thus, within the ASL pronominal system, person and number are the only categories marked.

2.4.1.3 Summary of ASL pronominal reference

In this section I present a summary table of ASL personal pronouns as well as some comments. Adopting Cormier’s (2002) analysis of exclusives, ASL personal pronouns pattern as follows.³⁷

³⁷ The table in (2-17) represents an analysis and summary of pronoun forms elicited from one native Deaf signer (a Deaf individual with Deaf parents). Although many of the distinctions represented in this table are commonly known to exist, the distinctions in number marking are ones that exist for this particular signer. Whether distinct number-marking forms are prevalent across signers is a question for further research.

(2-17) Summary table of ASL pronouns

PERSON		SING.	DUAL	TRIAL	QUAD.	QUINT.	PLURAL
1	incl.	✓	✓				
	excl.		✓	✓	✓	✓	✓
2		✓	✓	✓	✓	✓	✓
3		a,b,c,d ...	✓	✓	✓ / ?	✓ / ?	✓

Looking first to the category of person, we see that a three-way distinction of first, second, and third person exists throughout the pronominal system. Particularly interesting, from a cross-linguistic perspective, is the large number of third person singular pronouns. As was discussed above, non-present referents are established (or localized) at distinct locations in the signing space. Since there are an unlimited number of locations in space, it has been argued that there exist a potentially indefinite number of distinct pronominal forms (Padden, 1983/1988; Lillo-Martin and Klima, 1990). Additionally, because individual referents are associated with distinct locations in the signing space, pronominal reference to single individuals is unambiguous; once Nora has been established at location ‘a’, an index directed toward location ‘a’ *unambiguously* identifies Nora as the referent for the duration of the discourse.³⁸

As was detailed above, ASL has a fairly rich system of marking for number in its pronominal system. The general plural extends across all three person categories (WE, YOU-ALL, THEY), and there is also a fully indexical dual form. The morphological process of numeral incorporation leads to the creation of the cardinal

³⁸ There are, in fact, certain circumstances in which reference is not wholly unambiguous. In ASL discourse, abstract concepts and physical locations (such as cities) can also be localized in the signing space, usually as a strategy for comparison. For example, a signer might wish to compare her life growing up in Chicago with her experiences as an adult living in New York City. In this instance, Chicago might be localized to the signer’s left (at locus ‘c’ in (2-6)) and New York to the signer’s right (at locus ‘b’). In the course of the discourse the signer might also establish a non-present referent, her mother perhaps, at locus ‘c’ because her mother lives in Chicago. Consequently, later reference to locus ‘c’ could be argued to be ambiguous, in that an index to that locus could be interpreted as a reference to either the city of Chicago or to the signer’s mother. The correct interpretation is dependent upon the context of the utterance. I thank Karen Emmorey for bringing this exception to my attention.

plurals (trial, quadral, and quintuple). The exclusive category ('we' excluding addressee) is marked by a displacement of the sign to either the right or left side of the signing space. Furthermore, the exclusive distinction carries over into the numerally-incorporated forms.

Finally, there are no other semantic contrasts encoded in ASL pronouns; ASL pronouns are marked only for person and number.

2.4.2 Pronominal reference in other signed languages

Before delving into a discussion of pronominal reference in other signed languages, it is necessary to comment on signed languages as an object of cross-linguistic and typological study. Any typological study strives to include a range of languages that represents the widest variety of genetic and areal samples. Typological studies of spoken languages have a wealth of data from which to draw; a huge number of spoken languages have been described and analyzed in the linguistics literature, and a great deal is known about the historical relationships between the various language families.³⁹ Such is not the case for signed languages. While there is a rich and deep literature exploring the typology of the world's spoken languages, very few cross-linguistic or typological studies have been undertaken on signed languages. It is only recently that linguists have turned their attention to cross-linguistic study of signed languages.⁴⁰ There are two primary reasons for this. First, relatively few signed languages have been studied. Indeed, many would argue that research on signed languages is still in its infancy; the first linguistic study of a signed language, American Sign Language, appeared only in 1960 (William Stokoe's *Sign Language Structure*).

³⁹ For an introduction to the field of linguistic typology, see Croft (2002) and Comrie (1989). Additionally, see The International Encyclopedia of Linguistics (Frawley, 2003) for a guide to the historical relationships between spoken languages. Also of interest is the Ethnologue (<http://www.ethnologue.com/>), a comprehensive listing of information pertaining to the currently known languages of the world.

⁴⁰ Recently a workshop on typological and cross-linguistic study of signed languages was held at the 7th International Conference on Theoretical Issues in Sign Language Research, 2000. Additionally, there is now a sign language typology research group working out of the Department of Linguistics at the University of Cologne and the Max Planck Institute for Psycholinguistics in Nijmegen.

Since that time, the linguistic study of ASL has flourished, and over the past few decades, a growing number of signed languages have been researched. Nevertheless, signed languages remain relatively under-studied when compared to spoken languages.

A second factor contributing to the dearth of cross-linguistic and typological research on signed languages has to do with the fact that relatively little is known about the genetic classification of signed languages. While the historical relationship between French Sign Language and American Sign Language has been well documented (Woodward, 1978a; Lane, 1984; Padden and Humphries, 1988, among others), far less is known about the genetic relationship between other signed languages.⁴¹ Indeed, there is no published work that summarizes either the actual or supposed genetic relationships between all the various sign languages that have been researched.

Woodward (1978b) presents what remains the most comprehensive listing of sign language families. Using a modified Swadesh list, he measures the number of cognates between sign languages and uses this to determine whether two languages are dialects of the same language, belong to the same language family, or are distinct languages that belong to separate language families. While this is a start, Woodward himself points out that when studying signed languages, the potential for lexical iconicity can lead to a high number of false cognates. Nevertheless, I have utilized Woodward's classification in presenting data on other signed languages.

I will now go on to examine pronominal reference in five other signed languages. The languages considered are Italian Sign Language, or LIS (Pizzuto, 1986; Pizzuto, Giurana, and Giuseppe, 1990), Australian Sign Language, or Auslan (Johnston, 1989; 1991b; 1998), Danish Sign Language, or DSL (Engberg-Pedersen, 1986; 1993), Indo-Pakistani Sign Language, or IPSL (Zeshan, 1998; 1999, p.c.; Vasishta, Woodward,

⁴¹ There is some debate as to whether or not the historical-comparative method, which is the usual method for establishing genetic relationships between spoken languages, is an appropriate tool for sign language genetic studies. Nevertheless, Zeshan (in a posting on the Sign Language Linguistics discussion list) points to a few specific types of historical connections that may be helpful in understanding the historical relationships between individual signed languages. In particular, signed languages may be shown to be historically related due to colonization and emigration (British Sign Language, Australian Sign Language, New Zealand Sign Language), due to the history of the deaf education system (French and American sign languages), or due to political domination (sign languages in Japan, Taiwan and South Korea).

and Wilson, 1978), and Japanese Sign Language, or NS (Nihon Syuwa) (Fischer, 1996; Supalla and Osugi, unpublished). These five languages represent at least three distinct sign language families: the French Sign Language Group (LIS and DSL), the British Sign Language Group (Auslan), and the Asian Sign Language Group (NS) (Woodward, 1978b). Although the precise historical affiliation of Indo-Pakistani Sign Language (IPSL) is at present unknown, evidence suggests IPSL is not related to any European signed languages (Vasishta, Woodward, and Wilson, 1978).⁴²

Rather than summarize data from each signed language separately, I will examine each individual category (person, number, gender) in turn. To facilitate comparison, I will also include the data from American Sign Language. I begin with an examination of person distinctions.

2.4.2.1 Person distinctions across signed languages

The table in (2-18) represents a summary of person distinctions across the six signed languages reviewed in this chapter.

(2-18) Person distinctions across signed languages

ASL	LIS	AUSLAN	DSL	IPSL	NS
1	1	1	1	1	1
2	2	2	2	2	2
3...	3...	3...	3...	3...	3...

All of the signed languages considered here utilize an index, or ‘1’ handshape, (or some highly similar handshape, such as a lax index) directed toward the signer’s chest to indicate first person reference, and an index directed toward the addressee to

⁴² To an even greater extent than is true with ASL, the data available on pronouns in these signed languages is incomplete. Consequently, there are gaps in the data I will present and discuss.

indicate second person reference.⁴³ In addition, all signed languages considered here use strategies similar to those used in ASL to establish (or localize) nonpresent referents along a horizontal plane in the signing space.⁴⁴ Third person pronominal reference is made through an index directed toward the location previously associated with a referent. Zeshan (1998) points out that in IPSL, for some referents it is required or possible to localize referents in the upper signing space, as opposed to along the horizontal plane. The upper signing space is used for place names, and can be used for entities that have been invested with some degree of authority as well as referents that are physically remote from the signer (for example in a telephone conversation).⁴⁵

Finally, all signed languages appear to allow a theoretically unlimited number of non-present (third person) referents to be established in the signing space. As with ASL, because all individual referents are associated with distinct loci in the signing space, reference to individuals is largely unambiguous.

While the index is clearly the primary handshape utilized for singular reference in these signed languages, some variation does occur. In ASL, third person pronouns can be produced with an ‘open A’ handshape (closed fist with thumb extended) (Valli and Lucas, 1995:99). In some signed languages (ASL and Auslan, for example), there is a formal or honorific form of singular pronouns in which the handshape that surfaces is the ‘B’ handshape (semi-open or flat, fingers together, palm upwards) (Baker and Cokely, 1980:205; Johnston and Schembri, 1999:138). Similarly, Japanese Sign

⁴³ Meier (1990) and Engberg-Pedersen (1993) argue for a first / non-first distinction in ASL and DSL, respectively. Under this analysis, there is no formal distinction between second and third person reference. This possibility will be discussed at length below, in section 3.3, where I address the theoretical status of person marking, in general. Arguments against a first/non-first person analysis are presented in section 6.5. In this section of the thesis, however, the focus is on providing a description of the various pronominal forms in signed languages, not so much on the theoretical status of the categories, per se. As such, the summary in (2-18) classifies second and third person pronouns separately, in order to emphasize the fact that reference to singular participants is remarkably uniform across signed languages, irrespective of formal categories posited.

⁴⁴ On the generally assumed notion that these points in space are abstract, Johnston (1991b:58) notes that ‘it would be more correct to say that, for Auslan at least, the syntactic use of space involves a limited number of points and is based on the real world location and extension of actual or imagined referents’.

⁴⁵ Zeshan (1998:4) reports that when referents are localized in the upper signing space, the precise location of the pointing is not crucial; the upper locus used for a referent might change within the course of a conversation, and it is even possible for several different referents to be assigned the same locus.

Language (NS) has an honorific form of the second person singular pronoun, in which the ‘B’ handshape replaces the index handshape (Mike Morgan, p.c.).

Additional variation is evidenced in Japanese Sign Language (NS), where the first person singular pronoun can take one of three forms: an index handshape pointing to the chest, an index pointing to the nose, or the ‘open A’ handshape (with thumb extended) pointing to the chest (Morgan, p.c.). The second form (index pointing to the nose) is likely a borrowing from Japanese hearing culture, and the third form (‘A’ handshape, thumb extended) is largely restricted to males. As far as I can determine, the NS index to the nose is the only variation that occurs in the location component of first person singular pronominals; an index to the signer’s chest is essentially the universal form for first person singular reference in signed languages.

2.4.2.2 Number distinctions across signed languages

The number distinctions in the signed languages considered here pattern as in (2-19).⁴⁶

(2-19) Number distinctions across signed languages

ASL	LIS	AUSLAN	DSL	IPSL	NS
singular	singular	singular	singular	transnumeral	singular
plural	plural	plural	plural	dual	plural
dual	?	dual	dual	nonspecific	dual
3, 4, 5		3, 4	3, 4	plural	3, 4, 5
					(6-10)?

⁴⁶ In (2-19) I have included all information that is available in the literature as well as information gleaned from personal communication with sign language linguists. Based on available data, I am not able to comment on whether or not trial, quadral, and quintuple forms in other signed languages constitute grammatical number or rather are instances of numeral incorporation, as I have argued is the case for ASL (cf. section 2.4.1.2).

LIS, Auslan, and DSL all have a singular/plural distinction similar to that present in ASL, where the general plural form is marked by an arc-shaped movement that is added to the pronominal index. Plural marking in Japanese Sign Language (NS) is unusual in that it utilizes a distinct handshape. Mike Morgan (p.c.) reports that the first person plural pronoun is generally indicated by a ‘B’ handshape that moves along an arc, starting on the left side of the signer’s chest and ending on the right side of the signer’s chest. It has been suggested (Daisuke Hara, p.c.), that the general plural pronouns across all three persons in NS are, in fact, compound structures, but that the first element of the compound is usually deleted. For example, the second person plural pronoun is composed of two signs, the sign for YOU (sg) and the sign for ALL (‘B’ handshape, palm downward, with an arc-shaped movement). But Morgan reports that the initial index sign is deleted in virtually all signing situations, with the exception of some stage, or formal, signing situations.⁴⁷

All signed languages for which data was available appear to have a dual form similar to that found in ASL, where the ‘V’ handshape (or some variation of it) moves between two referential locations in the signing space (no data was available for NS). As is the case in ASL, the dual pronoun is fully indexic in that it indicates which referents are included. In terms of the cardinal plurals (trial, quadral, quintuple), there is considerable variation, not only among signed languages, but among signers within individual signed languages as well. Auslan and DSL have trial and quadral forms that appear to be used fairly consistently across signers.⁴⁸ In Japanese Sign Language (NS), Mike Morgan (p.c.) reports that while there are trial, quadral, and quintuple forms, the general plural is often used instead.⁴⁹ Quite unusual is the fact that in NS, the numbers

⁴⁷ As Morgan notes (p.c.), the compound analysis of the plural pronouns in NS might possibly be accurate, but to date no etymological evidence of this has been documented.

⁴⁸ On larger cardinal plural pronouns in Auslan, Johnston (1989:152) writes, ‘Though not impossible, the numerals above NINE tend not to be incorporated into personal pronouns because the formation of such numerals already requires a movement which is difficult to superimpose on the movement required to make the unincorporated pronoun itself.’

⁴⁹ On the infrequent use of the quintuple forms, Morgan (p.c.) reports ‘Since the NS number “5” is the thumb-extended A-hand rather than the 5-hand, the form FIVE-OF-US is more rare than the others (though NOT non-existent). Another reason for its rarity is possibly that a slightly curved 5-hand is used to indicate a group as a classifier.’

up to ten can be used as cardinal plurals, formed with an arc (circular motion) indexing the participants. In all other signed languages reviewed here, the limit on cardinal plurals was the number five.

Number marking in Indo-Pakistani sign language is, in many respects, distinct from number marking in the other signed languages considered here. Zeshan (1998; 1999; p.c.) reports that IPSL has a transnumeral form that is unspecified for number. In other words, a single point with an index finger can refer to any number of entities; it is the context of the discourse (and how many referents have been localized at the point in question) that determines whether singular or plural reference is intended. This is true not only for second and third person reference, but for first person reference as well. IPSL also has a dual form ('V' handshape, with middle and index finger extended, moving between two points of reference) that can mark for 'inclusive/exclusive-like' distinctions. In addition, IPSL has a 'nonspecific plural' (a half-circle horizontal movement) that refers to an indefinite number of persons.⁵⁰

The only signed languages for which I was able to find discussion of an inclusive / exclusive distinction in the first person were Auslan and Japanese Sign Language (NS). Johnston (1989) reports that in Auslan, the sweeping movement of the first person plural pronoun WE can be modulated in such a way as to indicate inclusion or exclusion of the addressee. Johnston writes, 'The signer ends the sweeping movement before the addressee to signify "we/us but not you", and ends with the addressee to signify "we/us and you"' (Johnston, 1989:140). Johnston includes no mention of whether or not the trial and quadral plurals can be modulated so as to include or exclude the addressee. In Japanese Sign Language (NS), the first person plural inclusive/exclusive distinction is marked by a variation in arc movement; in the inclusive form, the arc moves outward (from the left side of the signer's chest out into neutral space and then back to the right side of the signer's chest), while in the exclusive

⁵⁰ Ulrike Zeshan (p.c.) observes that number marking seems to interact with animacy in IPSL; in her data, the arc-shaped, 'non-specific plural' is used only with human referents. Because she has not elicited grammaticality judgments concerning this issue, she is unable to claim with assurance that there is an animacy restriction associated with this pronoun. Nevertheless, this could be an interesting variation and is thus worth noting.

form it moves inward (from the left side of signer's chest more directly across to the right side, without arcing out into neutral signing space; Morgan, p.c.).

2.4.2.3 Gender distinctions across signed languages

Finally, gender marking across these signed languages patterns as shown in (2-20).

(2-20) Gender distinctions across signed languages

ASL	LIS	AUSLAN	DSL	IPSL	JSL
--	--	--	--	--	???
					male
					female
					(optional?)

Only one of the six signed languages considered here has (possibly) morphological marking for gender; as the discussion below will reveal, it is not clear whether this gender marking is actually an integral component of the pronominal system.

Japanese and other Asian signed languages (Taiwan Sign Language, see Smith, 1990) are unique in that they use classifier handshapes to mark gender in certain classes of signs. In NS, a closed fist with the thumb extended upward represents 'male', while the same fist with the pinkie finger extended represents 'female'. Fischer and Osugi (2000) point out that the male and female handshapes are borrowed directly from Japanese culture, but that the use of these handshapes in NS appears to be completely grammaticized.

Supalla and Osugi (unpublished) report that these gender handshapes are used in four morphosyntactic paradigms: nominal lexemes referring to humans (where a combination of the two gender handshapes refers to 'couple'); classifier predicate constructions (where a verb of motion or location incorporates the masculine gender handshape to represent any animate entity); kinship lexemes (where the handshape

marks the gender of the referent, and placement in relation to other articulators denotes the familial status, as in ‘daughter’); and inflectional morphemes incorporated into agreement verb constructions (a gender handshape can mark the gender of the subject or object).

Fischer (1996) notes that, in addition to cooccurring with verb agreement, gender marking can cooccur with pronominal indexes. She gives only the following example.

(2-21) MOTHER_a COOK CAN INDEX_{a-1}

‘Mother can cook, she can.’

(INDEX_{a-1} simultaneously indicates gender and location).

In (2-21), subscript letters indicate spatial locations, while the subscript number ‘1’ indicates the female gender handshape. Susan Fischer (p.c.) comments that most often, the gender handshape is articulated on the nondominant hand, with the dominant hand index pointing to it. Less common is a form where the gender handshape is incorporated into the pronoun itself (in (2-21) above, the female gender handshape ‘1’ would be articulated at location ‘a’). It is not clear what restrictions apply to the use of gender handshapes within the pronominal system (for example, whether they can be used across all three person distinctions), nor is it clear whether or not this gender marking is a required component of a well-formed pronoun. Daisuke Sasaki (p.c.) reports that gender marking in NS pronouns is optional. If gender marking is, in fact, optional, this would suggest that it is not grammatical gender marking, but rather a productive morphological process at work (optionally) in parts of the pronoun system (c.f. discussion of grammatical number marking in section 2.4.1.2).

Finally, aside from the formal / honorific forms in ASL and Auslan, none of the signed languages considered encode other semantic contrasts within their pronominal systems (animacy, distance, proximity, kinship status, or tense).⁵¹

⁵¹ But see fn. 50 on the possible presence of animacy restrictions on the non-specific plural in IPSL.

Having discussed systems of pronominal reference across spoken and signed languages, I will now go on to examine the second domain of grammar in which person-marking plays a role – verbal agreement.

2.5 Verbal agreement in spoken languages

While the precise definition of what constitutes agreement is a matter of great debate (see Barlow and Ferguson, 1988)⁵², in the most general sense agreement refers to the formal relationship that exists between linguistic elements, whereby the form of one word requires a corresponding form of another word (Crystal, 1997:14). From a morphological perspective, agreement phenomena are inflectional (as opposed to derivational) in nature. On these two different uses of morphology (inflection and derivation), Aronoff (1994:126) writes ‘... inflection is the morphological realization of syntax, while derivation is the morphological realization of lexeme formation.’ Thus, the function of inflection, and by extension verb agreement, is to encode phrase-level properties and relations.

The range of syntactic relations encoded by agreement morphology varies from language to language and may include the following: 1) the agreement of a modifier or specifier with the head of the encompassing phrase; 2) the agreement of a predicate (or verb) with one or more of its arguments; 3) the agreement of an anaphoric expression with its antecedent; and 4) the agreement of a complementizer with the subject of its complement (Stump, 1998:22).⁵³ It is the second type of agreement, verb-argument agreement, that will be the focus of discussion here.

Before moving into a discussion of verb-argument agreement in spoken language, it will be helpful to introduce the relevant terminology, drawing on Corbett, 1995; 1998. Within a given construction, the element that determines the agreement is

⁵² On the debate surrounding the nature of agreement in natural language, Barlow and Ferguson (1988:3) write ‘no consensus has been reached on the limits to be set on what constitutes grammatical agreement or on the basic parameters in terms of which agreement phenomena can or should be characterized’.

⁵³ For more detailed discussions of agreement phenomena, see Moravcsik (1978), Barlow & Ferguson (1988), and Corbett (1995; 1998; 2003).

called the *controller*, while the element whose form is determined by agreement is the *target*. The term *domain* refers to the syntactic environment in which agreement occurs. Additionally, when we discuss in what respect there is agreement (agreement in number, for example) we are referring to *agreement features* or *categories*. Furthermore, with a feature such as number, the *values* of that feature would be singular, dual, plural etc.⁵⁴

In a language like English, a verb agrees in person and number with its subject. Take for example the following sentence:

(2-22) The dog barks every morning.

In (2-22) there exists a syntactic relation (the domain) between the subject (dog) and verb (bark). The verb *bark* is the target, which agrees with the subject *dog* (the controller). Because the subject is third person singular, the agreement features marked on the verb are person and number. The third person singular status of the subject is marked on the verb by the suffix *-s* and forms a constituent with it.

Looking at agreement in the broad sense (considering all four syntactic relations mentioned above), the most common agreement categories that can be marked in a language are the following: gender, number, person, case, and definiteness (Corbett, 1995; 1998). However, with respect to verb-argument agreement, the relevant categories found across languages are person, number, and gender.⁵⁵ In terms of the form that agreement takes, across the languages of the world we see the full range of inflectional morphology – prefixes, suffixes, and infixes (Corbett, 1998:196). Having sketched out the very basics of agreement, I will now present examples of agreement from several languages that have verb-argument agreement.

⁵⁴ Alternative terminology labels number a *category* and singular as a *property* or *feature* (Matthews, 1991)

⁵⁵ Using a sample of fifty languages from different language families and of varying cultural and geographic areas, Bybee (1985a:21) studied the various categories expressed inflectionally in verbs. For the agreement categories relevant to verb-argument agreement, the frequency values are as follows: person (56 percent), number (54 percent), and gender (16 percent).

2.5.1 Verb-argument agreement in person

As was briefly illustrated above (2-22), English verbs show person agreement, but only with third person referents. In other languages, however, person agreement within the verbal paradigm is much more widespread. For example, Russian has a three-person system that is directly reflected in verb-argument agreement.

(2-23) Russian verb-argument agreement (Corbett, 1998:194)

<i>ja беру</i>	I take
<i>ty bereš'</i>	you take
<i>on/ona берет</i>	he/she takes

Here the verb stem *ber* agrees with the subject of the clause; the controller of agreement is the noun phrase, and the target is the verb. The agreement takes the form of a suffix: *-u* marks first person subject, *-eš'* marks second person subject, and *-et* marks third person subject.

While the Russian data in (2-23) illustrates verb agreement with the subject, in other languages verbs can agree in person with both subject and object. The following data from Swahili is an illustration.⁵⁶

⁵⁶ The data in (2-24) has been adapted from Carstairs-McCarthy (1998:327) and Jannedy et al. (1994:157).

(2-24) Swahili verb-argument agreement

III	II	I	Stem	
a-	ta-	ni-	penda	's/he will like me'
a-	ta-	ku-	penda	's/he will like you'
a-	ta-	m-	penda	's/he will like him'
a-	ta-	tu-	penda	's/he will like us'
a-	ta-	wa-	penda	's/he will like them'
ni-	ta-	ku-	penda	'I will like you'
u-	ta-	ni-	penda	'you will like me'
tu-	ta-	m-	penda	'we will like him'
wa-	ta-	m-	penda	'they will like him'

In this example, the verb stem *penda* (like) has three prefixes. In order of proximity to the verb stem, the prefixal positions are labeled I (object agreement prefix), II (tense), and III (subject agreement prefix). As can be seen in (2-24), each of the three person categories has distinct agreement markers, and in some categories there is a morphological distinction between subject agreement and object agreement. In the category first person, subject and object arguments are marked identically on the verb, with the first person singular indicated by the prefix *-ni* and the first person plural by the prefix *-tu*. There is no singular vs. plural distinction in the second person agreement prefixes, but subject and object are differentially marked, with *-u* indicating agreement with the former and *-ku* with the latter. Finally, in the category third person, subject and object agreement are distinguished in the singular (by the prefixes *-a* and *-m*, respectively), but not in the plural, where both subject and object are marked by the prefix *-wa*.

2.5.2 Verb-argument agreement in number

In addition to person, verbs can agree with their subject arguments in number as well. As can be seen from the following example, verb agreement is often an additional means of marking number (Corbett, 2000:136).

(2-25) *Those kids are washing the dog.*

In (2-25) plurality is marked on the subject *kids* (the controller of agreement) and by agreement on two agreement targets: the demonstrative *those* and the verb *are*.

A second example of a language that marks number on both the controller noun and the verb is Russian (Corbett, 2000:180).

(2-26) *on* *rasskazyva-et tebe* *tak-ie* *anekdot-y?*
 3.SG.MASC tell-3.SG 2.SG.DAT such-PL.ACC joke-PL.ACC
 ‘Does he tell you such jokes?’

Here, the verb is marked third person singular by the addition of the suffix *-et*, agreeing with the third person singular pronoun *on* ‘he’. There is also number agreement outside the verb phrase, where the object noun phrase *tak-ie* ‘such’ is marked by the plural suffix *-ie* to agree with *anekdot-y* ‘jokes’.

There are, however, languages in which the main locus of number marking is the verb. In the Papuan language Amele (Roberts, 1987, discussed in Corbett, 2000:136-137), the verb must agree in number with the subject, as seen in (2-27).

- (2-27) a. Dana (uqa) ho-i-a
 man 3.SG come-3.SG-TODAY'S.PAST
 'The man came'
- b. Dana (ale) ho-si-a
 man 3.DU come-3.DU-TODAY'S.PAST
 'The two men came'
- c. Dana (age) ho-ig-a
 man 3.PL come-3.PL-TODAY'S.PAST
 'The men came'

In (2-27), the base verb *ho* 'come' agrees in number with the subject of the sentence. Number agreement is expressed on the verb by the suffixes *-i* (marking third person singular), *-si* (marking third person dual), and *-ig* (marking third person plural). The morpheme *-a* indicates today's past tense. In Amele, the noun may reduplicate to indicate plural marking (*dana-dana* for 'men'), but this is optional. Number may also be marked by pronominal copying (indicated by the parenthetic pronouns above), but this also is optional. Thus, Amele is an example of a language in which nominal number is always marked through verbal agreement.

2.5.3 Verb-argument agreement in gender

While less widespread than adjectival agreement with gender, verb agreement with gender is relatively common. Bybee (1985a:18) surveys fifty languages (selected so as to avoid areal and genetic bias) and finds that 16 percent of the languages show gender agreement in the verb. In Russian, verbs often agree in gender with subject noun phrases. Take, for example, the following sentences (Corbett, 1991:110).

- (2-28) a. žurnal ležal-Ø na stole
 magazine lay-MASC on table
 ‘the magazine lay on the table’
- b. kniga ležal -a na stole
 book lay-FEM on table
 ‘the book lay on the table’
- c. pis’mo ležal -o na stole
 letter lay-NEUT on table
 ‘the letter lay on the table’

In the examples above (2-28), the verb *ležal* ‘lay’ agrees in gender with the controller subject. When the subject noun is masculine, as is the case with *žurnal* ‘magazine’, agreement is marked by the zero suffix –Ø. Verb agreement with a feminine noun such as *kniga* ‘book’ is marked by the suffix –a. Finally, a subject noun like *pis’mo* ‘letter’ is of neutral gender, and is marked on the verb by the suffix –o.

A second example of gender agreement with verbs comes from Swahili, a language in which nouns are divided into eleven gender classes. Take, for example, the following sentences (data from Welmers, 1973:171-2, discussed in Corbett, 1991).

- (2-29) a. mtu a-li-kuja
 person 1-PAST-come
 ‘A person came’
- b. mshale u-li-anguka
 nail 3-PAST-fall
 ‘A nail fell’

In (2-29a), the addition of the prefix *a-* to the verb stem *kuja* ‘come’ shows class 1 agreement; the subject *mtu* ‘person’ is a noun of the 1/2 gender. The form of the verb

changes if there is a noun of a different gender; in (2-29b), the subject *mshale* ‘nail’ is a noun of the 3/4 gender, so the gender marking that surfaces on the verb is the prefix *u-*.

2.5.4 Verb-argument agreement in spoken languages: summary comments

While the data discussed in this section is, again, a miniscule sampling of the world’s languages, this brief survey of verb-argument agreement in spoken languages serves to illustrate one major point: verb-argument agreement is quite varied across spoken languages. First, there is variation in terms of whether or not verb-argument agreement exists in a given language. For those languages that do exhibit verb-argument agreement, there is variation in the semantic categories that are marked (person, number, gender), as well as variation in which distinctions are marked within each of those categories. Finally, there is tremendous variation in terms of *how* semantic categories and distinctions are marked – variation at both the phonological and morphological levels of structure. In Russian, verb-argument agreement is morphologically marked via the addition of suffixes, while in Swahili it is through a series of prefixes. While it is relatively rare, some languages employ tonal distinctions to mark verb-argument agreement. For example, in some Bantu languages tonal distinctions within finite verbal prefixes can signal the difference in subject and object person (John Hyman, p.c.). In the Kru language Grebo, the first and second person singular forms of indicative verbs are distinguished only by tone (Innes, 1966:62). Similarly, in the Athapaskan language Sekani, in some verbs the difference between first and third person singular subject is signaled solely by tone (Sharon Hargus, p.c.).

2.6 Verb-argument agreement in signed languages

A second domain in which we see locations in space used for reference is within the verbal agreement system of signed languages. In parallel with the above discussion of pronominal reference in signed languages (cf. section 0), I will look first at verb

agreement in American Sign Language (section 2.6.1) then move on to examine verb agreement in other signed languages (section 2.6.2).

2.6.1 Verb-argument agreement in American Sign Language

Only a subset of verbs in American Sign Language show agreement with clausal arguments. I begin this section of the thesis with a brief overview of the verb classes in ASL. This will be followed by a more detailed discussion of agreement verbs in ASL.⁵⁷

2.6.1.1 Verb classes in American Sign Language

Early research on verb classes in American Sign Language revealed that groups of verbs utilize the signing space in different ways and to varying degrees (Friedman, 1975; Fischer and Gough, 1978; Klima, Bellugi et al., 1979; Padden, 1983/1988). Focusing on morphological and syntactic characteristics, in particular agreement patterns, Padden (1983/1988) proposed three distinct classes of verbs: plain verbs, agreement verbs, and spatial verbs.

Plain verbs are not marked for either person or number, and thus require separate signs for subject and object.⁵⁸ It has been noted that, with plain verbs, word order plays a more direct role in the conveyance of grammatical relations. (2-30) is an

⁵⁷ There is a growing literature dealing with verb classes and verb-argument agreement in signed languages. Major works in this area include the following: Meier (1982), Shepard-Kegl (1985), Padden (1983/1988; 1990), Brentari (1988), Fischer and Gough (1978), Kegl (1990), Lillo-Martin (1991), Janis (1992; 1995), Bahan (1996), Supalla (1997), Meir (1998; 2002), Taub (1999), Mathur (2000), and Rathmann and Mathur (2002).

⁵⁸ Plain verbs can, in fact, occur without an overt subject pronoun. Lillo-Martin (1986, 1990) discusses this phenomenon as one of two types of *pro*-drop at work in ASL. In a discourse-oriented, topic-prominent language such as ASL, when a plain verb occurs without an overt subject pronoun, the pronoun is not considered to be null, but rather a variable that is bound by a null-topic operator. A rule of coindexation identifies the variable with a preceding discourse topic. Lillo-Martin argues that this type of *pro*-drop is similar to what is evidenced in other discourse-oriented, topic-prominent languages such as Chinese (see Huang, 1984; 1989).

example of an ASL sentence containing a plain verb. In this example, as well as in examples that follow, pronominal indexes are glossed as 'IX'.⁵⁹

(2-30) a. IX₁ LIKE IX_a
'I like him/her'

b. I LIKE HIM/HER



In (2-30), the verb LIKE is uninflected; neither the subject nor the object is marked (spatially) on the verb. Rather, separate signs for the subject (I) and object (him/her) are required. In this case, the signs for subject and object are pronouns, indexes directed toward referential locations that have previously been associated with specific referents (cf. section 2.4.1.1). Thus, in (2-30a) the gloss IX₁ represents a pronominal index directed toward the signer's chest (first person reference), while the gloss IX_a represents an index directed toward location 'a' in the signing space, a location presumably associated with a non-present referent. Other examples of plain verbs are KNOW, THINK, and HIDE.

In contrast, *agreement verbs*⁶⁰ are lexically specified as to which arguments they can agree with. Utilizing the association of nominals with locations in space (cf. section

⁵⁹ The subscripts in (2-30) indicate the location toward which the pronominal index is directed: a '1' subscript denotes an index toward the signer (first person); a '2' subscript is an index toward the addressee (second person); and a subscripted letter indicates an index directed toward a point in space that has been previously associated with a non-present referent (third person).

⁶⁰ Padden (1983/1988) referred to this class of verbs as *inflecting verbs*. Other terms found in the literature include *indicating verbs* (Liddell 2000b) and *directional verbs* (Baker and Cokely, 1980).

2.4.1.1), agreement verbs morphologically mark subject and/or object.⁶¹ Like pronouns, agreement verbs can mark for person and number, but they do not mark for gender. In terms of their structure, the common assumption is that agreement verbs consist of a verbal root to which specific agreement morphology attaches (Padden, 1983/1988). Agreement morphology surfaces as changing path movement and/or orientation of the verb root, and the beginning and endpoints of articulation serve as agreement markers (affixes) identifying the arguments. One example of an agreement verb is HELP.

(2-31) a. fs-MARY_b bHELP_c fs-JOHN_c

‘Mary helped John.’

b. fs-MARY_b

bHELP_a

JOHN_a



In this example, the subscripts ‘b’ and ‘c’ on Mary and John indicate that these signs are articulated at distinct and particular locations in the signing space, loci ‘b’ and ‘c’ respectively. The corresponding video stills capture the last letter of the name as it is fingerspelled at the referential location (‘y’ in the case of Mary, and ‘n’ in the case of John). The articulation of these signs at these locations serves to establish both Mary and John as referents in the discourse (cf. section 2.4.1.1). The first subscript on the verb HELP indicates that the starting point of the articulation of this verb is location ‘b’, and the second subscript indicates the endpoint of the articulation, location ‘c’. The movement of the verb HELP from location ‘b’ to location ‘c’ (depicted in the second

⁶¹ While the general consensus is that these verbs are morphologically marked for agreement with syntactic subjects and objects, some researchers have argued that the behavior of these verbs is determined by the *semantic* roles associated with the arguments in question (Janis, 1995; Meir, 1998; 2002; Taub, 2001). Additionally, a clitic analysis of locations has been proposed by some (Reilly and McIntire, 1980; Shepard-Kegl, 1985; Kegl, 1986).

and third video stills) serves to mark agreement with the subject (MARY) and object (JOHN) of the sentence. Agreement verbs will be discussed in greater detail below in section 2.6.1.2).

The third and final class of verbs is *spatial verbs*. These verbs use space to refer to locations rather than subjects or objects (Padden, 1983/1988; Liddell, 1990a). There is no inflection for person or number, but instead spatial verbs have locative affixes. These verbs utilize space in a topographic manner, with the beginning and ending locations (in terms of the articulation of the verb) representing actual locations in space. Examples of spatial verbs are CARRY-BY-HAND and MOVE-FLAT-OBJECT.

- (2-32) a. MOVE-FLAT-OBJECT-FROM-*a*-TO-*b*
 ‘move object from location ‘a’ to location ‘b’’

b.



In (2-32) the locations in space, ‘a’ and ‘b’, do not represent referents in the discourse, but rather three-dimensional locations in the signing space – the initial and final endpoints of the object being moved.

Subsumed under the general class of spatial verbs is a large class of signs referred to in the literature as classifier predicates or verbs of motion and location (Supalla, 1978; 1982; 1986). With these verbs, specific handshapes (classifier handshapes) are combined with location, orientation, movement, and nonmanual signals to form a predicate. For example, the English sentence *The person walked by* might be signed in ASL by articulating the person classifier (a ‘1’ handshape, upright orientation)

and moving it from right to left across the signing space. In these constructions the use of space is not lexical, but rather topographic. The relationship between locations in space is three-dimensional; there exists a one-to-one correspondence between the elements of the classifier predicate and what they represent in the real world.⁶²

Two of the three verbs classes mentioned above utilize space and spatial relations in linguistically significant, yet apparently distinct, ways.⁶³ The common claim is that spatial verbs utilize locative morphology to realize relations in *topographical space*. It is argued that agreement verbs, on the other hand, utilize locations within *syntactic space* (Poizner, Klima, and Bellugi, 1987). Exactly how and to what degree these two types of space are distinctly utilized in ASL and other signed languages is a matter of considerable theoretical interest, one that has recently begun to receive attention in the literature.⁶⁴ In the present discussion, I will leave these questions aside.

2.6.1.2 Agreement verbs in American Sign Language: a closer look

When agreement verbs are used, overt pronouns are not needed to indicate the subject or object of a clause. Rather, the articulation of an agreement verb incorporates specific locations in space which, through nominal establishment, have been associated with specific referents.⁶⁵ These locations, it is claimed, mark agreement with subject and object arguments (Padden, 1983/1988).⁶⁶

⁶² For an overview of classifier predicates in ASL, see T. Supalla (1986). Additionally, Engberg-Pedersen (1993:227-305) provides an excellent discussion of classifier predicates (what she refers to as polymorphemic verbs) in Danish Sign Language.

⁶³ Padden (1990) provides an interesting and informative discussion of the relation between space and grammar in ASL verbs.

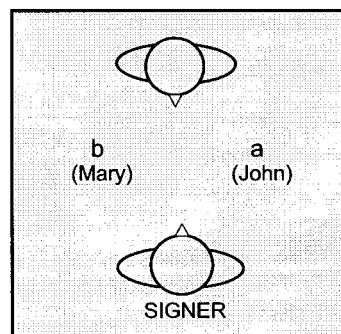
⁶⁴ See Johnston (1991b) for a discussion of the ways in which the topographical and syntactic uses of space in Auslan are not fundamentally different. See also Engberg-Pedersen (1993: 310-311) who argues for 'a continuum between using space to express locative notions and using space to express other kinds of semantic and pragmatic notions.'

⁶⁵ Neidle et al. (2000:34) discuss an unmarked form of agreement in ASL, in which the beginning of the agreement verb is articulated at a location close to the signer's body. The articulation of this unmarked form of agreement is quite similar to that of first person subject agreement.

⁶⁶ In addition to manual agreement, agreement may be marked nonmanually, through the use of a head tilt and eyegaze (Bahan, 1996). In transitive sentences, the head can tilt toward the location associated with

The diagram in (2-33) represents a signing situation in which two referents, John and Mary, have been established in the signing space. The sentences in (2-34) are examples of a single agreement verb, GIVE, moving between these locations in space. In both of these sentences, the direction of the movement is significant in that it directly affects the meaning of the individual sentences.

(2-33) Schematic diagram of signing situation for examples (2-34 and b)



(2-34) a. fs-JOHN_a _aGIVE_b fs-MARY_b FLOWER
'John gave Mary a flower.'

b. fs-MARY_b _bGIVE_a fs-JOHN_a FLOWER
'Mary gave John a flower.'

In both of these sentences, the verb GIVE is articulated between two referentially significant locations in the signing space. In (2-34a) GIVE begins at location 'a' (the location at which the non-present referent John has been established) and moves left across the signing space to location 'b' (the location at which non-present referent Mary has been established). Thus, the direction of the movement (from 'a' to 'b') indicates the subject and object of the verb, and the loci 'a' and 'b' are considered third person agreement markers. The meaning of the sentence can only be 'John gave Mary a

the subject, and the eyes can gaze toward the location that has been associated with the object. While these nonmanual agreement markings are not required, they occur frequently, with both agreeing and plain verbs (Neidle et al., 2000:64).

flower’. If the movement of the verb GIVE is reversed, as in (2-34b) the subject and object are reversed as well, and the result is a change in meaning: ‘Mary gave John a flower’.

Now, if in the same discourse a signer were to establish two additional referents at distinct locations in the signing space (let’s say ‘c’ and ‘d’) these loci could be used in a similar fashion, to indicate subject and object agreement with the same, or any other, agreeing verb.

- (2-35) a. fs-FRED_c _cGIVE_d fs-JANE_d CANDY
 ‘Fred gave Jane candy.’
- b. _cGIVE_a MONEY
 ‘Fred gave John money.’
- c. _dGIVE_b BOOK
 ‘Jane gave Mary a book.’
- d. ₁GIVE_b BOOK
 ‘I gave Mary a book.’

In (2-35a) two new referents, Fred and Jane, are established at locations ‘c’ and ‘d’ in the signing space, and the verb GIVE can be moved between these locations to indicate subject and object agreement. As the examples in (2-35b-d) illustrate, once a referent has been established at a location in the signing space, neither the name of the referent nor a pronominal index needs to be articulated when an agreement verb is used. Examining the sentences in (2-34) and (2-35), some interesting observations can be made. Although each has its own specific referent in the discourse (a referential relationship established through nominal association) all four loci serve as third person singular agreement markers. Additionally, because space is infinite, the number of loci that can be associated with nominal referents is, theoretically, unlimited. From a morphological standpoint, the fact that there is an unlimited number of possible

locations toward which a signer's hand can be directed poses a problem; how is it that a single morpheme (in this case third person singular) can have an unlimited number of surface forms? This question, originally raised by Lillo-Martin and Klima (1990) and more recently discussed by Liddell (1995), is one of the central questions driving the present inquiry, and considerable attention will be devoted to it in the remainder of the thesis.⁶⁷

Within the class of agreement verbs as a whole, there is a tremendous amount of variation as to which grammatical roles can be marked on a given verb, the order in which those grammatical roles are marked, and which morphemic elements are used to mark them.⁶⁸ The following table summarizes the inflectional variation present in ASL agreeing verbs.

(2-36) Inflectional variation in American Sign Language agreement verbs

MORPHEMIC ELEMENTS		GRAMMATICAL ROLES MARKED	EXAMPLES
Location		Subject / Object	HELP
		Object / Subject	HIRE
		Object only	TELL
Orientation		Subject and Object	HATE
Location & Orientation		Subject / Object	ASK
		Object / Subject	COPY
Reciprocals	Location	Subject	UNDERSTAND-EACH-OTHER LOOK-AT-EACH-OTHER
	Orientation	Object	

⁶⁷ Both Lillo-Martin and Klima (1990) and Liddell (1995) discuss this problem with respect to pronouns, but the same issue surfaces in agreement morphology as well.

⁶⁸ Supalla (1997) examines the inflectional variation in ASL verbs (excepting spatial verbs) and argues for five subclasses of verbs: 4-, 3-, 2-, 1-, and 0-agreement feature verbs. He develops an implicational hierarchy which accounts for the particular agreement features that may be marked in each of these subclasses (i.e. object number, object person, subject person, and subject number).

The left-most column in (2-36) lists the distinct morphemic elements (and combinations thereof) that can be used to mark verb-argument agreement in ASL; agreement can be marked by location (sometimes referred to in the literature as path movement), orientation of the hands, or a combination of both location and orientation. Starting with the top row, among the verbs that mark agreement via location only, some verbs mark the syntactic subject first, then the object (i.e. the articulation of the agreement verbs begins at the location associated with the subject and ends at the location associated with the object). Examples of this class of agreement verbs are **HELP** and **GIVE** (cf. examples (2-34) and (2-35) above). With other agreement verbs, such as **HIRE**, the beginning location corresponds to the object, while the ending location indicates the subject of the sentence. These verbs have been referred to as ‘backwards verbs’ in the sign linguistics literature (Padden, 1983/1988; Brentari, 1988). Additionally, some verbs in ASL can mark agreement only with the syntactic object, and thus it is only the ending location of the verb that signifies agreement.⁶⁹

Moving down to the second row of (2-36), some agreement verbs mark agreement with subject and object, not by a change in location, but rather by the orientation of the hands. Take, for example, the following sentences:

- (2-37) a. ₁HATE₂
 ‘I hate you.’
- b. ₂HATE₁
 ‘You hate me.’

In both (2-37a) and (2-37b), the verb **HATE** is articulated in neutral signing space; the verb itself does not move between referential locations in the signing space to indicate agreement with subject and object. Rather, it is the orientation of the dominant hand

⁶⁹ Many, if not all, of these verbs are body-anchored (i.e. they are specified for a place of articulation that is on the body). As such, the fact that the object is the only argument marked is likely a result of articulatory and lexical constraints; because the beginning location of the verb is lexically specified, there is no ‘open location slot’ to be filled by an R-loci associated with a subject.

(the hand on which this one-handed sign is articulated) that marks agreement; the back of the hand faces the subject, while the front of the hand faces the object. Thus, it is a change in orientation that alters the meaning, from 'I hate you' to 'You hate me'.

A third class of agreement verbs (represented in row three of (2-36)) utilizes a combination of location and orientation to mark agreement with the syntactic subject and object. Within this class, some of the verbs (for example ASK) move from the subject location to the object location. But whereas a verb like HELP (which utilizes only location to mark agreement) has no change in orientation, in a verb like ASK the palm of the hand always faces the object. Other verbs in this class utilize location and orientation to mark object then subject (these are considered backwards verbs, similar to those discussed above). For example, with the verb COPY, a two-handed sign, the non-dominant hand ('B' handshape, thumb extended) does not move, but is oriented such that the palm faces toward the subject. The dominant hand (in an open '5' handshape) initially contacts the non-dominant hand, then moves away toward the location of the subject, while the fingers come together.

Finally, reciprocal verbs use both location and orientation to mark two subjects and two objects. In these verbs, the subjects are marked by the location of the signing hands, and the objects by the orientation. I will discuss one example of a reciprocal verb, the verb UNDERSTAND-EACH-OTHER. The simple verb UNDERSTAND (a plain verb) is formed by placing the dominant hand, with the fist closed, near the side of the forehead, the back of the closed fist facing outward, then flicking the index finger up once (the ending handshape is a 'D' handshape). This plain verb cannot utilize locations in the signing space to mark subject and object agreement. The reciprocal verb UNDERSTAND-EACH-OTHER is a two-handed sign.

(2-38) ₁UNDERSTAND-EACH-OTHER₂

'You and I understand each other.'

In (2-38) each of the two hands articulates the sign UNDERSTAND. The dominant hand articulates UNDERSTAND as in the plain verb (location to the side of the

forehead, indicating one subject) but crucially the orientation is palm outward, facing the location that has been associated with one object. The non-dominant hand is located in front of the addressee (the second subject), with the palm oriented toward the signer (indicating that the signer is the object). Thus, there are essentially two verbs articulated simultaneously, each marking the subject via location and object via orientation.

2.6.1.3 Number marking in ASL agreement verbs

In addition to morphologically marking grammatical arguments, agreement verbs in ASL can inflect for number. As is the case with pronouns, number marking on agreement verbs is largely accomplished through modulations in movement that incorporate, to a greater or lesser degree, referential locations in the signing space. For example, predicates can be modified to indicate two objects. The dual marking in ASL takes one of two forms (Padden, 1983/1988). The first form of dual marking is accomplished by articulating the verb first to the R-locus of one object, then directly to the R-locus of the second object. Alternately, the verb stem can be doubled to a two-handed form and articulated either simultaneously or two times in sequence. Padden notes that either of these two forms can be used with dual objects, but with dual subjects, only the first form is possible (1983/1988:32).⁷⁰

A second type of number inflection present in ASL agreement verbs is the multiple inflection (Klima, Bellugi et al., 1979; Padden, 1983/1988). The multiple inflection is marked on the verb by the addition of an arc-shaped sweeping movement along the horizontal signing plane. The location of the arc movement depends upon the referential locations of the object arguments. The verb GIVE, for example, when inflected for multiple number, conveys the meaning that something was given out to

⁷⁰ Klima, Bellugi et al. (1979:281) note that a trial form of verb agreement (one that specifies separate actions with respect to a trial argument) is present for some signers. They give no specific examples of this trial form, however, and there is limited reference to such a number category in the literature.

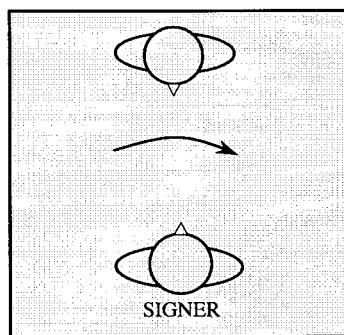
many individuals, but that the action is viewed as a single episode. The following example of the multiple inflection is from Klima, Bellugi et al. (1979:282).

(2-39) HOMEWORK, TEACHER GIVE [N:multiple]

‘The teacher gave out homework to them.’

A schematic diagram of the multiple inflection might look as follows.

(2-40) Schematic diagram of the multiple inflection in ASL



Padden (1983/1988:36) notes several distributional restrictions on the multiple inflection; namely, the inflection can only be used to mark object agreement, and only with verbs whose stems have a single movement component (such as GIVE, INFORM) – verbs with repeated movement (such as FLATTER, CRITICIZE, FINGERSPELL-TO) cannot be inflected for multiple agreement.

Finally, it is worth noting that the grammatical categories of number and distributional aspect are quite interrelated in ASL. For example, in the exhaustive form of inflected verbs, there is movement toward three or more locations (Fischer and Gough, 1978; Klima, Bellugi et al., 1979). Take for example the following sentence (from Klima, Bellugi et al., 1979:284).

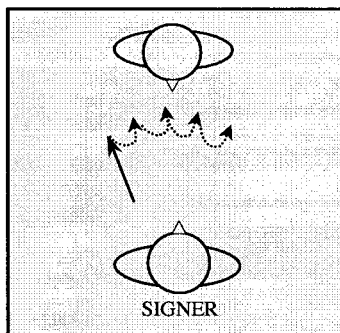
(2-41) DIPLOMA, PRINCIPLE GIVE [N:exhaustive]; ME NONE.

‘The principle gave out a diploma to each one, except for me.’

Under the exhaustive inflection, the sign give specifies a separate act of giving with respect to each recipient, yet the action is still viewed as a single event. The exhaustive

inflection takes the form of multiple iterations of the verb, together in a series along an arc in the horizontal indexic plane, with each successive articulation displaced laterally. A schematic diagram of the exhaustive inflection might look as follows.

(2-42) Schematic diagram of the exhaustive inflection in ASL



Before moving on to a discussion of verb agreement in other signed languages, a few comments on indexicality and verbal agreement are in order. When agreement is with a singular subject and/or object, the agreement is largely indexic; that is, the movement of the verb between referential locations ‘points to’ the subject and/or object arguments. With plural forms, however, agreement verbs are less indexic; that is, the precision with which verbs agree with previously established argument locations is greater with singular verbs than with plural verbs (Cormier, 2002:149). Cormier analyzed multiple instances of the agreeing verb GIVE found in her corpus, and reports that ‘the mean distance between singular indexers and verbs is 124.9mm (SD=58.4). In contrast, the mean distance for plurals was 176.6mm (SD 84.9)’ (2002:149). Thus, in agreement verbs we see a situation that is similar to that found with plural pronouns, where the presence of number marking can lead to a loss of indexicality (cf. section 2.4.1.2).

2.6.2 Verb agreement in other signed languages

While research on the classification of verbs in signed languages began with investigations into American Sign Language, over the past two decades research on other signed languages has revealed that verb agreement across signed languages is remarkably similar.⁷¹ In this section I will present a brief discussion of verb agreement properties in five other signed languages.⁷² As in section 2.4.2 above, where pronominal reference was discussed, the languages considered and references consulted are as follows: Italian Sign Language (Pizzuto, 1986; Pizzuto, Giurana, and Giuseppe, 1990), Australian Sign Language (Johnston, 1989; 1991b; Johnston and Wilken, 1998), Danish Sign Language, (Engberg-Pedersen, 1986; 1993), Indo-Pakistani Sign Language (Zeshan, 1998; 1999; p.c.; Vasishta, Woodward, and Wilson, 1978), and Japanese Sign Language, or NS (Nihon Syuwa) (Fischer, 1996; Supalla and Osugi, unpublished). In addition, I have also consulted some recent cross-linguistic studies that examine verb agreement in signed languages, namely Supalla (1997) and Mathur (2000).

Starting with an overview of the verb agreement characteristics discussed above for ASL, a summary table is presented in (2-43).

⁷¹ The similarity of verb agreement across signed languages has been noted by several researchers, among them are Pizzuto (1986), Johnston (1989), Sandler (1993), Meir (1998), Newport and Supalla (2000). For cross-linguistic studies examining verb agreement in signed languages, see Supalla (1997), Mathur (2000), Mathur and Rathmann (2001), Rathmann and Mathur (2002).

⁷² In addition to the six signed languages considered in this chapter, verb agreement has been researched in several other signed languages, including the following: British Sign Language (Brennan, 1981; Deuchar, 1984; Kyle and Woll, 1985); Israeli Sign Language (Meir, 1998), Taiwan Sign Language (Smith, 1990), Sign Language of the Netherlands (Bos, 1990; 1993), and German Sign Language (Prillwitz, 1986; Keller, 1998; Gluck and Pfau, 1999).

(2-43) Verb agreement properties across signed languages

PROPERTY	ASL	AUSLAN	LIS	DSL	IPSL	NS
VERB CLASSES	✓	✓	✓	✓	✓	✓
PERSON MARKING	✓	✓	✓	✓	✓	✓
INFLECTIONAL VARIATION	✓	✓	✓	✓	✓ / ?	✓
NUMBER MARKING	✓	✓	✓	✓	✓ / ?	✓ / ?
GENDER MARKING	--	--	--	--	--	?

In (2-43), a check mark indicates that the property in question exists in the signed language. A check mark followed by a question mark indicates that while there is mention of that property in the literature, I was unable to find extensive discussion in the available (published) sources.

All signed languages reviewed here evidence the same verb classes originally identified by Padden (1983/1988) and discussed at length above: plain verbs, agreeing verbs, and spatial verbs (cf. sections 2.6.1.1 and 2.6.1.2).⁷³ Furthermore, in each of the signed languages considered, locations in the signing space are used to mark person agreement with subject and/or object arguments. In other words, the locations between which an agreeing verb moves (and/or the locations toward which the hands are oriented) serve to mark person distinctions.

⁷³ Engberg-Pedersen (1993:160-161) provides a classification for verbs of Danish Sign Language that is slightly different than the standard classification originally proposed by Padden (1983/1988). Her typology is based on a distinction between modifications for distribution, semantic agreement, and pragmatic agreement. She posits, for DSL, a major distinction between polymorphemic verbs (i.e. classifier predicates) and non-polymorphemic verbs, the latter of which she subdivides into plain verbs (which allow no modification), agreement verbs (which can be modified to show semantic and pragmatic agreement) and other non-polymorphemic verbs (which can be modified to show pragmatic, but not semantic, agreement).

With respect to inflectional variation (c.f. (2-36)), all of the signed languages considered here appear to show a range of inflectional behavior within the broad class of agreement verbs, though not all analyses describe the variation in the same terms used above for ASL. For example, Johnston (1991b:32) analyzes spatially inflecting verbs as falling into three major subtypes: ‘directional’ signs (which change their beginning and endpoints, and thus direction of movement); ‘orientating’ signs (which change their orientation to indicate subject and object); and ‘locating’ signs (which change their place of articulation). Additionally, Johnston distinguishes two subgroups of partially directional signs (‘end directional’ and ‘beginning directional’) and one subgroup of locating signs.⁷⁴

In describing the various subtypes of agreement verbs in Danish Sign Language, Engberg-Pedersen (1993:57-59) notes that there are both single and double agreement verbs; the former can agree with the patient or indirect object, but never with an agent argument, while the latter can agree with two arguments (an agent argument and either an indirect object argument or a patient argument). As with ASL, DSL has both regular and backward verbs, as well as reciprocal verbs. Also similar to ASL is the fact that agreement can surface as a change in path movement (beginning and/or ending location) and / or orientation.

Italian Sign Language (LIS) and Japanese Sign Language (NS) are two of the five signed languages that Supalla (1997) examines in his cross-linguistic study of verb agreement in signed languages. These languages (as well as the others he considers – British, Finish, and Swedish Signed Languages) show the same subclasses of agreement verbs that Supalla posits for ASL (discussed in fn. 68). Furthermore, all of the signed languages included in his study follow the same implicational hierarchy in verb agreement features (object number > object person > subject person > subject number) (Supalla, 1997:45). While Supalla stresses that his investigation is only preliminary, and that a great deal more research needs to be done, it is clear that the inflectional variation present in ASL is also present in other signed languages.

⁷⁴ See also Johnston (1998:580-581).

Number marking in agreement verbs is not well documented across signed languages. In fact, I found no explicit discussion of number marking on agreement verbs for LIS, IPSL, or NS. While it is probably safe to assume that all signed languages considered here do mark at least some distinctions of number on agreement verbs (perhaps an added arc to indicate multiple), there is simply not a great deal of published research in this area. Additionally, given the fact that number marking is an area in which signed language pronouns *do* vary cross-linguistically (cf. section 2.4.2.2), there is likely to be variation in agreement verb number marking as well. Here I will review what little discussion I have found.

Johnston (1989:164) notes that directional verbs (i.e. agreement verbs) in Auslan ‘can incorporate the plural sweep’; this would be analogous to the multiple inflection discussed in section 2.6.1.3. Engberg-Pedersen argues that, in Danish Sign Language, number marking does not exist as a separate form of inflection apart from distribution. She writes, ‘Signs in predicative use, with an added linear, circular, semicircular, or random movement, with or without reduplication, have a distributive meaning besides denoting number’ (1993:166). Thus an agreement verb such as GIVE, when made with a semicircular movement (similar to the general plural or multiple inflection in ASL, cf. (2-40)) holds the meaning of distributed among members of a group.

Finally, as was the case with pronouns (cf. section 2.4.2.3) gender marking is generally not present across signed language agreement verbs. The one possible exception to this comes, again, from Japanese Sign Language (NS), where indexical classifiers, or ICs (handshapes that can occur on either the dominant or non-dominant hand, and that serve to represent human beings), interact with verb agreement. In ASL, the upright index (or ‘1’) handshape is a classifier that represents an upright human entity. This classifier handshape surfaces primarily in classifier constructions, where a verb of motion or location is overlaid (such as PERSON-APPROACH), but it also appears in on the non-dominant hand in signs like EXPOSE, BEAT-UP, FLATTER (Fischer and Osugi 2000). Recall from section 2.4.2.3 that in Japanese Sign Language, the indexical classifier can be marked for gender; the upright thumb represents a male, and the upright pinkie a female. Fischer and Osugi (2000) report that in NS, ‘virtually

any verb (with a human object) that can take locus agreement can also take IC agreement, at least for third person' (p.2). Thus, with an agreement verb like TELL, there are three distinct ways of showing agreement with a third person object: moving the verb toward the location in space that has been associated with the referent (meaning 'tell a person'); moving the verb toward a MALE IC (meaning 'tell him'); and move the verb toward a FEMALE IC (meaning 'tell her'). It is not clear to this author whether this constitutes grammatical gender agreement, or rather the (redundant) addition of a classifier handshape. However, the fact that the IC is optional lends support to the latter analysis.

2.7 General summary and initial observations

In this chapter I have reviewed data on pronouns and verb-argument agreement in both spoken and signed languages. While brief summaries have been included in major sections above, here I will summarize the findings and offer some initial typological observations regarding referential morphology in signed languages.

Referential morphology in spoken language is quite varied. Across the pronominal systems of the world's languages, there is variation in terms of which semantic categories are marked, as well as which distinctions are marked within those categories. In addition, there is a tremendous amount of variation (at both the morphological and phonological levels) in how semantic distinctions are marked. Verb-argument agreement across spoken languages is varied as well; in addition to the above types of variation (variation of categories and distinctions marked, and variation in manner of marking), spoken languages vary in terms of whether or not verbs show agreement with their arguments. The situation in signed languages is markedly different. Here I will briefly discuss two typological observations concerning referential morphology in signed languages. Both of these observations will be discussed at greater length in Chapter 5.

Despite the fact that the signed languages analyzed here represent several language families, there appears to be a tremendous amount of uniformity across signed languages in the way reference to individuals in a discourse is structured.⁷⁵ Pronominal reference to single individuals is virtually identical across signed languages, at both the phonological and morphological levels. One aspect of the phonological form of personal pronouns, the index handshape, is either identical across languages, or is very closely related.⁷⁶ As for location, the forms of first and second person reference are virtually identical across the signed languages considered here; first person reference is through an index to the signer's chest, and second person reference takes the form of an index directed toward the addressee. Furthermore, all six signed languages reviewed here use locations in the signing space for reference to non-present individuals. Through strategies of nominal establishment (or localization) that are similar across languages, non-present referents are localized at distinct locations in the signing space, and further reference to an individual within a given discourse is through an index to the specific location with which she has been associated. While there are strong similarities across signed languages in terms of how number distinctions are marked (for example the general plural sweeping movement), there is some interesting variation (variation in which distinctions are marked, and variation in the phonological form of those markings).

As with pronominal reference, there is considerable homogeneity across the verbal agreement systems of signed languages. All six signed languages considered here utilize locations in space (the same referential locations that are so integral to the pronominal systems of signed languages) to mark subject and object agreement on

⁷⁵ That signed languages are similar in how they refer to individuals in a discourse has been noted by many researchers, among them are Johnston (1989), Emmorey (1996), Newport (1996), Newport and Supalla (2000), among others.

⁷⁶ While the phonological form of personal pronouns is highly similar across signed languages, this is not true in the case of possessive and reflexive pronouns. Although locations in space are still used, there appears to be considerable variation in handshape among languages in the possessives and reflexives. Furthermore, some signed languages do not have separate forms for possessive; for example, IPSL has no possessive form, rather the basic pronominal index is used in a position preceeding the possessed item (Zeshan, 1999).

agreeing verbs. In addition, all signed languages seem to exhibit similar types of inflectional variation within the broader category of agreeing verbs.

Referential specificity

A second aspect in which signed languages appear to be quite distinct from spoken languages is the overall specificity of reference. In spoken language pronominal systems, while reference to first and second persons is unambiguous within a discourse (the pronoun *I* refers specifically to the speaker, while the pronoun *you* refers specifically to the addressee),⁷⁷ reference to third persons is not. For example, in English the third person pronoun *he* refers only to a non-present, male individual. In contrast, in signed languages, reference to all single individuals in a discourse is largely unambiguous. Through the establishment of referents in the signing space, the location component of singular pronouns allows for complete and unambiguous reference. Once a non-present referent has been established in the signing space (at location ‘a’, for example), an index back to that location unambiguously identifies that referent (cf. section 2.4.1.1).

The overview of pronouns and agreement presented in this chapter has revealed that spoken and signed languages are, in certain respects, distinct in terms of how systems of reference (and in particular referential morphology) are structured. Whereas spoken language referential morphology is characterized by variation, signed language referential morphology is quite homogeneous in many respects. What underlies this difference between spoken and signed languages is the ability of signed languages to utilize locations in the signing space for reference to individuals in a discourse. It is the use of spatial locations to convey person distinctions that sets signed languages apart from spoken languages.

In the next three chapters of this thesis I examine more closely the grammatical category ‘person’ and the extent to which the notion of grammatical person can (or cannot) account for the referential morphology of signed languages (and in particular

⁷⁷ This is not true of reported speech, where both *I* and *you* can refer to referents other than the actual speaker and addressee.

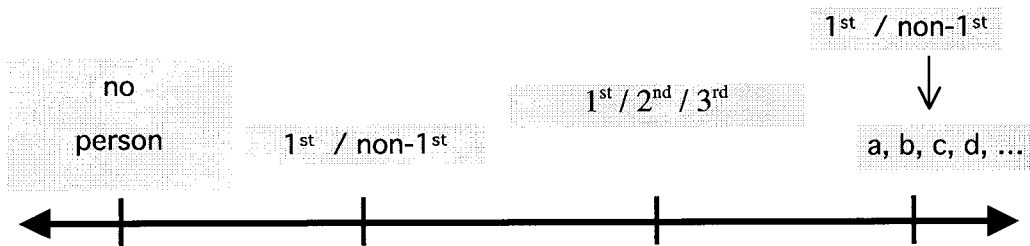
the typological homogeneity and referential specificity discussed above). Chapter 3 presents a brief overview of previous analyses concerning person distinctions in signed languages. In Chapter 4 I examine the paradigmatic structure of person marking in spoken languages (Cysouw, 2003). This is followed, in Chapter 5, by an evaluation of spatial referencing in signed languages utilizing the framework developed in Chapter 4.

3 Spatial referencing in signed languages: previous analyses

3.1 Introduction

Over the past few decades, a great deal has been written concerning the use of space to represent discourse entities in signed languages. In this chapter I present a review of this literature, focusing on the following question: do signed languages systematically encode a distinction with respect to person? In addressing this question, it may be helpful to visualize the range of positions on this issue as falling at various points along a continuum of distinctions marked (3-1).

(3-1) The range of analyses regarding person distinctions in signed languages



At one end of this continuum are analyses that posit there are no person distinctions marked in signed languages. The other end of the continuum is occupied by analyses that suggest an unlimited number of formal person distinctions. While my discussion of previous research in this area does not necessarily progress consistently along this continuum, the continuum of person distinctions marked should, nevertheless, provide a useful framework within which to view the questions at hand.

It should be noted that there is a wide range of terms used to refer to the manner in which pronouns and agreement verbs utilize space for reference. Among them are the following: indexical inflection, referential indexing, indexic reference, and indexing. In my review of the literature, I will adopt the terminology utilized by individual researchers. While this may initially seem confusing, I think it will be clear that the

phenomena being described and analyzed (pronominal reference and verbal agreement) are unified. I begin my review of the literature by discussing the standard analysis of pronouns (and agreement markers) in ASL, that which advocates the typical three-way distinction in person (first, second, third).⁷⁸

3.2 Three-way distinction in person (first/second/third)

Among the earliest works on ASL is Stokoe, Casterline, and Croneberg's (1965) *A Dictionary of American Sign Language on Linguistic Principles*. Here the authors observe that with some ASL verbs, movement toward or away from the signer signifies verbal inflection. The authors make reference to person distinctions in their discussion of the spatial layout of reference to individuals and write 'First and second persons in signing are the opposite and interchangeable ends of an imaginary but well-defined line of sight. A third person or a fourth – even a fifth if needed – is designated by pointing at an angle to that line' (1965:281). While this passage seems to suggest an analysis of person that includes distinctions beyond first, second and third, elsewhere in the dictionary reference to nonpresent individuals is labeled simply 'third person'. One such example is in the discussion of 'the nature of the sign' included in the dictionary's introduction. While for most signs the association between the sign and its meaning is arbitrary, Stokoe et al. write '... American sign language uses visible human activity instead of sounds, hence there may often be a relationship of some kind between a sign and its referent' (1965:xxiii). They characterize several types of relationships that can exist; among them are pantomimic signs, imitative signs, metonymic signs, and indicative signs. On the different degrees of indicative signs, the authors write, 'Still further from direct and tactile indication are *the signs for third person* which do not require the referent or referents to be present or visible' (1965:xxv) (emphasis SLM). Here the impression is that the authors view reference to non-present individuals as a unified 'third person' reference. However, Stokoe et al.'s comments regarding the

⁷⁸ For previous discussion of person marking in signed language, see Farris (1998) and Berenz (2002).

possibility of a fourth and fifth person speak to the unusual nature of the third person category in ASL.

In the earliest substantive discussion of person reference in ASL, Friedman (1975) argues that pronominal reference is achieved by indexing, and that there exist two kinds of indexing. With the first type of indexing, a reference point in space is established by the signer for referring to a person in the actual environment of the signer and addressee (i.e. first person and second person, respectively). In the second case, the signer indexes to a point in space which she has previously established as referring to a non-present individual. Interestingly, Friedman claims that there are no pronouns in ASL; ‘the equivalent of pronominal reference is achieved by the signer’s first establishing a frame of reference, in front of his body, within which he establishes points of reference identified with the objects, persons, and locations to which he will refer’ (1975:946). While Friedman utilizes a three person system in analyzing pronominal reference (first – point toward signer; second – point toward addressee; and third – point away from signer and addressee), it is not clear where these person distinctions are housed in the grammar of the language if, in fact, there are no pronouns on which the distinctions of person are carried.

Fischer and Gough (1978) note that ASL pronouns, as well as many ASL verbs, have distinct forms for first, second, and third persons. The pronouns for first and second person, they write, are formed by ‘direct pointing with the index finger’ (1978:17), while the third person pronoun points out obliquely. On verbal inflection, Fischer and Gough comment that some ASL verbs have distinct forms for first, second, and third persons, and that the process of person inflection is more general in ASL than in many other (spoken) languages; it is not only the subject person that is indicated, but often also the object, source, goal, and other arguments. The authors describe ‘directional verbs’ (i.e. agreement verbs) as follows: ‘... a process of incorporating a pronoun (or a case-marking copy of from one to three arguments) into a verb. The pronoun copy is then deleted, leaving behind a trace – the direction in which the sign moves’ (1978:26).

Klima, Bellugi et al. (1979) discuss the indexic system that forms the basis of person reference in ASL, noting that it ‘operates with respect to target loci in a horizontal plane of signing space, which functions as the indexic plane’ (1979:276). These loci are associated with specific referents either by indexing the actual location of a present referent (as in the case of signer and addressee) or, for non-present referents, by using the indexic plane as ‘a stage on which indexical loci are created by indexic signs alone, or in conjunction with noun signs, or by positioning certain noun signs or classifier signs at particular locations on the indexic plane’ (p.277). Thus, the various target points in the indexic plane serve to distinguish reference to first person (signer), second person (addressee), and third person. The class of verbs in ASL that reflect their arguments (agreement verbs) utilize these locations in a process of deictic inflection.

In her seminal work on verb classes in ASL, Padden (1983/1988) notes that person inflection surfaces on certain verbs via ‘discrete and specific morphological forms which are added to the verb stem’ (1988:28). The forms of the person agreement markers are as follows: first person – near signer’s body; second person – in direction of addressee; and third person – any other location, where ‘the agreement marker will have the same locus point *i* in neutral space as the assigned third person nominal locus point *i*’ (p.28). While Padden considers these inflectional forms to be ‘discrete and specific’, she acknowledges the unusual nature of the forms themselves, writing ‘while the form of the 1person marker is usually at a position near the body of the signer, 2person and 3person markers appear to have potentially an infinite number of possible locations’ (p.28). The variability of the second person form stems from the fact that an addressee can be positioned in any location relative to the signer. The form of the third person agreement marker is highly variable because the assignment of nominals to locations in space is largely arbitrary.⁷⁹

⁷⁹ Padden (1983/1988:29-30) notes that the selection of a particular locus point for third person reference is determined by ‘a number of locational factors’. However, she discusses only one specific factor – that a third person referent might be established at a location in space that roughly corresponds to the general location or direction of, for example, the office s/he occupies. Beyond this, locations are arbitrarily chosen.

Berenz and Ferreira Brito (1990) argue for a three-way distinction in person for pronouns in Brazilian Cities Sign Language (BCSL) and American Sign Language, but present an analysis that is distinct from those discussed above. Their analysis of BCSL and ASL pronouns centers on one particular formational feature of sign language pronouns, orientation. Berenz and Ferreira Brito draw on the work of Fillmore (1982), which identifies three axes comprising the system of coordinates that underlies spatial notions in natural language: up/down; front/back; and left/right. Central to the analysis presented by Berenz and Ferreira Brito is the front/back axis, which is understood as being anthropocentric in nature and largely determined by certain asymmetries inherent in a referent object. Fillmore identifies two strategies for assigning the concepts front and back to entities that lack an inherent front/back orientation: the ‘ego-opposed’ strategy (where the entity is seen as facing the speaker); and the ‘ego-aligned’ strategy (where the entity is seen as having its back to the speaker, facing away in the same direction as the ego). Whichever strategy is employed, the assignment of ‘front’ and ‘back’ is viewed as conventional.

Berenz and Ferreira Brito state that sign language pronouns utilize an ego-opposed strategy, while classifier constructions adopt an ego-aligned strategy.⁸⁰ Of the personal pronouns I and YOU, they write, ‘the orientation of the fingertip is *opposite* to the orientation of the referents’ bodies (signer and addressee). The structure of these two signs (first and second person) follows an “ego-opposed” strategy’ (1990:28). Again drawing on Fillmore’s work, in particular his prototype semantic theory, the authors argue that a first person pronoun refers to the person who is facing (on the opposite side of) the addressee, while a second person pronoun refers to the person who

⁸⁰ While it seems accurate to describe classifier constructions as depending on an ego-aligned strategy, the motivation for analyzing pronouns as adopting an ego-opposed strategy is questionable. As set forth by Fillmore (1982), the ego-opposed and ego-aligned strategies are useful for assigning concepts ‘front’ and ‘back’ to entities that lack an inherent front/back orientation. The vast majority of discourse referents (certainly the ones discussed in Berenz and Ferreira Brito’s research) are human, and as such *do* possess an inherent front/back orientation. The fact that the ego-opposed strategy lies at the heart of their analysis of person marking in sign languages seem, therefore, somewhat problematic. In a similar vein, Engberg-Pedersen (1993) comments on Berenz and Ferreira Brito’s analysis: ‘...the analysis rests on the assumption that the pronouns are based in the anthropocentric front/back, axis; but this assumption is unfounded, since the index hand of pointing signs points in the direction of the entity referred to, no matter its position in relation to the signer’ (Engberg-Pedersen, 1993:138).

is facing (on the opposite side of) the sender. As such, the first and second person pronouns are argued to ‘have the *identifying* function, in the sense that they identify the two true persons of the discourse in opposition to third persons which may have only the informing function or be only indexing acts’ (1990:30).

In arguing that orientation lies at the heart of person reference in signed language pronouns, Berenz and Ferreira Brito set their analysis apart from other work on personal pronouns that views location of the referent as central (see Lillo-Martin and Klima, 1990, and Ahlgren, 1990, discussed below). On the topic of location, the authors differentiate and discuss three spatial levels (Berenz and Ferreira Brito, 1990:31):

- 1 location as internal component of the structure of a sign;
- 2 location as part of the signing space used as the linguistic structure for pronouns (the spatial linguistic interpretation of referents);
- 3 the actual location of conversational participants and third person referents.

Levels one and two are linguistic and conventional, while level three is not. The manner in which these spatial levels interact distinguishes between the three persons found in sign language pronoun systems. With first person reference, the three levels of location are realized as one physical space, the area in front of the signer’s body. In the case of second person pronouns, ‘the realization in physical space of the three levels of location does not co-occur’, and with third person ‘the three levels of location do differ’ (1990:31).⁸¹

Returning to their central claim, Berenz and Ferreira Brito stress that it is the orientation of the hand (with index finger pointed toward signer and palm facing the signer’s body) that serves to indicate first person reference. It is the orientation of the hand that sets second and third person reference apart from first person reference (for the former two, the extended index finger is pointing away from the singer). The distinction between second and third person reference is carried by orientation of

⁸¹ In an attempt to clarify the differences between the three persons of the pronoun systems, Berenz and Ferreira Brito examine the three spatial levels independently. I have chosen not to devote additional space to discussion of their analysis; their arguments are convoluted and difficult to follow, and shed little additional light on their overall analysis.

eyegaze; ‘For second person referent, the signer holds the gaze of the addressee while, for third person referent, the signer shifts gaze from an orientation towards addressee to an orientation towards the (nonpresent) referent’s location as part of the signing space or towards the actual location of the (present) referent and back to the addressee’ (1990:32).⁸²

3.3 Two-way distinction in person (first/non-first)

Meier (1990) examines person deixis in ASL and argues that deictic signs (pronouns) are linguistic, and that the relevant person distinction is first vs. non-first.⁸³ His argument for a first versus non-first person distinction in ASL is based on two sets of facts. First, the phonological form of first person plurals WE and OUR is only partially motivated; whereas the singular pronouns index specific referents, the place of articulation of the plurals WE and OUR does not index the actual locations of anyone other than the signer. Secondly, Meier argues that deictic points in role-playing situations (where the signer takes on the role of some character, such as with direct quotation) provide evidence for first person. It is often the case that role-playing is marked by a body shift to the left or right, which results in tokens of INDEX_s (index to signer) that are associated with distinct spatial locations (one shifted and one not) and have distinct referents (the individual quoted, and the signer herself). Role-playing can also be marked by the signer’s adoption of a facial expression or posture associated with the character whose role is being assumed, or by the signer’s head position and eye gaze. In these situations, there is no body shift; the result is that ‘two tokens of the same deictic point can be associated with a single spatial locus yet make reference to two distinct individuals’ (Meier 1990:183). Whichever strategy is used to signal role-playing, Meier argues that the ASL pronoun INDEX_s (index to signer) is appropriately

⁸² Meier (1990) refutes this with respect to ASL, reporting that, for ASL, eyegaze is not a consistent marker of grammatical person. See discussion below.

⁸³ Revising their earlier analyses, both Lillo-Martin (1995) and Padden (1990) have adopted Meier’s first versus non-first analysis of person marking in ASL.

translated as *I*, because it behaves just as the English first-person pronoun does when used in direct quotation.⁸⁴

While Meier posits a grammatical distinction between first and non-first person in ASL pronouns, he presents three arguments against a distinction between second and third person. First, with respect to the ways in which points in space are used within a discourse, ‘the set of pointing signs we might identify as second person largely, if not completely, overlaps with the set we would identify as third person’ (1990:186). Second, although eye gaze at the addressee is an important component of sign conversations, it does not appear to be a grammatical marker of second person in ASL. Finally, Meier notes that, while there exist gaps in the paradigms of agreement verbs that appear to be motivated by the existence of a first person object, there are no gaps that arise with respect to either the addressee (second person) or a non-addressed participant (third person).

Similar to Meier’s analysis of ASL pronouns, Engberg-Pedersen (1993:134) has argued for a distinction between first and non-first person in Danish Sign Language. As evidence in support of this distinction, she points out that the first person pronoun differs formally from other pronouns in two ways. First, the first person pronoun is the only pronoun in which the hand makes contact with something (namely, the signer’s body). Second, the first person pronoun is the only pronoun that is not always articulated with an index handshape; other handshapes used include a loose index handshape, loose flat hand, and handshapes identical to the handshape used in the verb that follows the first person pronoun.

3.4 Multiple person distinctions

Bahan (1996) and Neidle, et al. (1998) interpret the unambiguous reference that spatial referencing affords as an indication that ASL has an enriched set of phi- features

⁸⁴ See section 6.5.1 for arguments against Meier’s analysis.

(compared to the standard distinctions of first, second, and third person).⁸⁵ Because spatial locations convey information that allows referents to be uniquely identified, the referential information contained in spatial locations is sufficient to uniquely identify individual referents. In later work, Neidle et al. (2000) refine this position, arguing that, while there exists a primary distinction between first and second person (as proposed by Meier, 1990), the category non-first person ‘can be further subclassified into many distinct person values’ (2000:167). Focusing on the syntax of sign language pronominals and agreement verbs, Neidle et al. claim that the manner in which space is used to for referencing discourse participants ‘constitutes an overt instantiation of ϕ - features (specifically person features) associated with these referential entities ...’ (2000:31).⁸⁶ As support for their argument that locations in space are used to express person features, Neidle et al. note that these spatial locations ‘...systematically participate in the same linguistic phenomena that involve ϕ -features cross-linguistically’ (2000:31). Among the linguistic phenomena they discuss are the following: pronominals, determiners, possessives, reflexives/emphatics, and morphological verb agreement.

In discussing pronominals, the authors observe that pronoun articulation is accomplished by the index finger pointing to the location in space that has been associated with the person features of the intended referent.⁸⁷ With respect to verb agreement, Neidle et al. contend that person-agreeing verbs utilize a subject agreement prefix and an object agreement suffix, both of which access the locations used for pronominal reference. On the status of these locations, the authors write that ‘these

⁸⁵ Phi-features (Chomsky, 1993; 1995) are the grammatical features of person, number, gender, and case.

⁸⁶ Similarly, MacLaughlin (1997) posits that ASL has a potentially infinite number of values for the person feature, and that the particular value of this feature for a noun phrase is determined dynamically.

⁸⁷ Neidle et al. (2000) do not discuss how it is that person features are ‘associated’ with locations in space. Emmorey (2002a) notes that the association between a referent and a particular spatial location can change if the signer describes the referent moving to a new physical location (cf. Padden, 1983/1988), but there is no resulting change in person features. She concludes, ‘person features may be associated with referents, but there is no evidence that person features are directly associated with locations in signing space. A person feature can only be associated with a location in signing space via its relationship to a referent’ (2002a:55, fn.16).

affixes constitute the manual expression of the person features of the relevant argument' (2000:33).

Summarizing their analysis of person reference in ASL, Neidle et al. argue that the manner in which space is used for reference allows for finer person distinctions than can be found in most languages, where a distinction between first, second, and third persons is traditional. On this point, the authors comment that 'any number of "persons" can be associated with distinct spatial locations in ASL' (2000:36). Furthermore, the fact that reference is represented spatially leads to unambiguous pronominal reference.

3.5 No person distinctions

Among those claiming that there are no person contrasts in ASL are Lillo-Martin and Klima (1990). In describing ASL pronominals, they observe that signs which function as personal pronouns take the form of the index finger directed toward a point in space, termed a referential locus, or R-locus. They go on to discuss three unusual aspects of the ASL pronominal system: a potentially infinite number of distinct pronominal forms; reference that is unambiguous; and the potential for shifting reference. An examination of these unusual aspects leads Lillo-Martin and Klima to argue that the distinctions found in the ASL pronominal system are not the typical lexical distinctions found in pronominal systems, but rather 'represent a *free* partitioning of certain areas of space into *meaningful* distinctions in form' (Lillo-Martin and Klima, 1990:198; emphasis in original).

Within standard theories of pronominal reference and binding, coreferentiality within a discourse is accomplished via referential indexing (or R-indexing), the process by which referential markers (or indicies) are attached to a set of items in a sentence to show either identity or difference of reference. Lillo-Martin and Klima point out that while the R-index is part of the *semantic* structure of ASL (and all other languages, both spoken and signed), the R-locus (referential locus) is used to describe the *form* of pronouns in ASL. They argue that ASL has only one personal pronoun, a lexical root

specified for handshape and movement, but not specified for location. This single pronoun root is assigned a referential index at each use. What makes ASL pronominal reference unusual is the fact that referential indices are overtly manifested in ASL. It is this overt manifestation of referential indices, they argue, that leads to the unambiguous reference of ASL pronouns. Lillo-Martin and Klima conclude that there are ‘no contrasts for person in ASL’ (1990:198).⁸⁸

Like Lillo-Martin and Klima (1990), Ahlgren (1990) presents an analysis of sign language pronouns that does not rely on traditional contrasts of person. Examining data from Swedish Sign Language, she argues that personal pronouns, *per se*, do not exist. In contrast to spoken Swedish, where deictic reference to person is accomplished via formal distinctions within the personal pronoun system, in Swedish Sign Language persons are deictically referred to by their location, not by their conversational roles. While the act of pointing to the location of a referent has a pronominal function, it is more accurately analyzed as being analogous to a demonstrative pronoun in spoken language. Swedish Sign Language, Ahlgren argues, ‘grammaticizes deixis of location in a highly structured and complex way for a variety of functions, including that of reference to persons’ (1990:168). Thus, when pointing is used to designate individuals participating in a discourse, it is not the participant roles (speaker, addressee, other) that are grammaticalized, but rather the location of speaker, addressee, and others relative to one another that is grammaticalized (1990:170-71).⁸⁹

In what is arguably the most controversial analysis of pronouns and agreement verbs in ASL, Liddell (1990a; 1994; 1995; 2000a; 2000b) rejects the notion that spatial locations, as used in pronouns and agreement verbs (which he calls ‘indicating verbs’), belong to the grammatical system. He points out that traditional analyses concerning spatial referencing make some questionable assumptions: some sort of spatial

⁸⁸ It is not clear to this author how a language (ASL in this case) can have one personal pronoun, while at the same time show no contrasts for person. To call the pronominal index in ASL a ‘*personal* pronoun’ entails, definitionally, the existence of person distinctions.

⁸⁹ Engberg-Pedersen (1986:35) presents a similar argument with respect to Danish Sign Language, noting that pronouns consist of pointing to a ‘point of reference’, and that agreeing verbs agree in points of reference, not in person. In later work, Engberg-Pedersen (1993) revises her analysis and adopts a first / non-first distinction for pronouns and agreeing verbs (cf. section 3.3).

morpheme is somehow attached to the verb or pronoun; this spatial morpheme can be described by using phonological features; the signing space is part of the grammatical representation of ASL sentences (Liddell, 2000b:309-310). Liddell takes issue with these assumptions, arguing that spatial morphemes cannot be part of the grammar.

Liddell's arguments against the linguistic analysis of referential locations are twofold. First, pronouns and agreeing verbs are not directed toward specific points in space; rather, they are directed toward general areas in the signing space (Liddell, 1990a). The location toward which an agreeing verb is directed varies depending upon the verb itself, as each agreement verb has a specific body height at which it moves (the height being part of the verb's lexical specification). For example, the sign ESP-WITH is articulated at forehead level, SAY-NO-TO at nose level, and GIVE at chest level. Additionally, the location toward which an agreeing verb is directed can vary depending on the height of the referent. For example, the sign ASK, which is lexically specified for articulation at roughly the level of the chin, would move horizontally in the signing space if the signer and addressee were the same height, upward if the addressee were taller, and downward if the addressee were shorter. Liddell's second argument against treating locations in space as part of the grammar centers on phonological and morphological specification. He argues that there are no phonological features that can adequately describe referential locations. Furthermore, because there are an unlimited number of locations in space toward which a pronominal index or agreeing verb can be directed, the list of morphemes in the grammar would have to be infinite – clearly a problem (Liddell, 1995:24-25, 2000a:344).

Liddell's alternative analysis of spatial referencing is situated in the framework of Mental Space Theory, which holds that 'constructing the meanings of sentences depends on the existence of mental spaces – a type of cognitive structure distinct from linguistic representations' (Liddell, 2000a:340-341, cf. Fauconnier, 1985; 1997). Mental spaces are conceptual structures that speakers build up during discourse. A grounded mental space is a mental space whose entities are conceived of as being present in the immediate environment. Nonpresent referents (those that have been localized or established at locations in signing space) are viewed as conceptually

present entities (complete with three-dimensional characteristics) within a grounded mental space. These conceptually present entities are referred to as tokens.⁹⁰

In Liddell's analysis, pronouns and agreeing verbs are directed not toward abstract locations in the signing space, but rather toward elements of grounded mental spaces. When a pronoun or indicating verb is directed toward a physically present referent (such as the signer and the addressee), it is not 'locations in space' that govern the behavior of these signs, but rather the actual physical locations of the entities themselves. The phonological form of these signs (i.e. the direction in which they move) is not lexically fixed, but rather depends on the actual physical location of the referent. Because a present referent can be in an unlimited number of physical locations, there are no linguistic features or discrete morphemes that can specify the direction of the sign. For nonpresent referents, pronouns and indicating verbs are directed at elements (tokens and surrogates) that are conceived of as present in a grounded mental space.⁹¹

In sum, Liddell argues that pronouns are a combination of linguistic and gestural elements. The linguistic elements (handshape, aspects of orientation, and some types of movement) are describable using discrete linguistic features. The direction and goal (or end point) of the movement, however, are not linguistic at all, but rather are gestural.⁹² Liddell summarizes his view as follows (2000b:319).

⁹⁰ Liddell (1994) distinguishes between two types of non-present referents, *tokens* and *surrogates*. Surrogates are invisible entities that are conceived of as present in the signing environment. Surrogates have size and dimensions like those of actual referents; if a signer imagines that a short person is standing nearby and wants to make reference to her, the pronoun would be directed downward, toward the imagined location of the short person's chest. Tokens, on the other hand, are invisible entities but are not life-sized. They are placed (or established) on the horizontal plane of the signing space but are not conceived of as being 'there' with the signer. Furthermore, tokens are limited to third person reference. The third person pronouns discussed in the present work are primarily tokens, in Liddell's analysis.

⁹¹ The idea of non-present referents being conceived of as present has been a useful descriptive notion, present in the literature from early on. In some of the earliest work on ASL, Stokoe, Casterline and Croneberg (1965: 23) discuss reference to present and non-present referents, writing 'The referent is a person present and in view of the speaker, or a person who, for the sake of description, is imagined as being present' (1965:23).

⁹² For an excellent discussion of the morpheme vs. gesture debate in sign language linguistics, see Okrent (2002).

Indicating verbs and pronouns simply point at entities. The purpose of the pointing is to allow the addressee to make an association between the entity and the semantic representation of the verb or pronoun. The means by which the sign points is not phonological. Rather, the sign points because the signer knows where the entity is and knows how to point. This analysis applies to both physically and conceptually present entities.

3.6 Summary

In this chapter I have reviewed the literature on spatial referencing in signed languages, in particular the various analyses concerning person marking in pronouns and agreement verbs. While it is certainly the case that most researchers view locations in space as markers of grammatical person, there exists a range of analyses concerning which person distinctions are encoded within the referential systems of signed languages. The first person versus non-first person analysis, originally proposed by Meier (1990) for ASL and Engberg-Pedersen (1993) for Danish Sign Language, has, of late, been adopted by a growing number of sign language linguists (Padden, 1990; Lillo-Martin, 1995; Neidle et al., 2000; Mathur, 2000; Cormier, 2002; Emmorey, 2002a). At the same time, there are linguists who maintain that locations in space do not mark formal person distinctions. Suffice it to say, the precise status of grammatical person in ASL (and other signed languages) is still being debated. In the remainder of this thesis I join this debate by focusing on one central question: do locations in space (as they are used for reference to individuals in signed discourse) serve to mark grammatical person?

4 Person marking in spoken languages

4.1 Introduction

In the previous chapter I reviewed the literature on spatial referencing in signed languages. While it is by no means uncontroversial, the prevailing view in the sign linguistics literature is that locations in space (as utilized in spatial referencing / pronouns and agreement verbs) serve as morphological markers of person. In the next three chapters of the thesis I evaluate this position.

In order to evaluate whether or not spatial referencing in signed languages constitutes grammatical person marking (the focus of Chapters 5 and 6), I devote this chapter to reviewing the marking of grammatical person in spoken languages. In his recent thesis (now book), Michael Cysouw (2001; 2003) explores the range of linguistic devices that spoken languages use to mark the participants in a speech act. Through an exhaustive cross-linguistic survey of data from person paradigms in more than 400 of the world's spoken languages, he develops a typology of personhood which reveals a tremendous amount of variation.⁹³ In this chapter I present and discuss the criteria Cysouw uses to classify person markers in spoken languages, and provide a very brief summary of some of his major typological findings.⁹⁴ In Chapter 5 I evaluate sign language pronouns using some aspects of the framework developed by Cysouw. It will be shown that there are many ways in which sign language spatial referencing is quite distinct from person marking in spoken languages.

⁹³ Of course Cysouw's monograph was preceded by several other works which examine person marking in spoken language. The first extensive cross-linguistic study of person marking was Forchheimer (1953). Other important works include Greenberg (1963), Mülhäusler and Harré (1990), Laycock (1977), and Ingram (1978).

⁹⁴ Cysouw's study is massive and quite impressive. An adequate summary of the major findings would fill many pages. Here I will only be discussing those aspects of Cysouw's analysis that are particularly germane to my analysis of spatial referencing in signed languages. The interested reader is strongly encouraged to consult Cysouw's monograph.

4.2 Person marking and the paradigm

Cysouw delimits three criteria for a linguistic element to be considered a person marker: it must be a shifter, specialized for that function, and used for reference to a speech act participant (2003:4-5). Participant deictics (as well as spatial and time deictics) are shifters in that they involve shifting reference of linguistic elements (c.f. Jespersen, 1922:123-24; Bühler, 1934; Jakobson, 1957/1971). For example, the referential value of words like *I* and *you* shifts depending upon who is speaking. A word like *Daddy* can be used as a shifter (for example when a mother, talking to her baby, utters *Daddy is busy now*), but it does not always function as a shifter. In his investigation of person marking, Cysouw includes only those shifters that are specialized in that they must function only as shifters. Additionally, he considers only those specialized shifters that are used for reference to participants in the speech act (speaker, addressee, and other). The linguistic elements that meet these three criteria are referred to as ‘person markers’. Cysouw includes in his study all specialized participant shifters, regardless of their morphological status: independent pronouns, clitics, and inflectional person markers.

Within the domain of pronominal reference, the features person and number are interrelated; in marking the various speech act participants, it is not only the status of the participants (speaker, hearer, other) that is relevant, but also the number of individuals referred to. As such, an examination of person reference must take into account both person and number. In his typological study of person marking, Cysouw disregards many of the additional semantic dimensions that can be encoded in pronominal systems, including person marking paradigms that distinguish gender, honorific usage and specialized polite forms of pronouns, other traditional pronominal elements (such as indefinites, interrogatives, reflexives, and reciprocals), spatial specification in the third person, obviative third person pronouns, and logophoric pronouns. While these additional facets of person marking contribute to the tremendous variability of language, excluding them leads to a more focused and constrained typology, one that hones in on the central notion of person.

Recognizing that person markers do not stand alone within a language, Cysouw's investigation into person marking focuses on the structural context of the paradigm and the extent to which person marking paradigms vary cross-linguistically. Cysouw discusses four general characteristics of paradigms (pp.8-9). First, a person marking paradigm is a closed class of linguistic items that surface in the same syntagmatic place in the structure of a language. This syntagmatic-paradigmatic duality (cf. Saussure, 1916:170-180) motivates the inclusion of separate paradigms representing each syntagmatic place in the language. For example, in English there is a subject pronoun paradigm as well as an object pronoun paradigm. Each of these paradigms constitutes one pattern, one paradigm, one way in which person distinctions are linguistically marked in a language. Secondly, Cysouw notes that there is no impossible reference in a paradigm. He writes, 'the mutually exclusive elements in a person marking paradigm fill out the complete referential array of possible participants' (p.8). For instance, many languages divide singular reference into 'speaker', 'addressee', and a third class comprising all reference that is not either speaker or addressee. This third class ('non-person' cf. Benveniste, 1966) essentially fills all the referential possibilities that are not marked by the other elements in the paradigm. Similarly, if a language has no specialized element that marks plural reference, then the missing referential value is assumed by one of the other elements in the person-marking paradigm (Cysouw, 2003:8).

Thirdly, a paradigm is interpreted as a closed space of alternative options. On this point, Cysouw writes 'the individual person markers in a paradigm do not arrive at their referential value intrinsically, but in mutual delimitation vis-à-vis the other elements in the paradigm' (p.8). It is the available elements within a paradigm that subdivide the space of possible reference into referential categories. As such, the referential value allotted to a specific element within a paradigm can be defined only in relation to the other elements within that paradigm.⁹⁵

⁹⁵ Cysouw provides a useful analogy from phonetics, writing 'This perspective of the paradigm is reminiscent of the division of vowel space by the available phonemic vowels. A low open vowel /a/ is a

Finally, his study focuses on the internal structure of person paradigms, each of which is only a small part of a complete language. Most languages have multiple person marking paradigms that share the referential work; Cysouw does not treat as primary any one paradigm within a language, but rather focuses on the individual paradigms within each language, each as an instance of person marking.

4.3 Paradigmatic structure and person marking

4.3.1 The marking of singular participants

Cysouw begins his examination of the paradigmatic structure of person marking by focusing on the marking of singular participants. With the two main categories (speaker and addressee) plus a third category ('any other singular participant'), there exists a maximum of three different morphemes that can be used within any given paradigm. For example, the Latin inflectional pronominal paradigm has three separate morphemes marking the three distinct person categories: first person is marked by the suffix *-o*, second person by the suffix *-s*, and third person by the suffix *-t* (Cysouw, 2003:39). While this three-morpheme paradigm is relatively common, different kinds of homophony between the singular categories leads to rather wide variation among person-marking paradigms. Cysouw's use of the term *homophony* is intended to be theory-neutral, interpreted only as meaning 'two categories (that are distinguished for cross-linguistic reasons) are referred to by the same sounds – they are *homo-phonein*' (p.40).⁹⁶

The following table (4-1) presents the possible types of singular homophony.

rather different vowel when it is found in a three-vowel system as compared to when it is found in a seven-vowel system' (2003:9).

⁹⁶ In the literature, Cysouw points out, homophony has been referred to variously as syncretism, homonymy, polysemy, and merger (2003:40).

(4-1) Possible types of singular homophony (Cysouw, 2003:40)

	(Sa)	(Sb)	(Sc)	(Sd)	(Se)
Speaker	A	A	A	A	A
Addressee	B	B	B		
Other	C		A	B	

(Sa) through (Se) (with ‘S’ standing for singular) represent the five possible ways in which languages can mark person distinctions in the singular. The capital letters ‘A’, ‘B’ and ‘C’ are variables; identical morphemes are represented by the same letter, and distinct morphemes are represented by different letters. The basic case (Sa) shows all three persons marked with distinct morphemes (‘A’, ‘B’, ‘C’). Given a three-person paradigm (speaker, addressee, other), there exist four theoretically possible kinds of homophony. (Sb) shows homophony in that the second and third person categories are marked by the same morpheme (represented by ‘B’). (Sc) shows homophony in that the first and third person categories are marked by the same morpheme, (Sd) in that first and second person categories are marked by the same morpheme, and (Se) in that all three person categories are marked by the same morpheme.⁹⁷ Thus, there are five different paradigmatic variations that can be attested across languages. Within the four possible types of homophony (Sb) – (Se), it is also possible for one of the morphemes to show zero marking (i.e. where that morpheme is not phonologically realized). Cysouw notes that ‘homophony of singular pronominal marking is a rare phenomenon’ (2003:52). Still, almost every type of homophony that is theoretically possible is shown to exist. In his survey, only one theoretical possibility is not attested: homophony of the (Sc) type, where the second person is zero marked.⁹⁸

⁹⁷ On the unusual nature of paradigms of the (Se) type, Cysouw notes that because ‘all the singular persons are marked identically ... it is not clear whether such a paradigm really marks person, or rather something else...For there to be person marking with a homophony of type (Se), there has to be an opposition in the non-singular person categories’ (2003:51).

⁹⁸ Cysouw notes that this type of homophony may very well show up as more languages are studied.

4.3.2 Plurality

Before presenting his typology of paradigmatic structuring, Cysouw includes a critical discussion of the notion ‘plurality’ as it relates to pronominals, arguing that an analysis based on plurality inadequately accounts for the cross-linguistic variation in person marking (2003:66-72). Plurality, he asserts, is a ‘semantically awkward’ term for pronominal elements; ‘plural’ pronouns are not always plural. In particular, the first person plural pronoun *we* does not usually refer to multiple speakers in the same way that *chairs* refers to multiple chairs; more often than not, plural pronouns are associative in meaning (where *we* means something like ‘I and my associates’, where the associates are likely either addressees or others). Morphologically, in most person paradigms ‘plural’ markers are not derived from the singular categories by regular plural marking. Additionally, the traditional notion of plurality (which is based on a six-way typology of three persons and two numbers) requires an additional dimension in order to account for the inclusive/exclusive opposition found in the first person plural (where the inclusive denotes inclusion of the addressee, and the exclusive denotes exclusion of the addressee).

Cysouw proposes that the notion of ‘group’ marking replace plural marking. The primary distinction is between singular participants and groups of participants, and groups are analyzed according to the *kind* of participants of which they are composed, not the number of participants. Under this analysis, a group can comprise the speaker and the addressee, or the addressee and some other participant, etc. Whereas the plural perspective on number marking is quantitative in focus, the group perspective developed by Cysouw is more qualitative in nature. This proposed revision in analyzing person paradigms is more satisfying, Cysouw argues, because it is semantically and morphologically less awkward, and it automatically incorporates the inclusive/exclusive distinction.

4.3.3 Paradigmatic ‘meta-language’

Having replaced the notion of plural with group marking, Cysouw presents the following ‘meta-language’, a framework for presenting the wide variety of paradigmatic structures found across languages.

(4-2) Outline for presentation of paradigmatic structures (Cysouw, 2002:104)

		NON-SINGULAR			
SINGULAR		1+2	minimal inclusive	inclusive	first person complex
		1+2+3	augmented inclusive		
speaker	1	1+3	exclusive		
addressee	2	2+3	second person plural		
other	3	3+3	third person plural		

There are eight different categories captured in this framework: three singular categories (1, 2 and 3) and five different groups (1+2, 1+2+3, 1+3, 2+3 and 3+3). In this framework, there are two different types of inclusives within the first person complex; the minimal inclusive denotes a group of 1+2, while the augmented inclusive covers groups consisting of 1+2+3. Again, in the non-singular forms the emphasis is not on the number of participants but rather the kind of participants. The schematic representation in (4-2) is a helpful tool for understanding and defining the general paradigmatic space into which the person marking systems of various languages fit.

Using Cysouw’s basic paradigm outline, the Italian verbal paradigm would look as follows.

(4-3) Italian verbal agreement paradigm

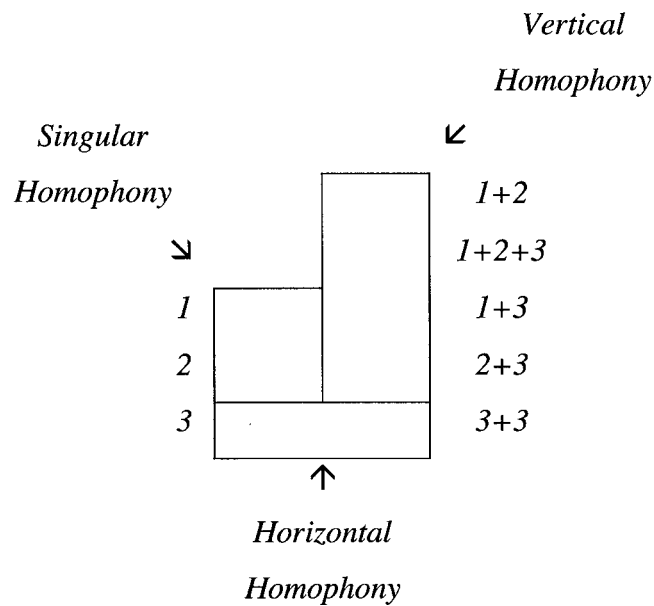
			1+2
		-iamo	1+2+3
1	-o		1+3
2	-e	-ate	2+3
3	-a	-ano	3+3

In this paradigm, each of the three singular categories (1, 2 and 3) is represented by a (phonologically) distinct inflectional marker. Additionally, there is a three-way distinction among the non-singular categories ‘we’, ‘you-all’ (2+3) and ‘they’ (3+3). This type of paradigm (which Cysouw classifies as being of the Latin-type) is widespread among inflectional systems of Indo-European languages, and is often assumed to be the prototypical pattern of all pronominal marking. Yet it is only one of many types of person-marking paradigms found across spoken languages.

4.3.4 Homophony within person marking paradigms

Person marking paradigms vary according to the type and amount of homophony present in the paradigm. As was discussed above with respect to singular marking (cf. section 4.3.1), when different categories are marked by one morpheme in a particular paradigm, they are said to be homophonous and are shown as contiguous blocks (i.e. the lines between the blocks are removed). Cysouw distinguishes three types of homophony, all of which are exemplified in (4-4).

(4-4) Different kinds of homophony (Cysouw, 2003:104)



Singular homophony occurs when different singular categories combine and are marked by one morpheme. An example of a paradigm showing singular homophony can be found in Icelandic (Cysouw, 2003:123; cf. Thráinsson, 1994:159).

(4-5) Icelandic weak present suffixes (class 1)

			1+2
		-um	1+2+3
1	- ∅		1+3
2		-ið	2+3
3	-ur	-a	3+3

In the weak present suffixes of Icelandic, both second and third person singular are marked by the same morpheme, *-ur*.

When different non-singular categories combine into one morpheme, this is an instance of vertical homophony. Southern Haitian Creole provides an example of vertical homophony (Cysouw, 2003:126; cf. Lefebvre, 1998:141; cf. Holm, 1988:201).

(4-6) Southern Hatian Creole pronouns

			1+2
		<i>nou</i>	1+2+3
1	<i>mwen</i>		1+3
2	<i>ou</i>		2+3
3	<i>li</i>	<i>yo</i>	3+3

In (4-6) we see that there are only two pronouns covering all five of the non-singular categories. The pronoun *yo* denotes third person non-singular (3+3), while vertical homophony leads to *nou* covering all other non-singular categories.

Finally, horizontal homophony represents the combination of a singular with a non-singular category, both of which are marked by the same morpheme. The English pronoun *you* is perhaps the most familiar example of horizontal homophony.

(4-7) English subject pronouns

			1+2
		<i>we</i>	1+2+3
1	<i>I</i>		1+3
2	<i>you</i>		2+3
3	<i>he/she/it</i>	<i>they</i>	3+3

When non-contiguous categories are homophonous, the cells of the paradigm are connected by small corridors. An example can be found in the past suffixes from Omië, a Papuan language from the southeastern tip of Papuan New Guinea (Cysouw, 2003:135; cf. Austing and Upia, 1975:544).

(4-8) Omië past suffixes

				1+2
			-are	1+2+3
1	-ôde			1+3
2	-ane	-arije		2+3
3	-ade	-are		3+3

Here there is vertical homophony between several of the groups, though not all are in adjacent blocks. The ‘you-all’ form is *-arije*, while all other group forms are homophonous, and are marked by the same morpheme *-are*.

Having laid out the basics of Cysouw’s definitions and framework, I now go on to discuss a select few aspects of Cysouw’s typology, aspects that figure prominently into my analysis of spatial referencing in signed languages.

4.4 Survey of paradigmatic structure in spoken languages

In his survey, Cysouw found a total of sixty-three different paradigmatic structures across the more than 400 languages considered. He uses the pattern of non-singular marking as the main guideline for the classification of the various paradigmatic structures, with a basic division existing between paradigms without an inclusive/exclusive opposition, and those with an inclusive/exclusive opposition. An additional level of classification relates to the whether or not vertical homophony is evidenced in a paradigm; split patterns are those that have no vertical homophony (i.e. have distinct forms for each non-singular category), and this is contrasted with those paradigms which show homophony in the non-singular forms.

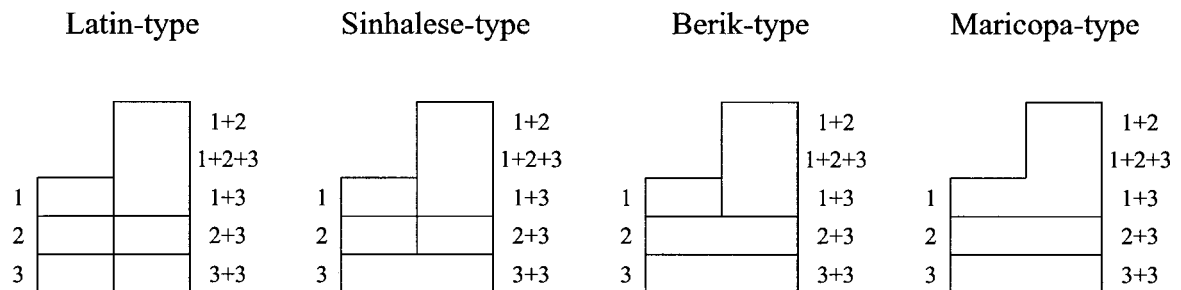
(4-9) presents a summary of the various paradigmatic structures attested.

(4-9) Number of paradigmatic structures attested (adapted from Cysouw, 2003:160)

	No inclusive/exclusive		With inclusive/exclusive		Total	
	SPLIT	HOMOPH.	SPLIT	HOMOPH.		
	NON-SG	NON-SG	NON-SG	NON-SG		
Common patterns	4	-	4	-	-	8
Semi-common patterns	-	4	1	-	-	5
Rare patterns	11	20	2	12	5	50
Total	15	24	7	12	5	63

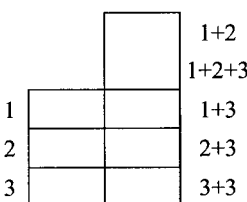
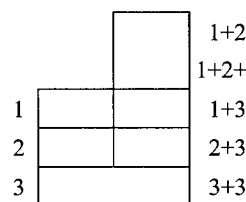
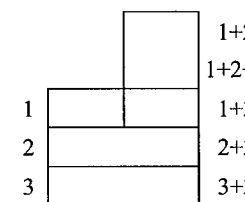
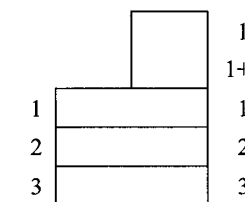
A total of eight patterns were classified as common; these paradigmatic structures are attested often, widely dispersed over the languages of the world, and can be considered ‘characteristic of at least a few genetically close-knit groups’ (2003:165). (4-10) shows the common paradigmatic structures without an inclusive/exclusive opposition.

(4-10) Common paradigmatic structures without an inclusive/exclusive opposition (Cysouw, 2003:161)



(4-11) illustrates the common paradigmatic structures that show an inclusive/exclusive distinction.

(4-11) Common paradigmatic structures with an inclusive/exclusive opposition
(Cysouw, 2003:161)

Mandara-type	Tupí Guaraní-type	Kwakiutl-type	Sierra Popoluca-type
			

Five patterns are classified as semi-common, and the remaining fifty as rare, found only sporadically.

An examination of the numbers in (4-9) above reveals a significant difference between paradigms with an inclusive/exclusive distinction and those without, in terms of the number of different paradigms attested. There are twenty-four distinct paradigmatic structures with an inclusive/exclusive opposition, and thirty-nine different paradigmatic structures without such an opposition. Despite the fact that paradigms with an inclusive/exclusive opposition have, in theory, a far greater potential to show different types of homophony (because there are more categories distinguished), these paradigms in fact show significantly *less* paradigmatic variation. Cysouw takes this quantitative observation to be part of a broad generalization concerning the paradigmatic structure of person marking: he writes, ‘the more categories are distinguished in a paradigm, the less paradigmatic variation exists ... the more explicit the person marking, the less acceptable it is for a paradigm to confound various categories’ (p.160). Additionally, paradigms that have different forms for minimal and augmented inclusive show hardly any variation at all. Cysouw interprets this robust homogeneity as an indication that the opposition between a minimal and an augmented inclusive is a late addition to the overall paradigmatic structure, commenting, ‘only if all other categories are distinguished can a minimal/augmented distinction in the inclusive eventually be added’ (p.160).

4.5 Paradigmatic explicitness

The above discussion highlights one dimension along which paradigms vary – the degree of explicitness. A maximally explicit paradigm has distinct morphemes for all eight referential categories. An example of a maximally explicit person marking paradigm comes from Maranao, an Austronesian language from the Philippines (Cysouw, 2003:139; cf. McKaughan 1959).

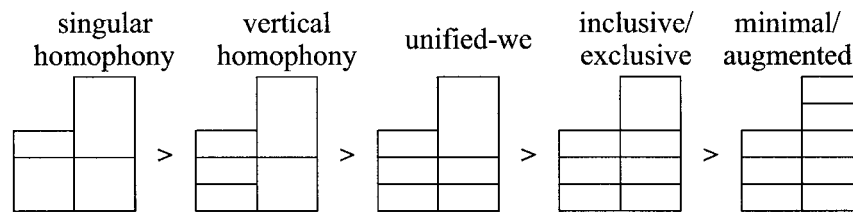
(4-12) Maranao pronouns

		<i>ta</i>	1+2
		<i>tano</i>	1+2+3
1	<i>ako</i>	<i>kami</i>	1+3
2	<i>ka</i>	<i>kano</i>	2+3
3	<i>sekanian</i>	<i>siran</i>	3+3

As can be seen in (4-12), Maranao pronouns differentiate all eight person categories – there is no homophony, of any kind, in this maximally explicit paradigm.

While the Maranao-type paradigmatic structure is found relatively frequently among languages of the world, most person paradigms do not mark each individual category with a distinct morpheme. The various types of homophony lead to lesser degrees of explicitness. Cysouw finds that vertical and singular homophony occur almost exclusively in paradigms that do not show an inclusive/exclusive distinction (2003:163). Additionally, singular homophony occurs almost exclusively in paradigms that also show vertical homophony. While there are some rare exceptions, these structural dependencies are robust and can be expressed via an explicitness hierarchy (a graphic representation is provided directly below the hierarchy).

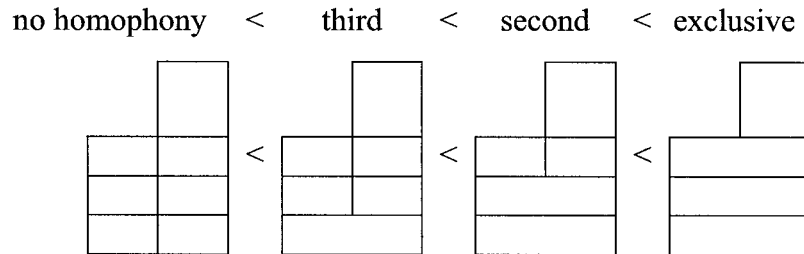
(4-13) Explicitness Hierarchy (adapted from Cysouw, 2003:164, 305)



The Explicitness Hierarchy characterizes the order in which a particular set of oppositions within a person-marking paradigm is grammaticalized. Leftward movement along the above hierarchy corresponds to increasingly lesser degrees of explicitness within a paradigm. The five stages of the hierarchy (from right to left) can be described as follows (adapted from Cysouw, 2001:179): 1) minimal/augmented inclusive: all categories are marked with separate morphemes; 2) inclusive/exclusive: all non-singular categories that include ‘speaker’ and ‘addressee’ are marked together (with the same morpheme); 3) unified-we: all non-singular categories that include at least the ‘speaker’ are marked together; 4) vertical homophony: different non-singular categories that include the ‘speaker’ or the ‘addressee’ are marked together; and 5) singular homophony: some singular categories are marked together as well.

The Explicitness Hierarchy (4-13), which covers homophony of the singular and vertical types, can be combined with two additional person hierarchies that characterize the patterns of horizontal homophony. The common paradigmatic structures with an inclusive/exclusive distinction (4-11) are characterized by various kinds of horizontal homophony along the lines of the following person hierarchy.

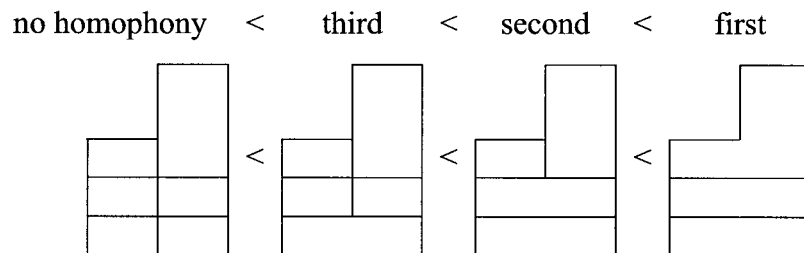
(4-14) Horizontal Homophony Hierarchy I (with inclusive/exclusive)
 (adapted from Cysouw, 2003:161, 300)



This hierarchy shows the order in which the non-singular categories of paradigms that have an inclusive/exclusive distinction are marked by horizontal homophony. In other words, the generalization is that if a language shows a distinction between singular and plural, in the second person, it will also have a distinction in the first person. If there is a plural distinction in the third person (i.e. there is no horizontal homophony in the third person), then there will be a similar distinction in the second and first person as well.

The common paradigmatic structures without an inclusive/exclusive distinction (4-10) are characterized by various kinds of horizontal homophony along the lines of a separate, but similar, person hierarchy.

(4-15) Horizontal Homophony Hierarchy II (without inclusive/exclusive)
 (adapted from Cysouw, 2003:162, 300)

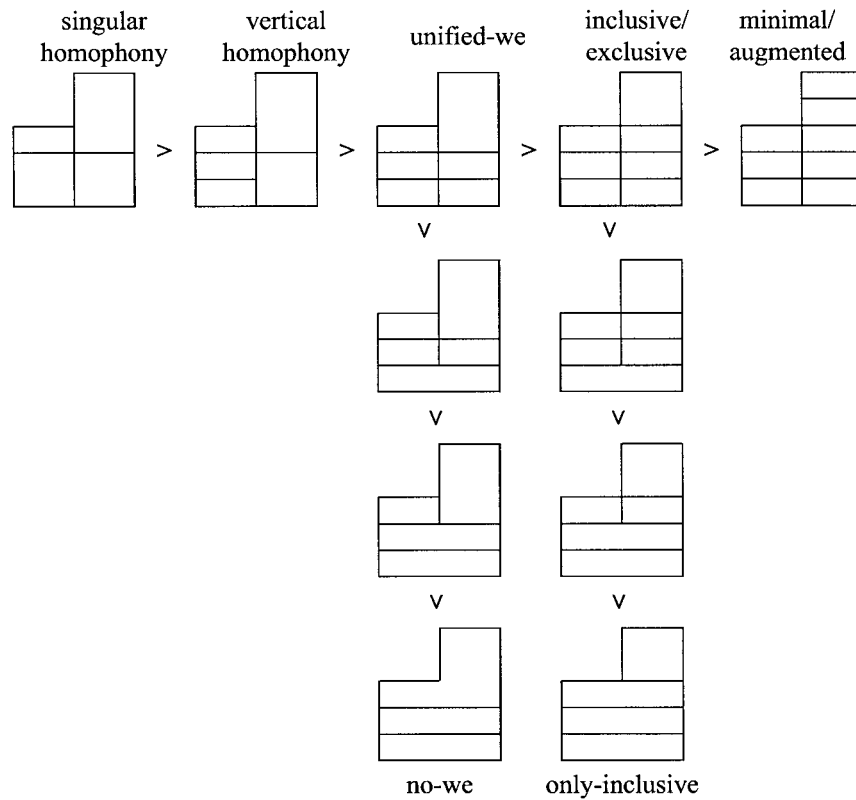


(4-15) illustrates the order in which the non-singular categories of paradigms that do not have an inclusive/exclusive distinction are marked by horizontal homophony. That is to say, if there is homophony in paradigms without an inclusive/exclusive opposition, it is first attested in the third person, and only subsequently in the second person.

Furthermore, homophony is only found in the first person if it is also found in both second and third person.

The combination of the Explicitness Hierarchy with the two Horizontal Homophony Hierarchies leads to an interconnected model of person marking, shown in (4-16).

(4-16) Model of the paradigmatic structure of person marking (Cysouw, 2003:164).



In (4-16), the Explicitness Hierarchy (4-13) is laid out along the top row, while the two Horizontal Homophony Hierarchies (4-14) and (4-15) are represented vertically: the Horizontal Homophony Hierarchy I (with inclusive/exclusive opposition) appears on the right side, and the Horizontal Homophony Hierarchy II (without inclusive/exclusive opposition) on the left. Cysouw notes that in (4-16), the paradigmatic structures that are

shown for singular and vertical homophony are not the only possibilities that exist – the patterns depicted simply serve to illustrate that part of the overall model.⁹⁹

This model, Cysouw writes, ‘shows the most frequent paradigmatic structures ordered in a two-dimensional space according to the structural dependencies between the patterns’ (2003:165). In other words, the vast range of variation in the paradigmatic structure of person marking in fact falls out in a principled manner; the model in (4-16) summarizes the major synchronic restrictions on the occurrence of particular oppositions and illustrates the various paths along which paradigms as a whole move from minimal to maximal explicitness.¹⁰⁰

4.6 Number marking

Returning to the notion of number, Cysouw expands his framework to account for dual, trial, and paucal forms, but does so in a way that is distinct from traditional analyses (cf. section 4.3.2). He illustrates the difference between the traditional approach to number marking and his own with the following diagram (4-17).

⁹⁹ Keep in mind, also, that this model shows only the most frequent paradigmatic structures, and that there exists a far wider range of variation in the person-marking paradigms of the world (Cysouw found a total of sixty-three paradigmatic structures).

¹⁰⁰ In the latter section of his monograph, Cysouw uses the synchronic hierarchies depicted above as a tool for exploring and depicting diachronic changes in person marking paradigms. He hypothesizes that the model in (4-16) illustrates the ‘paths of least effort’ for the diachronic development of paradigmatic structure. Through the comparison of cognate paradigms (pronominal paradigms from closely related languages that show only slight differences in paradigmatic structure), Cysouw found that the Horizontal Homophony Hierarchies were not accurate predictors of diachronic change, but that aspects of the Explicitness Hierarchy (those which pertain to the structure of the first person complex only) fared much better.

(4-17) Different perspectives on number marking in the pronominal domain
(Cysouw, 2003:188)

traditional division:	unmarked for		marked for	
	number		number	
	SINGULAR		GROUP (PLURAL)	RESTRICTED GROUP (DUAL, TRIAL, ETC.)
	—		—	
perspective of	unmarked for		marked for	
Cysouw (2003):	number		number	

In the traditional approach to number marking, the major division is between singular and plural; singular forms are unmarked for number, while all non-singular forms (general plural forms as well as duals, trials, paucals etc.) are considered marked for number. In contrast, Cysouw relies on the notion of ‘group’, with a group of participants defined as a specific combination of various single participants (where it is the kind, not number, that is important). Thus, both singular and group in (4-17) are unmarked for number, in Cysouw’s analysis. He uses the concept ‘restriction’ to describe the marking of number; a restricted group of participants is a group that is marked for the minimally needed number of participants (2003:203). For example, the group 1+3 minimally requires two participants (a speaker and one other) for it to retain its characteristic constitution.

In most cases, the minimally restricted group is essentially a dual, but his revised terminology has the advantage of including paradigms that have a minimally restricted 1+2+3 group (traditionally referred to as a trial). In Cysouw’s framework, the paucal (few) is reformulated as a ‘small’ restricted group. The amended paradigmatic scheme, including number marking, looks as follows.

(4-18) Paradigmatic scheme for number marking

		GROUP	RESTRICTED GROUP	
1				1+2
				1+2+3
				1+3
2				2+3
3				3+3

An example of a pronominal paradigm with an inclusive dual comes from Maori (Cysouw, 2003:191; cf. Harlow, 1996:6).

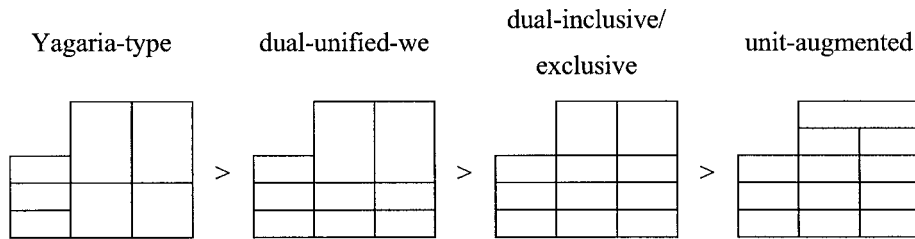
(4-19) Maori pronouns

		GROUP	RESTRICTED GROUP	
1	<i>au</i>	<i>tā-tou</i>	<i>tā-ua</i>	1+2(+3)
		<i>mā-tou</i>	<i>mā-ua</i>	1+3
		<i>kou-tou</i>	<i>kōr-ua</i>	2+3
2	<i>koe</i>	<i>rā-tou</i>	<i>rā-ua</i>	3+3

In (4-19) we see that the general plural (i.e. group-marked) pronouns are marked by the suffix *tou*, while dual forms are marked by the suffix *-ua*.

As is the case with pronouns unmarked for number, homophony of various kinds leads to paradigmatic variation in number marking. Cysouw surveys the various paradigmatic structures with restricted group marking (dual marking), and comes up with the Dual Explicitness Hierarchy, presented in (4-20).

(4-20) Dual explicitness hierarchy (Cysouw, 2003:270)



The most explicit type of paradigm (pictured on the right in (4-20)) is termed ‘unit-augmented’. The Australian language Rembarrnga provides an example of such a paradigm (Cysouw, 2003:233; cf. McKay, 1978).

(4-21) Rembarrnga pronouns

		GROUP		RESTRICTED GROUP	
		<i>yukku</i>			1+2
		<i>ngakorrɯ</i>	<i>ngakorr-bbarrah</i>		1+2+3
1	<i>nguɯɯ</i>	<i>yarrɯ</i>	<i>yarr-bbarrah</i>		1+3
2	<i>ku</i>	<i>nakorrɯ</i>	<i>nakorr-bbarrah</i>		2+3
3	<i>nawɯ/ngadɯ</i>	<i>barrɯ</i>	<i>barr-bbarrah</i>		3+3

This paradigm (4-21) illustrates quite nicely the advantages of Cysouw’s group/restricted group framework for analysis. Cysouw writes, ‘The pronoun *ngakorrbbarrah* refers to the speech act dyad plus one extra person. This group consists of three persons, and therefore, in the referential sense, it is a trial. However, paradigmatically, this form aligns with the other duals, using the dual suffix *-bbarrah*’ (Cysouw, 2003:233).

4.7 Summary

In this chapter a summary of some of the major aspects of Michael Cysouw's detailed and comprehensive survey of the paradigmatic structure of person marking in spoken languages was presented. While there are some patterns of person contrasts that are more common than others, among spoken languages we see an extremely wide range of paradigmatic structures. This variation among spoken language person marking is due to homophony, the marking of two or more distinct person categories by the same morpheme. The phenomenon of homophony leads to varying degrees of explicitness within the person-marking paradigms of the world's languages; maximally explicit paradigms show the widest array of person categories, each distinguished by a separate morphological forms, while less explicit paradigms display varying degrees of homophony, and as a result various person distinctions are conflated. Furthermore, the varying structures within person-marking paradigms in the world's spoken languages are subject to synchronic restrictions, which Cysouw formulates as hierarchies. These hierarchies serve to illustrate the ways in which paradigmatic variation is constrained in spoken languages.

Cysouw's cross-linguistic comparison of person marking paradigms illustrates quite effectively the universe of paradigmatic variation; it lays out what is possible in spoken language. In reviewing Cysouw's findings, my goal has been to give the reader a sense of the extraordinary range of variation that exists among spoken languages in how person reference is structured. With Cysouw's framework and observations in mind, I will now turn my attention to person marking (or lack thereof) in signed languages.

5 The nonexistence of person marking in signed languages

5.1 Introduction

In his 1953 thesis, *The Category of Person in Language*, Forchheimer presents the first extensive cross-linguistic study of person marking. In laying out a provisional definition of person, Forchheimer (1953:4) writes, ‘...the American College Dictionary, following Jespersen, defines grammatical person: a. (in some languages) a category of verb inflection and of pronoun classification, distinguishing between the speaker (first person), the one addressed (second person), and anyone or anything else (third person)...’. The parenthetical phrase ‘in some languages’ leads the reader to believe that Forchheimer does not necessarily consider grammatical person to be a universal phenomenon. However, in a general remarks section that precedes his presentation of the various types of person patterns, Forchheimer writes ‘The distinction of speaker, addressed, and neither speaker nor addressed is universally found. We refer to these categories as first, second, and third person, respectively’ (p.39).¹⁰¹

Though still often cited as a principle reference on person marking, Forchheimer’s thesis was not well received. In an early review published in *Language*, Householder (1955) criticizes Forchheimer’s classification of person marking according to pre-established patterns found in Latin grammar: ‘When he could have actually studied the grammatical category of person, found out which languages do and which do not have such a category, determined the various systems in the different languages and compared them, he chose instead to investigate the words which might conceivable

¹⁰¹ Forchheimer is not alone in arguing that person deixis is universally present in human languages (see Lyons, 1977 and Greenberg, 1993). Yet there is some evidence that suggests person marking may not, in fact, be universally present in languages. In Thai, for example, reference to persons is normally accomplished through the use of social designations, making it very difficult to pinpoint any clear correspondence to ‘I’ or ‘you’ (see Cooke, 1968). Similarly, Householder (1955:96) argues that neither Burmese nor Japanese possess a category of person. At the very least, however, person deixis is nearly universal in spoken languages.

translate *I, thou, we, you, he, she, it, they*' (p.94). In a contemporary review of Forchheimer's work, Cysouw (2003) expresses a similar criticism, only more directly, writing 'He *assumes* that person categories exist; he does not *investigate* whether or not they actually do' (p.28).

I include this discussion of Forchheimer's work for two reasons. First, even decades after its publication, it continues to be cited as a primary reference on grammatical person in language. Secondly, and more importantly for the purposes of this thesis, the criticisms discussed above apply (at least partially) to the way grammatical person marking in signed languages has been treated in the literature. Most research on sign language pronouns and verbal agreement assumes that the formal category of person exists in signed languages. In this and the following chapter of the thesis I take a step back and ask the fundamental question ... does grammatical person deixis exist in signed languages? Does the use of spatial locations for reference to individuals in a discourse constitute person marking, in the grammatical sense?¹⁰²

In developing an analysis of spatial referencing in signed languages, there are two main issues that need to be addressed (cf. section 2.7). The first is the fact that in all signed languages that have been studied, the overall structure of pronominal reference and verb-argument agreement appears to be essentially identical. I have referred to this property as *typological homogeneity*. The second issue that is of central importance to any analysis is the fact that in signed languages, reference to singular individuals is *unambiguous*; even with plural pronouns, the identification of referents through indexical strategies (pointing) is widespread. Both of these issues have been mentioned in earlier sections of this thesis, but here I address them head on.

The starting point for my analysis of spatial referencing in signed languages is the paradigm, and I utilize quite extensively the paradigmatic structure framework elaborated by Cysouw (2003) and outlined in the previous chapter. While the

¹⁰² Despite the fact that the existence of person deixis is currently being investigated here, in the course of the present discussion I will continue to use the relevant person-marking terminology. In other words, I will continue to refer to the categories of first person, second person, and third person, despite the fact that I am questioning whether or not such formal categories are present in signed languages.

phenomenon of spatial referencing encompasses both pronominal reference and verb-argument agreement, in this chapter I focus primarily on pronouns; verb-argument agreement is discussed, but in far less detail. Additionally, the detailed analysis of the paradigmatic structure of person marking will be framed in reference to American Sign Language pronouns. ASL is the signed language with which I am familiar, and a great deal of the research on spatial referencing has focused on data from ASL. Once I have laid out the paradigmatic structure of ASL pronouns, I will address the fact that signed languages are remarkably similar in the way that they use space for reference to individuals in a discourse. This typological homogeneity is significant, and constitutes a backdrop against which any analysis of ‘person marking’ in signed languages must be proposed.

The structure of this chapter is as follows. I begin, in section 5.2 with an overall assessment of the notion of paradigmatic structure as it relates to sign language ‘person marking’. This will be followed, in section 5.3, by the presentation and discussion of the marking of singular participants in ASL. Group person marking and restricted group marking will be the focus of sections 5.4 and 5.5, respectively. Section 5.6 addresses the verbal agreement paradigm in ASL. In section 5.7 I provide summary comments regarding person marking in ASL pronouns. Having examined the paradigmatic structure of person marking in ASL pronouns, I will then go on, in section 5.8, to discuss person marking in other signed language pronominal systems. Section 5.9 provides a comparison of person marking in spoken and signed languages. Finally, section 5.10 offers some concluding remarks concerning the lack of person marking in signed languages.

5.2 Signed language reference and the paradigm

The notion of paradigm has a long history in studies of language and linguistics (see Lieb, *in press*, for a thorough discussion). As the brief review of Cysouw’s monograph makes clear, the paradigm is an invaluable tool for understanding and classifying the marking of person across the world’s languages. In this section I present

a close examination of the notion paradigm as it applies (or does not apply) to the marking of person distinctions in sign language pronominals. This will be followed by the presentation and evaluation of the paradigmatic structure of singular pronouns in American Sign Language.

One of the central characteristics of person marking paradigms is that they constitute a closed class (or set) of linguistic elements that occur in complementary distribution. As Mühlhäusler and Harré (1990) explain, ‘when we talk of a “closed set”, we imply that in human languages only a small, definite repertoire of pronoun forms is found in each’ (p.9). The notion of closed class is problematic with respect to sign language pronouns. As was detailed above in section 2.4.1.1, in signed language pronominal reference there exists an unlimited number of locations in space at which non-present referents can be established and toward which a third person pronoun can be directed. While memory and processing constraints appear to limit the number of distinct locations that are actually used within any given discourse situation, the pronominal system of ASL (and other signed languages) is essentially infinite. In a foundational paper discussing ASL pronouns in syntactic theory, Lillo-Martin and Klima (1990) address this point, writing ‘between any two points that have been associated with various referents, another could in principle be established’ (p.194). The infinite nature of space leads to a situation in which the pronouns of signed languages are not listable. Sign language pronouns do occur in complementary distribution (i.e. they occur in the same syntagmatic place within the structure of the language); however, sign language pronouns do not constitute a closed class of lexical items.

Signed languages fare much better when it comes to the second characteristic of person marking paradigms; within a given person marking paradigm, there is no impossible reference. On this point, Cysouw writes ‘the mutually exclusive elements in a person marking paradigm fill out the complete referential array of possible participants’ (p.8). This is true, in spades, for sign language pronominals. In fact, sign language pronouns seem to go above and beyond in this respect. The ‘complete referential array’ of possible participants in spoken language pronoun systems is highly

constrained; the number of possible cells in a paradigm is determined by the range and possible combinations of person and number distinctions (together with any homophony). In signed language pronominal systems, there is an unlimited number of locations toward which a third person pronoun can be directed, and reference is unambiguous. Given this, one could argue that the referential array is unlimited. Furthermore, there are no missing referential values in sign language pronominal systems; with singular pronouns, for example, each index refers to one, and only one, individual in the discourse, and does so in a manner which unambiguously identifies the referent. Thus, while pronominal systems in both spoken and signed languages have no impossible reference, signed languages appear to differ dramatically in the overall scope of referential possibilities.

A third characteristic of person-marking paradigms in spoken languages is that they constitute a closed space of alternative options. Cysouw elaborates on this point, noting that ‘the individual person markers in a paradigm do not arrive at their referential value intrinsically, but in mutual delimitation vis-à-vis the other elements in the paradigm’ (2003:8). To be sure, sign language pronouns exist within a structured system, and an individual pronominal element stands in relation to other elements (see discussion in section 0). However, the referential value of individual sign language pronouns is fundamentally different from the referential value of spoken language pronouns. Specifically, it is not the relation between pronouns in a paradigm (the mutual delimitation) that leads to referential identity; rather, the referential value of sign language pronouns is arrived at through direct indexical strategies. This idea will be explored more fully below, in section 5.9.4, when referential specificity is addressed.

Finally, an individual person-marking paradigm in a spoken language is only a small part of a complete language, usually one of several distinct person-marking paradigms within a single language. For example, English has four distinct paradigms that share the referential work: independent nominative pronouns, independent oblique pronouns, possessive pronouns, and present tense verbal inflections (Cysouw, 2003:9). The four referential paradigms of English are distinct not only in terms of their structure, but also in terms of their phonological content (compare *I*, *me*, *mine*, and $\emptyset$,

for example). The situation in ASL (and in other signed languages, perhaps) is quite different.¹⁰³ In American Sign Language, there are three person marking paradigms sharing the referential work: independent pronouns, possessive pronouns, and verbal inflection (on one class of ASL verbs, agreement verbs, cf. section 2.6.1). Whereas the various referential paradigms in a spoken language are almost always distinct, all three of the referential paradigms in ASL are structured identically, on both the paradigmatic and phonological levels (cf. fn. 27).¹⁰⁴ In other words, personal pronouns, possessive pronouns and agreement verbs in ASL all use the same locations in space to mark for the same basic person categories.

In this section I have examined several defining characteristics of the paradigm, and have pointed out the ways in which ASL referential morphology does not conform to the notion of paradigm. The fact that referential locations in ASL do not pattern paradigmatically should not, necessarily, be taken as definitive evidence against the existence of grammatical person in ASL. The non-paradigmatic aspects of spatial referencing should, however, open up the possibility that person marking in signed languages is distinct from person marking in spoken languages. I will now go on to present and discuss the paradigmatic structure of ASL pronouns, starting first with the marking of singular participants, then moving on to group and restricted group marking.

5.3 The marking of singular participants in American Sign Language

Recall that singular pronouns in ASL take the form of an index (or ‘1’ handshape) directed toward a location in the signing space (cf. section 2.4.1.1). First person reference is accomplished by the signer indexing her chest; second person reference is an index directed toward the addressee; and third person reference is through an index directed toward a location in the signing space that has been

¹⁰³ This is true with respect to personal pronouns and agreement in other signed languages, but I cannot confirm this for possessive pronouns.

¹⁰⁴ This is, in fact, a bit of an overstatement, in that number marking seems to differ between these referential categories (cf. sections 2.4.1.2 and 2.6.1.3). Nevertheless, the same locations in space lie at the heart of person distinctions across all three of these referential systems in ASL.

previously associated with a particular referent. In this sense, singular pronouns are fully indexic – they point to their referents. Crucially, a theoretically unlimited number of third person referents can be set up in the signing space, and thus a theoretically unlimited number of distinct third person pronominal forms exists. While this section focuses primarily on personal pronouns in ASL, the fact that agreement verbs mark person distinctions in an identical fashion (via the same referential locations) is significant.

Cysouw (2003) delimits four theoretically possible patterns of homophony, given three singular person categories ((4-1) from above, repeated here as (5-1)).

(5-1) Possible types of singular homophony (adapted from Cysouw 2003:40)

	(Sa)	(Sb)	(Sc)	(Sd)	(Se)
Speaker (1)	A	A	A	A	A
Addressee (2)	B	B	B		
Other (3)	C		A	B	

Reviewing (5-1) and the various types of singular homophony found in the world's (spoken) languages, it does not appear that any of these patterns accurately represent the patterning of singular pronouns in American Sign Language. Pattern (Sa) seems to come closest; here there is no homophony between the three person categories (i.e. each category is marked by a distinct morpheme). Indeed, this pattern represents, at least in some respects, the standard analysis of ASL pronouns and agreement markers (cf. section 3.2). For example, discussing the form of third person pronouns, Friedman (1975) writes that 'all third person reference is made by indexing the space not in the direct line of sight between the signer and the addressee' (p.944). Similarly, Fischer and Gough (1978:16) describe third person pronouns as pointing out obliquely. While these authors likely would have agreed that the various third person pronouns within a

given discourse are distinct signs with distinct referents, all pronouns used for reference to non-present individuals were classified as ‘third person’.

The standard three-person analysis of ASL is problematic; in order to be classified a language of the (Sa) type, ASL would have to have a single third person morpheme, and this is not the case (cf. Liddell, 1995; 2000a; see discussion below in section 3.5). Discussing the notational conventions used in (5-1), Cysouw notes, ‘the capital letters in the table are variables designating identical morphemes by the same letter and different morphemes by different letters’ (2003:40). It most definitely is *not* the case that the various third person forms in ASL (i.e. indexes to points a, b, c, d ... in (2-6)) represent identical morphemes. Within a given discourse, each third person pronoun in ASL is marked by a distinct morpheme, and thus ASL cannot be considered a language of the (Sa) type.

The two-person analysis of ASL person marking (cf. section 3.3) could be argued to correspond to possibility (Sb), which is characterized by homophony among the categories second and third person. Originally proposed by Meier (1990) and subsequently adopted by several others (Padden, 1990; Lillo-Martin, 1995; Emmorey 2002a, among others), this analysis of ASL person marking holds that the only grammatical distinction that exists is between first person and non-first person. However, this analysis is also problematic, along the same lines discussed above for the standard three-person analysis. In order to be classified as a language of the (Sb) type, in Cysouw’s framework, a language would have to use only two morphemes to mark singular participants in a discourse; first person would be marked with one morpheme (‘A’ in (5-1)) and both second and third person would be marked by a second morpheme (‘B’ in (5-1)). The ASL facts (cf. section 2.4.1) show that while there is one morpheme that marks first person (that morpheme being the location component of an index to the signer, i.e. the signer’s chest), there is no single morpheme, no single location in the signing space, that marks non-first person (i.e. second and third person) reference. Thus, ASL cannot be classified as a language that marks singular participants according to the (Sb) paradigm. As for the other possible patterns of

homophony, (Sc) – (Se), none of them come any closer to representing the use of space for reference in ASL.

A more accurate, but still provisional, schematic depiction of the ASL singular person marking paradigm might look as follows.

(5-2) ASL singular person marking (provisional)

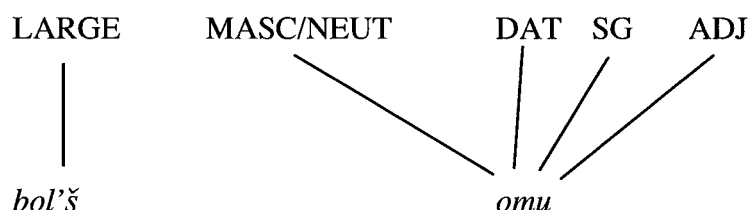
PERSON CATEGORY	MORPHOLOGICAL MARKING
SPEAKER (1)	A
ADDRESSEE (2)	B
OTHER (3)	C
	D
	E
	...

In this paradigm, each distinct third person form is represented by a separate cell in the paradigm. The cell with the ellipsis (...) is meant to represent the unlimited nature of the third person category in ASL (unlimited due to the medium of the language: the infinity of space). There is no homophony among the morphemes marking singular person categories; i.e. no single morpheme (location in space) marks more than one category. In fact, there is a sort of ‘reverse’ homophony among the categories themselves (where one category, third person, is marked by many different morphemes). To be sure, this usage of the term homophony is questionable; the notion of ‘exponence’ seems a more useful way to characterize the phenomenon, where *exponence* refers to the relationship that exists between a morphosyntactic category and

its morphological realization within an inflected form.¹⁰⁵ In some instances, the relation between a morphosyntactic category and its morphological realization can be characterized as one-to-one. This type of exponence, termed *simple exponence* (Matthews, 1991:179), is exemplified by such forms as the English verb *walked*, where [d] is the simple exponent of past tense (or, alternately, past participle).

In contrast, *cumulative exponence* refers to those instances where the relation between a morphosyntactic category and its morphological realization is many-to-one. An example of cumulative exponence can be found in Russian adjectival forms like *bol'somu* 'big (masc./neut. dat. sing. adjective)'. The many-to-one relationship is laid out in (5-3).

(5-3) Cumulative exponence in Russian adjectival form *bol'somu* (Spencer, 1991:51)

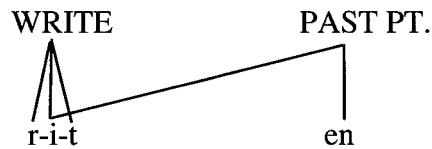


Here we have four morphosyntactic categories (gender, case, number, and adjectival) all realized by a single morphological form (a portmanteau morpheme where several morphemes are fused into one).

The opposite of cumulative exponence is *extended exponence*, where the relation between a morphosyntactic category and its morphological realization is one-to-many. The past participle form of the English verb *write* provides an example of extended exponence.

¹⁰⁵ An exponent is the physical expression of any abstract unit (e.g. the 'morph' is the exponent of the 'morpheme', and the grammatical element *-s* is the exponent of a syntactic category, 'plural') (Crystal, 1997:144).

(5-4) Extended exponence in English *written* (Spencer, 1991:51)



In (5-4) the past participle is marked by two distinct morphological changes: the change in the stem vowel (ablaut) and the past participle morpheme *-en*.

While the exponence discussed above has to do with the relationship between a morphosyntactic category and its morphological realization, it is possible to extend the notion of exponence to encompass the relationship between a *morphosemantic distinction* and its morphological realization (where morphosemantic distinction means a distinction within a morphosyntactic category, such as person). Applied in this way, Dutch present tense verbal inflections would display cumulative exponence.

(5-5) Dutch subject agreement (Cysouw, 2003:41)

- | | | |
|----|--------------------|---------------|
| a. | <i>ik</i> | <i>loop-∅</i> |
| | 1.SG.PRON | walk-1SG |
| | 'I walk.' | |
| b. | <i>jij</i> | <i>loop-t</i> |
| | 2.SG.PRON | walk-2/3SG |
| | 'You walk.' | |
| c. | <i>hij/zij/het</i> | <i>loop-t</i> |
| | 3.SG.PRON | walk-2/3SG |
| | 'S/he walks.' | |

In Dutch the single inflectional suffix *-t* is the cumulative exponent of two different morphosemantic distinctions (second person and third person).

Returning to the marking of singular participants in ASL (5-2), the categories first and second person display simple exponence, where the relation between the

morphosemantic distinction and its morphological realization is one-to-one.¹⁰⁶ The situation for third person pronouns is markedly different; here the relation between the morphosemantic distinction (third person) and its morphological marking (C, D, E ...) is one-to-many, clearly an instance of extended exponence.

Cross-linguistically, there are no spoken languages that show this kind of extended exponence (a one-to-many, meaning to form relationship) in the third person. In fact, no spoken language displays extended exponence in any of the person categories. On the contrary, simple exponence, where each person distinction is marked by a distinct morpheme, seems to be preferred. In spoken languages, homophony of singular pronominal marking is rare, ‘too rare a phenomenon to reach a noticeable frequency in a strict typological sample’ (Cysouw, 2003:52).¹⁰⁷ Languages tend to maximally differentiate singular referents; in other words, singular person marking paradigms tend to be maximally explicit in their marking of person categories. In terms of maximal explicitness, the ASL person-marking paradigm (5-2) seems to go above and beyond what is found in spoken languages. In particular, the extended exponence of the third person category (the one-to-many, meaning/form relationship) allows for many more distinctions within the third person category. The same can be said of person-marking paradigms in other signed languages, as all signed languages studied to date are typologically homogeneous in this respect.

Now, there are spoken languages that appear to make finer-grained distinctions within the category third person. It is not all that uncommon in spoken languages to find additional specification of spatial configuration within the third person category, accomplished through the use of demonstratives.¹⁰⁸ For example, Lak, a northeast Caucasian language spoken in southern Dagestan, has the following demonstrative base forms.

¹⁰⁶ The second person distinction is not, in fact, an instance of simple exponence, for reasons discussed below.

¹⁰⁷ Cysouw (2003:53) also notes that what little singular homophony exists is found, almost exclusively, in inflectional paradigms.

¹⁰⁸ Demonstratives and their grammaticalization into third person markers will be discussed at length in Chapter 7. Here, I provide only a few comments relevant to the data at hand.

(5-6) Lak demonstrative base forms (Friedman, 1994:79)

<i>va</i>	‘near to speaker’
<i>mu</i>	‘near to addressee’
<i>ta</i>	‘distant from both, neutral’
<i>ga</i>	‘below speaker’
<i>ka</i>	‘above speaker’

The demonstratives of Lak represent a ‘person-oriented’ deictic system; of the three main deictic terms (*vu*, *mu*, *ta*), the middle term denotes a referent that is close to the addressee, as opposed to a medial distance relative to the speaker. In addition to the three main deictic terms, Lak encodes a distinction based on elevation (*ga*, *ka*).

The personal pronouns of Lak are limited to the first and second person, and pattern as follows.

(5-7) Lak singular personal pronouns (adapted from Friedman, 1994:79-80)

Speaker (1)	<i>na</i>	
Addressee (2)	<i>ina</i>	
Other (3)	<i>va</i>	‘near to speaker’
	<i>mu</i>	‘near to addressee’
	<i>ta</i>	‘distant from both’
	<i>ga</i>	‘below speaker’
	<i>ka</i>	‘above speaker’

There is no independent pronominal form representing a third person distinction in Lak; rather, any of the five spatial deictics can function as third person pronouns. The choice

between the various demonstratives is determined by the spatial location of the referent itself.¹⁰⁹

What is important to note here is that these demonstrative forms are not third person pronouns; rather, they are only *functioning* as third person pronouns. As Cysouw (2003) notes, ‘often a third person independent pronoun simply does not exist. The function fulfilled by an overt third person pronoun ... is fulfilled by other linguistic means’ (p.63). These other linguistic means include demonstratives, full noun phrases, and proper names. According to the criteria laid out in Cysouw (2003), a language such as Lak, that uses demonstratives as third person markers, does not have a third person.

The manner in which Lak recruits demonstratives to serve as third person pronouns seems similar to what we see in signed language pronouns; the paradigmatic structure depicted in (5-7) seems to show extended exponence similar to that depicted in the ASL paradigm (5-2). There are, however, three crucial differences between the two paradigms and the ways in which the respective languages utilize demonstratives. The first difference has to do with the degree of exponence. In ASL, the exponence that exists within the singular third person is more than simply ‘extended’. As has been discussed (cf. section 2.4.1.1), there are an unlimited number of locations in space toward which a ‘third person’ pronoun can be directed. Thus, what we see happening within the category of third person in ASL might be more accurately described as *infinite* exponence (or at least theoretically infinite exponence).

In addition to the infinite exponence, the singular third person pronouns of ASL (and all other signed languages) are cross-linguistically unique in another respect. All singular third person pronouns in signed languages unambiguously identify their referents.¹¹⁰ As has been described in detail above, an index to a location in the signing space does not simply indicate that the referent is third person (i.e. neither speaker nor addressee); rather, an index to a specific location in the signing space unambiguously

¹⁰⁹ Djenar (2001) notes that in Indonesian, the three locative pronouns *sini* ‘here’, *situ* ‘there’, and *sana* ‘over there’ can serve as first, second, and third person pronouns, respectively.

¹¹⁰ In fact, singular pronouns in all signed languages unambiguously identify their referents. This issue will be discussed at length below and forms the basis of my argument against the existence of person marking in signed languages.

identifies the specific individual that has been previously associated with that location.¹¹¹

Finally, in Lak (as in all other spoken languages that utilize demonstratives in this way) it is only within the independent pronominals that we see demonstrative forms fulfilling the function of overt third person markers. Within the inflectional paradigms of these languages, the (non) category third person is zero-marked. In other words, there is no overt inflectional marking for third person. Again, ‘demonstrative’ third persons are only a phenomenon for independent pronouns; in inflectional paradigms they are zero (Cysouw, 2002:61-64). In signed languages, the situation is markedly different. The same array of spatial locations that is used for (unambiguous) pronominal reference to non-present referents is used within the verbal inflectional paradigm as well. Agreeing verbs move between these locations and unambiguously identify their referents (cf. section 2.6.1).

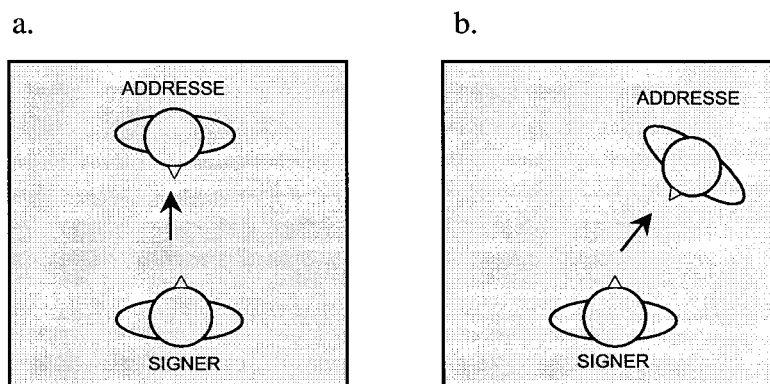
At this point, it may seem clear that there is something else going on here, that what has been collectively referred to as third person reference in ASL pronouns is not third person marking at all. This is, in fact, the position I am taking in this thesis; there is no third person in ASL. The indexes that have been interpreted as third person pronouns are, in fact, demonstratives. I will develop this argument, extending it to second person pronouns (in the following section) and eventually to first person pronouns as well (Chapter 6).

Up to this point in the discussion I have discussed second person singular reference as if it were an instance of simple exponence, where one morphological form (an index toward the addressee) marks for one category – second person. This is, in fact, not the case, and for two reasons. First, although the form of a second person

¹¹¹ Although I have been using the term extended / infinite exponence to describe the use of demonstratives as third person pronouns, it is questionable as to whether or not this is an appropriate use of the term. If exponence is interpreted as a means of characterizing the relationship that exists between a morphosyntactic category and its morphological realization, then the use of the term exponence above seems erroneous. Following Cysouw (2003), languages which use demonstratives as third person pronouns have no third person category. If there is no third person category in these languages, then there can be no morphological realization of that category, and thus no relationship of exponence.

pronoun *may* be consistent throughout a discourse, it is quite often the case that the form of a second person pronoun varies, due to the fact that any given addressee can be positioned in any location relative to the signer (Padden, 1983/1988:28).¹¹²

(5-8) Multiple forms of second person pronoun, due to movement of addressee



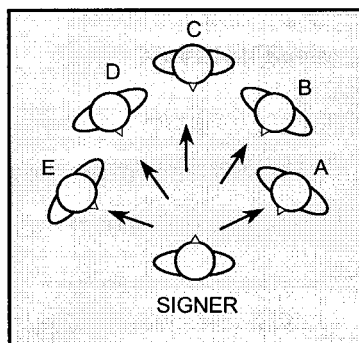
If an addressee is standing directly ahead of the signer, the second person pronoun would be an index directed at the addressee; the location component of that pronoun would be specified for a location directly out from the signer (5-8a). In contrast, if the addressee is standing off to the right of the signer, the form of the second person pronoun would be different; the location component of this pronoun would be specified for a location out and to the right (5-8b). Just as with the third person pronouns, the number of locations toward which a second person pronoun can be established is unlimited.¹¹³

Secondly, in a discourse situation where there are several addressees present (5-9), there are several distinct second person pronoun forms, one for each of the addressees.

(5-9) Multiple forms of second person pronoun due to multiple addressees

¹¹² In these diagrams, as well as in those that follow, the arrows represent the location and direction of the pronominal index.

¹¹³ This fact of ASL forms the basis of Meier's (1990) arguments against a formal distinction between second and third person. He writes, 'the set of pointing signs we might identify as second person largely, if not completely, overlaps with the set we would identify as third person' (1990:186).



In the discourse situation represented in (5-9), there are five distinct second person singular pronoun forms; a second person pronoun referring to addressee 'A' is distinct from one referring to addressee 'B', which is in turn distinct from one referring to addressee 'C', and so on. It is the physical location of each addressee that determines the phonetic form (location) of the corresponding second person pronoun. Additionally, as discussed above, each addressee could be positioned at any number of different locations relative to the position of the signer. The end result is a theoretically unlimited number of second person pronoun forms.

Returning to the overall paradigmatic structure of singular person marking in ASL, the paradigm in (5-2) can now be revised.

(5-10) ASL singular person marking (revised)

PERSON CATEGORY	MORPHOLOGICAL MARKING
SPEAKER (1)	A
ADDRESSEE (2)	B
	C
	D
	...
OTHER (3)	F
	G
	H
	...

In this section I have examined the marking of singular participants in ASL and have illustrated the ways in which person marking in ASL is unlike singular person marking found in any spoken language. The infinite expanse of the category third person has led me to argue that ASL does not have a category third person. As is the case with languages like Lak (5-7), ASL uses demonstratives to function as third person pronouns. Similarly, the category second person does not exist in ASL; because it is the physical location of each of the possible addressees that determines the form of the pronoun, these ‘second person’ pronouns are better understood as demonstratives. In Chapter 6 this demonstrative analysis of pronouns will be extended to encompass first person as well. But first, I will take a look at group marking and restricted group marking in ASL pronouns, as well as person marking in other signed languages.

5.4 Group person marking in American Sign Language pronouns

As was discussed in Chapter 2, there is a very rich morphological structure underlying the expression of number in ASL. In this section I will examine number

marking in ASL using the framework developed in Cysouw (2003). While I have argued that the categories second and third person do not exist in ASL (demonstratives do the work), in order to facilitate comparison with spoken language group person marking, in this and following sections I will continue to use the relevant person-marking terminology.

(5-11) represents an initial formulation of the paradigmatic structure of singular and group person marking in ASL pronouns. This will be amended below following a detailed discussion of two properties of the ASL pronominal system: the inclusive/exclusive distinction and the presence of a category (2+2) not found in spoken languages.

(5-11) Independent pronouns in American Sign Language (Version I)

	SINGULAR	GROUP	
		√ central √ displaced	1+2 1+2+3 1+3
1	√		
2	√ √ √ ...	√ √ √ ..?	2+3
3	√ √ √ ...	√ √ √ ..?	3+3

In (5-11), check marks are used to indicate that a separate morphological form exists for a given category in the paradigm. In presenting paradigms, Cysouw (2003) naturally includes transcriptions of the person-marking morphemes. Including phonetic transcriptions of the ASL pronouns seemed an impractical endeavor; the overall pattern of the paradigm is what is germane to the discussion at hand. The reader should consult Chapter 2 for prose descriptions and video stills of the various pronominal forms. In the course of the following discussion, aspects of the phonological form of individual pronouns will be discussed as needed.

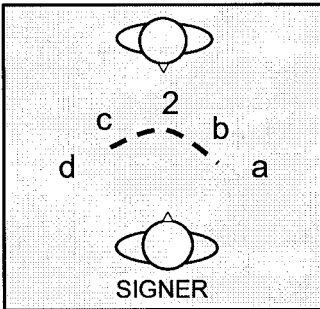
5.4.1 Unconstrained third (and second) person reference

First, looking at the overall structure of the paradigm, one is immediately struck by the fact that certain cells in the paradigm have themselves been further divided. For example, the third person singular cell has been divided in such a way as to represent the fact that there is an unlimited number of locations in space that can function as the location component of a third person pronoun (the non-closed class issue, cf. section 5.2). Similarly, the division of the second person singular cell comes as a result of the fact that multiple addressees (and/or an addressee that moves around during the course of a conversation) leads to multiple distinct forms of the second person pronoun. These issues were discussed at length above (cf. section 5.3) with respect to the marking of singular participants, and formed the basis for my initial arguments against the existence of second and third person in ASL. Indeed, this is quite unlike anything that has been found in spoken language pronominal systems.

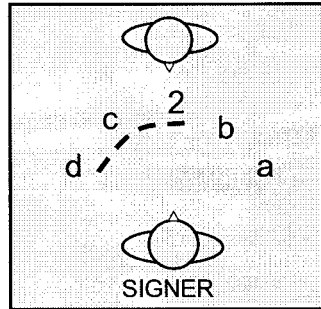
Closer examination of the ASL group person marking paradigm (5-11) reveals that the categories 2+3 and 3+3 have also been subdivided. This subdivision reflects the fact that the unusual nature of third person reference extends beyond the singular and into group pronouns as well. In the 2+3 category, for example, there are an unlimited number of forms (at least a theoretically unlimited number) that can surface, depending upon the location at which the third person referents have been established. While the basic form of the group pronoun involves an index handshake with an arc-shaped, or sweeping, horizontal movement (cf. section 2.4.1.2), the location of the sweeping movement can change depending on which referents are to be included. Take, for example, a discourse situation where there is a signer, an addressee, and four non-present referents established at locations 'a', 'b', 'c', and 'd' (5-12). A 2+3 pronoun that is meant to refer to the addressee plus third person referents that have been established at locations 'b' and 'c' has a sweeping movement that begins near location 'c', continues on to include the addressee, and ends at a location near 'b'. The dashed line in (5-12a) indicates the path of the arc movement in such a pronoun.

(5-12) Three different 2+3 plural pronouns

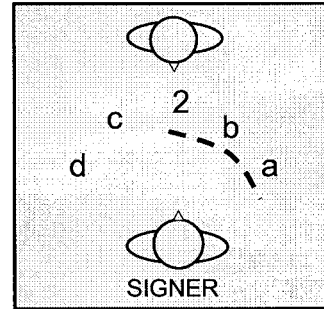
a.



b.



c.



Alternately, a 2+3 pronoun intended to refer to the addressee plus third person referents established at locations 'c' and 'd' has a sweeping movement that begins in the area in front of location 'd', continues on past location 'c', and ends at the location in front of the addressee. The dashed line in (5-12b) represents such a pronoun. (5-12c) represents a third distinct 2+3 plural pronoun that might surface in the context of this discourse; here the sweeping movement begins in front of the addressee and continue on to include locations 'b' and 'a'. Thus, (5-12) represents three distinct 2+3 plural pronouns, each of which has a specific set of referents associated with it. Because it is possible for there to be more than four non-present referents established in a discourse, each associated with a distinct location in the signing space, there could be more than these three distinct 2+3 plural pronouns.

Within the category 3+3, there are a number of distinct plural pronouns that could surface in a given discourse. For example, in a discourse where six non-present referents have been established at distinct locations in the signing space (three along the space to the right of the signer, and three to the left), the sweeping movement of the plural 3+3 pronoun can be modulated in order to index which individuals are referred to.

It is not always the case that the general plural pronoun is indexical; it is for this reason that the last divided cell in the plural third person categories ends in a question mark. Indeed, number marking can interfere with the indexical nature of pronouns in

signed languages (cf. section 2.4.1.2). In some instances, it is not possible to index in a precise manner the locations of the intended referents. Again referring to the discourse situation presented above (5-12), if a signer wanted to refer to a group of 3+3+3, with one intended referent established at location 'a', one at location 'b' and the third at location 'd', a general plural (index with added arc) could not index those (and only those) three referents without also including in the path of the arc the location in front of the addressee. In this situation, the signer might instead use an alternate type of plural (or group) pronoun, most likely a combination of three successive single pronouns (Baker and Cokely, 1980:208). These pronouns have been analyzed as composite pronouns, following Forchheimer (1953) (Cormier 2002:10). In general, composite pronouns are fully indexic in that they are comprised of points to all included referents (Baker and Cokely, 1980:208).

Despite the fact that group pronouns are not always indexic, the ASL paradigm remains unique; the unlimited number of locations in the signing space at which non-present referents can be established, together with the variable form of second person pronouns, leads to a (theoretically) unlimited number of forms in all non-first person categories.

5.4.2 The inclusive/exclusive distinction in American Sign Language

A second unusual aspect of the ASL paradigm (5-11) that deserves mention is the inclusive/exclusive distinction and the manner in which it plays out in ASL. The existence of an inclusive/exclusive distinction serves a crucial role in the paradigmatic structure of person marking across the world's spoken languages (Cysouw, 2002; 2003). Indeed, in Cysouw's typology of person marking in spoken languages a major division exists between languages that display a distinction between the inclusive ('we' including addressee) and exclusive ('we' excluding the addressee) and those that do not have such a distinction. ASL is reported to have (sort of) an inclusive/exclusive distinction in its pronominal system (briefly discussed in section 2.4.1.2). In this

section I will discuss in greater detail Cormier's (2002) findings regarding exclusives in ASL pronouns.

In a study involving four Deaf native ASL signers, Cormier (2002:44-70) used a questionnaire to elicit different forms of first person plural pronouns. Participants were asked to translate context-specific English sentences into ASL. The English sentences all used the pronouns *we*, *us*, or *our*; since the inclusive/exclusive distinction does not exist in English, the study participants had to use the context to determine which ASL pronoun to use. The number of referents was manipulated across sentence contexts in order to elicit a variety of plural forms in ASL. In addition, props were used to assist the participants in imagining real-world discourse situations; props were deemed necessary because 'the physical location of discourse participants is so crucial to how indicies are set up in the signing space' (Cormier, 2002:44).

The study revealed six different forms of the first person plural pronoun in ASL. Cormier divides these into two groups, *lexical plurals* and *ostensive pronouns*. The lexical plurals are termed as such because they do not index (i.e. point to) the locations of the individual referents; the location of these signs is, therefore, lexicalized (p.46). The four lexical plurals are: the first person plural (WE); number-incorporated first person plurals (3/4/5-OFF-US); first person plural possessive (OUR); and universally quantified first person plurals (ALL-OFF-US). The ostensive plurals, which transparently point to the location of each referent, are as follows: the composite first person plural (WE-COMP), which comprises a series of pointing signs that point to each member of some set; and the dual form (TWO-OFF-US).¹¹⁴

It was observed that the lexical plurals were often produced at or near the center of the signer's chest, but that each of these forms had variants that could be displaced to the signer's left or right side. Exploring the connection between this optional

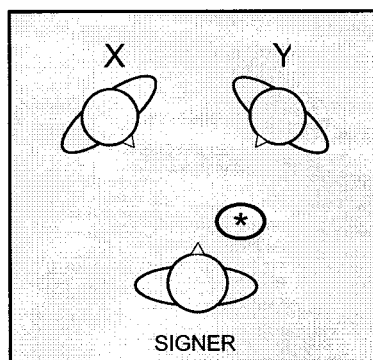
¹¹⁴ As this section of the thesis focuses on group person marking (as defined by Cysouw, 2003), I am most interested in the general plural WE and its displaced variants. The other first person plurals in ASL (the dual pronoun and number-incorporated pronouns 3/4/5-OFF-US) will be discussed in section 5.5, where I address restricted group marking. Cormier treats all of these plurals as a unified group (all are, in her terms, 'lexical plurals'). Unfortunately, when discussing the specifics of exclusive marking in ASL, most of her examples contain the restricted group pronoun 3-OFF-US.

displacement and the marking of an inclusive/exclusive distinction, Cormier found that in inclusive contexts the lexical pronouns tended to be central, while in exclusive contexts they tended to be displaced. In order to determine if these tendencies stem from a grammatical inclusive/exclusive distinction, further grammaticality judgments were elicited. The grammaticality judgments revealed that the central forms are grammatical in both inclusive and exclusive contexts, while displaced forms are grammatical only in exclusive contexts. Cormier concludes,

Since there is no form that is grammatical for inclusive, but ungrammatical for exclusive, we cannot posit a distinct inclusive category for lexical plurals. However, the fact that the displaced forms of the lexical plurals are grammatical in the exclusive context and ungrammatical in the inclusive context shows that there is a distinct *exclusive* category for lexical plurals (2002:52).

Cormier goes on to discuss work by Wilbur and Patschke (1998) that looks at certain body leans in ASL that function as an indication of inclusion or exclusion on a broader level. Their research shows that a forward lean can indicate inclusion, and a backward lean can indicate exclusion. Significantly, these leans can indicate inclusion or exclusion of referents other than the addressee. Exploring this further, she consulted her native signer participants and found that the exclusive (i.e. displaced) forms can, indeed, exclude any referent that is salient in the discourse situation, including non-present referents. Cormier discusses only one example, a discourse situation involving three present participants and another non-present participant (pp.54-56). A schematic diagram of the discourse situation looks as follows.

(5-13) Discourse situation for example (5-14)



(5-14) NEXT-WEEK THREE-OF-US-DISPLACED GO-OUT MOVIE

‘Next week the three of us will go out to see a movie.’

In this example the sign **THREE-OF-US** is displaced slightly to the right of the signer (indicated by the asterisk within a circle). Grammaticality judgments reveal that, in the above sentence, **THREE-OF-US-DISPLACED** can exclude either of the two addressees (X or Y) or the non-present referent (Z).¹¹⁵

While Cormier does not discuss any examples that illustrate the use of the general plural **WE-DISPLACED** to exclude a non-present referent (nor any examples of **4-OF-US-DISPLACED** or **5-OF-US-DISPLACED** used to exclude a non-present referent) in a summary table laying out the semantics of lexical plurals she extends this finding to all lexical plurals (p.56). Cormier concludes that displaced lexical plurals are marked [-SR] (indicating that these pronouns exclude some salient referent), while non-displaced lexical plurals (i.e. those produced at or near the center of the signer’s chest) are unmarked (meaning they are neither inclusive nor exclusive). The fact that first person exclusives in ASL can exclude referents other than the addressee is yet another

¹¹⁵ The diagram Cormier provides (5-13) does not mark a locus for the non-present referent. Furthermore, in discussing this example, Cormier (2002) does not mention whether or not the non-present referent (Z) has been localized at a location in the signing space. Cormier (p.c.) clarifies that the non-present referent in these elicited judgments did not have to be localized in the signing space; in other words, non-present referent Z had been introduced as a topic in the discourse, but was not localized in any specific location (the signs referring to her were articulated in neutral signing space).

way in which ASL person marking is distinct from person marking found across spoken languages; in the whole of his typological survey, Cysouw found no spoken languages in which there exists an exclusive form that excludes any referent other than the addressee.

Before proceeding any further, I will revise the paradigmatic structure of ASL pronouns ((5-11) from above) to incorporate those aspects of ASL exclusive marking discussed above. Here I include singular and group marking only; restricted group marking will be discussed below, in section 5.5.

(5-15) Independent pronouns in American Sign Language (Version II)

	SINGULAR	GROUP	
		√ central 1+2(+3)	
1	√	√ dr √ dl	1+2 1+3
2	√ √ √ ...	√ √ √ ..?	2+3
3	√ √ √ ...	√ √ √ ..?	3+3

(dr = displaced to the right; dl = displaced to the left)

This revised paradigmatic structure differs from the previous version in two respects; the exclusive box has been further subdivided, and an additional category (1+2 exclusive) has been added. I will elaborate on both of these revisions below.

As the work of Cormier reveals, there are several unusual aspects of the inclusive/exclusive distinction as it plays out in American Sign Language pronouns. Recall that in spoken languages, if a language has specialized marking for the exclusive in a pronominal paradigm, then that language will also have specialized marking for the inclusive (Sokolovskaya, 1980:95). As Cysouw notes, ‘a specialized inclusive can exist without a specialized exclusive, but a specialized exclusive cannot exist without a

specialized inclusive' (2003:96). ASL does not conform to this universal finding; ASL has a distinct exclusive category, but does not mark the inclusive category. In (5-15), the fact that ASL has an inclusive but no exclusive category is represented by the unusual merging of the group marking category 1+2(+3) and *parts* of the categories 1+2 and 1+3 (the division of these two categories is discussed below). The displaced forms of the general plural WE (i.e. WE-DISPLACED-left and WE-DISPLACED-right) always mark the exclusive, yet not all exclusives are marked by displacement; rather, both WE-CENTRAL and the two WE-DISPLACED forms can be used in an exclusive context. In Cysouw's typology of person marking, this type of paradigm (where only the exclusive is marked, and marked optionally) was not found in any spoken language.¹¹⁶

Another unusual aspect of ASL is the fact that the displaced forms of lexical plurals can exclude referents other than the addressee (Cormier 2002:54). In the above paradigm (5-15), this has been somewhat awkwardly represented by further dividing the 1+3 cell to allow for the 1+2 exclusive category. This alteration of Cysouw's basic paradigmatic structure is, in and of itself, somewhat problematic, as the category 1+2 is listed twice. I know of no other way to represent this unusual aspect of ASL group marking. The fact that the paradigm has to be modified in this way is, perhaps, another indication that ASL is non-paradigmatic in structure (cf. section 5.2).

In sum, this discussion has touched on four unusual aspects of the inclusive/exclusive distinction in ASL: the category exclusive is marked, but not the category inclusive; the exclusive is marked only optionally; the exclusive can be marked by two distinct forms (displaced to the right or to the left); and any salient referent can be excluded.

¹¹⁶ Cysouw found only one exception to the universal implication Exclusive → Inclusive (2003:94-95). In the inflectional paradigms of the Papuan language Binandere, there is a specialized morpheme for referring to a group of category 1+3, while the first person singular form is used for the reference to 1+2 and 1+2+3. The horizontal homophony between first singular and first inclusive makes the paradigm distinct from that of ASL.

5.4.3 The category 2+2 in American Sign Language

The paradigmatic structure of ASL pronouns as presented above in (5-15) is quite complex when compared to the paradigmatic structures found in spoken languages. As discussed above, much of this complexity is due to the fact that there is an unlimited number of ‘third person’ referents that can be established in the signing space, and the fact that there is an unlimited number of second person forms. The unlimited nature of these two person categories requires that all cells corresponding to second and third person reference be subdivided and that an ellipsis be present. As complicated as (5-15) appears, it does not, in fact, represent the whole picture. In this section I will discuss the fact that ASL marks within its pronominal system a category, 2+2, that is not present in spoken languages.

In developing his typology of group marking, Cysouw (2003) utilizes the three categories of singular participants to come up with seven logical possibilities for groups. All possibilities are summarized in (5-16).

(5-16) Possible groups of participants (Cysouw, 2003:74)

GROUP	DESCRIPTION
~~1+1~~	‘we’, mass speaking
1+2	‘we’, including addressee, excluding other
1+3	‘we’, including other, excluding addressee
~~2+2~~	‘you-all’, only present audience
2+3	‘you-all’, addressee(s) and others
3+3	‘they’
1+2+3	‘we’, complete

Two of the seven possible categories are not linguistically salient, despite the fact that they are semantically feasible (these categories are marked above with a strikethrough). The category 1+1, which represents the notion of mass speaking, is semantically

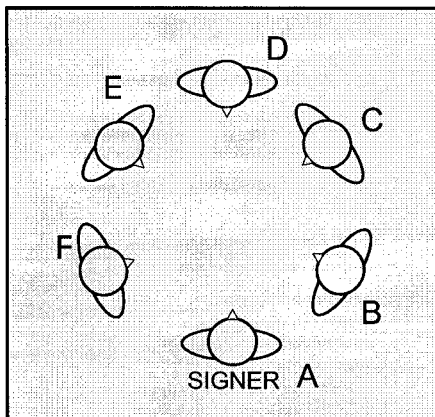
relevant in situations such as football chanting and ritual mass speaking, as in a church service (Mühlhäusler and Harré, 1990:201-202). Yet to be considered linguistically salient, a category must be grammaticalized in some languages of the world (Cysouw, 2003:74; cf. Moravcsik, 1978). Cysouw comments, ‘As far as I know, there is no language in the world that distinguishes a separate morpheme for mass speaking.’ (p.74). Thus, the category 1+1 is not a linguistic category.

Similarly, the category 2+2 is generally not considered a viable linguistic category. The difference between 2+2 and 2+3 has been described by Lyons (1968:277) as an inclusive/exclusive distinction in the second person plural. While the category 2+2 is, no doubt, semantically plausible (Cysouw mentions a classroom address, where the teacher asks the students present *Should I tell you more about this?*), it is not found to be grammaticalized in the (spoken) languages of the world (Cysouw, 2003:74-76; cf. Moravcsik, 1978:356, Greenberg, 1988).¹¹⁷

In contrast to what has been found in spoken languages, the category 2+2 is linguistically salient in American Sign Language (and other signed languages as well). As group marking is based on the *kind* of participants rather than the *number* of participants (cf. section 4.3.2), the category 2+2 subsumes the categories 2+2+2 and 2+2+2+2. To explore the presence of these categories in ASL, imagine a situation in which there are several signers (let’s say six) sitting around a table, planning a camping trip – I will refer to the signers as campers A, B, C, D, E, and F. With much to be done in preparation for the trip, the group leader (camper A) makes a list of the various tasks (planning meals, buying food, getting maps, checking equipment etc.) and calls everyone together to assign tasks. A diagram of the signing situation is pictured in (5-17).

¹¹⁷ Cysouw (2003:75-76) discusses two possible counter examples to this claim, both of which he concludes are inadequate evidence for the existence of 2+2 as a linguistic category. In the first language, the Caucasian language Abkhaz (Hewitt, 1979), the opposition between 2+2 and 2+3 is rather weak within the language, and it is not found in any related languages. In Mao Naga, a Tibeto-Burman language from India (Giridhar, 1994), the apparent distinction is not, in fact, part of the pronominal paradigm; rather the marking is part of a more general and widespread marking of homogeneity/heterogeneity in plural expressions, and is found in nouns as well as all non-singular pronouns. Cysouw concludes, ‘it seems implausible, if not impossible, for a language to have a grammaticalized category 2+2 in the pronominal paradigm’ (2003:76).

(5-17) Diagram of group signing situation (camping trip planning)



Camper A is leading the planning meeting, doling out the tasks in preparation for the camping trip. The other five campers (B through F) are physically present, and thus all can be considered second persons in this discourse situation. Of course campers B through F will likely jump into the conversation and thus serve as first person signers at various points in the course of the discourse situation, but for now, camper A leads the meeting.

If camper A wishes to assign the first task, that of planning the meals, to campers B and C, she might sign the following.

(5-18) YOU-DUAL_{b-c} PLAN EAT

‘You (dual) plan the meals.’

In this utterance, the sign YOU-DUAL would be articulated with a K handshape moving back and forth between signers B and C. This is a dual pronoun, and as was discussed in section 2.4.1.2, dual pronouns are indexical – they can be articulated between any two locations in the signing space to index the intended referents. So, in this scenario, the signer could use several distinct dual pronouns to pick out distinct combinations of 2+2. In Cysouw’s framework of numerosity, however, dual forms are included as instances of restricted group marking. Because this section of the thesis

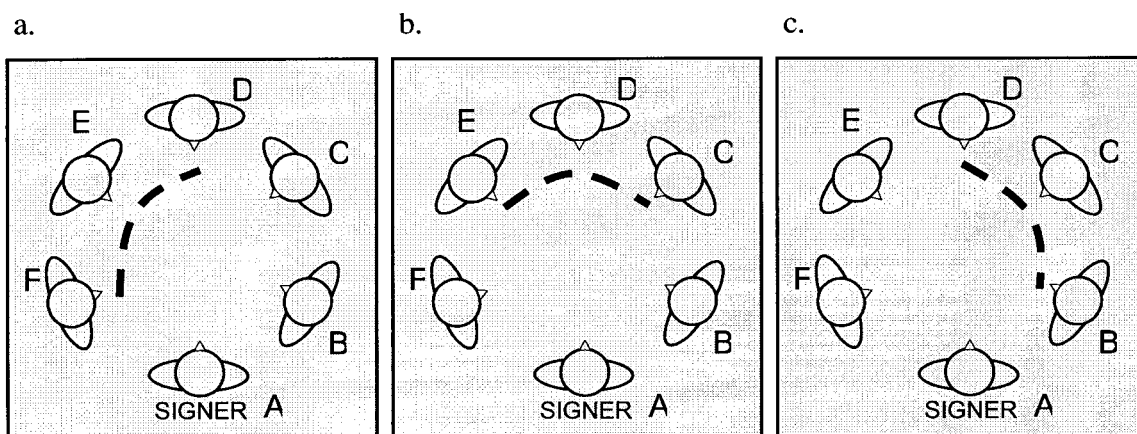
focuses on group marking (non-restricted), I will now turn to a discussion of the general plural 2+2+2.

Referring again to the signing situation depicted in (5-17) above (the six signers planning a camping trip), suppose the signer wants to assign the task of buying the food for the camping trip to Campers F, E, and D. Because there are three or more referents, a general plural pronoun would likely be used.

(5-19) YOU-PL_{f-e-d} BUY FOOD
 ‘You (plural) buy the food.’

The form of this pronoun would be an index finger moving along an arc-shaped path, starting in the area in front of camper F, sweeping along past E and ending in the area in front of camper D. A schematic diagram of this plural pronoun within this discourse situation is pictured in (5-20a). The dashed line indicates the path of the arc movement for the general plural 2+2+2 pronoun as articulated in (5-19).

(5-20) Schematic diagram of three distinct 2+2+2 plural pronouns in ASL



Other tasks might be assigned to different groups of campers, and distinct plural pronoun forms would surface. Suppose the signer wanted to assign the task of gathering and packing the necessary equipment to Campers E, D, and C. The resulting

2+2+2 pronoun would take the form of an index finger moving along an arc-shaped path, starting in the area in front of camper E, sweeping along past D and ending in the area in front of camper C. The dashed line in (5-20b) is a schematic representation of the arc portion of this pronoun. A third distinct 2+2+2 pronoun would be used if the signer assigned a task to Campers D, C, and B, and the arc movement would surface as pictured in (5-20c). All three of the 2+2+2 plural pronouns pictured in (5-20) are distinct, and each pronoun identifies which referents are included in the pronoun.

Furthermore, a task could be assigned to campers C, D, E and F (an instance of the category 2+2+2+2), or one could plausibly be assigned to campers B, C, D, E and F (perhaps that of dethroning the lazy lead camper, who as yet has taken on no preparation responsibilities). A YOU-PL pronoun moving from location B, through locations C, D, and E, and ending near location F would this be an instance of the category 2+2+2+2+2.

As has been discussed above (cf. section 2.4.1.2), plural pronouns are not always fully indexic in the way that singular pronouns are. If camper A wanted to assign a task to campers C, E and F, a general YOU-PL would not work; an index moved in an arc between locations C, E and F would erroneously include referent D. In this situation, a collection of singular pronouns would be used. This is an illustration of the fact that the marking of number does interfere with the indexic nature of ASL pronouns.

The distinct forms of the various YOU-PL pronouns discussed above have distinct referential meanings. It is the physical locations of the referents themselves, all present in this signing situation (i.e. second persons), that determines the form of the various 2+2 (+2...) pronouns. Thus, these examples serve to illustrate one major point: the category 2+2 (+2+2+2?) appears to exist in American Sign Language pronouns (and other signed languages). This sets signed languages, once again, quite apart from spoken languages, where the category 2+2, while semantically plausible, is not linguistically salient.

Given the existence of the category 2+2, and the fact that there are a number of distinct forms of YOU-PL, further revision of the ASL paradigmatic structure is called for.

(5-21) Independent pronouns in American Sign Language (Version III)

	SINGULAR	GROUP	
		√ central √ dr √ dl	1+2(+3)
1	√		1+3
			1+2
2	√ √ √ ...	√ √ √ ...?	2+2
		√ √ √ ...?	2+3
3	√ √ √ ...	√ √ √ ...?	3+3

(dr = displaced to the right; dl = displaced to the left)

In this revised version of the paradigm, the category 2+2 has been added and the cell representing this category has been split, representing the fact that there are many distinct forms of the YOU-PL pronoun. The various forms of this pronoun differ according to which referents are included in the arc of the plural marking. The final split cell in this category is marked with a questionable ellipsis; as was discussed above with respect to the category third person, there is a theoretically unlimited number of forms this pronoun could take, depending on the precise locations of the various present addressees in any given discourse situation. The question mark is intended to represent the fact that the 2+2 (+2) YOU-PL pronoun is not always indexical.

5.5 Restricted group marking in American Sign Language pronouns

Recall from section 4.6 that Cysouw's notion of restricted group is intended to represent groups that are marked for the minimally needed number of participants. For example, the group 1+3 minimally requires two participants (a speaker and one other) for it to retain its characteristic constitution. In most spoken language cases, the minimally restricted group is essentially a dual, but his revised terminology has the advantage of including paradigms that have a minimally restricted 1+2+3 group (traditionally referred to as a trial). In this section I will examine number marking in ASL pronouns, utilizing Cysouw's notion of restricted groups.

In an earlier paper (McBurney, 2002) I argued that in ASL the dual pronoun is grammatically marked for number, but that the number-incorporated pronouns (3/4/5-OF-US/YOU) are not – rather, they are instances of numeral incorporation and lie outside the core pronominal system. The arguments supporting this distinction were discussed above, in section 2.4.1.2. In contrast, Cormier (2002) posits three number values for ASL pronouns: singular, dual, and plural, with a further division of the last category into plural (without cardinality specified) and cardinal plural (with cardinality specified). While I am not yet willing to fully concede that the number-incorporated forms are grammatically marked for number, in this section I will treat all these forms as instances of restricted group marking.

The paradigm in (5-22) represents the restricted group marking in ASL pronouns.

(5-22) Restricted group marking in American Sign Language pronouns

	DUAL	TRIAL	QUADRAL	QUINTUPLE														
1+2	<table><tr><td>✓</td><td>✓</td><td>✓</td><td>...</td></tr></table>	✓	✓	✓	...	<table><tr><td colspan="3">✓ central</td></tr></table>	✓ central			<table><tr><td colspan="3">✓ central</td></tr></table>	✓ central			<table><tr><td colspan="3">✓ central</td></tr></table>	✓ central			1+2(+3)
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1+3	<table><tr><td>✓</td><td>✓</td><td>✓</td><td>...</td></tr></table>	✓	✓	✓	...	<table><tr><td></td><td>✓dl</td><td>✓dr</td></tr></table>		✓dl	✓dr	<table><tr><td></td><td>✓dl</td><td>✓dr</td></tr></table>		✓dl	✓dr	<table><tr><td></td><td>✓dl</td><td>✓dr</td></tr></table>		✓dl	✓dr	1+3
✓	✓	✓	...															
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2+2	<table><tr><td>✓</td><td>✓</td><td>✓</td><td>..?</td></tr></table>	✓	✓	✓	..?	<table><tr><td>✓</td><td>✓</td><td>..?</td></tr></table>	✓	✓	..?	<table><tr><td>✓</td><td>✓</td><td>..?</td></tr></table>	✓	✓	..?	<table><tr><td>✓</td><td>✓</td><td>..?</td></tr></table>	✓	✓	..?	1+2
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2+3	<table><tr><td>✓</td><td>✓</td><td>✓</td><td>..?</td></tr></table>	✓	✓	✓	..?	<table><tr><td>✓</td><td>✓</td><td>..?</td></tr></table>	✓	✓	..?	<table><tr><td>✓</td><td>✓</td><td>..?</td></tr></table>	✓	✓	..?	<table><tr><td>✓</td><td>✓</td><td>..?</td></tr></table>	✓	✓	..?	2+2
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✓	✓	..?																
3+3	<table><tr><td>✓</td><td>✓</td><td>✓</td><td>..?</td></tr></table>	✓	✓	✓	..?	<table><tr><td>✓</td><td>✓</td><td>..?</td></tr></table>	✓	✓	..?	<table><tr><td>✓</td><td>✓</td><td>..?</td></tr></table>	✓	✓	..?	<table><tr><td>✓</td><td>✓</td><td>..?</td></tr></table>	✓	✓	..?	2+3
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					3+3													

Several aspects of the paradigm laid out in (5-22) need explanation. First, in terms of the inclusive/exclusive distinction in ASL pronouns, the trial, quardal, and quintuple forms pattern like the general plural WE. Recall that Cormier (2002) found the displaced forms of these pronouns are marked for exclusive, but the central forms are not marked. In other words, the central forms of these cardinal plurals can be used in both inclusive and exclusive contexts. The dual form, however, patterns differently. The dual pronoun in ASL ('K' handshake, moving between the locations associated with the included referents) has distinct forms depending upon which referents are included; a dual referring to the signer and the addressee is distinct from a dual referring to the signer and a non-present (third person) referent. Thus, the dual has distinct inclusive and exclusive forms.¹¹⁸

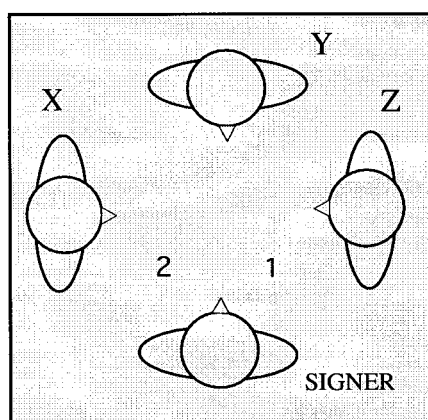
¹¹⁸ In an earlier work, Cormier (1998) concurs with this analysis of the inclusive/exclusive distinction in ASL dual pronouns, noting that the inclusive and exclusive forms of the dual pronoun are differentiated by whether or not the location of the addressee is indexed in the sign. However, Cormier (2002) revises her analysis of the ostensive plurals (WE-COMP and TWO-OF-US), writing '...it seems inappropriate to posit any sort of inclusive/exclusive distinction, since these forms pick out certain referents but do not particularly include or exclude anyone. These forms include all and only the referents that they point to ... Other referents are 'excluded' only in the sense that they happen to not be included' (p.53).

Like singular pronouns, dual pronouns in ASL are highly indexic – they index the locations of the intended referents. Despite the fact that number marking can interfere with the indexic nature of pronouns, the three number-incorporated forms (3/4/5-OF-US/YOU) can index the general location of the referents in a group (Cormier 2002:57). Baker and Cokely (1980:212-213) give examples of this general location indexation with respect to three person groups, but, with respect to the quadral and quintuple forms, mention only that they ‘follow the pattern of the other plural pronouns’ (p.213). Also, the use of the higher cardinal forms varies among signers; as Baker and Cokely note, ‘some Singers will also use the “1” handshape index when talking about five people since not all Signers are comfortable using the “5” handshape for pronominal reference’ (1980:214). To date, there has been no extensive study done of the cardinal plural pronoun forms among signers and their patterns of usage with respect to indexation. It seems reasonable to say, however, that as the number of included referents increases, the ability to index the general location of that group is likely to decrease.¹¹⁹ Accordingly, in the paradigmatic structure presented above (5-22), the cells of the cardinal plurals have been divided into fewer subcells; this limited division is intended to represent the fact that the ability to index, and in turn the number of distinct forms that might exist for that category, decreases.

On a related note, the displacement of a cardinal plural (such as THREE-OF-US-DISPLACED) can hold two very distinct meanings – indexation or exclusion. Take, for example, the discourse situation pictured in (5-23).

¹¹⁹ Examining the relation between indexicality and number of referents, Cormier found that lateral indexicality differs according to the number of referents. She writes ‘Pronouns indicating two referents most closely matched the location of their referents (72%), followed by pronouns indicating three referents at 56%. Pronouns indicating many referents matched their locations the least at 42%’ (Cormier, 2002:66).

(5-23) Discourse situation (adapted from Cormier 2002:58)



A trial pronoun articulated at location 1 in (5-23) can refer to the signer + addressee Y + addressee Z, and as such would be indexing the general location of the group of referents. Similarly, a trial pronoun articulated at location 2 in (5-23) can indexically refer to the signer + addressee X + addressee Y. However, the displacement of these pronouns can also serve as a marker of the exclusive. Cormier notes that a pronoun at location 1 could refer to the signer + addressee X + addressee Y, and exclude addressee Z or some other non-present referent. In this situation, she notes, ‘the pronoun is not at all indexic because the pronoun is being produced on the signer’s right side while the referents are directly in front of her and to the left’ (p.59). Thus, with these ASL pronouns, there exists a type of homophony, where a single form can have two distinct meanings depending on the context; in an exclusive context, a cardinal plural must be displaced, while in a context that is neither inclusive nor exclusive, that same displaced pronoun can serve to index the general location of the referents. I have not found a way to represent this unique type of homophony within the ASL pronominal paradigm laid out in (5-23).

Finally, as discussed above in section 5.4.2, Cormier reports that with all lexical plurals (i.e. including the trial, quadral, and quintuple forms addressed here), the exclusives (i.e. the displaced forms) can exclude any salient referent, not just the addressee. She discusses an example of the trial form used in this way, but includes no discussion of this phenomenon with respect to 4-of-US or 5-OF-US. While it is not

entirely clear to this author how these forms would appear and be used, I have included the additional cell 1+2 to represent this possibility.

5.6 The verbal agreement paradigm in American Sign Language

This chapter has focused primarily on person distinctions as they surface in the pronominal systems of signed languages. Yet independent person pronouns are just one of many structures of a language where person distinctions can be marked. In his typology of person marking, Cysouw considers independent pronouns and inflectional marking as two distinct, yet equivalent, ways in which languages can mark person, and thus includes in his typology person-marking paradigms of both types. Clearly, the referential use of spatial locations in signed languages is present in both independent pronouns and verbal inflection (cf. Chapter 2). Here I will include a few brief comments regarding the overall paradigmatic structure of person marking in ASL agreement verbs.

To be sure, the morphological behavior of ASL agreement verbs is hardly uniform. As was discussed in section 2.6.1, in ASL (as well as in all other signed languages), verbs can fall into one of three main classes (plain, agreement, spatial). Within the class of agreement verbs, both movement (from one R-locus to another R-locus) and orientation of a sign can serve as morphophonological manifestations of verbal agreement. Furthermore, in ASL there is variation as to which grammatical roles can be marked on a given verb; while some verbs (e.g. HELP) can mark for both subject and object, others can take only object marking (e.g. TELL). Additionally, we have seen that regular and backwards verbs differ with respect to the order in which the allowed grammatical roles are marked.

Looking at the broad range of verbal behavior in ASL (cf. (2-36)), it would appear that the verbal system of signed languages is complex in a way that is unattested in spoken languages. Given the difficulty I had fitting the pronouns of ASL into the constrained space of paradigmatic variation posited by Cysouw, I will not even attempt to provide a person-marking paradigm representing ASL verbal inflection. With the

variety of referential locations that can be used, together with the range of grammatical roles that can be marked by either or both of two phonological aspects (location and orientation), one can only imagine how the resulting person-marking paradigm might look.

5.7 Person marking in ASL pronouns: summary and discussion

(5-24) is a summary table laying out the overall paradigmatic structure of person marking in ASL pronouns.

(5-24) Complete paradigmatic structure of ASL pronouns

	SINGULAR	GROUP					DUAL					TRIAL				QUADRUPLE				QUINTUPLE				
		√ central				1+2(+3)	1+2	√	√	√	...		√ central				√ central				√ central			1+2(+3)
1	√																							
				√ dr	√ dl	1+3	1+3	√	√	√	...		√dl	√dr		√dl	√dr		√dl	√dr	1+3			
						1+2															1+2			
2	√	√	√	...	√	√	√	..?	2+2	2+2	√	√	√	..?	√	√	..?	√	√	..?	2+2	2+2		
					√	√	√	..?	2+3	2+3	√	√	√	..?	√	√	..?	√	√	..?	2+3	2+3		
3	√	√	√	...	√	√	√	..?	3+3	3+3	√	√	√	..?	√	√	..?	√	√	..?	3+3	3+3		

Trying to fit the various forms of ASL singular and plural pronouns into the constrained space of variability that is present in spoken language paradigmatic structure has been only minimally successful. In order to represent the pronominal system of ASL, I have had to make a number of significant adjustments to Cysouw's basic paradigmatic framework. In this section I will review those necessary adjustments and then go on to discuss a few observations concerning the marking of person in ASL pronouns.

With respect to the general notion of paradigm as it relates to person marking, ASL is unusual in two respects. First, unlike spoken language pronouns, those in ASL do not constitute a closed class of lexical items; the unlimited nature of space leads to an unlimited number of locations toward which third person pronouns can be directed. This fact is directly related to the second point; with an unlimited number of third

person pronouns, the scope of referential possibilities is greater in ASL than in spoken languages.

Singular pronouns in ASL are fully indexic – they point to their referents. In the case of first and second person (speaker and addressee), the pronominal index points at an actual person. In the case of third person (non-present referent), the pronominal index is directed toward a location in space that has been associated with the referent (a token or surrogate in Liddell's view, cf. section 3.5). The unlimited number of spatial locations at which non-present referents can be established leads to a paradigmatic structure unlike any found in spoken languages. In other words, none of the possible types of singular homophony discussed by Cysouw (2003) represent the patterning of ASL singular pronouns. This unusual aspect of ASL necessitates the division of the third person singular cell in the paradigm laid out above (5-24), (cf. section 5.3). Some spoken languages, such as Lak (5-7), utilize demonstratives to serve as third person pronouns, and the resulting paradigms seem slightly more similar to what we see in ASL. Both have an element of spatial specification that leads to greater distinctions within the category third person. Crucially, however, these demonstrative forms are not third person pronouns, they simply fulfill the function of third person pronouns (Cysouw, 2003:63). Thus, I have argued above that in ASL, reference to non-present individuals in a discourse is through the use of demonstrative pronouns, not personal pronouns. There is no third person in American Sign Language pronouns – indeed, no third person category at all in American Sign Language.

Similarly, I have discussed the fact that the form of the second person pronoun is not always consistent throughout a discourse because an addressee can be located at any number of locations with respect to the signer. Additionally, there can be several addressees in a discourse situation, leading to several distinct second person pronouns. These facts of ASL second person pronouns have led to the division of cells (as well as the inclusion of an ellipsis to indicate the infinite number of forms) in the category second person above (5-24). Because it is the varying *physical location* of the addressee(s) that leads to the proliferation of distinct second person forms, I have argued that these pronouns are more accurately analyzed as demonstrative pronouns.

The paradigmatic effects of the unlimited nature of space (and thus of locations that can be used for third person/demonstrative pronouns) extend beyond the singular and into group marking as well. This has led to a division of the cells representing categories 2+3 and 3+3, with a theoretically unlimited number of forms available, depending upon the location of the referents. Additionally, plural reference to multiple second persons is such that there can be distinct forms of YOU-PL corresponding to distinct groupings of referents in a discourse. Thus, whereas the category 2+2 is not linguistically salient in spoken languages, this category (as well as the category 2+2+2 and even 2+2+2+2) *is* linguistically salient in ASL.

5.7.1 Homophony in the ASL person marking paradigm

The person-marking paradigms of the world's spoken languages vary according to the amount and types of homophony that each paradigm exhibits (cf. section 4.3). While homophony of singular pronominal marking is rare in spoken languages, homophony is commonplace in both general and restricted non-singular pronouns across the world's spoken languages. Indeed, it is the various types of homophony that lead to the wide range of paradigmatic structures that comprise the typology of person marking.

ASL pronouns show no singular homophony; no two singular categories are marked by the same morpheme. Likewise, there is no horizontal homophony in the ASL pronominal paradigm; no singular and non-singular categories are combined into the reference of one morpheme. The ASL pronominal paradigm does, however, exhibit an unusual type of vertical homophony. I repeat here the ASL pronominal paradigm (5-21) (singular and general non-singular only).

(5-25) Independent pronouns in American Sign Language (Version III)

	SINGULAR	GROUP	
		✓ central ✓ dr ✓ dl	1+2(+3)
1	✓		1+3
			1+2
2	✓ ✓ ✓ ...	✓ ✓ ✓ ..?	2+2
		✓ ✓ ✓ ..?	2+3
3	✓ ✓ ✓ ...	✓ ✓ ✓ ..?	3+3

(dr = displaced to the right; dl = displaced to the left)

In section 5.4 I discussed the fact that ASL has a distinct exclusive category for lexical plurals, marked by displacement of the plural pronoun either to the right or to the left of the signer (Cormier 2002). Highly unusual, from a cross-linguistic perspective, is the fact that ASL does not mark the inclusive category; the central forms of lexical plurals (for example WE-CENTRAL) can be used in either inclusive or exclusive contexts. In (5-25) this is represented by the unusual merging of the group marking category 1+2(+3) and parts of the categories 1+2 and 1+3. This kind of *partial vertical homophony* is quite unusual. I know of no spoken language paradigm that patterns like this.

There is one other instance of vertical homophony present in the above paradigm. The general plural WE-DISPLACED can be used to exclude the addressee or to exclude a salient referent who is not physically present in the signing situation. The fact that the same displaced form of the plural pronoun WE can be used to exclude either the addressee or a third person (non-present) referent leads to a homophony between the categories 1+3 and 1+2. No spoken language has an exclusive that

excludes a third person referent, and thus this specific type of homophony is unique to ASL.

Not surprisingly, restricted group marking in ASL is paradigmatically unusual as well. The dual pronouns in ASL are fully indexic, and there exists an inclusive and an exclusive distinction. The trial, quadral and quintuple pronouns pattern like the group plural WE, with displaced forms marking the exclusive but no formal marking of the inclusive category. Like the general plural WE, the displaced forms of these cardinal plurals can exclude any referent that is salient in the discourse, not just present (i.e. second person) referents. Again, this is unattested in spoken language person marking paradigms.

5.7.2 Paradigmatic explicitness

One dimension along which person-marking paradigms vary is the degree of explicitness. A maximally explicit person-marking paradigm exhibits no homophony; there are distinct morphemes for all eight referential categories. In section 4.5 I discussed the maximally explicit pronominal paradigm of Maranao (4-12), repeated here as (5-26).

(5-26) Maranao pronouns (Cysouw, 2003:139; cf. McKaughan, 1959)

		<i>ta</i>	1+2
		<i>tano</i>	1+2+3
1	<i>ako</i>	<i>kami</i>	1+3
2	<i>ka</i>	<i>kano</i>	2+3
3	<i>sekanian</i>	<i>siran</i>	3+3

For comparison, let us look again at the ASL pronominal paradigm above (5-25). Using the framework and guidelines laid out in Cysouw, the ASL pronominal paradigm is not maximally explicit. In order to be considered maximally explicit, a paradigm must have three separate morphemes marking the three possibilities for *we*: inclusive (1+2),

augmented inclusive (1+2+3), and exclusive (1+3). While ASL does have an exclusive (WE-DISPLACED), Cormier (2002) has argued that there is no distinct inclusive form. Furthermore, there is no distinct pronoun form that marks for the category augmented inclusive.

While ASL is not maximally explicit in this respect, one could argue that it is maximally explicit in another sense. In ASL, a signer can differentially refer to any number of third (as well as second) person referents. There is no morpheme that marks for third person, nor is there one morpheme that marks for second person; rather there exists an unlimited number of morphemes (locations), each of which distinctly identifies its referent.¹²⁰ The end result is a paradigm that is, in a sense, fully explicit (excepting, of course, the lack of an augmented inclusive).

As this summary discussion has highlighted, when compared to person marking in spoken languages, person marking in ASL is highly unusual in a number of respects. While I have attempted to represent the various unusual aspects of ASL person marking using the ‘metalanguage’ (i.e. the graphic format) proposed by Cysouw (4-2), I have done so with only limited success. The summary paradigm laid out above (5-24) is messy and somewhat unconstrained, certainly in the area of second and third person. Furthermore, I have had to introduce two additional categories not present in Cysouw’s model; the category 2+2 is needed to account for the various YOU-PL forms that can arise in a group signing situation, and the category 1+2 exclusive is necessary to account for the fact that ASL exclusives can exclude non-present referents. As such, it is not unreasonable to question whether the ‘paradigmatic structure’ of ASL person marking is really paradigmatic at all, in the sense intended by Cysouw.¹²¹

¹²⁰ While this unambiguous reference is complete within the singular pronouns, it is less robust when group marking comes into play.

¹²¹ Stump (1998:13) notes that ‘the structure of paradigms in a given language is determined by the inventory of morphosyntactic properties available in that language.’ What kind of inventory of morphosyntactic properties could possibly lead to a person-marking paradigm as unconstrained as that found in ASL (5-24)? I would argue that an inventory that includes person cannot possibly account for such a paradigm.

5.8 Person marking in other signed languages

The previous sections of this chapter have laid out in considerable detail the overall (non) paradigmatic structure of person marking in American Sign Language. In this section I go on to examine person marking in the pronominal systems of other signed languages. I will focus on the five other signed languages discussed in Chapter 2 (Italian Sign Language, Australian Sign Language, Danish Sign Language, Indo-Pakistani Sign Language, and Japanese Sign Language), but will include information from signed languages not covered in Chapter 2 if they present something of particular interest.

It should again be noted (cf. section 2.4.2) that pronominal reference in ASL has been much more extensively researched than pronominal reference in most other signed languages. While the signed languages discussed in Chapter 2 represent a variety of language families, not all of them have been subject to equal amounts of linguistic investigation. As a result, there are gaps (at times significant) in our understanding of specific aspects of the person-marking systems in some of these languages, particularly in the area of number marking. And while the overall homogeneous nature of person marking in signed languages is, I would argue, unquestionable, there most likely are differences that have been overlooked due to the lack of published research. Additionally, there may very well be signed languages in existence that have yet to be studied at all. It is certainly possible that research on one or more of these signed languages might reveal interesting, even significant, differences.

5.8.1 The marking of singular participants in other signed languages

There is *very* little variation among signed languages in terms of how singular participants are marked in a discourse. In fact, the schematic depiction of the ASL singular person marking paradigm could be used to depict singular person marking in all of the signed languages considered here.

(5-27) Singular person marking (all signed languages)

PERSON CATEGORY	MORPHOLOGICAL MARKING
SPEAKER (1)	A
ADDRESSEE (2)	B
	C
	D
	...
	F
OTHER (3)	G
	H
	...
	...

As was discussed in detail above with respect to ASL, in the signed languages of the world there is no homophony among the morphemes marking singular participants; rather the category first person is marked by a distinct morpheme, and within the categories second and third person, there exists an indefinite number of possible ‘person marking’ morphemes, each distinct in form (location) and reference. Just as with ASL, singular pronouns in other signed languages are fully indexic, and unambiguously identify their referents.

There is a limited amount of variation across signed languages in terms of the handshape used for singular pronouns. For example, the first person singular pronouns in Japanese Sign Language (NS), can take one of three forms: an index handshape pointing to the chest, an index pointing to the nose, or the ‘A’ handshape (with thumb extended, pointing to the chest (Mike Morgan, p.c.). The second of these three forms (the index to the nose) is apparently a carry-over from a gesture widely used in by hearing Japanese. Additionally, Farnell (1995) notes that in Plains Indian Sign Language, first person reference sometimes takes the form of an index finger touching the nose.

It appears that there is some variation across signed languages in how non-present (third person) referents are localized in the signing space. Bergman (1982:85) reports that in Swedish Sign Language (SSL), the localization of non-present referents can be accomplished with either an index finger or a thumb; the choice between these two handshapes depends on the location chosen for localization and the resulting ease of articulation. In particular, the thumb is the preferred form for localizing referents behind the signer or in the upper regions of the ipsilateral side. Thus in SSL there is some interesting variation – apparently, non-present referents can be localized behind the signer. This is quite unusual; I have found no evidence of localization outside of the standard signing space in other signed languages.¹²²

Bergman also reports that when more than one third person is present in the discourse, they are usually localized in front of the signer, starting on the contralateral side and continuing toward the ipsilateral side (1982:89). This tendency in Swedish Sign Language is in contrast to what appears to be the norm for many signers in ASL. Barring any specific locational factors (such as attempts to re-create the spatial layout of a previous experience, in which case the actual locations of the referents as they are remembered will often determine the localization of the signs), in ASL localization normally begins on the ipsilateral side. That is to say, many right-handed signers will set up the first non-present referent to their right. This is only a tendency, and there exists variation between signers as well as variation due to localization strategies. See

¹²²Locations behind the signer are outside the ‘standard signing space’, an area that extends vertically from just below the waist just above the head, and horizontally roughly as far as the elbows reach (Klima, Bellugi et al., 1979). Baker and Cokely (1980:224, fn.16) describe a situation in which a signer wishes to refer to a *place* that she can see, or knows the location of; if that place is located behind the signer, she is likely to localize it just within the boundaries of the signing space ‘in order to comply with the constraints of the language concerning where signs are made.’ The apparently general restriction of localization to locations within the standard signing space (i.e. in *front* of the signer) is likely motivated by articulatory, perceptual, and communicative factors. If a referent is localized behind the signer, an agreeing verb marking agreement with that referent could be difficult to articulate. Furthermore, it might be difficult for the addressee to access that location for reference further on in the discourse. It is, of course, possible that the same constraints are not at work in Swedish Sign Language, but it may also be that the thumb indexing to which Bergman refers is more gestural in nature (i.e. a way of stating, in a more directly gestural way, ‘that guy over there’).

Baker and Cokely (1980:225-235) for a discussion of the wide range of strategies that signers use for deciding where to set up referents in space.

5.8.2 Group person marking in other signed languages

As in ASL, there is rich morphological structure underlying the expression of number in the signed languages of the world. The general plural form, marked by an arc-shaped movement added to the index, appears to be nearly universal across signed languages. Only one of the signed languages discussed in Chapter 2 shows variation in this area. Japanese Sign Language (NS) uses a compound structure, with an index followed by the sign ALL ('B' handshape, palm downward, with an arc-shaped movement) (Daisuke Hara, p.c.). The first sign in the compound, the index, is optional, and is almost always deleted (cf. section 2.4.2.2 and fn. 47). This leads to a situation where the general plural in NS has the same arc-shaped movement as the general plural in ASL (and other signed languages), but has a different handshape. Another notable exception to the arc-shaped plural marking in signed languages exists in Brazilian Cities Sign Language (BCSL), where plurality is marked with a change of handshape. Berenz and Ferreira Brito (1990:34) describe this distinction, 'for plural pronouns, BCSL changes the hand configuration – using two B hands touching at the wrists, oriented towards the location of the referents.'

In contrast to what we have seen in the marking of singular participants, there appears to be some variation in how distinctions of number, beyond the general plural, play out in different signed languages. The most distinct variation I have come across is in the pronominal system of Indo-Pakistani Sign Language (IPSL), discussed in section 2.4.2.2. Ulrike Zeshan (1998; 1999; p.c.) reports that IPSL has a transnumeral form that is unspecified for number; a single point with an index finger can refer to any number of entities. The interpretation of an index (whether it is singular or plural) is determined by the context of the utterance. Quite interesting is the fact that the transnumeral quality of the index applies not only to second and third person reference, but to first person reference as well. Thus, in IPSL, there is no difference between *I* and *we*; both

are made by the signer pointing to her chest.¹²³ IPSL does have a ‘non-specific plural’ pronoun, which is essentially the same as the general plural discussed above for other signed languages. This plural differs from the others, however, in that it can refer only to persons. Taking these unusual aspects into consideration, the pronominal paradigm for IPSL could be represented as in (5-28).

(5-28) Indo-Pakistani Sign Language pronouns

	SINGULAR	GROUP	
			1+2
			1+2+3
1	✓		1+3
2	✓ ✓ ✓ ✓ ...	✓ non-specific plural	2+3
3	✓ ✓ ✓ ✓ ...	✓ non-specific plural	3+3

Again, what is most unusual about the pronouns in IPSL is the fact that there is no pronominal form that specifies singular only; the transnumeral forms can indicate either singular or plural, and the non-specific plural means only plural. Thus, the paradigm structure (5-28) reveals considerable horizontal homophony, that is, homophony in all three person categories. The horizontal homophony is complete in the case of first person, where there is no non-specific plural option. In contrast, the second and third person categories show only partial horizontal homophony. This reflects the fact that plural reference in these categories can be marked using the non-specific plural form

¹²³ Zeshan (p.c.) reports that unambiguous singular reference can be accomplished through the use of a classifier construction (an upright index, which has been called the ‘person marker’ in ASL.). This would be similar to the (optional) use of the indexical classifiers in Japanese Sign Language (NS) pronominal forms, but without the gender handshake (cf. section 2.4.2.3).

(half-circle, horizontal movement). The horizontal homophony that surfaces in IPSL is quite unusual from a cross-linguistic perspective. In his survey of person-marking paradigms in spoken language, Cysouw (2003) did not report any paradigms that display this pattern of person marking, with complete homophony in the first person and this unusual partial homophony in the second and third persons. The homophony depicted in (5-28) is also unusual because two of the joined cells (representing the transnumeral second and third person forms) are themselves subdivided by dashed lines. In IPSL (as in ASL, cf. section 5.4.1), there can be any number of distinct second person pronouns (in a situation where there are multiple addressees), as well as an indefinite number of third person referents established at distinct locations in the signing space. Thus, in the second and third persons, we have a very unusual situation in which there is considerable partial horizontal homophony, while at the same time many distinct forms of pronouns within the homophonous cells themselves.

The inclusive/exclusive distinction has not been documented in many signed languages other than ASL; in fact, in the sign linguistics literature I found discussion of this distinction in only two other languages. In Australian Sign Language (Auslan), the sweeping movement of the first person plural WE can be modulated in order to indicate inclusion or exclusion of addressee; with the inclusive form, the movement includes the location in front of the addressee, while in the exclusive form the sweeping movement ends somewhere before the location in front of the addressee (Johnston, 1989:140). Johnston does not mention whether inclusion and exclusion can apply to any salient referent in the discourse (as in ASL), nor does he discuss these modulations with respect to the cardinal plurals (trial and quadral). Nevertheless, a comparison of the inclusive/exclusive in Auslan and ASL reveals some cross-linguistic variation; the two languages mark different distinctions (Auslan marks both the inclusive and exclusive, while ASL only the latter), and the way in which the distinctions are marked is distinct

(Auslan utilizes modulations in movement, while ASL relies on displacement of the entire pronoun).¹²⁴

Cormier (2004a) reports that British Sign Language (BSL) has an exclusive variant of the first person plural pronoun, which is marked by displacement of the sign, as in ASL. Like ASL, the BSL exclusive can exclude any referent salient in the discourse. The BSL exclusive differs from the ASL exclusive, however, in that the non-indexic WE-DISPLACED is impossible in BSL; if the referents are physically present in the signing situation, the displacement of the pronoun to the right or the left side of the signer must match the location of the referents. Based on personal communication with informants contacted through the Sign Language Linguistics listserve (SLLING-L), Cormier (in press) reports that the following signed languages ‘may have a distinction between an inclusive and an exclusive’: Polish Sign Language, Icelandic Sign Language, New Zealand Sign Language, Australian Sign Language, German Sign Language, Japanese Sign Language, Danish Sign Language, and Israeli Sign Language. On the qualified nature of this statement, Cormier writes, ‘it is not clear if these languages that were identified as having an inclusive/exclusive distinction were identified as such based on indexic forms like ASL TWO-OF-US, or if there are true inclusive/exclusive forms that do not rely on indexation (like ASL WE)’ (p.23). To be sure, the inclusive/exclusive distinction is just one of many areas in which further research on a wide range of signed languages is needed.

5.8.3 Restricted group marking in other signed languages

The restricted group category dual appears to be quite widespread across signed languages. While one of the five signed languages discussed in Chapter 2 did not have any published data available on number marking beyond the singular/plural distinction (LIS), all others have a dual form that appears to be fully indexic (i.e. it can be moved

¹²⁴ It seems likely that Cormier (2002) would not consider the inclusive and exclusive WE to be instances of grammatical inclusion and exclusion, since they are indexic (physically point to their referents) (cf. fn 118).

between two locations to indicate specific referents). Thus, the paradigmatic structure for dual marking in other signed languages looks as it does for ASL.

(5-29) Dual marking across signed language pronouns

	DUAL			
1+2	✓	✓	✓	.?
1+3	✓	✓	✓	.?
2+2	✓	✓	✓	.?
2+3	✓	✓	✓	.?
3+3	✓	✓	✓	.?

Even IPSL, which is so unusual in many other number marking respects, has a dual pronoun (handshape with middle and index finger extended, moving between two points of reference) that can mark for ‘inclusive/exclusive-like’ distinctions.

In contrast, the existence and overall range of cardinal plurals (trial, quadral, and quintuple) seems to vary across signed languages, and likely across signers within a given signed language as well. Some languages, like IPSL, do not have any cardinal plurals. Other signed languages have cardinal plurals, but the range is restricted; for example, both Australian Sign Language and Danish Sign Language have only trial and quadral forms. Once again, we see that when number marking is involved, there exists cross-linguistic variation among signed languages. Given that there is a paucity of data available on restricted group marking in other signed languages, and that the available data indicates variation, I will not attempt to provide an overall paradigmatic framework for restricted group marking. I will instead move on to the final major section of this chapter, in which I present an overview of the fundamental differences in person marking between spoken and signed languages.

5.9 Person marking: signed languages and spoken languages compared

In the previous sections of this chapter I have examined the paradigmatic structure of person marking in American Sign Language pronouns and, to a less thorough degree, pronouns from other signed languages. While I have included some discussion and analysis within each of the above sections, here I will focus more directly on the ways in which person marking in signed languages is distinct from person marking in spoken languages. In particular, I will address four aspects of signed language reference that are quite distinct from spoken language person reference: the overall structure of pronominal reference; the typological homogeneity of person marking; the morphophonological exclusivity of referential locations in space, and the referential specificity of singular pronouns in signed languages.¹²⁵

5.9.1 The unusual overall structure of sign language pronominal reference

Beginning with a global view of signed language pronouns, the overall structure of pronominal reference in signed languages is highly unusual from a cross-linguistic perspective. One could imagine a spoken language with a pronominal system structured in a way that is analogous to what we see across signed language pronominal systems. A schematic diagram of such a system might look as follows.

(5-30) Possible analogously structured system of pronominal reference

NOMINAL ESTABLISHMENT				PRONOMINAL REFERENCE	
SIGNED LANGUAGE	Proper	+	index to	index to	unambiguous reference
	Name		[location α]	[location α]	
SPOKEN LANGUAGE	Proper	+	pronominal	pronominal	unambiguous reference
	Name		root + [phoneme α]	root + [phoneme α]	

¹²⁵ Some of these aspects were originally discussed in McBurney (2002).

The hypothetical spoken language pictured in (5-30) might establish nominals in a discourse in the following manner: the speaker utters a proper name ('Mary') and then utters a series of two phonemes; the first (let's say /t/) serves as the pronominal root, the second (let's say /i/) as a 'person marker' that, through a one-to-one association, uniquely identifies the nonpresent referent Mary. For the remainder of the discourse, reference back to Mary would be through uttering /ti/. For example, the speaker might say '*I like /ti/*', which would be interpreted as meaning 'I like Mary'. Each time the word /ti/ is uttered, Mary is unambiguously referred to. A pronominal system thus structured is unattested in spoken language.¹²⁶

5.9.2 Typological homogeneity

In discussing the myriad ways in which spoken languages can mark the participants in a speech act, Cysouw (2003:4) writes 'Once the full expressive power of any natural language is taken into account, the possibilities to mark participants in a speech-act become innumerable.' Indeed, Cysouw's book does an impressive job of exploring, presenting, analyzing and classifying those possibilities with respect to spoken languages.

In signed languages, the situation is markedly different. In fact, the inverse of this statement seems to hold (at least in some respects). Despite the fact that the 'full expressive power' of the language(s) is enlisted (or perhaps precisely *because of* this power, i.e. the medium), we see virtually no variation in the marking of singular participants in the speech act. To be sure, when number marking comes into play we do see variation among signed languages. But when the basic marking of singular participants is considered, there is remarkable homogeneity among signed languages in how person is marked.

¹²⁶ In legal and mathematical texts, however, variables are used in a manner that approaches similarity to sign language pronominal paradigms. For example, 'If a person *x* steals something from a person *y*, and *x* sells it to a person *z*, then *z* is not obliged to give it back to *y*.'

Signed language person marking is homogenous in two respects. Paradigmatically, there is essentially no variation in how singular person is marked across signed languages of the world. Whereas across spoken languages there exists variation in the paradigmatic structure of singular person marking (cf. section 4.3.1), in signed languages this is not the case.¹²⁷ The vast range of paradigmatic variation found in person-marking paradigms across the world's languages, as well as the complex and interesting principles that constrain the variation of those paradigms, just does not exist in signed languages.

Signed languages are also homogeneous with respect to the actual morphemes (locations) that serve to mark person distinctions. In all signed languages studied to date, reference to first person is through an index to the chest, reference to second person through an index directed toward the addressee(s), and reference to third persons is through an index directed toward a location in space previously associated with that referent.

While the typological *homogeneity* of paradigmatic and morphological structure is unique to signed languages, spoken languages do exhibit varying degrees of typological *similarities*. Discussing this fact (with respect to spoken languages), Comrie (1989:201) posits four reasons why typological similarities between languages may exist. First, they could be due to chance. Secondly, observed similarities could be due to a genetic relationship, whereby the languages in question have inherited the common property from a common ancestor. Thirdly, areal contact could be responsible for the similarity; one language could have borrowed the property from the other, or both languages could have borrowed it from a third language. Finally, the property in question could be a language universal.¹²⁸

¹²⁷ One could argue that the transnumeral form in IPSL is an exception to this, since an index to the chest indicates either first person singular or first person plural. However, the fact remains that the form of the first person singular pronoun in IPSL is an index to the chest; the possible plural reading is just that, a possibility, dependent upon the context. I would argue that the form of the singular pronouns is entirely homogeneous across signed languages.

¹²⁸ With respect to language universals, Comrie (1989:19) notes an important distinction between absolute universals (i.e. universals that are exceptionless, such as 'all languages have vowels') and those that exist as tendencies, but do have exceptions.

In compiling his typology of person marking in spoken languages, Cysouw (2003) found many instances of typological similarities.¹²⁹ Certainly, some typologically similar paradigms are similar only by chance. These similarities reveal little that is of interest. The bulk of the similarities, however, are due to genetic and areal factors. For example, non-dual number marking (i.e. trial, quadral, paucal) seems to be a characteristic of Melanesian languages. On the robust nature of this areal/genetic distribution, Cysouw writes, ‘I have never come across a pronominal paradigm with a trial, a quadral, or a paucal other than among the Austronesian languages or among the non-Austronesian languages from New Guinea and the surrounding islands’ (2003:197). In terms of language universals, Cysouw makes clear his position (following Comrie, 1989, and Dryer, 1997) that typological generalizations should not be interpreted as universals, in the strict sense, but rather as ‘statistically preferred patterns of linguistic structure’ (2003: 23).

It may very well be the case that some of the typological similarities that exist between person-marking paradigms in signed languages are due to genetic and areal factors. For example, further research into aspects such as cardinal plurality could reveal similarities due to language family. I am in no position to posit any such connections. And of course, some typological similarities could be due to chance. However, the typologically *homogeneous* (as opposed to typologically *similar*) nature of certain aspects of signed language person marking makes it quite likely that there are universals, sign language universals, at work here. As I have shown above, singular person marking is homogeneous across signed languages; the paradigmatic structures are identical, and the central formational component of singular pronouns (the location of the index) is essentially invariable. The use of locations in signing space to fully and unambiguously identify singular referents in the discourse is a sign language universal. I would even go so far as to say it is likely an *absolute* sign language universal (as

¹²⁹ The final section of Cysouw’s thesis is devoted to using the typological results from his survey to investigate diachronic changes in paradigmatic structure, and he uses cognate paradigms for this purpose. Through comparison of cognate paradigms (pronominal paradigms from closely related languages that show only small differences) he develops a network of interconnected paradigms that, in effect, maps the similarity of paradigmatic structure across languages.

opposed to a typological tendency), though future research on unstudied signed languages might very well prove otherwise.¹³⁰

5.9.3 Morphophonological exclusivity

In American Sign Language, locations in space seem to be reserved for referential purposes (pronouns and verbal agreement markers).¹³¹ In other words, there exists a particular subset of phonemes (locations in space) that are used for reference, as person markers within the pronoun and verbal agreement systems. Additionally, the locations in space at which referents are established are lexically noncontrastive; there exist no minimal pairs that are distinguished solely by spatial location along the horizontal signing plane.¹³² While I cannot, with any confidence, make the same observation for other signed languages (as I am not familiar with their lexicons), it is not unlikely that this might prove true for other signed languages. Nevertheless, until further research confirms this, my comments on the exclusive use of locations in space for reference apply specifically to ASL. At the outset, this morphophonological exclusivity appears to be very unusual, quite unlike anything found in spoken languages.

However, Gordon (1995) examines the phonological composition of personal pronouns in spoken languages and confirms that cross-linguistically, there is a tendency

¹³⁰See Johnston (1989, Chapter 6) for an early and excellent discussion of grammatical convergence in signed languages. Kyle and Woll (1985:170) also discuss common grammatical features in different signed languages. Aronoff, Meir, and Sandler (2000) present a thorough exploration of sign language morphology, which they divide into two types: sign language universal and sign language specific.

¹³¹ This is, in fact, an oversimplification. Locations in the signing space are also used in classifier constructions, where specific handshapes (classifiers) are combined with location, orientation, movement, and nonmanual signals to form a predicate (Supalla, 1982; 1986) (cf. 2.6.1.1). It has been argued that classifiers use space in a topographic manner (where the relationship between locations in space is three-dimensional). In terms of morphophonological exclusivity, my claim is that when space is used *lexically* (as opposed to topographically), locations in space seem to be reserved for referential purposes.

¹³² Liddell (2000b) makes this point in a recent paper, but notes one exception: the signs GOAL and POINT. Both are two-handed signs; in both the nonmoving (nondominant) hand has a '1' handshape with the finger pointing upward, and the moving (dominant) hand, also a '1' handshape, is directed toward the tip of the nondominant hand finger. Liddell notes that what distinguishes these two signs is the placement of the stationary hand; when articulated at the level of the forehead, the sign is GOAL, but when articulated at the level of the abdomen, the sign is POINT. Although locations in the signing space appear to be lexically contrastive here, it is worth noting that these two signs are distinctly articulated with respect to the relative *vertical* position of the nondominant hand, rather than with respect to different locations within the *horizontal* signing plane. There are no two signs in ASL that differ only in location along a horizontal signing plane.

for languages to use a limited number of available phonemes in pronoun forms.¹³³ Furthermore, the sounds which surface in pronouns across languages are among the least marked sounds – in other words they are the most frequent sounds, cross-linguistically. His study uncovered two significant patterns correlating sound and meaning in spoken language pronoun systems; *m* is correlated with first person pronouns, and *t* with third person pronouns. Gordon argues that these findings have implications for genetic hypotheses for language relatedness. He writes, ‘when considering cross-linguistic resemblances of form and meaning, we can never prove that the genetic hypothesis is the only explanation, the best we can hope for is to establish that it is the most reasonable explanation. In working with pronouns, it seems this job is all the more difficult’ (p.125).

These findings seem to suggest that signed languages might not be so unusual in their exclusive use of spatial locations for reference. However, a closer examination of Gordon’s findings and comparison of them with the facts of sign language reference leads to a different conclusion. First, Gordon’s study looked at pronoun systems from 62 genetically diverse spoken languages and reported only a *tendency* for languages to use a limited number of phonemes in pronoun forms. The exclusive use of locations in space for reference to individuals in a discourse might very well be universally found in signed languages. Secondly, while there may in fact be limitations on the number of sounds used in spoken language pronouns, Gordon suggests a more pragmatic explanation may be in order. Because pronouns (and grammatical morphemes in general) tend to be shorter (contain fewer segments) than other elements in a language, the number of available phoneme slots is reduced. Gordon points out that this has the net effect of limiting the range of sounds used in pronouns. Additionally, the number of different sounds used is influenced by the number of pronominal forms available in the

¹³³ In his 1948 paper, ‘The phonemic and grammatical aspects of language in their interrelations’, Jakobson addresses a similar issue. He writes, ‘Certain categories of phonemes are found to be specialized for definite grammatical functions’ (Jakobson, 1948/1971:108). Jakobson cites as an example the tendency of Semitic languages to use vowels for inflectional (as opposed to lexical) purposes. Like Gordon, Jakobson notes that this is a tendency only. This point is significant and will be discussed below.

various languages (the range in his data was from 8 pronominal forms in one language to 232 in another). A language with fewer pronominal forms has a reduced capacity to display its various phonemes. With respect to signed languages, it is not clear to this author whether or not grammatical morphemes (and pronouns in particular) contain fewer segments than other elements in signed languages.¹³⁴ It is clear, however, that the number of pronominal forms available to different signed languages is far less varied. In fact, one could argue that, since there are an unlimited number of third person forms, all signed languages have the same number of pronominal forms available: an infinite number.

As has been discussed at length throughout this chapter, signed language pronominal systems are typologically homogeneous in the case of singular marking; all signed languages have pronominal systems that utilize locations in space to unambiguously refer to singular referents in a discourse. And while there is some variation across the various plural forms, signed languages are still highly similar when it comes to number marking. Additionally, there is a theoretically unlimited number of locations in space that can be used for singular third person reference. Thus, the morphophonological exclusivity evidenced in sign language pronouns (and agreement verbs) cannot be explained by a reduced capacity to utilize various phonemes.

An additional point has to do with Gordon's finding that the sounds which surface across spoken language pronouns tend to be unmarked; that is they are the most cross-linguistically frequent sounds. The opposite is true for locations in space, as they are used for reference in signed languages. Referential locations are used *exclusively* for pronouns and verb agreement, and do not surface in other lexical items. These facts lead me to conclude that the morphophonological exclusivity evidenced in signed

¹³⁴ The question of whether or not the notion of *segment* is relevant to the phonological analysis of signed languages is a subject of debate. Within the various segmental approaches to ASL syllable structure, signs are said to be composed of distinct types of segments. For example, movements (M) and holds (H) (Liddell, 1990b; 1993), movements (M) and locations (L) (Sandler, 1989), and movements (M) and positions (P) (Perlmutter, 1993). Within the non-segmental approaches to ASL syllable structure, sequential segments are of little import; rather, distinctive features for changes of handshape, location, and orientation are the major phonologically relevant components of a sign (Wilbur, 1993; Brentari and Goldsmith, 1993; Corina, 1993). For an overview of the various models of syllable structure, see Corina and Sandler (1993).

language referential locations is truly unique to signed languages. To my knowledge, there are no spoken languages that pattern this way, where a *particular* subset of phonemes is used exclusively for a *specific* morphological purpose, such as person reference.¹³⁵

Finally, while the two sound – meaning correlations Gordon uncovered in his study (*m* and *t* with first and third person, respectively) are potentially interesting, the correlations themselves are arbitrary. In other words, there is nothing about the phoneme *m* that represents in any inherently meaningful way the category first person. Likewise, *t* is not inherently representative of the category third person in a discourse. In contrast, the connection between form and meaning in sign language reference is not at all arbitrary. This point will be further explored in the next section.

5.9.4 Referential specificity

The pronominal systems in signed languages exhibit a high degree of *referential specificity*, which I define as the degree to which full referential information is recoverable from the morphology. The location component of singular pronouns (in all signed languages studied to date) allows for complete and unambiguous identification of referents within a discourse. As a result, the relationship between form and meaning (referent) is nonarbitrary.

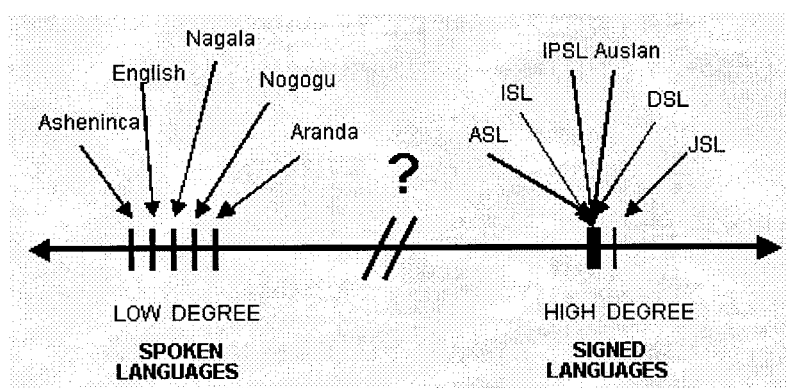
Indeed, signed and spoken languages appear to differ in their capacity for encoding referential information in pronouns. Returning to the brief overview of pronominal reference in spoken and signed language presented in Chapter 2, where distinctions beyond just person and number (i.e. distinctions of gender, kinship, social

¹³⁵A note on the use of the term *phoneme* in sign language linguistics is in order. In the first linguistic analysis of American Sign Language, Stokoe (1960) identified three formational parameters of signs: handshape, location, and movement. An additional parameter, orientation, was later suggested by Battison (1978). Under Stokoe's analysis, a finite number of *cheremes* (from the Greek word for 'hand') is associated with each parameter; these are analogous to spoken language phonemes. While Stokoe's terminology may, in fact, be more accurate, most contemporary linguists working on signed languages adopt the more familiar terms (phonology, phoneme, phonetic etc.), arguing that the objects of study exhibit the same abstract structural properties as the elements of spoken languages. See Anderson (1993) for discussion.

status, generation of persons involved etc.) were considered, we saw that across the world's spoken languages, there is variation in the categories that are marked, as well as variation in the distinctions marked within categories. In signed languages, however, it is only person and number that are marked, and the variation is extremely limited, existing only when number marking is present.

In an attempt to characterize the differences that exist between languages, one could posit a continuum of referential specificity, as in (5-31).

(5-31) Continuum of referential specificity



A language like Asheninca (2-2), which marks minimal contrasts in the pronoun system, would fall to the left of a language like Nagala

(2-3), which has more extensive marking for both number and gender. Nagala, in turn, might fall to the left of a language like Aranda (2-5), which, in addition to marking for increased number distinctions, also has a rich system of marking for kinship.

Evaluating pronominal systems in this way, signed languages would fall far to the right of spoken languages; because the location component of singular pronouns allows for complete and unambiguous reference, signed language pronouns have an extremely high degree of referential specificity. Furthermore, because pronominal systems across signed languages are structured so similarly, signed languages would cluster together at the high end of the continuum. If gender marking in Japanese Sign

Language turns out to be an integral component of the pronominal system, then perhaps this language would fall slightly more to the right.

The fact that signed and spoken languages cluster at opposite ends of the continuum of referential specificity (5-31) begs an important question: does the notion of continuum even apply in this situation? With respect to referential specificity, is the difference between spoken language pronoun systems and signed language pronoun systems a difference of *degree*, or is it rather a difference of *kind*? I will argue for the latter. Indeed, it seems that the continuum of referential specificity can be further analyzed as being composed of two separate continua: a continuum of semantic specificity and a separate continuum of indexic specificity. In any given language, the identity of a referent may be determined either semantically or indexically. Spoken language pronoun systems are relatively rich semantically in that they rely on the use of formal semantic features (such as person, number, gender, kinship etc.) to convey important referential distinctions. The fact that the spoken languages examined in Chapter 2 fall at various points along a continuum of referential specificity is a reflection of the degree to which the richness of *semantic* marking varies across spoken languages.

Signed languages, on the other hand, are relatively impoverished semantically; with the exception of numerosity, signed language pronouns rank very low on a continuum of semantic specificity. However, whereas they have a low degree of semantic specificity, signed languages as a whole demonstrate a very high degree of indexic specificity. Because signed languages have access to and fully utilize the three dimensions of space, reference to single individuals within a discourse is fully indexic. Significantly, it is when pronoun forms are semantically marked for number that the system is pushed in less indexic directions.

Thus, in signed languages the medium of the language (space) affords direct identification of referents in a discourse. By 'direct identification' I mean that in signed languages, referents in a discourse are identified not via a cluster of features (person, number, gender, kinship), but rather (largely) through direct *indexical* strategies. I agree with the fundamental insight of Liddell (2000a) that referents are identified by

pointing (cf. section 3.5). Reference to present individuals involves physically indexing an actual person, and reference to non-present individuals involves placing them in space (establishing a token at a location in a grounded mental space) and indexing that person's conceptual location. The location component of pronouns (and verbal agreement) is wholly dependent upon (and indeed more-or-less directly corresponds to) the physical location of referents in the discourse, either in real space or conceptual space.¹³⁶

5.10 Concluding remarks

Michael Cysouw's cross-linguistic investigation of person marking addresses the question of what possibilities spoken languages use to mark the participants in a speech act. The range of possibilities is vast, indeed, and it is this variety that is of primary interest to typologists. As Cysouw notes in the concluding section of his monograph, 'variability should not be considered a nuisance to linguistic inquiry, but a potential source of insight into the possibilities of human language' (2003:295). For signed languages, it appears that there is essentially no variability of person marking; there is just one possibility, one way in which person distinctions are marked across all signed languages.

Just as linguistic variability provides a rich source of insight into the possibilities of human language, I would argue that the typological homogeneity evidenced in sign language reference is also a potential source of insight into the possibilities of human language. The fact that all signed languages exploit the spatial medium and have developed systems of reference that maximize the potential of that medium, while not surprising, is quite interesting.

Just what does this lack of variability mean for signed languages and for our understanding of person reference in general? There seem to be two possible ways of

¹³⁶As has been discussed throughout this thesis, when number marking is involved, the pronouns tend to lose some of their indexical power. Also, there is some variation in terms of the degree to which agreeing verbs directly (i.e. accurately) index the locations of referents. See Cormier (2002:72-160) for discussion of a study looking at the factors that affect the indexicality of plural agreeing verbs.

accounting for the lack of variability in sign language person marking. First, it might be that person marking exists in signed languages, but the way in which it is manifest simply does not conform to established models of specialized person marking. In order to maintain a person analysis of spatial referencing in signed languages, the ‘theory’ of person must be adapted (i.e. there must be an expansion in the number of person distinctions made available to be marked within a given language or paradigm). Such an adaptation is problematic, to say the least. First, expanding the number of options (to, let’s say, first person, second person, third person, fourth person, fifth person, sixth person etc...) seems counter to the central notion of person – the marking of speech act participants. The three categories that have been posited in characterizing the reference systems of spoken languages (first, second, and third) have quite adequately served to represent the pragmatic roles of speaker, hearer, and ‘other’. With the exception of the fourth person ‘obviate’ distinction found in some languages, spoken languages have not required additional distinctions to be made in order to account for systems of person reference. Certainly, we should be wary of modifying a theory that has gone so far in explaining the phenomena of person marking in spoken languages. Secondly, even if additional person distinctions were made available in an adapted theory of person marking, the issue of referential specificity would remain unaddressed; the fact that sign language pronouns specify particular referents, rather than a class of possible referents, would still be unaccounted for.

The second possible explanation for the typologically homogeneous nature of sign language reference is that grammatical person marking is not involved. This, in fact, is the position I am taking. I argue that spatial referencing in signed languages does not involve the grammatical category person – that signed languages do not have person deixis. In the next two chapters I set forth in detail my arguments in support of this position.

6 Deixis and the nature of sign language reference

6.1 Introduction

In Chapter 5 I presented a detailed examination of person marking in American Sign Language, as well as a more general discussion of person marking in other signed language pronominal paradigms. Several unusual characteristics of spatial referencing were discussed (including non-paradigmatic structuring, typological homogeneity, morphophonological exclusivity, and referential specificity) and it was provisionally posited that the unique character of sign language reference cannot be explained by appealing to the notion of person deixis. In this chapter I will set forth a more detailed argument against grammar-internal person marking in signed languages.

The structure of the chapter is as follows. In section 6.2 I discuss the syntactic evidence that supports a pronominal (as opposed to a fully gestural) analysis of pronouns and agreeing verbs in signed languages. In this section I propose that the nominal features relevant to ASL are location and number, and that person features play no role in the grammar. In sections 6.3 and 6.4 I discuss referential identification in spoken and signed language and develop an argument for a unified deictic analysis of sign language reference, where all spatial referencing is accomplished through spatial, as opposed to person, deictics. In section 6.5 I present arguments against a first versus non-first analysis of person marking in signed languages. Section 6.6 examines the fully-deictic nature of sign language reference, and section 6.7 presents a summary of the main points of the chapter.

6.2 In support of a pronominal analysis

While I am arguing against the existence of grammatical person in signed languages, I am not suggesting that pronominal indexes are not *pronouns*. It is not the case that pronominal indexes are simply pointing gestures that are used within the

language(s). I do not believe that spatial referencing is fully gestural in this sense. To the contrary, I believe that pronominal indexes are, in fact, pronouns (in the grammatical sense), and that verbal inflection is grammatical agreement. In this section I will discuss the syntagmatic evidence in support of a pronominal analysis of sign language indexing.

6.2.1 Binding effects in American Sign Language

One of the main arguments against a fully gestural (i.e. non-pronominal) account of indexing in signed languages has to do with the distribution of pronominal indexes. Crucial to any theory of pronominal reference and distribution is the notion of *coreferentiality*, whereby two referential elements in a structure refer to the same entity (have the same reference). Take, for example, the following sentence.

(6-1) *Mary_i says that she_i has eaten here before.*

In (6-1), the NPs *Mary* and *she* can be coreferential. Coreference between two NPs in a sentence is usually indicated by coindexing. The referential index (the subscript 'i' in the example above) is the formal device used to indicate coreference between elements in a sentence. In (6-1) the NP *Mary* is the antecedent of the pronouns *she*.

In contrast to (6-1), there are situations in which a pronoun cannot be coreferential with a prior NP in a sentence.

(6-2) **Mary_i likes her_i.*

In this sentence, the NP *Mary* cannot serve as the antecedent for the object pronoun *her*. The specific rules that govern the distribution of pronouns are part of a larger group of

principles (Binding Theory) that regulate the distribution and interpretation of noun phrases (NPs).¹³⁷

The three types of noun phrases with which the principles of Binding Theory are concerned are the following: anaphors (reflexives and reciprocals: *myself*, *yourself*, *himself*, *herself* etc.), pronominals (personal and possessive pronouns: *I*, *you*, *he*, *she*, *it*, *we*, *his*, *your*, *my*, *our* etc.), and referential expressions (full NPs, including names: *the butcher*, *Owen*, *a neurotic friend*). Binding principles A, B, and C respectively specify the syntactic conditions that must be met in order for each of these three types of NPs to be present.¹³⁸ In this section of the thesis, I will briefly discuss binding conditions A and B, the two aspects of Binding Theory that apply to spatial referencing in ASL; both reflexives and pronominals utilize locations in the signing space in the same way. In my discussion, I will illustrate the effects of each condition using data from English, then will move on to discuss pronouns and reflexives in ASL, and the ways in which these Binding Conditions apply. In the end, I will illustrate that pronominal indexes in ASL are indeed subject to the conditions of Binding Theory, and are thus best analyzed as pronouns.

Principle A of Binding Theory states that an anaphor (reflexive or reciprocal) must be A-bound in its local domain. In this context, the notion ‘A-bound’ refers to having an antecedent that is in an argument position, and the notion ‘local domain’ refers to the minimal structure (noun phrase or sentence) in which the relationship of binding obtains). Furthermore, a reflexive and its antecedent must agree with respect to the nominal features of person, number, and gender. The following sentences illustrate these effects in English.

¹³⁷ Originally proposed by Chomsky (1981), Binding Theory has received a great deal of attention in the literature over the years. For detailed discussion of the various aspects of Binding Theory, see Weibelhuth (1995), Buring (to appear), among many, many others. The discussion here is based on discussions in Haegeman (1994) and Harbert (1995).

¹³⁸ Binding Theory is a complex and somewhat disputed area of syntactic theory. In this thesis, I will be discussing binding effects in general (even sketchy) terms, and will not devote discussion to some of the more complex issues and problems surrounding the notion of binding (of which there are many).

- | | | | |
|-------|----|--|-------------------------|
| (6-3) | a. | *Smoking bothers herself _j . | *no antecedent |
| | b. | Ann _j likes herself _j . | local antecedent |
| | c. | *He _j likes herself _j . | *no agreement in gender |
| | d. | *Ann _j thinks that [_{IP} he likes herself _j]. | *no local antecedent |

(6-3a) is ungrammatical because there is no antecedent (local or non-local). (6-3b) is fully grammatical, while the ill-formedness of (6-3c) and (6-3d) is due to the lack of a proper antecedent: *herself* in (6-3c) does not agree in gender features with *he*, and *Ann* is outside the local domain in (6-3d) (where the brackets indicate the local domain). Thus, (6-3b) and (6-3d) illustrate that a reflexive may be bound to the subject of its own clause (its local domain), but may not be bound to a subject of a higher clause (outside its local domain).

Principle B of Binding Theory pertains to pronominals, and states that a pronominal must be A-free in its local domain. In other words, a pronominal cannot have a binder within its local clause. The following sentences from English illustrate the effects of this condition in English.

- | | | | |
|-------|----|---|----------------------|
| (6-4) | a. | Smoking bothers her _k . | no antecedent |
| | b. | *Ann _k likes her _k . | *local antecedent |
| | c. | Ann _k likes her _j . | free – no antecedent |
| | d. | Ann _k thinks that [_{IP} I like her _k]. | non-local antecedent |

The pronoun *her* in (6-4a) is free (i.e. has no antecedent) and thus the sentence is grammatical. In (6-4b), the pronoun *her* has a local antecedent, *Ann*, and the sentence is ill-formed according to binding principle B. In contrast, the pronoun *her* in (6-4c) is free – no antecedent, and the sentence is acceptable. Finally, in (6-4d) the pronoun *her* has a non-local antecedent (i.e. is bound by an NP that is outside the local domain, the IP in which it resides), and thus the sentence is acceptable.

Turning now to the ASL data, I will look first at pronominals and the effects of Binding Theory principle B. The relevant examples are included below (6-5).

- (6-5) a. SMOKING BOTHERS IX_k . no antecedent
 ‘Smoking bothers her/him_k.’
- b. *fs- ANN_k LIKE IX_k . *local antecedent
 ‘Ann_k likes him/her_k.’
- c. fs- ANN_k LIKE IX_j free – no antecedent
 ‘Ann_k likes him/her_j.’
- d. ANN_k THINK [_{IP} IX_1 LIKE IX_k]. non-local antecedent
 ‘Ann_k thinks I like her_k.’

Before discussing the binding effects evidenced in (6-5), it is important to point out the fact that the subscripted letters serve a dual purpose here. As with the English sentences in (6-4), the subscripts in (6-5) are referential indices, formal devices that indicate coreference between elements in the sentence. In addition, in the ASL examples the subscripted letters refer to locations in the signing space; in other words, in example (6-5b) the nominal fs- ANN_k is fingerspelled at location ‘k’ in the signing space, and the pronoun IX_k is articulate at location ‘k’ as well. Two separate sets of subscripts could (and perhaps should, technically) be used to distinguish between coreference and location, but the end effect of this would be considerable repetition, because referential indices and locations are essentially synonymous in ASL. In other words, the referential indices that are unspoken in English are, in fact, overtly manifested, via locations in space, in ASL (Lillo-Martin and Klima, 1990:198). This is an important point, and one that gets at the heart of spatial referencing in signed languages.

Turning now to the sentences above, recall that pronouns must be A-free in their local domain. The pronoun in (6-5a) has no antecedent at all (i.e. is completely free), and thus the sentence is grammatical. (6-5b) is ungrammatical, however, because the pronoun is bound by the antecedent ANN within a local domain, the sentence. In contrast, (6-5c) is fully grammatical due to the fact that the pronoun is not coindexed with the NP subject of the sentence (the subject ANN has a different referential index,

and is associated with a different location in space). Finally, the second pronoun in (6-5d) can be coindexed with the NP ANN because the NP ANN is not in the local domain, but rather is the subject of the matrix clause.

Just as pronominal indexes in ASL are subject to the constraints of Binding Theory, the distribution of reflexive pronouns is constrained by Binding Theory as well. Reflexive pronouns in ASL use the same referential locations in space as do pronouns, but the handshape is different; reflexives are formed with an open ‘A’ handshape (closed fist with thumb extended). The movement component of a reflexive can take two forms; it can be the same as that which surfaces in pronouns (a single movement to a location or area in space) or, more frequently, there is an additional bounce at the end of that movement. For example, the reflexive MYSELF would be formed with an open ‘A’ handshape contacting the signer’s chest twice.¹³⁹ Reflexives can be marked for number (general plural) by the addition of a sweeping arc that indexes the locations of the referents that are included.

The following sentences (6-6) illustrate that ASL reflexives adhere to condition A of Binding Theory; they must be A-bound in their local domain. As with the sentences in (6-3), subscripted letters serve as referential indices (indicating coreference between elements) as well as markers of locations in space.

¹³⁹ There is an additional level of variation with the first person reflexive MYSELF; the orientation can be either inward (so that the knuckles contact the signers’s chest) or outward (so that the back of the thumb contacts the signer’s chest (Baker and Cokely, 1980:218). There is no variation in orientation for second or third person reflexives.

- (6-6) a. *SMOKING BOTHERS SELF_j. *no antecedent
 ‘Smoking bothers her/himself_j.’
- b. fs-ANN_j LIKE SELF_j. local antecedent
 ‘Ann_j likes herself_j.’
- c. *fs-ANN_j THINK [_{IP}IX_k LIKES SELF_j]. *no local antecedent
 ‘Ann_j thinks that s/he_k likes herself_j.’
- d. *IX_j LIKE SELF_k. *no agreement in location
 ‘S/he_j likes her/himself_k.’
- e. *IX_j LIKE SELF_{j-k-l}. *no agreement in number
 ‘S/he_j likes themselves_{j-k-l}.’

Only in (6-6b) is the reflexive (SELF_j) bound by a local antecedent (the local subject ANN_j). Sentences (6-6a) and (6-6c) are ungrammatical because they lack proper antecedents; the former has no antecedent whatsoever, and the latter lacks one in the local domain (the IP clause).

Examples (6-6d) and (6-6e) are particularly interesting in that their unacceptability is due to the fact that the reflexives do not agree with their antecedents. Recall that a reflexive and its antecedent must agree with respect to the nominal features of person, number, and gender. However, as I have argued (cf. Chapter 5), ASL does not mark the category person in its pronouns (or in verb-argument agreement). Instead, pronouns and agreement markers are marked for location. Both the form and the distribution of pronouns in ASL are largely determined by the location of referents in the signing space. As such, it follows that the nominal features that are relevant to ASL are location and number. For example, location ‘k’ in (6-6d) does not mark for any particular person category, but rather it unambiguously identifies the referent that has been established at that location. Thus, the non-agreement in (6-6d) is a non-agreement of location; the antecedent IX_j is associated with location ‘j’ and the reflexive SELF_k

with location 'k'. Again, this sentence is ungrammatical not because of a disjunction of person features, but as a result of a disjunction of location features. In contrast, the ungrammaticality of (6-6e) is due to the fact that the reflexive does not agree with its antecedent in number. The reflexive $SELF_{j-1}$ is plural (indexing locations 'j', 'k' and 'l'), while the antecedent IX_j indexes only one location, and is therefore singular.

In summary, in this section I have illustrated the ways in which the distribution of pronouns and reflexives in ASL is constrained by the relevant principles of Binding Theory. I have also suggested that the nominal features that are relevant in ASL are not the traditional features of person, number, and gender, but rather the two features *location* and number. This fact, that the features relevant to ASL nominals are location and number, is significant; it sets signed languages apart from spoken languages, where the nominal features are person, number, and gender.¹⁴⁰

6.2.2 Pronoun copy in American Sign Language

A second respect in which sign language pronouns exhibit distributional properties similar to those observed with spoken language pronouns is the phenomenon of pronoun copy. *Pronoun copy* refers to the double expression of an argument within the same clause, once in its regular position and a second time (generally) clause finally. Padden (1983/1988) was the first to make note of this phenomenon in American Sign Language, but others have discussed it as well (Lillo-Martin, 1990; Petronio, 1993; Aarons, Bahan, Kegl and Neidle, 1992). Examples (6-7) and (6-8) illustrate this phenomenon in ASL (examples from Padden, 1983/1988:96).

(6-7) $_i$ INDEX ACQUIESCE $_i$ INDEX

'She didn't say anything after that'

¹⁴⁰ See Cormier, Wechsler, and Meier (1999) for a similar argument in favor of locus functioning as a phi feature in ASL

(6-8) ₁INDEX GO-AWAY ₁INDEX

‘I’m going, for sure (I am).’

In (6-7) the pronoun copy of the subject is tagged onto the end of the sentence as a confirmation by the speaker, while in (6-8) the pronoun copy is used to add emphasis. These types of constructions have also been reported for other signed languages: Japanese Sign Language (Torigoe, 1994; Fischer, 1996), and Sign Language of the Netherlands (Bos, 1995).

6.2.3 Null arguments in American Sign Language¹⁴¹

In terms of agreement verbs, evidence clearly indicates that inflectional arguments, like pronouns, are syntactically real. Lillo-Martin (1991) examines null arguments in ASL and lays out the various ways in which the inflectional arguments found with agreeing verbs are like overt NPs (pronouns). One way is that they can be used to associate NPs with locations in space (cf. section 2.4.1.1). Another way in which inflectional arguments pattern like overt pronouns is in their function as resumptive pronouns. Topicalization, a highly productive process in ASL, is marked by nonmanuals (raised eyebrows, slight backward head tilt) as well as a temporal lengthening of the topicalized sign (Liddell, 1977). Topicalization can take place from a main clause, but is also possible from an embedded clause containing an agreeing verb. Crucially, when the topicalized constituent originates from an embedded clause containing a plain verb, a resumptive pronoun is required to fill the gap. The two examples I present here are instances of subject extraction (Lillo-Martin, 1991:56). The ‘t’ refers to the non-manual accompaniments of topicalization, and the ‘br’ refers to brow raise.

¹⁴¹ Pro-drop has also been discussed with respect to other signed languages, for example Italian Sign Language (Pizzuto, 1986) and Sign Language of the Netherlands (Bos, 1993).

- (6-9) $\frac{\text{t}}{\text{a}}\text{BROTHER}, \frac{\text{br}}{\text{b}}\text{JULIE THINK } (\frac{\text{a}}{\text{a}}\text{PRONOUN}) \text{a LOOK-OVER}_c \text{ CAR FINISH.}$

My brother_p, Julie thinks (he_i) already looked over the car.

- (6-10) a. $\frac{\text{t}}{\text{a}}\text{BROTHER}, \frac{\text{br}}{\text{b}}\text{JULIE THINK } \frac{\text{a}}{\text{a}}\text{PRONOUN BRUSH-TEETH FINISH.}$
 b. $\frac{\text{t}}{\text{a}}\text{BROTHER}, \frac{\text{br}}{\text{b}}\text{JULIE THINK } \text{___ BRUSH-TEETH FINISH.}$

My brother_p, Julie thinks he_i already brushed his teeth.

In (6-9) the verb of the embedded clause (LOOK-OVER) is an agreeing verb. The presence of the inflection on this verb makes the use of an overt pronoun optional. In contrast, (6-10a and b) contain a plain verb (BRUSH-TEETH) with no inflection for subject or object. In (6-10b), omission of the pronoun leads to an ungrammatical sentence.

Lillo-Martin goes on to offer additional examples of ways in which null pronominal arguments of agreeing verbs are like overt pronouns. These include the fact that inflectional arguments can save sentences from violating island constraints and subjacency constraints, and the fact that inflectional arguments can serve as crossover-evading resumptive pronouns. She sums up her discussion by stating ‘the distribution of overt pronouns in ASL is paralleled by the distribution of non-overt pronouns with agreement-marked verbs’ (Lillo-Martin, 1991:63).

In this section we have seen that both overt pronouns and inflectional marking evidence distributional characteristics that are in line with what we see in spoken languages. However, while the distribution of sign language pronouns is constrained by the principles of Binding Theory, their form remains quite distinct.

6.3 Unified deixis in signed languages

In this and the following section I set forth an argument for a unified deictic analysis of sign language reference, where all spatial referencing is accomplished through spatial, as opposed to person, deixis. As a first step toward developing this

argument, let us briefly return to the pronominal system of Lak, a system in which demonstratives are used as third person pronouns. I repeat the original pronominal paradigm (5-7) here as (6-11).

(6-11) Lak singular personal pronouns (adapted from Friedman, 1994:79-80)

Speaker (1)	<i>na</i>	PERSON DEICTICS	SPATIAL DEICTICS
Addressee (2)	<i>ina</i>		
Other (3)	<i>va</i>	'near to speaker'	
	<i>mu</i>	'near to addressee'	
	<i>ta</i>	'distant from both'	
	<i>ga</i>	'below speaker'	
	<i>ka</i>	'above speaker'	

In Lak, there are two types of deixis at work in the pronominal system; person deixis (first and second person pronouns) and spatial deixis (demonstratives used as third person pronouns). As was discussed, Lak has no category third person. The utilization of demonstratives for third person pronouns in Lak allows for a greater range of referential distinctions within the pronominal system. In a language like English, where there are only two third person singular pronouns (*him* and *her*), the addressee has only the feature gender to help identify the non-present referent. In contrast, when referring to a third person referent, a speaker of Lak has five distinct terms to choose from, each corresponding to a different general location. The location of the third person referent is encoded in the pronominal form, and the identification of that referent by the addressee is accomplished through accessing that spatial information.

The same was argued to be true for both second and third person pronouns in ASL (cf. section 5.3), where the location of the referents (either actual or conceptual) allows the addressee to identify them. The ASL singular paradigm (5-10) is presented

again as (6-12), with one possible breakdown of deictic systems functioning within the pronominal system.

(6-12) ASL singular person marking

PERSON CATEGORY	MORPHOLOGICAL MARKING	
SPEAKER (1)	A	PERSON DEIXIS?
ADDRESSEE (2)	B	
	C	SPATIAL DEIXIS
	D	
	...	
OTHER (3)	F	
	G	
	H	
	...	

It could, in theory, be the case that there are two separate deictic systems functioning within the ASL pronominal system, sharing the referential load. As has been discussed, this is the case for languages like Lak. However, I would argue that there is no motivation for maintaining a person analysis for first person, and a spatial / demonstrative analysis for second and third person. There is no difference between how reference to first person and reference to second and third persons is accomplished. In the next section I will illustrate this via an examination of referential identification in spoken and signed languages.

6.4 Referential identification in spoken and signed languages

In spoken languages, morphological features (and the semantic distinctions that these features encode) are one of the primary means by which the link between a pronoun and its referent is established.¹⁴² Major semantic features such as person, number, and gender (together with additional distinctions such as animacy, kinship status, etc.) serve to delimit the range of possible referents. Take, for example, the sentence in (6-13).¹⁴³

(6-13) Nora gave **me** a kiss.

In (6-13), the features person and number are involved in the interpretation of the pronoun *me*. The distinctions first person and singular pick out the speaker of the utterance as the object which the pronoun *me* identifies. Identification is through features of person and number. These features do not, however, always lead to a straightforward identification of the referent. Consider the third person pronoun in the following example.

(6-14) Owen is really into trucks. **He** knows the names of all of them.

The pronoun *he* has certain features (person, number and gender, in this case) that serve to restrict the range of possible referents: the features and their values tell us the referent of *he* is not the speaker or addressee, is just a single referent, and is male. While these features narrow the range of possible referents, full identification can be made only through anaphoric processes. In other words, the linguistic unit *he* derives its interpretation from some previously expressed linguistic unit or meaning (the antecedent *Owen*, in this case).

¹⁴² Other types of factors that contribute to the association between a pronoun and its referent include morphosemantic, discourse-pragmatic, morphosyntactic, and syntactic (Wiese and Simon, 2002:2).

¹⁴³ The English examples in this section, as well as some aspects of the discussion, are adapted from a discussion of the grammatical properties of pronouns in Wiese and Simon (2002).

The manner in which referents are identified in signed languages is, in certain respects, distinct from that described above. This was touched upon in the earlier discussion of referential specificity (cf. section 5.9.4), but here I will discuss in greater detail the unique referential strategies of signed languages. As a way to explore this, let us look at the pronominal indexes in the following set of ASL sentences (6-15).¹⁴⁴

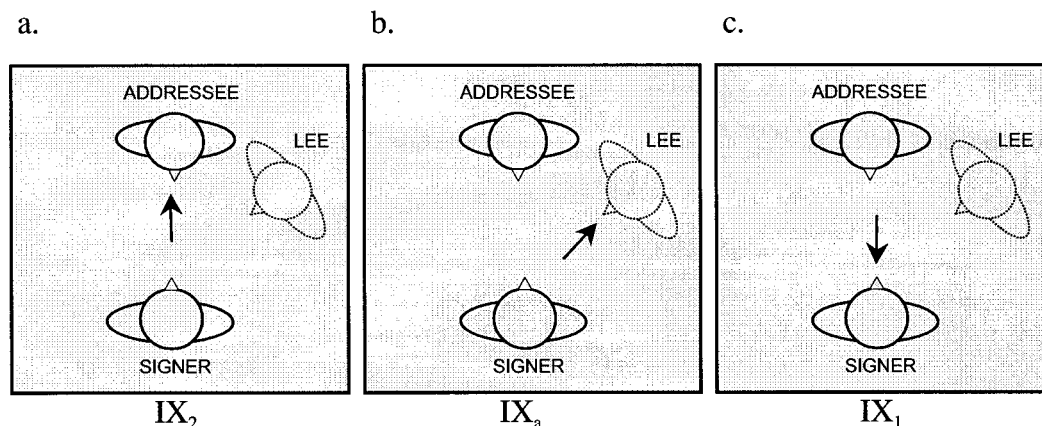
- (6-15) $\overset{q}{\text{IX}_2}$ KNOW fs-LEE? aINFORM_1 IX_a BEST #QB. TALK+++ TOP.
 IX_a EXAGGERATE. IX_1 WAVE-DOWN.

‘You know Lee? He told me he was the best quarterback. He talked up a storm, like he was tops. He was exaggerating. I thought, whatever.’

In (6-15), the first pronominal index (IX_2) is directed toward the addressee. The non-present referent, LEE, is established at location ‘a’ in the signing space through the use of the agreement verb aINFORM_1 ; this verb moves from location ‘a’ toward the signer, and the resulting meaning is ‘Lee informed me’. Following the establishment of this referent in the signing space, the next two pronominal indexes directed toward that location, IX_a , are references back to LEE. The final pronominal index, IX_1 , is directed toward the signer, and can only be interpreted as reference to the signer. A schematic diagram of these three distinct pronominal indexes looks as follows.

¹⁴⁴ This example comes from a corpus of ASL sentences being used as stimuli for a neurolinguistic experiment currently underway (Brain Development Laboratory, University of Oregon; Helen Neville, Director).

(6-16) Diagram of pronominal indexes in example (6-15)



For ASL pronouns, the range of possible referents is delimited not solely by a set of morphosemantic features (i.e. person, number, gender), but rather primarily through spatial-locational features. In all three singular pronouns, (6-16a) – (6-16c), it is the location of the referent that determines the form of the pronoun; in (6-16a) and (6-16c) the pronominal index is directed toward physically present individuals, and in (6-16b) it is directed toward the conceptual location of a non-present individual. It follows that the interpretation of these pronouns depends wholly on the location of the referents, not on the grammatical feature person.

The morphosemantic feature ‘number’ does play a role in the proper identification of referents in ASL discourse. Take, for example, the following modified sentence from the discourse presented above (6-15).

(6-17) $\overset{q}{\text{IX}_2}$ KNOW fs-LEE? aINFORM_1 IX_{a-c} BEST #QB.

‘You know Lee? He told me they were the best quarterback.’

In this sentence, the pronoun is plural; the subscripts ‘a-c’ represent the addition of an arc-shaped plural morpheme to the pronominal index. The resulting sentence is ungrammatical due to the fact that the pronoun IX_{a-c} and its antecedent, LEE, do not agree in number.

So in ASL the feature number does play a role in establishing a link between a pronoun and its referent, but crucially the feature person does not. With all singular referents in a discourse, the link between a pronoun and its referent is established via a location feature. Crucially, these location features are fully dependent upon the extralinguistic context of the utterance – the physical location of the individuals involved in a conversation, as well as the physical locations in space at which non-present referents (or tokens) have been established. As such, pronouns in ASL (and in other signed languages) are best understood as spatial deictics.¹⁴⁵

Returning to the question considered above concerning the existence of two types of deictic systems (person deixis and spatial deixis) within the pronominal system of ASL, I have shown here that all pronouns in ASL are spatial deictics. There is simply no motivation for maintaining two separate systems of deixis within ASL pronouns. However, the prevailing view in the literature is that the grammatical category person *is* present within ASL and other signed languages (cf. Chapter 3). Following Meier (1990), the first vs. non-first analysis of ASL person reference has been adopted by many researchers (cf. section 3.3). Under this analysis, there is a distinct first person, but no distinction between second and third person. The next section of this chapter will provide a discussion and refutation of this analysis of spatial referencing in signed languages.

6.5 Against a first/non-first person distinction in ASL

In this section I will argue against the first versus non-first model of person reference in signed languages. I will begin by addressing some of the arguments that have been set forth in the sign language linguistics literature as evidence for the

¹⁴⁵ Marschark (1994) anticipates this analysis when he notes that deictic pointing is lexicalized in ASL. He does not, however, discuss the status of grammatical person in signed languages. Similarly, Liddell (1995:27) has characterized ASL pronominal reference as ‘grammatical deixis’. While this term is accurate when interpreted broadly, it is ambiguous in the sense that there is more than one type of deixis that can be grammaticalized: grammatical *person* deixis, grammatical *spatial* deixis, and grammatical *time* deixis (among others). In this thesis I have attempted to lay out, in a clear and precise manner, the way in which signed language reference relies entirely on spatial deixis.

existence of a distinct first person in sign languages. I will then go on to discuss first/non-first person systems in spoken languages and the ways in which the signed language data is significantly different. Finally, I will close this section with some comments regarding Benveniste's (1971) discussion on the nature of pronouns.

6.5.1 Arguments against the existence of first person in ASL

Engberg-Pedersen (1993) has argued for a distinction between first and non-first person in Danish Sign Language.¹⁴⁶ As evidence in support of this distinction, she points out that the first person pronoun differs formally from other pronouns in two ways. First, it is 'the only form in which the manual articulator makes contact with something, namely the signer's body as representing the referent' (p.134). Second, the first person pronoun is the only pronoun that is not always articulated with an index handshape; other handshapes used include a loose index handshape, loose flat hand, and handshapes identical to the handshape used in the verb that follows the first person pronoun. Most of these arguments could be made with respect to the posited first person pronoun in ASL. As in DSL, the first person pronoun in ASL is the only pronoun that makes contact with something, and there is some handshape variation that surfaces. As I am not familiar with DSL, my arguments against Engberg-Pedersen's analysis will be framed with respect to the facts of ASL.

The formational differences that form the basis of Engberg-Pedersen's analysis can be explained by other factors. With respect to the claim that the first person pronoun is distinct because it contacts something (the signer's chest), an alternative explanation is available, namely, that the form of this index is determined by phonological rules of the language. Various locations on the signer's body can be used as places of articulation for well-formed signs; in ASL, these include locations on the neck, upper arm, elbow, forearm, as well as several distinct locations on the face, chest, and nondominant hand. The center of the chest is, without question, one of these locations,

¹⁴⁶ Portions of this section appeared in McBurney (2002).

as evidenced by the fact that there are numerous lexical items in ASL whose specification for location is the center of the chest (LIKE, FEEL, EXCITED, WHITE). To my knowledge, however, there are no signs whose specification for location is the area just in front of the chest. I would argue that the first person pronoun contacts the chest because the well-formedness constraints of ASL require that it do so.¹⁴⁷ In other words, an index directed toward the chest but not actually contacting the chest could be argued to be in violation of well-formedness constraints that exclude the area in front of the chest as a permissible place of articulation for a sign. The fact that the pronoun referring to the addressee (second person in the standard analysis) does *not* contact the chest of the addressee is also due to phonological well-formedness constraints; in signed languages, locations on other peoples' bodies are not permissible places of articulation for well-formed signs.¹⁴⁸

Engberg-Pedersen's second argument for distinguishing the category of first person is based on handshape variation that occurs with the first person pronoun forms in DSL. While the data Engberg-Pedersen provides with respect to this issue are incomplete, observations of similar variation in ASL 'first person' pronouns suggest that the variation might be due in some instances to surface phonetic variation and in others to morphophonological processes, in particular handshape assimilation. The following example from ASL illustrates the first type of variation.¹⁴⁹

(6-18) POSS₁ NEIGHBOR TEND TALK+++ IX₁ HATE_a POSS_a GOSSIP.

'My neighbor, s/he tends to talk a lot. I hate her/his gossiping!'

In (6-18), the signs POSS₁ and POSS_a are possessive pronouns, formed with a flat hand, fingers together. In POSS₁ the flat hand contacts the signer's chest and has the meaning

¹⁴⁷ This is perhaps an overstatement; phonetic variation may lead to an index directed toward, but not actually contacting, the chest.

¹⁴⁸ An exception to this might be found in infant- or child-directed signing, during which mothers (or other caregivers) sometimes produce pointing signs that contact a child.

¹⁴⁹ Examples (6-18) and (6-19) are from a corpus of ASL sentences that are being used as stimuli for a neurolinguistic experiment currently underway (Brain Development Lab, University of Oregon, Helen Neville, Director).

my; POSS_a is articulated at location ‘a’, the location previously associated with the non-present referent, NEIGHBOR, and is interpreted as meaning *her/his* (in this utterance, the gender of the neighbor was left unspecified). In this particular utterance, the phonological form of the ‘first person’ pronoun IX₁ is a loose index handshape (index finger is partially extended, other three fingers are loosely closed). Whereas the citation form of this pronoun is a clearly articulated index, I would argue that what surfaces here is an instance of phonetic variation.

A second example (6-19) illustrates handshape assimilation.

(6-19) DOG STUBBORN. IX₁ FEED_b, IX_b REBEL, REFUSE EAT.

‘The dog is stubborn. I feed it, but it rebels, refuses to eat.’

In this utterance, the handshape of the ‘first person’ pronoun IX₁ is not the citation form handshape (clearly articulated index), but rather something that more closely resembles the handshape of the following verb, FEED (four fingers together, with the thumb touching the middle of the fingers). In other words, the handshape of the pronoun IX₁, *I*, has assimilated to the handshape of the following sign, FEED. Assimilation is the process whereby one phonological segment influences the articulation of another (usually adjacent) segment. Similar types of assimilation occur widely in spoken languages, as well as in other areas of sign language discourse (such as the formation of compounds).

The above examples (6-18) and (6-19) address the posited distinction between first and non-first person. Though my discussion is based not on DSL data but on similar data from ASL, I have illustrated that the two formational differences she claims support a first person distinction (contact with body and varying handshape) can, in fact, be interpreted as resulting from phonological factors.

Like Engberg-Pedersen, Meier (1990) has argued that ASL distinguishes between first and non-first person in its pronouns. Meier’s arguments against a formal distinction between second and third person pronouns in ASL are quite convincing (cf.

section 3.3), and I fully agree with this aspect of his analysis.¹⁵⁰ However, his arguments for distinguishing between first and non-first pronouns are less clearly convincing, and an alternative analysis is possible. Here I will address two of his arguments.

Meier's first argument for the existence of first person in ASL is based on role-playing (also referred to as role shift, referential shift, reported speech, and constructed dialogue). In role-playing, the signer takes on the role of a character in the discourse (Mandel, 1977; Loew, 1984; Padden, 1983/1988; 1990, among others). Role-playing is usually accompanied by a body shift to the left or right, and the signer breaks eye gaze with the addressee. Assuming a new role, the signer's facial expression and/or body posture may change as a way of associating with the assumed character. Analyzing data from role-playing in ASL, Meier states that 'deictic points in role-playing do mark grammatical person, as is indicated by the interpretation of deictic points to the signer in role-playing' (p.185). In role-playing situations, Meier argues, the ASL pronoun INDEX_s (an index to the signer) behaves just like the English first-person pronoun, *I*, does in direct quotation. Although Meier takes this as evidence of the category first person in ASL, an alternative analysis exists.

Couched within Liddell's framework (cf. section 3.5), each 'deictic point' in a discourse, regardless of whether or not role-playing is involved, is a point to an entity within a grounded mental space. These entities are either physically present (in the case of the signer and the addressee) or conceived of as present (in the case of non-present referents). When role-playing occurs, the conceptual maps on which the mental spaces are based shift. In other words, the conceptual layout of referents within a discourse shifts in the context of role-playing. Role-playing or not, pronominal indexes still point to entities within a grounded mental space, and referents are identified not through abstract person features, but through spatial deixis.¹⁵¹

¹⁵⁰ Meier's (1990) arguments against a formal distinction between second and third person are threefold: the set of pointing signs (in particular the actual locations) used for second person reference overlaps extensively with those used for third person; eyegaze is not a grammatical marker for second person; and there are no agreement verb paradigm gaps in either the second or third person.

¹⁵¹ Liddell (1994, 1995) explains this as a process by which a surrogate coincides with a signer's body. But this process, he points out (1994), is not limited to first person; surrogates may take any role (first,

In addition to these arguments from role-playing, Meier suggests that the first person plural pronouns WE, OUR, and OURSELVES provide further evidence for a person distinctions in ASL. The place of articulation of these signs, he argues, is only partially motivated; they share the same general place of articulation as the singular first person forms (the signer's chest) but the place of articulation does not indicate the real world locations of those other than the signer. The phonological form of these signs, Meier argues, supports the existence of a first person category in ASL.

Although pronominal reference is unambiguous for singular pronouns, it is not the case that the plural forms of pronouns are always unambiguous (cf. section 2.4.1.2). I agree with Meier on this point. Some plural pronouns are unable to take advantage of spatial locations in the same way that singular pronouns are; articulatory constraints can limit the ability to identify and coindicate plural referents that are located at nonadjacent locations in the signing space. Take, for example, the sign WE; one version of this sign (cf. (2-12)) is normally articulated with the index handshape contacting the right side of the chest, then arcing over to the left side of the chest. As Meier notes, the articulation of this plural pronoun does not indicate the locations of any referents other than the signer.¹⁵²

While Meier argues that the phonological form of WE, OUR, and OURSELVES is evidence for a distinction between first and non-first person, this is not the only possible analysis. Like the plural form WE, there are instances in which non-first plural forms (THEY, for example) do not indicate the locations of referents. The following example (6-20) serves as an illustration.¹⁵³

second, or third person). This fact makes it difficult to argue that first person, and first person only, is marked in ASL/ that deictic points in role playing mark grammatical person.

¹⁵² ASL does, in fact, have pronominal forms that can (to varying degrees) clearly indicate which referents other than the signer are included (cf. section 2.4.1.2). One such form is the indexical plural WE-COMP (composite 'we') discussed in Cormier (1998), where individual pointing signs refer exhaustively to each member of the set. Baker and Cokely (1980) discuss a separate collection of forms that utilize an 'arc-point'; with multiple present referents, 'if the signer starts the arc by pointing to him/herself and stops with the last person on the other end, the *arc-point* means "we" or "all of us"' (pp.208-209).

¹⁵³ This example is taken from data gathered by the author.

- (6-20) Context: The signer is describing her experience working at a Deaf school; the individuals for whom she worked, while the topic of conversation, have not been established at distinct locations in the signing space.

_____ ^t _____ ^{hn}
 RESEARCH WORK, REGULAR. SOMETIMES FIND INFORMATION
 FOR IX-PL.

‘I did research on a regular basis. Sometimes I found information for them.’

In (6-20) the INDEX-PL serves as an unspecified general plural (a non-first person plural in Meier’s terms) and is articulated by a small sweeping motion of the index from left to right in neutral space. As none of the referents has been established in the signing space, this plural pronoun is non-indexic.

A second set of nonsingular pronouns provides an additional example. Cormier (1998, 2000) notes that the number-incorporated signs (THREE-OF-US, FOUR-OF-US, FIVE-OF-US) do not always index the locations of the referents (cf. sections 2.4.1.2 and 5.4.2). She writes, ‘modulations for inclusive/exclusive interfere with the default indexic properties’ of these pronouns (1998:23). Thus we see that when pronouns are marked for plurality, the indexical function is sometimes suppressed. These non-indexical plurals can be taken as evidence for grammatical number marking within ASL; however, the fact that they can surface in both ‘first’ and ‘non-first’ constructions suggests that the non-indexical WE (as one of several forms of WE) is insufficient evidence for the existence of a first person category.

The fact that WE is more often non-indexical than the plural forms YOU-ALL and THEY might also be related to the unusual semantics of WE (speaker + other(s)). Generally speaking, the category traditionally referred to as first person plural is anomalous across languages; as Benveniste (1971) and others point out, ‘“we” is not a multiplication of identical objects but a junction between “I” and the “non-I”, no matter what the content of this “non-I” may be’ (p. 202). This anomaly is, one could argue, one of denotational semantics; whereas the plurals of ‘second’ and ‘third’ persons readily denote multiple addressees and multiple nonpresent referents, respectively, a

‘first’ person plural does not typically denote multiple speakers.¹⁵⁴ In the case of sign language pronominal reference, if we refer to the pragmatic constructs of speaker, hearer, and other (as opposed to the purely linguistic notions of person, which I have argued are unnecessary in languages expressed in the spatial medium), the non-indexical WE can be analyzed as just one way of expressing the concept of signer + unspecified others.

A third argument Meier sets forth for the existence of a first person category has to do with gaps in verb-argument agreement paradigms; while there exist gaps in the paradigms of agreement verbs that appear to be motivated by the existence of a first person object, there are no gaps that arise with respect to either the addressee (second person) or a non-addressed participant (third person). In discussing this, Meier notes that some, but ‘probably not all’ of the gaps in first person object agreement may have phonological explanations. Citing Fischer and Gough (1978), Meier mentions the one verb they discuss as an idiosyncratic exception, RUIN. Additionally, Meier (1990:187-188) mentions only one instance of a first person object form of agreement being idiosyncratic: a dialectal first-person object form of CONVINCEN. I would argue that two isolated examples, one coming from a dialectal variant, does not comprise a very strong case in support of first person being a distinct grammatical category.

6.5.2 The first/non-first distinction in spoken languages: evidence against the same in ASL

So far in this section I have reviewed two sets of arguments that posit a distinct first person category in signed languages, and have shown that the relevant data can be explained without appealing to the notion of grammatical person. I will now examine two examples of first/non-first person systems in spoken languages and briefly discuss the ways in which the signed language data is significantly different.

¹⁵⁴ But see above discussion of the alternative forms of WE. These are illustrations of strategies for specifying which specific referents are to be included in the semantically anomalous ‘signer and others’ category of pronoun.

Dutch is a language that has a first versus non-first distinction in inflectional marking (i.e. it is a language of the (Sb) type in Cysouw's typology, cf. section 4.3.1). The morphology of personal pronouns encodes a three-way distinction in independent pronouns, but in the verbal morphology Dutch encodes only a distinction between speaker and the rest.

(6-21) Dutch (Cysouw, 2002:41)

- | | | |
|----|--------------------|---------------|
| a. | <i>ik</i> | <i>loop-Ø</i> |
| | 1SG.PRON | walk-1SG |
| | 'I walk.' | |
| b. | <i>jij</i> | <i>loop-t</i> |
| | 2SG.PRON | walk-2/3SG |
| | 'You walk.' | |
| c. | <i>hiz/zij/het</i> | <i>loop-t</i> |
| | 3SG.PRON | walk-2/3SG |

In (6-21), each of the three person categories is marked by a separate pronoun, but in the verbal morphology, the morpheme *-t* marks for the combined category of 2/3 person. The independent pronouns that occur along with the inflected verb are required, and serve to disambiguate the homophony between second and third person that exists within the inflectional system (Cysouw, 2003:42).

A second language that exhibits a first person versus non-first person distinction is Qawesqar, an Alcalufan language from Chile.

(6-22) Qawesqar (Clairis, 1985:463-4; discussed in Cysouw, 2003:44)

- a. *ce* *as* *seqwe*
 1PRON go FUT
 ‘Voy a ir.’ (I will go.)
- b. *qwa* *caw* *cefanas* *seqwe*
 WH 2/3PRON drink FUT
 ‘¿Qué cosa vas a tomar?’ (What do you want to drink?)
- c. *ce* *caw* *asa* *qwalog*
 1PRON 2/3PRON go know
 ‘Les voy a enseñar que me voy.’ (I will tell them that I go.)

In (6-22) there is a first versus non-first distinction in the independent pronouns. The first person pronoun is *ce*, while the pronoun *caw* marks both second and third persons. This is an instance of singular homophony (cf. section 4.3.1).¹⁵⁵

While I have not discussed these examples in any great detail, the data from Dutch and Qawesqar serve to illustrate the way in which first / non-first person systems in spoken languages are quite distinct from what we find in signed languages. The major difference has to do with the fact that in the spoken languages, the category ‘non-first person’ is marked uniformly. In other words, within a given paradigm, there is one single morpheme (either pronoun or inflectional affix) that marks both second and third person categories. In Dutch, where the verbal suffix *-t* marks for second/third person, the required use of pronouns (which distinguish all three persons) serves to identify the referent. In Qawesqar, where there is no verbal person inflection to disambiguate the homophony, the referent is identified largely through pragmatic inference. In contrast to these examples from spoken languages, in signed languages the category ‘non-first person’ is *not* marked uniformly. There is no homophony in the paradigms, and each

¹⁵⁵ On this data from Clairis (1985), Cysouw (2003:44) notes, ‘I have been unable to find an example with a third person singular reference of *caw* in the grammar by Clairis (1985). However, the pronouns do not distinguish number, so I have given here an example with third person plural form.’

singular referent is unambiguously identified within the discourse (cf. section 5.3). Furthermore, the manner in which ‘second and third’ person referents are identified is the same as the manner in which ‘first person’ referents are identified, namely through indexing the spatial location of the referent (cf. section 6.4).

I now move on to one last set of facts that support my argument against a first/non-first person distinction in ASL (and other signed languages). Heath (to appear) discusses several linguistic phenomena that support a distinction between first person, on the one hand, and non-first person on the other. Among them are the following: some kin-term systems have special first person forms; in some languages, evidential modals pattern accordingly, as in Japanese, where reported inner states distinguish between first person and second/third person, the latter showing derivational modification; and finally the fact that first singular and first plural are consistently distinguished, even in languages that neutralize number in other persons (Heath, to appear).

To my knowledge, none of these linguistic phenomena that are characteristic of a first / non-first system are evidenced in ASL. First, there are no kinship terms in ASL that have special first person forms; certainly none of the major kinship signs (MOTHER, FATHER, SISTER, BROTHER, SON, DAUGHTER etc...) have first person forms (MOTHER-OF-THE-SPEAKER) that are distinct in any way from non-first person forms. Secondly, there is no differential marking of evidential modals along first versus non-first person lines. The third and final characteristic linguistic phenomenon is particularly interesting; even in languages that neutralize number in other persons, first person singular and first person plural are consistently distinguished. Given this fact, the number-marking data from Indo-Pakistani sign language provide a strong piece of evidence against a distinction between first and non-first person. Recall that IPSL has a transnumeral form that is unspecified for number, where a single point with an index finger can refer to any number of entities (Ulrike Zeshan, 1999; p.c.). As was discussed in section 2.4.2.2, the transnumeral form surfaces across all ‘persons’ – first, second, and third. If there were a formal distinction between first and non-first persons, we might expect that number marking, in this case transnumerality, would

reflect this distinction as well. The fact that first and non-first person pronouns are treated identically with respect to transnumerality suggests that the posited distinction is not particularly well motivated.

6.6 The fully-deictic nature of sign language reference

In his influential essay ‘The nature of pronouns’, Benveniste (1971) argues that the traditional conception of personal pronouns as comprising three terms (*I*, *you* and *he*) destroys the notion of ‘person’. Benveniste asserts that ‘“Person” belongs only to *I/you* and is lacking in *he*’ (1971:217). He illustrates the basic difference between person and non-person by examining the unique characteristics of the first person pronoun, *I*. Of this pronoun and the extent to which it is fully pragmatic in nature, Benveniste writes,

Each *I* has its own reference and corresponds each time to a unique being who is set up as such ... *I* can only be identified by the instance of discourse that contains it and by that alone. It has no value except in the instance in which it is produced. (1971:218)

I would argue that this is true of *all* pronominal indexes in ASL. Each referential index in ASL has its own reference, and corresponds each time to a unique individual who exists (either physically or conceptually, as a token) in the signing space. Each pronominal index within a signed discourse is identified by the instance of discourse (and the spatial/referential layout) that contains it. This is true not only for reference to the signer and the addressee, but also for reference to non-present individuals.

Because all pronominal indexes in ASL are deictic and are fully dependent on the instance of discourse for their identification, the notion of person, as conceptualized and articulated by Benveniste, loses its relevance. As I have argued above, pronominal indexes in ASL do not have at their semantic core the notion (or feature) of person. Rather, the dependence of sign language pronouns on the instance of discourse, on the extra-linguistic situation, is better understood as an expression of location.

Recall that person deixis is but one type of deixis at work in natural language. On the relation between person deixis and other types of deixis, Benveniste writes ‘This constant and necessary reference to the instance of discourse constitutes the feature that unites to *I/you* a series of “indicators” which, from their form and their systematic capacity, belong to different classes, some being pronouns, others adverbs, and still others adverbial locutions’ (p.218). Thus all deictics (person, time, and spatial deictics) are indicators, fully grounded in the instance of discourse. Furthermore, at the heart of all deixis is the relation between the indicator (deictic term) and the present instance of discourse (Benveniste 1971:219). Returning to the notion of unified deixis in signed languages, all ASL singular pronouns are indicators; they are indicators in the sense that they indicate, identify, point out their referents via the *locations* in space which the referents occupy. Because they are articulated in space, and can make full use of locations to refer to individuals in a discourse, signed languages do not need person deictic terms – spatial deictics do the job.

6.7 Summary

In this chapter I have laid out an argument against the existence of person deixis in signed language reference. I began by examining the distribution of pronouns and reflexives in ASL and demonstrating the ways in which these elements are constrained by the principles of Binding Theory. In comparing the effects of Binding Theory in spoken and signed languages, however, a crucial difference was pointed out: whereas in spoken languages a pronoun or reflexive must agree with its antecedent in the nominal features of person, number, and gender, in signed languages these elements must agree in location and number only.

While some spoken languages have two types of deixis at work in their pronominal systems (with person deictic terms as first and second person pronouns, and spatial deictic, i.e. demonstratives, fulfilling the function of third person pronouns), I have suggested that there is no motivation for maintaining both deictic systems in ASL. All singular referents in ASL are identified in a uniform manner – via a location feature.

Location features are, quite clearly, dependent upon the context of the utterance, the 'here and now' of the signing situation; it is the physical locations of present referents, and the conceptual locations of non-present referents, that determine both the form and the meaning of a pronoun. As such, all pronouns are spatial deictics.

7 Demonstratives and sign language pronouns

7.1 Introduction

In the previous two chapters I argued *against* the existence of grammatical person in signed languages. In this chapter I will argue *for* an analysis of pronominal indexes as demonstratives. I begin, in section 7.2, by illustrating the ways in which pronominal indexes evidence the major components that are characteristic of demonstratives. Section 7.3 contains a brief survey of the general properties of demonstratives (semantic, syntactic, and pragmatic) and a discussion of the ways in which signed language demonstratives are distinct from those found in spoken languages. In this section I also discuss and classify the range of indexing (pointing) signs in ASL. As demonstratives are a common source of grammatical markers, the final two sections of this chapter focus on the question of whether demonstratives have undergone (or are in the process of undergoing) grammaticalization. Section 7.4 reviews the general principles underlying the process of grammaticalization and presents a few examples from both spoken and signed languages. Finally in section 7.5 I present a detailed discussion of the criteria for the grammaticalization of demonstratives, then go on to use these criteria to evaluate demonstratives in ASL. It is shown that there is no evidence that demonstrative pronouns have grammaticalized into personal pronouns, but that there is some evidence that adnominal demonstratives have grammaticalized (or perhaps are in the process of grammaticalizing) into definite articles.

7.2 Demonstratives as pronominal elements

Lehmann (1982/1995) distinguishes two major categories of pronominal elements: *definite pronominal elements* (demonstrative pronouns, definite articles, personal pronouns, and their products in grammaticalization) and *indefinite pronominal elements* (indefinite articles, indefinite pronouns, interrogative pronouns, and their products in grammaticalization). Most relevant to the current discussion are definite

pronominal elements. The free demonstrative pronoun is at the root of this family, and in its full, ideal form it contains three components (two semantic and one syntactic) (Lehmann, 1982/1995:37). The first component is the demonstrative element (in the narrow sense), which ‘embodies definiteness and a pointing gesture’ (p.37). The second element, the deictic element, directs the addressee’s attention to something located with respect to the current speech situation. Finally, there is a categorial element (either NP or Det) that serves to specify the pronoun as either syntactically autonomous or dependent. Lehmann notes that either the demonstrative or categorial element will almost always lack expression.

As demonstratives, pronominal indexes in ASL contain all three of these components. First, the index handshape, together with the basic movement, form the demonstrative element in sign language pronouns. Like demonstrative elements in spoken languages, the handshape and movement represent definiteness. However, whereas the demonstrative element in spoken language *embodies* (or encodes) a pointing gesture, in signed language the index *is* a pointing gesture. Second, the deictic element in sign language pronouns is the location component of the sign. When a pronoun is articulated, the addressee’s attention is directed toward the specific referent that is positioned (either physically or conceptually) at that location. Finally, the categorial element lacks expression in signed language pronouns. This element clearly exists as a syntactic component; pronominal indexes in ASL are full, syntactically independent NPs whose distribution is constrained by the principles of Binding Theory (cf. section 6.2.1). Thus, we see that pronominal indexes in ASL evidence all three of the components that Lehmann posits are characteristic of demonstrative pronouns.

In the next section I will present a brief survey of the general properties of demonstratives in spoken languages (semantic, syntactic, and pragmatic).¹⁵⁶

Interspersed throughout the discussion I will highlight the ways in which signed

¹⁵⁶ In preparing this overview of the general properties of demonstratives, I have drawn heavily on Holger Diessel’s (1999) *Demonstratives: Form, Function, and Grammaticalization*, a thorough and lucid examination of all things demonstrative. In the following discussion, I will cite primary sources whenever appropriate, but the reader should know that in some sections my presentation of the material follows quite closely several sections of Diessel’s monograph.

language demonstratives are both similar to, and distinct from, demonstratives found in spoken languages.

7.3 General properties of demonstratives

7.3.1 Semantic properties of demonstratives

7.3.1.1 Deictic and qualitative features

Semantically, demonstratives consist of two kinds of features – *deictic features*, which serve to indicate the location of the referent relative to the deictic center, and *qualitative features*, which characterize the referent (Lyons, 1977: 648). I will take a closer look at each of these types of features, and present a few examples from spoken languages.

Primarily encoded by demonstrative roots, deictic features provide information about the location of a referent, including whether the referent is near or far from the deictic center, whether it is uphill or downhill, at a higher or lower elevation, or whether it is moving toward or away from the deictic center.¹⁵⁷ Diessel (1999) writes that ‘all languages have at least two demonstratives locating the referent at two different points on a distance scale: a proximal demonstrative referring to an entity near the deictic center, and a distal demonstrative indicating a referent that is located at some distance to the deictic center’ (p.36). The deictic center (also referred to as the *origo*) is most often associated with the location of the speaker. English has the following two-term deictic distinction in the demonstrative pronouns.

¹⁵⁷ Fillmore (1982:51) considers the features other than distance from deictic center (i.e. visibility, elevation, uphill vs. downhill, upriver vs. downriver, and moving toward or away from the deictic center) to be non-deictic. Diessel (1999:41) disagrees, noting that like the features proximal and distal, these features indicate the location of a referent relevant to the deictic center.

(7-1) English demonstrative pronouns

<i>this</i>	(proximal)
<i>that</i>	(distal)

Here, the proximal form *this* refers to an entity near the speaker, while the distal form *that* refers to an entity that is at a distance from the speaker.

While English has a two-way distinction, many languages have three basic demonstratives. In such languages, the first term denotes an entity that is close to the speaker, while the third term represents an entity that is remote relative to the space occupied by speaker and addressee. As Anderson and Keenan (1985) note, three-term systems differ in the interpretation given to the middle term. Take for example the following demonstrative forms found in Huallaga Quechua, an Amerindian language spoken in central Peru.

(7-2) Huallaga Quechua demonstrative pronouns (Weber, 1986:336)

<i>kay</i>	‘this (one) here’ (proximal)
<i>chay</i>	‘that (one) there’ (medial)
<i>taqay</i>	‘that (one) over there’ (distal)

The type of three-way distinction evidenced in Quechua has been characterized as *distance-oriented*, in that the middle term refers to a location that is a medial distance relative to the deictic center (or speaker) (Anderson and Keenan, 1985:282-286).

In contrast to the distance-oriented distinctions encoded in Quechua (7-2), we have the following system in Pangasinan, an Austronesian language spoken in the Philippines.

(7-3) Pangasinan demonstrative pronouns (Benton, 1971:88)

<i>(i)yá</i>	near speaker
<i>(i)tán</i>	near hearer
<i>(i)mán</i>	away from speaker and hearer

The three-term deictic system in Pangasinan is *person-oriented*; in this system the middle term denotes a referent that is close to the hearer (as opposed to a medial distance relative to the speaker).

The demonstrative pronoun system of Khasi, an Austro-Asiatic language spoken in India and Bangladesh, patterns as follows.

(7-4) Khasi demonstrative pronouns (Nagaraja, 1985; Rabel, 1961; in Diessel 1999:43)

	MASC.SG (<i>u</i> 'he')	FEM.SG (<i>ka</i> 'she')
PROXIMAL	<i>u-ne</i>	<i>ka-ne</i>
MEDIAL (NEAR HEARER)	<i>u-to</i>	<i>ka-to</i>
DISTAL	<i>u-tay</i>	<i>ka-tay</i>
UP	<i>u-tey</i>	<i>ka-tey</i>
DOWN	<i>u-thie</i>	<i>ka-thie</i>
INVISIBLE	<i>u-ta</i>	<i>ka-ta</i>

The demonstrative system in Khasi is based on six demonstrative roots, which are paired with personal pronouns, *u* 'he' and *ka* 'she'. Three of the demonstratives locate the referent on a distance scale (proximal, medial, distal). Khasi demonstrative pronouns encode two additional deictic dimensions: visibility (*ta* 'invisible') and elevation (*tey* 'up', and *thie* 'down'). The elevation dimension indicates whether the referent is at a higher or lower elevation relative to the deictic center, or speaker.

In addition to deictic information, demonstratives often contain information about the referent that is more qualitative in nature. Through qualitative features, demonstratives may indicate whether the referent is a location, object, or person,

whether it is animate or inanimate, human or non-human, female or male, a single entity or a set, or conceptualized as a restricted or extended entity (Diessel, 1999:47-50).

Apali, an American Indian Language, encodes a distinction in animacy, as seen in (7-5).

(7-5) (In)animate demonstratives in Apalai (Koehn and Koehn, 1986:95; in Diessel, 1999:48)

	ANIMATE		INANIMATE	
	NON-COLLECTIVE	COLLECTIVE	NON-COLLECTIVE	COLLECTIVE
PROXIMAL	<i>mose</i>	<i>moxiamo</i>	<i>seny</i>	<i>senohne</i>
MEDIAL	<i>mokyro</i>	<i>mokaro</i>	<i>moro</i>	<i>morohne</i>
DISTAL	<i>moky</i>	<i>mokamo</i>	<i>mony</i>	<i>monohne</i>

Although it is not very common, in some languages demonstratives are marked for humanness. Burushaski, a language isolate spoken in Pakistan, indicates humanness and animacy via distinct demonstrative roots, and also expresses gender as a secondary feature through certain case suffixes (Diessel, 1999:48).¹⁵⁸

(7-6) Demonstrative pronouns in Burushaski (Lorimer, 1935:141)

	HUMAN ANIMATE MASC	HUMAN ANIMATE FEM	NON-HUMAN ANIMATE (+few others)	NON-HUMAN INANIMATE
NOM/ACC	<i>ki:ne/ki:n</i>	<i>ki:ne/ki:n</i>	<i>guse</i>	<i>gute</i>
GEN	<i>ki:ne</i>	<i>ki:nemo</i>	<i>guse</i>	<i>gute</i>
DAT	<i>ki:ner/ki:nər</i>	<i>ki:nemər</i>	<i>guser</i>	<i>guter</i>

¹⁵⁸ Diessel refers to the marking of the secondary feature *sex*, as opposed to *gender*. It is unclear to this author why he refers to this feature in this non-standard way. I have chosen to use the more traditional term *gender*.

In (7-6), the nominative/accusative forms are unmarked for gender, but the genitive and dative forms indicate the referent's gender features indirectly through their case endings.

One final qualitative feature worth mentioning is number, the non-deictic category that is most frequently marked in demonstratives. Take, for example, Wardaman, a language of the Northern Territory of Australia (Diessel, 1999:49).

(7-7) Demonstrative pronouns/determiners in Wardaman (Merlan, 1994:139)

	PROXIMAL	MEDIAL	DISTAL
ABS.SG	<i>dana</i>	<i>nana</i>	<i>darni</i>
ABS.DU	<i>dan-guya</i>	<i>nan-guya</i>	<i>dang-guya</i>
ABS.PL	<i>dan-mulu</i>	<i>nan-mulu</i>	<i>dang-mulu</i>
ABS.COLL	<i>dan-ganung</i>	<i>nan-ganung</i>	<i>dang-ganung</i>

While most languages that mark for number distinguish only between singular and plural, the demonstratives in Wardaman mark a four-way distinction in number (singular, dual, plural, and collective).

7.3.1.2 Demonstratives in spoken and signed languages compared

Having examined data from spoken language demonstratives systems, we are now in a position to draw some comparisons between spoken and signed language demonstratives. My discussion will focus on three aspects of demonstrative systems: the range of spatial distinctions, the overall structure of the deictic system, and the presence of qualitative features. It will be shown that there are significant differences between spoken and signed languages in all three of these areas, differences that are due to the medium of the language (space).

The range of spatial distinctions marked within spoken language reference systems, while to some degree varied, is in principle limited. In the languages

examined here, the range of spatial distinctions marked was between two (English) and six (Khasi). While there may in fact be languages that distinguish more than six spatial markings, the number of spatial distinctions that surface within spoken language demonstrative systems is going to be limited.

Signed languages, on the other hand, exhibit an unlimited number of spatial distinctions within the demonstrative system. There exist an unlimited number of locations in the signing space, each of which can be used as a locus for establishing a referent in space (Lillo-Martin and Klima, 1990, cf. section 2.4.1.1). In practice, of course, the number of locations actually used within a given discourse is limited. These limitations are, however, not imposed by the grammar of the language, but rather are due to perceptual factors and general cognitive (i.e. memory) constraints. So, because signed languages unfold in space (as well as in time), the range of possible spatial distinctions is far greater than that available for spoken languages.

There are significant differences between spoken and signed languages with respect to the overall structure of spatial deictic systems as well. As was discussed above, languages that have a three-term distinction differ in the interpretation given to their middle terms; some are distance-oriented (cf. (7-2)), while others are person-oriented (cf. (7-3)) (Anderson and Keenan, 1985). The spatial marking that is present in signed languages does not seem to fit neatly into either of these two categories; rather, spatial marking in signed languages is based on absolute locations within the signing space. To be sure, the locations in space are set up by the signer, and can therefore be viewed as existing relative to the signer. However, it is not the distance from the signer *per se* (nor the distance from the addressee) that is relevant.¹⁵⁹

Finally, with the exception of number marking, signed language demonstratives do not provide any qualitative information about referents. Whereas spoken language demonstratives often (if not usually) provide information regarding animacy, humanness, sex, or boundedness (Diessel, 1999:50), signed languages do not. That this

¹⁵⁹ There are instances where the distance from the signer is important (for example, in classifier constructions). However, in standard discourse, referential locations in space are significant primarily as a means of differentiating referents in a discourse.

is so is likely due to the fact that locations in the signing space unambiguously identify referents in a discourse. Because pronouns identify specific referents (via indexical strategies), the marking of additional features is unnecessary.

7.3.2 Syntactic properties of demonstratives

7.3.2.1 Introduction

The pronominal index that has been the subject of inquiry for much of this thesis is, in fact, just one of several types of pointing signs that is used in ASL. For example, consider the following two sentences.

(7-8) IX_1 LIKE IX_2

‘I like you’

(7-9) $fs\text{-}JOHN_j$ $GIVE_i$ [IX_{det-i} MAN IX_{adv-i} ^{far} “far”]_{DP} NEW COAT

‘John gave the man way over there a new coat.’

The reader is by now quite familiar with the indexes in (7-8); they are both pronouns. As argued in chapters 5 and 6, these are demonstrative pronouns, not personal pronouns. In example (7-9) (taken from Neidle et al., 2000:92), the first index is labeled a determiner (IX_{det-i}) and the second an adverbial (IX_{adv-i}). A wider range of these indexing signs will be examined below. However, in the next section I will first review the framework for syntactic classification of demonstratives proposed by Diessel (1999). Following this review, in section 7.3.2.3, I will use Diessel’s framework as a tool for analyzing and classifying the range of indexing signs in ASL.

7.3.2.2 The distribution and categorial status of demonstratives

In his examination of the syntactic properties of demonstratives in spoken languages, Diessel (1999:3-6) argues that one must recognize an important distinction between the *distribution* (or syntactic context) of demonstratives, on the one hand, and the *categorial status* of demonstratives, on the other. The categorial status of a particular demonstrative is defined by assessing a combination of two features: a certain distribution, and a specific form. Within a given language, two demonstratives belong to different categories if they are distinguished both distributionally and formally. In his discussion, Diessel uses the attributive terms *pronominal*, *adnominal*, *adverbial*, and *identificational* to indicate the syntactic context in which demonstratives occur (i.e. their distribution). The nominal terms (*demonstrative*) *pronoun*, *determiner*, *adverb*, and *identifier* are used to indicate a demonstratives categorial status. (7-10) presents an overview of these terms.

(7-10) Demonstratives: distribution and category (Diessel, 1999:4)

DISTRIBUTION	CATEGORY
pronominal demonstrative	demonstrative pronoun
adnominal demonstrative	demonstrative determiner
adverbial demonstrative	demonstrative adverb
identificational demonstrative	demonstrative identifier

Diessel notes that in some languages, demonstratives of the same grammatical category are used in more than one syntactic context. It is this fact that motivates the distinction between the distribution of demonstratives and their categorial status. I will briefly discuss each of the distributive characteristics and categories in turn.

Pronominal demonstratives are syntactically independent pronouns, occurring in the argument position of verbs and adpositions. Pronominal demonstratives are often formally distinguished from adnominal demonstratives, which cooccur with a noun. The example Diessel discusses comes from French, where the demonstratives *celui*,

celle, *ceux*, and *celles* are used as independent pronouns, and the demonstratives *ce*, *cette*, and *ces* are used as modifiers of a following noun (1999:4). Because these two types of demonstratives are formally distinguished in French (i.e. their phonological form is distinct), they belong to different categories; the former are demonstrative pronouns, and the latter are demonstrative determiners.

Not all languages distinguish between demonstrative pronouns and demonstrative determiners. Diessel discusses Tuscarora, an Iroquoian language spoken in Canada, as an example. Tuscarora has two demonstrative particles, *hè:níkǎ̃*: ‘this/these’ and *kyè:níkǎ̃*: ‘that/those’ that are used either in isolation as independent pronouns or together with a cooccurring noun. Following Mithun (1987), Diessel concludes that pronominal and adnominal demonstratives belong to the same category in Tuscarora. This language does not have demonstrative determiners, only demonstrative pronouns that are used in two different syntactic contexts.

Adverbial demonstratives (like the locational deictics *here* and *there*, cf. Fillmore, 1982:47) are used as modifiers of verbs, adjectives, and other adverbs. For example, the English sentence *Gertie lives there*. In many languages, locational deictics can also be used adnominally; for example, the English phrase *this guy here*. When used adnominally, these locational deictics usually cooccur with a demonstrative determiner which they serve to intensify (Diessel, 1999:74). Diessel also notes that adverbial demonstratives are almost always distinguished from pronominal and adnominal demonstratives.

Finally, demonstrative identifiers are demonstratives that occur in copular and nonverbal clauses.¹⁶⁰ Diessel cites as examples of demonstrative identifiers the following data (1999:5).

¹⁶⁰ Diessel (1999:58) notes that he has found several other terms in the literature that seem to correspond to the notion of demonstrative identifier: ‘predicative demonstratives’ (Diessel, 1997) ‘demonstrative predicator’ (Schuh, 1977), ‘predicative pronoun’ (Marconnès, 1931), ‘copulative demonstrative’ (Ziervogel, 1952), ‘existential demonstrative’ (Benton, 1971), ‘pointing demonstrative’ (Rheg, 1981), and ‘deictic identifier pronoun’ (Carlson, 1994).

(7-11) French

C' est Pascal.

this/it is Pascal

'It/this is Pascal'.

(7-12) Ponapean (Rehg, 1981:143)

Iet noumn pinselen.

here.is your pencil

'Here is your pencil.'

The demonstratives in (7-11) and (7-12) serve to identify the referent in the speech situation. While these are usually analyzed as demonstrative pronouns, many languages distinguish ordinary demonstrative pronouns from demonstratives in copular and nonverbal clauses (Diessel, 1999:5). For example, both French and Ponapean use demonstratives with a different form as independent pronouns in other syntactic contexts.

In this section I have briefly reviewed the syntactic properties of the various types of demonstratives found in spoken languages and have discussed Diessel's (1999) motivation for distinguishing between the use of a demonstrative in a particular syntactic context and its categorial status. Using this framework, I will now move on to a presentation and discussion of the range of indexing signs in ASL.

7.3.2.3 The range of indexes in ASL

In ASL, as in many other signed languages, an index sign can occur in several different syntactic configurations within a sentence. In this section I will present and discuss several examples of index signs in ASL using the framework discussed in the previous section. Before doing so, however, it should be noted that there is a lack of consensus in the sign language literature concerning the precise categorial status of some of these pointing signs. Likewise, it is not always the case that these various

pointing signs can be distinguished in terms of their form, an issue that Diessel would consider important in terms of categorial status. The various index signs in ASL are all composed of the same handshape (an index, or ‘1’ handshape) which I have argued is the demonstrative root (cf. section 7.2). However, there are variations in movement (at times very slight variations) and these likely hold the key to determining the categorial status of the various pointing signs. I will not attempt to provide an exhaustive analysis and classification of all pointing signs, as this is far beyond the scope of the present work. Here, I will briefly present the various types of pointing signs, discuss their distribution, and review the various analyses in the literature concerning their categorial status.

7.3.2.3.1 Pronominal demonstratives

Following Diessel’s (1999) summary overview of the types of demonstratives (7-10) (but at the risk of repetition), I will start by providing examples of pronominal demonstratives (see Chapters 2 and 5 for many more examples).

- (7-13) a. IX_1 KNOW IX_2
 ‘I know you.’
- b. IX_a ARRIVE
 ‘S/he [individual associated with location ‘a’] arrived.’

In both of these sentences, the indexes serve as independent pronouns, demonstrative pronouns in my analysis, in argument position of verbs. Their movement is outward, toward a referentially significant location in the signing space, and the movement itself ends with a sort of ‘final stop’.

7.3.2.3.2 Adnominal demonstratives

ASL also has adnominal demonstratives; as the following examples show, an index can occur along with a nominal. Examples here are taken from MacLaughlin (1997:117;121).

- (7-14) [IX_i MAN]_{DP} ARRIVE
 ‘The/that man is arriving.’

- (7-15) $\overset{t}{\text{_____}}$ [IX_i WOMAN]_{DP}, ARRIVE EARLY
 ‘The/that woman, (she) arrived early.’

The indexes in both of these sentences are in prenominal position. However, as the glosses for these sentences reveal, there is not a clear distinction between a demonstrative determiner interpretation (i.e. *that man*) and a definite determiner interpretation (*the man*). As Neidle et al. note, ‘the definite determiner may receive either a definite or a demonstrative interpretation’ (2000:181,fn 5). Both MacLaughlin (1997:116-136) and Neidle et al. (2000:88-91) argue that all prenominal indexes are definite determiners, and they contrast these definite determiners with the indefinite determiner SOMETHING/ONE, which also occurs only in prenominal position. While the focus here is on demonstratives, in the interest of thoroughness I will briefly discuss the following example of an indefinite determiner (from Neidle et al., 2000:90).

- (7-16) Context: A videotape is missing. John asks where it is. Bill answers:
 [SOMETHING/ONE_{det} STUDENT]_{NP} HAVE VIDEOTAPE
 ‘A student has the videotape’.

The indefinite determiner is articulated with the same index handshake as is used in pronouns and other pointing signs, but the index finger points upward and the palm is oriented inward, toward the signer’s body. There is no outward movement toward a

location in the signing space, but rather there is a slight tremoring motion in the upper arm (MacLaughlin, 1997:118; Neidle et al., 2000:90).¹⁶¹

Returning to the definite (demonstrative) determiners discussed above, there is some evidence that suggests some of these pronominal indexes may be better analyzed as demonstrative determiners. First, some of them point to the location in the signing space that has been associated with the referent, and are thus marked for location (i.e. spatially-deictic, demonstrative) information. Take, for example, the following sentence (adapted from MacLaughlin, 1997:144).

(7-17) IX_{pro-i} LIKE [IX_{det-i} HOUSE_i]_{DP}

‘I like the/that house.’

In this sentence, the pronominal index (IX_{det-i}) points to location ‘i’, the same location in space at which the noun HOUSE_i is articulated. This spatial indexing is reminiscent of the manner in which demonstrative pronouns access referential locations in the signing space. Furthermore, MacLaughlin (1997:144-145) notes that DPs like the one in (7-17) often contain non-manual expressions of agreement with the location of the referent; the signer’s head may be tilted toward and/or the eye gaze may be directed to the spatial location associated with the referent.

A second factor that leads me to believe these pronominal indexes might be demonstrative in nature is the plural marking that can be found. Take, for example, the following sentence (MacLaughlin, 1977:122).

(7-18) [$IX_{pl-arc-i}$ MAN IX_i “over there”]_{DP} KNOW PRESIDENT

‘Those men over there know the president.’

¹⁶¹The indefinite determiner SOMETHING/ONE is usually accompanied by a nonmanual expression of uncertainty (wrinkled nose, furrowed brows, slight rapid head shake). Also, the degree of tremoring movement and the intensity of the nonmanuals may vary in relation to the degree of (un)identifiability of the referent (Neidle et al., 2000:90).

The pronominal index in (7-18) is inflected to show plurality in a manner similar to what is found on pronominal indexes (cf. section 2.4.1.2). The plural arc points to the location ‘i’ associated with the referents. The fact that these indexes access spatial locations (in singular and plural forms) and are often accompanied by non-manual agreement with locations suggests that these ‘definite determiners’ may, in fact, be demonstrative in nature. Further research is clearly needed in this area. As will be discussed below in section 7.5.4, in spoken languages demonstrative determiners often grammaticalize into definite determiners, and this may very well have happened, or perhaps be in the process of happening, in ASL.

Before moving on to a discussion of adverbial demonstratives in ASL, a few additional comments regarding the articulatory similarity between demonstrative pronouns and demonstrative determiners (or definite determiners, as analyzed by MacLaughlin (1977) and Neidle et al. (2000)) are in order. Neidle et al. (2000) note that, in ASL, both definite and indefinite determiners can function as pronouns, standing alone without any nominal material following. The examples they give are as follows (p.90).

(7-19) IX_{det-i} ARRIVE

‘He/She/It arrived.’

(7-20) SOMETHING/ONE_{det} ARRIVE

‘Someone/Something arrived.’

While both of these sentences are clearly grammatical, it is not clear to this author what the motivation is for calling the index in (7-19) a determiner that is functioning as a pronoun, (rather than a pronoun that also can function as a determiner). Neidle et al. (2000:92) claim that in ASL determiners and pronouns are identical in form. Yet there are others who have noted a distinct difference between the two. In an early study examining determiners in ASL, Zimmer and Patschke (1990) report that the vast

majority of the determiners in their data are phonologically distinct from other pointing signs, including pronouns. They note that these determiner signs, ‘move slightly or not at all, never arc or jab, and most often point slightly upward’ (p.202). As will be discussed below (cf. section 7.5.4) the determiners that Zimmer and Patschke discuss are likely demonstrative determiners that have grammaticalized into definite determiners.

Recall that some languages use demonstratives of the same grammatical category in more than one syntactic context. Diessel reports that most languages use the same demonstrative forms as independent pronouns and as modifiers of a cooccurring noun, so it is not unreasonable to posit that this is the case in ASL.¹⁶² Again, two demonstratives belong to different categories if they are distributionally *and* formally distinct. In his typological study, Diessel found two types of formal distinctions between demonstrative pronouns and demonstrative determiners in his spoken language data. Some languages, like Mulao, a Tai-Kadai language spoken in China, use different demonstrative stems.¹⁶³

(7-21) Demonstratives in Mulao (Diessel, 1999:59; cf. Wang and Guoqiao, 1993:52)

	DEM PROS	DEM DETS
PROXIMAL	<i>ni</i> ⁵	<i>naɪ</i> ⁶
DISTAL	<i>hui</i> ⁵	<i>ka</i> ⁶

In Mulao, the demonstratives that are used as independent pronouns are completely distinct from those used as modifiers of a cooccurring noun. In contrast, in a language like Lezgian, a North Caucasian language spoken in Russia, the demonstrative roots are the same, but the inflectional behavior is distinct.

¹⁶² In Diessel’s sample of 85 languages, there are only twenty-four languages that formally distinguish between pronominal and adnominal demonstratives (1999:59).

¹⁶³ The superscript numbers in (7-21) indicate specific tones.

(7-22) Demonstratives in Lezgian (Diessel, 1999:60; cf. Haspelmath, 1993:111)

		DEM PROS					DEM DETS		
		PROX	DIST	YONDER			PROX	DIST	YONDER
SG	ABS	<i>i-m</i>	<i>a-m</i>	<i>at' a-m</i>	SG/PL	<i>i</i>	<i>a</i>	<i>at'a</i>	
	ERG	<i>i-da</i>	<i>a-da</i>	<i>at' a-da</i>					
	GEN	<i>i-da-n</i>	<i>a-da-n</i>	<i>at' a-da-n</i>					
PL	ABS	<i>i-bur</i>	<i>a-bur</i>	<i>at' a-bur</i>					

In (7-22) we see an inflectional distinction between demonstrative pronouns and demonstrative determiners; the former are marked for case and number, but the latter are uninflected.

As was mentioned above, there is no consensus in the literature concerning the similar or distinct form of pronouns and determiners in ASL. It is fairly safe to say, however, that these two types of demonstratives do not have different stems. While there may be some differences in the type of movement, the demonstrative root (the index handshake and general pointing movement) is the same. Therefore, demonstrative pronouns and demonstrative determiners cannot be argued to be entirely distinct based on the form of the demonstrative stem. In terms of inflectional behavior, it appears that these two types of demonstratives can take the same types of inflection. Recall that pronouns inflect for number, but not for gender.

- (7-23) a. IX₁ LIKE IX-PL_{a-c}
 ‘I like them [referents established at locations ‘a’ through ‘c’].’
- b. IX₁ LIKE DUAL_{a-b}
 ‘I like the two of them [referents established at locations ‘a’ and ‘b’].’
- c. IX₁ LIKE TRIAL_{c-e}
 ‘I like the three of them [referents established at locations ‘c’ through ‘e’].’

Like the pronoun forms in (7-23), demonstrative determiners can also inflect for number. I repeat here (7-18) from above, with a determiner inflected with the general plural (example from MacLaughlin, 1997:122).

- (7-24) [IX_{pl-arc-i} MAN IX_i “over there”]_{DP} KNOW PRESIDENT
 ‘Those men over there know the president.’

As the following examples show, other types of number inflections can surface on determiners as well.

- (7-25) a. [DUAL_{a-b} MEN]_{DP} STEAL POSS₁ BIKE
 ‘Those two men stole my bike.’
- b. [TRIAL_{a-c} GIRLS]_{DP} STEAL POSS₁ BACKPACK
 ‘Those three girls stole my backpack.’

These two types of demonstratives may, however, differ in their inflection. As we saw above (7-18), the demonstrative determiner can inflect to show plurality (by the addition of the plural arc movement). However, the general plural marker is just one of

several number inflections that exist within the pronominal system. In addition to the general plural, there is number marking for dual, trial, quadral, and quadruple.

Thus, we have a situation in which the same demonstrative forms are used as independent pronouns and modifiers of cooccurring nouns. Following Diessel (1999), we would conclude that pronominal demonstratives and adnominal demonstratives belong to the same category in ASL. At this point, I am unable to determine with any certainty which of the two categories exists. In other words, it is not clear if ASL has demonstrative pronouns that are used in two different syntactic contexts (pronominally and adnominally), or demonstrative determiners that are used in those same two contexts. One piece of evidence in support of demonstrative pronouns being the category present in ASL is the fact that we see binding effects in ASL. As discussed in section 6.2.1, pronominal indexes are subject to the constraints of Binding Theory: they must be A-free in their local domain. If demonstrative pronouns did not exist as a syntactic category, then we would not expect to see these effects. Again, I am in no position to say with any certainty whether it is demonstrative pronouns or demonstrative determiners that are present in ASL; however, as the discussion here suggests, it is entirely likely that, like many spoken languages, ASL does not formally distinguish between demonstrative pronouns and demonstrative determiners.

Before going on to examine the remaining two types of demonstratives in ASL (adverbial and identificational), I will briefly revisit the main proposal of this thesis: that locations in space are not markers of person, but rather are spatial deictics. The (possible) fact that demonstratives of the same grammatical category are used in two different syntactic contexts lends very direct support to my analysis of pronouns in ASL as spatial, as opposed to person, deictics. It would be highly unusual (if not impossible) to find a language that has *personal* pronouns being used as adnominal demonstratives. Indeed, I have found no discussion of this type of situation in the literature. An analysis of pronouns as spatial deictics allows one to account for the use of these indexes in both pronominal and adnominal syntactic configurations.

7.3.2.3.3 Adverbial demonstratives

Unlike pronominal and adnominal demonstratives, adverbial and identificational demonstratives are distinct in form, and are thus easier to classify using Diessel's categorial framework. In (7-26) and (7-27) we see examples of adverbial demonstratives (taken from Neidle et al., 2000:89, and MacLaughlin, 1997:117, respectively).

(7-26) JOHN LIVE IX_{adv-i}
 'John lives there.'

(7-27) a. [MAN IX_{adv-i}]_{DP} ARRIVE
 'A man there is arriving.'

b. [IX_{det-i} MAN IX_{adv-i}]_{DP} ARRIVE
 'The/that man there is arriving.'

(7-26) could be considered a typical adverbial demonstrative in that it is used to indicate the location of the event or situation that is expressed by the cooccurring verb. The index in (7-26) expresses where the subject, JOHN, lives. As noted by MacLaughlin (1997:118) and Neidle et al. (2000:92), the articulation of adverbial demonstratives can vary in order to express specific information about the location of the event or situation. For example, if the location is distant, an adverbial demonstrative index can be articulated with a tremoring movement (shaking slightly) and a large, slow arc. The path along which the index finger moves can also convey distance and route information (such as simulating movement around corners). None of these movement modifications are present in either the pronominal or adnominal demonstratives.

As the examples in (7-27) indicate, an index can also occur postnominally in a DP. MacLaughlin (1997) and Neidle et al. (2000) classify all postnominal indexes as locative adverbials (adverbial demonstratives in Diessel's terminology). It may initially seem odd to find an adverbial demonstrative in a post nominal (as opposed to

an adverbial) position. However, as Diessel notes, many spoken languages use locational deictics adnominally (as in English *this guy here* or German *das Haus da* ‘this/that house there’) (1999:74). Diessel also notes that these adnominal demonstratives usually cooccur with a demonstrative determiner that they intensify. According to this generalization, the structure depicted in (7-27b) would be more typical than that in (7-27a). Discussing these indexes, Neidle et al. write, ‘When such indexes occur in postnominal position within DP, they provide information about the location of the referent, but they do not contribute information about definiteness’ (p.89).

7.3.2.3.4 Identificational demonstratives

The fourth and final type of demonstrative is the identificational demonstrative. These demonstratives occur in copular and nonverbal clauses and, like other demonstratives, serve to focus the addressee’s attention on entities in the discourse situation. Diessel notes that while most studies analyze these demonstratives as demonstrative pronouns, they often have a different phonological form and/or may differ in their inflection (1999:79). As such, they are treated as a distinct category, demonstrative identifiers. ASL has identificational demonstratives, as evidenced in the following sentence.¹⁶⁴

(7-28) GIRL IX_a BOY IX_c DUAL_{a-c} WRESTLE. GIRL HURT. GIRL _aBLAME_c
BOY

‘A girl and a boy were wrestling. The girl got hurt. She blamed the boy.’

In (7-28) we see two nominals being established in the signing space. The process of nominal establishment, or localization, was introduced in section 2.4.1.1. In this

¹⁶⁴ This example comes from a corpus of ASL sentences being used as stimuli for a neurolinguistic experiment currently underway (Brain Development Laboratory, University of Oregon; Helen Neville, Director).

sentence, each referent is introduced and immediately followed by an index to a location in the signing space. The index serves to establish the referent at that location. Two types of evidence support an analysis of these indexes as demonstrative identifiers.¹⁶⁵ First, these indexes are (in most cases) formationally distinct from the other demonstratives discussed in this section; whereas pronominal demonstratives move out toward the referential location, this pointing sign moves downward toward the referential location. This type of pointing sign has been referred to as ‘location fixing’ in the literature (Liddell, 1990a). Secondly, there is morphological evidence that these indexing signs are a distinct class of demonstratives. On this issue, Diessel writes, ‘there is a substantial number of languages in my sample in which pronominal demonstratives are inflected for gender, number, and/or case while identificational demonstratives are morphologically invariable’ (1999:84). While both pronominal and adnominal demonstratives can inflect for number (cf. (7-23) (7-24) and (7-25))¹⁶⁶, the indexes in (7-28) are morphologically invariable. Number marking of any kind is prohibited with these indexes.

7.3.3 Pragmatic use of demonstratives

In his analysis of demonstratives, Diessel (1999) notes that while they are primarily used to orient the addressee in the speech situation (and focus her attention on objects, persons, or locations therein), they also serve a number of other functions. He distinguishes four pragmatic uses of demonstratives that fall into two classes (cf. Halliday and Hasan, 1976:57-76). *Exophoric* demonstratives are used with reference to entities in the speech situation and *endophoric* demonstratives do not make reference to entities in the speech situation (the endophoric use is further subdivided into the

¹⁶⁵ To my knowledge, no one has discussed these indexes as being in a syntactic class of their own. As this discussion shows, these indexes very nicely fit into Diessel’s demonstrative identifier category.

¹⁶⁶ Pronominal demonstratives inflect for case as well; a change of handshape (from an index to a flat ‘B’ hand) inflects for possessive (cf. section

anaphoric, discourse deictic, and recognitional uses) (Diessel, 1999:93-114).¹⁶⁷ As I have suggested in previous chapters, pronominal indexes in ASL serve to focus the addressee's attention on entities (i.e. referents) in the speech situation in a very direct manner. As such, I would argue that pronouns in ASL (and in other signed languages) are exophoric demonstratives. Below I will lay out an argument in support of this.

Diessel discusses three distinctive features that are characteristic of exophoric demonstratives: they involve the speaker (or some other person) as the deictic center; they indicate a deictic contrast on a distance scale (unless they belong to the small minority of demonstratives that are distance-neutral); and they are often accompanied by a pointing gesture (1999:94). With some modification (necessary due to the medium of signed languages), these three features can also be said to characterize pronominal indexing in ASL.

Referential locations in signing space are set up by the signer, and can be viewed as existing relative to the signer. As such, the signer can be conceived of as the deictic center, the central point around which all other referential locations are established. In terms of the second characteristic of exophoric demonstratives, that they indicate a deictic contrast on a distance scale, signed language pronouns appear to be somewhat unusual. As was discussed above (cf. section 7.3.1.2), there are significant differences between spoken and signed languages with respect to the overall structure of spatial deictic systems. Because of the medium, signed language pronouns are not marked for specific distances (from the deictic center), but rather for location relative to the signer. That signed language pronouns are not marked on a distance scale is due to the medium; the ability to place referents at actual locations in the signing space makes the marking of distance unnecessary. Finally, while exophoric demonstratives in spoken languages are often accompanied by a pointing gesture, in signed languages they *are*

¹⁶⁷ Though I will not be discussing the endophoric demonstratives in any detail, a brief description of the three endophoric uses is worth including. Of the endophoric demonstratives, Diessel writes, 'Anaphoric demonstratives are coreferential with a prior NP; they keep track of discourse participants. Discourse deictic demonstratives refer to propositions; they link the clause in which they are embedded to the proposition to which they refer. Recognitional demonstratives do not refer to elements of the surrounding discourse; rather they are used to indicate that the hearer is able to identify the referent based on specific shared knowledge' (Diessel, 1999:93).

pointing gestures. In sign language pronominal indexing we see an unusual but very powerful confluence of language and gesture.¹⁶⁸

In this section of the thesis I have reviewed the general properties of demonstratives in spoken languages, and have presented an analysis of the different types of demonstratives (pointing signs) in American Sign Language. Cross-linguistically, it is quite common for demonstratives to develop into grammatical markers. Given the fact that ASL has such a wide range of demonstratives, it is not unreasonable to think that one or more of these pointing signs might undergo a process of grammaticalization. In section 7.5 I will explore this possibility; in particular, I will evaluate the claim that demonstrative pronouns (and in particular the location component of these indexes) have been grammaticalized into person markers. However, before doing so, I will present a brief review of the general principles underlying the process of grammaticalization and discuss a few examples of grammaticalization from both spoken and signed languages.

7.4 Grammaticalization in spoken and signed language

7.4.1 General principles of grammaticalization

Grammaticalization is the process whereby a lexical unit or structure develops into a grammatical item, and, once grammaticalized, may continue to develop new grammatical functions (Hopper and Traugott, 1993:xv; Bybee, Perkins and Pagliuca, 1994:4-5; Diessel, 1999:116). Here lexical items are to be understood as content words that serve to encode the main semantic concepts of an utterance. Grammatical items, on the other hand, are function words that serve to organize the lexical material within a sentence. In the process of grammaticalization, then, we see a reanalysis involving an increase in grammatical function.

¹⁶⁸ For a discussion of the cooccurrence of language and gesture in signed languages, see Emmorey (1999).

Central to any analysis of grammaticalization is the concept of a ‘cline’. Hopper and Traugott (1993:6-7) point out that in the process of grammaticalization, forms do not shift abruptly from one category to another, but rather seem to go through a series of gradual transitions, transitions that are similar in type across languages. While there continues to be debate surrounding certain specifics of the cline (which points to place on a cline, how to label those points), the relative positions on the cline are generally agreed upon. Hopper and Traugott (1993) put forth the following ‘cline of grammaticality’.

(7-29) Cline of grammaticality (Hopper and Traugott 1993:7)

content item > grammatical word > clitic > inflectional affix

The leftmost component of the cline of grammaticality is a lexical, or content, item. The cline moves rightward through stages that are more syntactic in nature (grammatical word, clitic) and finally to a point that is primarily morphological (inflectional affix). Grammaticalization can be seen, then, as the process by which an item moves from the lexical end of the cline toward the grammatical end of the cline.

While firm boundaries between categories on the cline can be difficult to establish, it is generally accepted that most grammaticalization takes place in a unidirectional manner (lexical items develop into grammatical items, and grammatical items may grammaticalize further, but the reverse is not typical).¹⁶⁹ As a lexical item grammaticalizes, it is not uncommon for earlier forms to coexist with later forms, and for earlier meanings to constrain later meanings and/or structural characteristics.

Discussing the characteristic effects of grammaticalization, Heine and Reh (1984:15) note, ‘With the term “grammaticalization” we refer essentially to an

¹⁶⁹There are, in fact, some counterexamples to the unidirectionality hypothesis, most of which are perceived as controversial. For discussion of degrammaticalization as a real and potentially interesting/relevant phenomenon, see Janda (2001) and van der Auwera (2002). See also Newmeyer (1998:260-278) for arguments against the idea of grammaticalization being invariably unidirectional.

evolution whereby linguistic units lose in semantic complexity, pragmatic significance, syntactic freedom, and phonetic substance, respectively.’¹⁷⁰ Indeed, the process of grammaticalization may affect all aspects of a linguistic sign – phonological, morphosyntactic, and semantic.

At the level of phonology, grammaticalization often involves a process of phonological reduction and coalescence (Bybee et al., 1994:6). When they grammaticalize, items tend to shorten and to fuse with other elements in their environment. Morphosyntactically, grammaticalization has the effect of restricting the distribution of an item, whereby more grammaticalized items tend to occur in a specific slot within a grammatical construction (Diessel 1999:117). At the level of semantics, grammaticalization usually involves a process of semantic bleaching or fading, whereby lexical items become semantically less concrete and pragmatically less significant (Sweetser, 1988, Heine and Reh, 1984).

Before going on to discuss some examples of grammaticalization, it should be noted that the status of grammaticalization as a distinct grammatical phenomenon requiring a distinct set of principles for its explanation is a subject of controversy. For example, in a chapter titled ‘Deconstructing grammaticalization’, Newmeyer (1998) examines the diachronic changes collectively referred to as ‘grammaticalization’ and concludes, ‘...no new theoretical mechanisms, nor mechanisms unique to grammaticalization itself, are needed to explain them. Far from calling for a “new theoretical paradigm”, grammaticalization appears to be no more than a cover term for a conjunction of familiar developments from different spheres of language, none of which require or entail any of the others’ (p.295). In this thesis I will not take any position regarding this issue. I will, however, utilize (discuss and apply for evaluative purposes) some of the general principles and patterns characteristic of grammaticalization to evaluate pronouns and agreement marking in sign languages.

¹⁷⁰While semantic loss has been considered to be a central component of grammaticalization, see Bybee and Pagliuca (1985) and Traugott and König (1991) for discussion of more positive forces (metaphor and metonymy) underlying the semantic effects of grammaticalization.

7.4.2 Grammaticalization in spoken language

Grammaticalization is a process that is prevalent across all languages. One of the most common sources of grammatical structures is the verb. Some typical grammaticalization paths include the development of verbs into grammatical markers (of tense, aspect, and mood), into connectives (for example a complementizer that introduces a finite complement clause), and into prepositions.

A frequently discussed example of grammaticalization comes from English. The phrase *going to* (with a finite form of *be*) has evolved into the intention/future marker *gonna* (Hopper and Traugott, 1993; Croft, 2001; Bybee, 2003). In this example, the phrase *go to* originally indicated spatial motion towards a destination (and still does, in many instances, as in *I am going to the library*). The phrase eventually came to be used to indicate intention to carry out a future action, as in *We are going to get married in August*. Finally, the phrase is now used to indicate future action that does not necessarily involve motion, as in *These flowers are going to die*.

This example can be used to illustrate the characteristic effects of grammaticalization discussed above. Phonologically, the form of *go to* is reduced to *gonna* (and even reduces further, in some contexts, to *I'm (g)onna*, where the initial /g/ is dropped; Bybee, 2003). Morphosyntactically, there has been a grammatical shift from a main verb to a verb more auxiliary in nature. Finally, at the level of semantics, there has been a shift in meaning, from lexical content (motion toward) to grammatical meaning (future tense) (Croft, 2001). While I have discussed only a single example of grammaticalization in spoken language, it serves to illustrate the basic principles underlying the process. Additional examples will be discussed below when the grammaticalization of demonstratives is addressed.

7.4.3 Grammaticalization in signed languages

Just as signed languages are shaped by many of the same structural constraints as spoken languages (cf. section 1.2), they are subject to some of the same types of language change. Recent research has shown that grammaticalization is a process at

work in signed languages (Bergman, 1990; Wilcox and Wilcox, 1995; Sexton, 1999; MacFarlane, 1998a; 1998b; Janzen and Shaffer, 2002; Pfau and Steinbach, 2004).¹⁷¹

Two types of grammaticalization are at work in signed languages. The first I will call *lexical grammaticalization*, which involves grammaticalization of lexical items, and is analogous to the types of grammaticalization found in spoken language and briefly discussed above. The second type of grammaticalization found in signed languages involves the grammaticalization of gesture. Though I am not fully satisfied with the term, I will refer to this type of grammaticalization as *gestural grammaticalization* (because it parallels the label lexical grammaticalization). In the following subsections I will discuss examples of both types of grammaticalization in ASL.¹⁷²

7.4.3.1 Lexical grammaticalization

There are a number of ASL lexical signs that have, through the process of grammaticalization, taken on additional, more grammatical meanings. I will discuss only two here. The first example, discussed in Sexton (1999), is the ASL verb FINISH, which in its citation form is a two-handed sign, where both hands are in a '5' handshape (open, with fingers spread, cf. Appendix A) begin in a position facing each other in neutral space.¹⁷³ There is a quick, downward twist of the wrists, which leaves the hands in a position where the palms are horizontal and oriented downward. The lexical sign FINISH is a verb that conveys a meaning that something is being, has been, or will be finished. The examples in (7-30), taken from Isenhardt (1990:202-203), illustrate this verb.

¹⁷¹ For an excellent overview of grammaticalization in spoken and signed languages, see Pfau and Steinbach (2004).

¹⁷² The division between these two categories may not be clear cut. Janzen and Shaffer (2002) suggest that prelinguistic gestures of the hands and face are the substrate of (all) signed language grammatical elements. In exploring grammaticalization pathways, they write, 'we may look not only to the expected lexical material as the sources of newer grams, but to even earlier gestures as the sources of the lexical items that eventually grammaticize' (pp.200-201). Nevertheless, some grammatical markers whose origins are gestural never pass through a lexical stage.

¹⁷³ For a more detailed analysis of the grammaticalization of FINISH in ASL, see Janzen (1995).

- (7-30) a. CLASS ALMOST FINISH
 ‘The class is almost done’
- b. WORK, ME FINISH WILL
 ‘I will finish the work’

The lexical sign FINISH has undergone grammaticalization and, as a grammatical sign, functions as a marker of the past tense or the completive aspect (cf. Madsen, 1972; Janzen, 1995). In this grammatical use, FINISH may either precede or follow the verb it modifies. The examples in (7-31) illustrate the grammatical sign FINISH.

- (7-31) a. FINISH EAT YOU?
 ‘Have you eaten?’ Isenhath (1990:203)
- b. WE-TWO DISCUSS FINISH
 ‘We discussed it’ Fant (1994:189)
- c. TOUCH FINISH JAPAN YOU?
 ‘Have you ever been to Japan?’ Fant (1994:245)

As Sexton (1999:116) points out, this example illustrates one of the characteristics common to grammaticalization; namely, that older and newer forms often coexist. In ASL, the sign FINISH has two roles, one lexical and the other grammatical. Sexton notes that the sign FINISH does not appear to have undergone any further grammaticalization, and as such has not shown any signs of phonological deletion or compounding.

Givón (1979) has pointed out that cross-linguistically, certain auxiliary verbs have a tendency to evolve into tense-aspect modality markers. *Finish* is among the most commonly grammaticalized verbs, and the grammatical function it tends to take on is

the indication of perfective or past action. This situates the grammaticalization of FINISH in ASL as a nice parallel example of grammaticalization in spoken languages.

In contrast to the grammaticalized form of FINISH, which does not show any variation in form, the grammaticalized form of WRONG does undergo phonetic alteration. MacFarlane (1998a) examines the grammaticalization of the sign WRONG in ASL, arguing that the property concept WRONG has grammaticalized to a coordinating conjunction.¹⁷⁴ Following Hopper and Traugott's (1993) cline of clause-combining constructions that move unidirectionally from free juxtaposition to syntactic and morphological boundedness, MacFarlane traces the development of a mirative coordinator in ASL (mirativity being the grammatical marking of unexpected information (cf. DeLancey, 1997)). The sign WRONG, in its most basic form, is phonetically realized with a 'Y' handshape that is oriented toward the body of the signer and moves from chest-level neutral space up to the chin, where the knuckles of the 'Y' hand contact the chin. It is this form of the sign, which MacFarlane calls WRONG-1, that is used to signify a property concept (a concept which expresses a property of an entity). He provides the following sentence as an example of its usage.

(7-32) YOU TEACH **WRONG-1** LESSON YESTERDAY, I-TELL-YOU TEACH HISTORY.

'You taught the WRONG lesson yesterday, I told you to teach history.'

The semantics of WRONG-1, as illustrated above, do not serve to link two clauses. Rather, WRONG-1 either modifies a noun (as in (7-32)) or can be used adverbally.

A grammaticalized version of WRONG, which MacFarlane labels WRONG-2, serves as a coordinating conjunction. This WRONG is also formed with a 'Y' handshape, but the movement is a twisting movement on the chin rather than a single path movement from chest-level neutral space to the chin. WRONG-2 can only be used to join two clauses where the second clause contains an unexpected, though not

¹⁷⁴ A property concept is a concept which expresses a property of an entity.

necessarily unpleasant, event. The following example (7-33), which MacFarlane adapts from Lane (1993), illustrates the use of both **WRONG-1** and the grammaticalized **WRONG-2**.

(7-33) SCOTLAND SET.UP SCHOOL. 1 TEACH READING. 2 **WRONG-1**
 SPEECH SOMEONE, TEACH RIGHT SPEECH, THEY HEARING.
 TIME.PASS, **WRONG-2** WIFE CHEAT, FATHER TAKE SON MOVE
 LONDON TEACH PRONUNCIATION TEACH.

‘Scotland established a school. First, they taught reading. Secondly, if someone had BAD speech they would teach correct speech, these children were hearing. Later, unexpectedly, the wife had an affair and the father took the son to London where he taught pronunciation.

In the above example, the signer used **WRONG-1** to indicate a property concept, and the grammaticalized **WRONG-2** to indicate a conjunction.

While I’ve discussed only two examples of lexical grammaticalization in ASL, a much wider range of grammaticalization exists in signed languages (the grammaticalization of aspectual and tense markers, of nouns and verbs to auxiliaries, of nouns to pronouns and complementizers, and of adjectives to negative existentials, among others; cf. Pfau and Steinbach, 2004).

7.4.3.2 Gestural grammaticalization

In addition to the grammaticalization of lexical items, the grammaticalization of gestures (both nonmanual and manual) is prevalent in signed languages. For example, the nonmanual eyebrow raise that signifies a topic marker in ASL has its roots in gesture. Exploring this path of grammaticalization (from gesture to highly grammaticalized functional category) Janzen (1999) proposes the following.

(7-34) Grammaticalization path for topic marker in ASL

communicative > yes/no question > topic constituent
questioning gesture (pragmatic/syntactic)

The origin of the topic marker is a communicative questioning gesture, essentially an eyebrow raise. This gesture has become conventionalized and has combined with a forward head tilt (inviting a response); it has become the obligatory nonmanual yes/no question marker in ASL (as well as in other signed languages).¹⁷⁵ This nonmanual grammatical marker is present in the following utterance (from Baker and Cokely, 1980:124).

_____q

(7-35) FINISH SEE MOVIE YOU
'Have you already seen the movie?'

The same eyebrow raise surfaces in topicalization, when the object of a sentence is moved to the front of the sentence. Following are two examples of topicalized objects (taken from Baker and Cokely, 1980:159; and Janzen, 1999:288, respectively).

_____t

(7-36) YESTERDAY MEETING, BORING*
'The meeting yesterday was really boring'

_____t

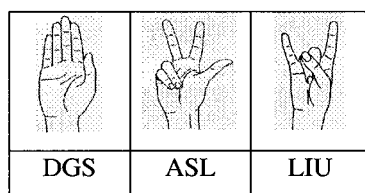
(7-37) WORLD CL:C_{globe} MANY DIFFERENT+ LANGUAGE INDEX_{3(onglobe)}+++
'In the world, there are many different languages used.' / 'There are many different languages used in all parts of the world.'

¹⁷⁵ Baker and Cokely (1980:122) note that the yes/no grammatical marker also calls for a widening of the eyes, and that sometimes the shoulders are raised as well.

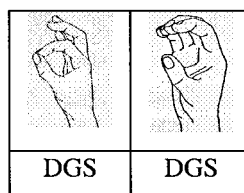
In (7-36) and (7-37), the topicalized constituent is marked by the raised eyebrows and a head tilt, and often is followed by a short pause. Thus, in these examples we see a nonmanual (in this case a facial) gesture grammaticalizing into a grammatical element (yes/no question marker) and then further grammaticalizing into a highly grammaticalized functional category, that of topic marking. Crucially, there is no stage at which an identifiable lexical item has conventionalized from the gestural source (Janzen and Shaffer, 2002).

Manual gestures also undergo grammaticalization in signed languages. For example, manual gestures can grammaticalize into handle (or object) classifiers (Pfau and Steinbach, 2004). Recall that classifiers are specific handshapes that are combined with location, orientation, movement, and non-manual signals to form a predicate. Two of the seven different types of classifier handshapes originally identified by Supalla (1978) are entity (or semantic) classifiers and handle (or object) classifiers. Entity classifiers are handshapes that refer to an object as a whole (such as a car, person, or animal), while handle classifiers represent hands holding different objects or instruments as they act on objects (for example holding a piece of paper versus holding a cup). Pfau and Steinbach (2004) provide the following examples of these two types of classifier handshapes.

(7-38) Entity classifiers for vehicles



(7-39) Handle classifiers



As (7-38) illustrates, the shape of entity classifiers tends to be arbitrary, as evidenced by the variation across signed languages: German Sign Language (DGS), American Sign Language (ASL), and Jordanian Sign Language (LIU). In contrast, handle classifiers (7-39) are more iconic, and are very clearly related to gestures used throughout the hearing community. On the grammaticalization of these handle classifiers, Pfau and Steinbach explain that these classifiers ‘can be seen as grammaticalized gestures which enter the language system at the morphology stage (i.e. as bound morphemes). That is, the morphology is directly created from non-linguistic input’ (2004:10).

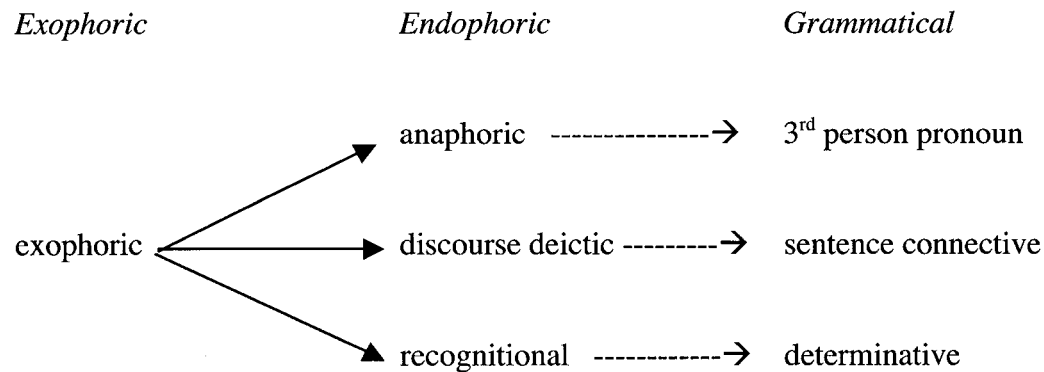
Another instance in which the morphology is directly created from non-linguistic input is the grammaticalization of pointing signs. As has been discussed throughout this thesis, singular pronouns in ASL (and other signed languages) are pointing signs. They are clearly related to (and some would argue indistinguishable from) gestural pointing signs. Have pointing signs been grammaticalized? In the sense that they have entered the language and exhibit systematic and structured behavior, the answer would have to be yes; pointing signs have entered the language(s) as demonstrative pronouns. They have not, however, further grammaticalized into markers of person. In the next section I will discuss evidence that supports this claim.

7.5 The grammaticalization of demonstratives

Crosslinguistically, demonstratives serve as a common historical source for a wide range of grammatical items, including definite articles, relative and third person pronouns, copulas, sentence connectives, complementizers, number markers, and possessives (Diessel, 1999:115). Diesel (1999) characterizes the grammaticalization of

demonstratives as ‘a continuous process leading from exophoric demonstratives used to orient the hearer in the outside world to grammatical items serving specific syntactic functions’ (p.118). He goes on to propose the following cline of grammaticalization.

(7-40) The grammaticalization cline of demonstratives (Diessel, 1999:113)



7.5.1 Criteria for the grammaticalization of demonstratives

When demonstratives grammaticalize, they undergo a number of changes, which Diessel summarizes as follows.

(7-41) Criteria for the grammaticalization of demonstratives (Diessel, 1999:118)

Functional changes

1. Grammatical items that developed from demonstratives are no longer used to focus the hearer's attention on entities in the outside world.
2. They are deictically non-contrastive.

Syntactic changes

3. Their occurrence is often restricted to a particular syntactic context.
4. They are often obligatory to form a certain grammatical construction.

Morphological changes

5. They are usually restricted to the distal or, less frequently, the proximal form.
6. They may have lost their ability to inflect.

Phonological changes

7. They may have undergone a process of phonological reduction.
8. They may have coalesced with other free forms.

While the functional criteria apply to (almost) all demonstratives that have undergone grammaticalization, whether or not the other criteria apply depends on the grammaticalization channel, the properties of the source item, and the stage that an emergent grammatical marker has reached (Diessel, 1999:119). Nevertheless, Diessel suggests that these eight criteria can be used to determine if and to what extent a demonstrative has been grammaticalized. In section 7.5.3 I will use these criteria to evaluate whether or not demonstrative pronouns in ASL have been grammaticalized (into personal pronouns).

7.5.2 The grammaticalization of pronominal demonstratives

Third person pronouns are historically derived from pronominal demonstratives in many of the world's spoken languages. As Diessel discusses, Givón (1984:353-360) has shown that the grammaticalization of demonstratives into third person pronouns is part of a larger diachronic cline.

(7-42) Cline of grammaticalization for pronominal demonstratives

DEM PRO > third person PRO > clitic PRO > verb agreement

At the far left of this cline is an anaphoric pronominal demonstrative that serves to track emphatic, contrastive, and unexpected discourse topics. When an anaphoric demonstrative develops into a third person pronoun, it becomes de-stressed and its use is gradually extended to all persisting topics. When a third person pronoun continues to grammaticalize, it may become a clitic, or it may eventually become an agreement marker (Diessel, 1999:120; cf. Givón, 1984:353; Lehmann, 1982/1995:39-42).

Diessel notes that the cline in (7-42) is attested in the history of French.

(7-43) *ille* > *il* > *l'* > clitics used as
agreement markers in some
non-standard varieties

In modern standard French, Diessel notes, clitics (*l'*) are used to track continuing topics, but in certain non-standard varieties they are used as agreement markers, commonly occurring with a coreferential pronoun (Diessel, 1999:120; cf. Lambrecht, 1981). Historically, the clitics emerged from the free third person pronoun *il*, which itself developed from the demonstrative *ille* in Vulgar Latin (Harris, 1978:100-101, as discussed in Diessel, 1999).

7.5.3 There is no grammaticalization of demonstrative pronouns in ASL

Before going on to evaluate the evidence (or lack thereof) for ASL demonstrative pronouns having grammaticalized, a few words concerning the sources of personal pronouns in spoken language are in order. As has been discussed, third person pronouns in spoken language are often derived from demonstratives. First and second person pronouns, on the other hand, tend to come from nouns of social relations (Lehmann, 1982/1995; Mühlhäusler and Harré, 1990). For example, the Spanish *vuestra merced* 'your grace' has yielded the honorific second person pronoun *usted*

(Lehmann, 1982/1995:40). This is not the case in signed languages; there is no evidence that first and second person pronouns have come from nouns of social relations. To the contrary, the similarity in form across all three person categories (i.e. the fact that locations in the signing space unambiguously identify referents in a discourse) suggests that all singular pronouns have a similar origin. As such, the question of whether or not demonstrative pronouns have undergone grammaticalization applies to all pronouns, not just third person pronouns. The cline of grammaticalization to be evaluated, then, looks as follows.

(7-44) Cline of grammaticalization for signed language pronominal demonstratives

DEM PRO > PRO > clitic PRO > verb agreement

Returning to Diessel's (1999) criteria for grammaticalization of demonstratives, is there any evidence that demonstrative pronouns in ASL have grammaticalized into personal pronouns? Below I repeat Diessel's list of changes that indicate a demonstrative has undergone grammaticalization. In this version of the criteria for grammaticalization, I have included symbols indicating whether or not the sign language data show evidence of each specific change. I will discuss each category of change in turn.

(7-45) Summary of evidence for the grammaticalization of demonstratives in ASL

Functional changes

-
- ✗ 1 no longer used to focus the addressee's attention on entities in the outside world
 - ✗ 2 deictically non-contrastive

Syntactic changes

-
- ? 3 occurrence is often restricted to a particular syntactic context
 - ? 4 often obligatory to form a certain grammatical construction

Morphological changes

-
- ✗ 5 usually restricted to the distal or, less frequently, the proximal form
 - ✗ 6 may have lost their ability to inflect

Phonological changes

-
- ✗ 7 may have undergone a process of phonological reduction
 - 8 may have coalesced with other free forms

The two functional changes, which Diessel asserts apply to (almost) all demonstratives that have undergone grammaticalization, have not occurred to ASL pronouns.

Pronominal indexes in ASL are (still) used to focus the addressee's attention on entities in the outside world (namely present referents and conceptually present tokens).

Similarly, pronominal indexes in ASL have maintained their deictic contrastiveness; locations in signing space are fully distinguishable.

In terms of the syntactic changes that are characteristic of grammaticalized demonstratives, it is not immediately clear whether or not these would apply to grammaticalized demonstratives in signed languages. Diessel does not explicitly discuss these specific criteria in relation to the grammaticalization of pronominal demonstratives into third person pronouns. To be sure, the presence of pronominal indexes is restricted to particular syntactic contexts in ASL (cf. section 6.2), but this

thus there is no phonological evidence for the grammaticalization into personal pronouns.

In sum, using Diessel's (1999) criteria for the grammaticalization of demonstratives, I have shown that there is little, if any, evidence that demonstrative pronouns in signed languages have grammaticalized into personal pronouns. It is not out of the question that this might happen at some point in the future, but as of this point I find no indication that this is taking place. One cannot rule out, however, that other types of demonstratives may have undergone (or be in the process of undergoing) grammaticalization. One such possibility will be discussed in the next section.

7.5.4 (Possible) grammaticalization of adnominal demonstratives in ASL

It appears that there may be some evidence of adnominal demonstratives undergoing grammaticalization. The relevant cline of grammaticalization for adnominal demonstratives looks as follows.

(7-47) ADNOMINAL DEMONSTRATIVE > DEFINITE ARTICLE

With respect to the grammaticalization process that leads to the development of definite determiners, Diessel (1999) notes that adnominal demonstratives lose their deictic function and turn into formal markers of definiteness.

Recall (cf. section 7.3.2.3) that in ASL an index can occur along with a nominal, as in the following sentence, which I repeat from (7-14).

(7-48) [IX_i MAN]_{DP} ARRIVE
 'The/that man is arriving.'

As discussed, there is not always a clear distinction between a demonstrative determiner reading (i.e. *that man*) and a definite determiner reading (*the man*). In section 7.3.2.3 I presented some evidence that suggests some of these prenominal indexes may be better

analyzed as demonstrative determiners (they access spatial locations and can take number inflection). Yet it seems that there are some adnominal indexes that show signs of having grammaticalized.

In a study of pointing signs in ASL, Zimmer and Patschke (1990) isolate a set that they classify as determiners. The relevant data is as follows (Zimmer and Patschke, 1990:205). Index signs functioning as determiners are glossed as 'DET', following the original.

- (7-49) a. SEE DET GIRL
 'He saw a girl.'
- b. OTHER SISTER DET COME
 'The other sister came over.'
- b. SAME MAN/DET CL:ONE PERSON-MOVES-TOWARD-
 ANOTHER
 'The same man was walking towards her.'

Zimmer and Patschke point out that their data support Wilbur's (1979) claim that determiners can occur before, after, or simultaneously with a noun. This analysis contradicts that put forth by MacLaughlin (1997) and Neidle et al. (2000), which claims that all postnominal indexes are adverbial demonstratives.

The pointing signs that Zimmer and Patschke classify as determiners are phonologically distinct from other pointing signs. In terms of the location, the vast majority of these determiners point slightly upward and are restricted in the locations they index; this is in contrast to the adnominals discussed in MacLaughlin (1997) and Neidle et al. (2000), which access a wider range of spatial locations along the horizontal signing plane. There are phonological distinctions in movement as well; the authors report that these determiners move slightly or not at all, and never arc or jab, as do other pointing signs. Finally, the nonmanuals that accompany these determiners are distinct as well; whereas the definite determiners discussed by MacLaughlin (1997) and Neidle

et al. (2000) are often accompanied by non-manual expressions of agreement with the location of the referent (e.g. the signer's head may be tilted toward and/or the eye gaze may be directed to the spatial location associated with the referent), Zimmer and Patschke (1990) report that, with the determiners in their study, eyegaze is variable, sometimes remaining on the addressee, sometimes following the direction of the point.

It may be the case that the pointing signs analyzed in Zimmer and Patschke (1990) are instances of adnominal demonstratives that have grammaticalized (or are in the process of grammaticalizing) and are now functioning as definite articles. Returning to Diessel's criteria for grammaticalization, several of the changes he discusses are in evidence.

(7-50) Summary of evidence for the grammaticalization of adnominal demonstratives

Functional changes

-
- ✓ 1 no longer used to focus the addressee's attention on entities in the outside world
 - ✓ 2 deictically non-contrastive

Syntactic changes

-
- ? 3 occurrence is often restricted to a particular syntactic context
 - ? 4 often obligatory to form a certain grammatical construction

Morphological changes

-
- ✓ 5 usually restricted to the distal or, less frequently, the proximal form
 - ✓ 6 may have lost their ability to inflect

Phonological changes

-
- ✓ 7 may have undergone a process of phonological reduction
 - 8 may have coalesced with other free forms

From the description given in Zimmer and Patschke, the determiners in their data do not focus the addressee's attention on entities in the signing situation and they are far less deictically contrastive than other indexes. Morphologically, they appear to be restricted,

in some sense, to certain locations (it appears to proximal locations). Furthermore, none of the determiners they discuss inflect for number. Finally, there has clearly been some phonological reduction.

As was discussed above, firm boundaries between categories on any cline of grammaticalization can be difficult to establish. Additionally, it is not at all uncommon for earlier forms to coexist with later forms. It is not surprising, then, to find within the literature differing views concerning the precise categorial and grammatical status of adnominal demonstratives in ASL.

7.6 Summary

In this chapter I have discussed several lines of evidence that suggest pronominal indexes in signed languages are demonstrative in nature. Sign language pronouns evidence the three major components that are characteristic of demonstratives (Lehmann, 1982/1995): a demonstrative element (the index handshape and basic movement), a deictic element (the location toward which the pronoun is directed), and a categorial element (NP). In comparing demonstratives in spoken and signed languages, we have seen that the medium of signed languages (the fact that they are conveyed in space) does, in fact, have an impact on the semantics of demonstratives. Three unique aspects of sign language demonstratives were discussed: signed languages exhibit an unlimited number of spatial distinctions within the demonstrative system; the overall structure of spatial deictic systems in signed languages is distinct (in that it is based on absolute locations within the signing space, rather than on the location relative to either the speaker or addressee); and, with the exception of number, signed language demonstratives do not provide any qualitative information about referents.

Using the framework for syntactic classification of spoken language demonstratives proposed by Diessel (1999), I have discussed the range of pointing signs that exist in ASL (pronominal, adnominal, adverbial, and identificational). While it is clear that demonstrative adverbs and demonstrative identifiers comprise two distinct syntactic categories, there is some evidence to suggest that pronominal demonstratives and

adnominal demonstratives might belong to the same syntactic category in ASL. At this point it is not entirely clear whether ASL has demonstrative pronouns that are used both pronominally and adnominally, or demonstrative determiners that are used in those two contexts. Additional research is needed in this area.

In the final section of this chapter I examined the grammaticalization of demonstratives in spoken languages, then went on to evaluate pronominal indexes in signed languages using grammaticalization criteria discussed in Diessel (1999). It was shown that there is no clear evidence that demonstrative pronouns have grammaticalized into personal pronouns, but that there is some evidence that suggests adnominal demonstratives may be grammaticalizing into definite articles.

8 Conclusion

I return now to one of the central questions raised in Chapter 1: how, and to what degree, do the modality and medium of a language affect the structure of that language? This thesis has explored one area of signed language structure that, most definitely, shows medium effects: reference. Through a cross-linguistic, cross-modality, examination of referential morphology, I have identified a fundamental difference in the way spoken and signed languages identify referents in a discourse.

Across spoken language pronominal systems there exists a range of semantic categories and distinctions that can be marked. Additionally, spoken languages exhibit considerable variation with respect to how semantic distinctions are marked, variation at both the morphological and phonological levels. In spoken languages, the grammatical category ‘person’ plays a central role in systems of pronominal reference and verb-argument agreement; the person deictic distinctions of speaker, addressee, and other are the primary means by which referents in a spoken language discourse are identified.

There exists a tremendous amount of structural variation among the world’s spoken languages in terms of how person is marked. Nevertheless, both the nature and scope of this variation are constrained in systematic ways: the variation of person marking occurs within a general paradigmatic space; paradigmatic variation arises as a result of homophony; certain paradigmatic structures are attested more commonly than others; and there exists a hierarchy of paradigmatic structure (the Explicitness Hierarchy) which characterizes the order in which a particular set of oppositions within a paradigm is grammaticalized.

Unlike spoken languages, the pronominal systems of signed languages do not utilize a variety of semantic categories and distinctions to identify referents; rather, referential identification is accomplished largely through indexical strategies. I have argued (in support of Ahlgren, 1990, and Liddell, 1995) that, for signed language pronouns and agreement verbs, the identification of referents is accomplished not through the marking of grammatical person (speaker, addressee, other), but rather

primarily through spatial deixis. My primary arguments against the existence of person marking in signed languages emerged from a cross-linguistic, cross-modality examination of person marking, and can be summarized as follows. First, the overall structure of signed language pronominal reference is non-paradigmatic. Secondly, unlike spoken languages, in which a wide range of morphological and phonological structures are used to mark distinctions of person, signed languages are characterized by typological homogeneity; there is virtually no variation, at either the morphological or phonological level, in how singular referents are identified in signed languages, and limited variation in how multiple referents are identified. Finally, the referential specificity that is characteristic of signed language pronominal systems can not be accounted for by appealing to the notion of grammatical person, where the referential distinctions are limited to first (speaker), second (addressee), and third (other).

Grammatical number does play a role in the identification of referents in signed language discourse, but crucially the feature person does not. With all singular referents, the link between a pronoun and its referent is established via a location feature. Crucially, these location features are fully dependent upon the extralinguistic context of the utterance – the physical location of the individuals involved in a conversation, as well as the locations in space at which non-present referents (tokens and surrogates, cf. Liddell, 1994; 1995) have been established. As such, pronouns in ASL (and in other signed languages) are best understood as spatial deictics (i.e. demonstratives).

At this point it is necessary to ask, what is the precise nature of the ‘location feature’ around which signed language reference is structured? Diessel (1999:51) discusses the wide range of deictic features encoded by demonstratives in spoken language: distance, visibility, elevation, geography, and movement. Yet none of these deictic features accurately characterize the process by which referents are identified in signed languages. Referents in a signed discourse are identified by indexical strategies, and as such, demonstrative pronouns do not encode anything.

In exploring the types of relationships that may hold between a sign (‘sign’ in the semiotic sense) and the object it represents, philosopher Charles Peirce classified signs

as being one of three types: icon, index, or symbol. On this tripartite division of signs, Peirce writes:

... I had observed that the most frequently useful division of signs is by trichotomy into firstly Likenesses, or, as I prefer to say, *Icons*, which serve to represent their objects only in so far as they resemble them in themselves; secondly, *Indices*, which represent their objects independently of any resemblance to them, only by virtue of real connections with them, and thirdly *Symbols*, which represent their objects, independently alike of any resemblance or any real connection, because dispositions or factitious habits of their interpreters insure their being so understood. (Peirce, 1911/1998:460-461)

Restating Peirce's classification, icons physically resemble the objects they represent (a portrait is an icon of its real-life subject), indices have a direct physical connection to the objects they represent (smoke is an index of fire), and symbols are linked to the objects they represent only via a convention of some sort (a bald eagle is a symbol of the USA).

The words of human languages are generally considered to be symbolic; words represent, or are linked to, that which they signify by convention. There are, of course, iconic elements present in all languages (the sound symbolism of words like *gong*, for example), but the vast majority of words in languages are symbolic.¹⁷⁷ As a symbol, the pronoun *he* is arbitrary, and is linked to its referent only by linguistic convention; there is nothing in the word *he* that resembles a referent, nor does the word *he* have a physical connection to a referent. The features of person, number, and gender are associated with this pronoun, and by convention, these features help the listener identify the intended referent. In contrast, in signed languages, singular pronouns are fully (and

¹⁷⁷Some researchers argue that iconicity is far more prevalent in human language than is traditionally thought. For discussion, see Haiman (1980; 1983; 1985a; 1985b). Iconicity is, arguably, quite pervasive in signed languages (see Armstrong et al., 1983; Dotter, 1995; 1999; Engberg-Pedersen, 1996a, 1996b; Taub, 2000, 2001, among others).

exclusively) indexic.¹⁷⁸ The form of sign language pronouns is not arbitrary, but rather is motivated; pronouns have a direct, physical connection to their referents – they literally point at them.

Plural pronouns in signed languages are most accurately characterized as both indexic and symbolic. As Liddell (2003:69) has pointed out, a plural pronoun such as THREE-OF-YOU is symbolic in that it encodes ‘three (human) beings other than the signer’, but it is also indexic in that the movement of the hand points toward the referents themselves. Again, when number marking is involved, sign language pronouns (and agreement verbs as well) lose some of their indexic capabilities and rely, at least partially, on symbolic conventions.

Returning to the notion of feature and the characterization of location in sign language reference, what is the status of location features? Broadly defined, the term *feature* can refer to ‘any typical or noticeable property’ of a language (Crystal 1997:148). Within these parameters, location (as it is used in sign language reference) could be considered a feature. While features are typically classified as being either linguistic or non-linguistic (extralinguistic), the location feature in signed languages seems to warrant a dual classification. Location is extralinguistic in the sense that it can only be specified through reference to the physical signing space and, more importantly, the location of referents (either real or imagined) within that space. In other words, there are no phonological features that can adequately describe the location components of pronouns and agreeing verbs (Liddell, 1995, 2000a). Yet location appears to be a grammatical feature in that it functions (along with number) as one of the nominal features that determines agreement behavior. What makes the location feature unusual is the nature of its content; whereas the standard grammatical features (person, number,

¹⁷⁸In several of his writings, Peirce has described the index in terms that very accurately characterize the nature of sign language pronominal reference. I include here a small sampling of his descriptions: ‘A sign which denotes a thing by forcing it upon the attention is called an index’ (1896/1933: para. 434); an index is a sign which refers to its object through a ‘dynamical (including spatial) connection both with the individual object ... and with the senses or memory of the person for whom it serves as a sign’ (1901/1931:2.305); ‘The index asserts nothing; it only says “There!” It takes hold of our eyes, as it were, and forcibly directs them to a particular object, and there it stops. Demonstrative and relative pronouns are nearly pure indicies, because they denote things without describing them’ (1885/1980:162-163).

gender) have semantic content, the grammatical feature location in signed languages has only indexical content.

The dual status of the location feature (both linguistic and extralinguistic) is a reflection of the fact that, in signed languages, linguistic structures and gestural expression co-exist. This is, of course, true of spoken languages as well; when people talk, they almost always gesture with their hands and arms. While the gesture that accompanies speech is spontaneous, and not part of a codified system of manual expression, gestures do follow general principles (see McNeill, 1992). Indeed, there is a unity of speech and gesture (Kendon, 1972; 1980); speech and gesture are interrelated in time, meaning, and function (McNeill, 1992). As McNeill has noted, ‘so closely linked are they that we should regard the gesture and the spoken utterance as different sides of a single underlying process’ (1992:1).

There is evidence to suggest that Deaf signers also use gestures while signing, although the process of isolating gestures from signed language can be difficult (Marschark, 1994; Emmorey, 1999). The challenge here is a result of the fact that for signed languages, language and gesture utilize the same (manual-gestural) modality and are conveyed in the same medium (space). The fact that language and gesture are conveyed in the same modality in signed language has led to the uniformity of reference in signed languages. The deictic point, which is so essential to human communication, and which is used gesturally in spoken languages, has been fully incorporated into signed languages. Whereas in spoken languages deictic points are extralinguistic, in signed languages they have been fully incorporated into the formal structure of the language(s). Sign language pronouns are gestural, in that they point to referents, but they are also linguistic, in that they exist as part of a structured system of ‘verbal’ expression.¹⁷⁹

¹⁷⁹ Liddell (2000b:354) addresses this point when he writes ‘Regardless of the modality, there is a need for deictic gestures toward elements of grounded mental spaces. In spoken languages the gesture does not influence the form of the individual spoken words. The one difference I am proposing between signed languages and spoken languages is that signed languages have all developed in ways which allow the gestural component to combine with the linguistically specified features of some classes of signs without interfering with the ability to recognize the signs themselves.’

Spatial referencing as an affordance of the medium

Because they are conveyed through the spatial medium, signed languages have an increased potential for deictic expression. While it is true that all languages have deictic expressions (Anderson and Keenan, 1985), and that, through deictics, the utterances of all natural languages are ‘anchored’ directly to aspects of the speech context (Levinson, 1983), in signed languages we see deictic anchoring taken to a new level. This is nowhere more apparent than in the area of reference, where spatial deictics (demonstratives) serve to identify referents in a discourse. Pronouns and agreeing verbs, the signs themselves, are physically anchored in the context; through spatial mapping and the ability to point at things, signers take advantage of the enhanced deictic capacity of the medium.

Sign language pronouns and agreement verbs are indexical because they can be. Given the modality of signed languages (visual-gestural), as well as the medium in which they are conveyed (space), it should come as no surprise that signed languages use space as they do; for signed languages it is the most efficient and effective way to identify referents in a discourse.¹⁸⁰

The fact that signed languages are expressed through the visual-gestural *modality* does not preclude a fully abstract, grammatical system of reference. Signed languages *could* have developed systems of reference that utilize the modality-determined abstract building blocks that are part of the language (handshapes, locations on the body, internal movements etc.) without using space. Instead of localizing referents at distinct locations in the signing space, reference might have looked something like the following.

¹⁸⁰ For additional discussion of the effects of language modality on the structure of signed languages, see Emmorey (2002b), Liddell (2002), Lillo-Martin (1999; 2002), and Meier, et al. (2002), among others.

(8-1) A theoretically possible sign language pronoun system

fs-MARY [F handshape to left shoulder], fs-BILL [F handshape to chest]
 [F handshape to left shoulder] LIKE [F handshape to chest]
 'Mary likes Bill.'

Here, a signer would sign the name of a referent, then follow this with a specific handshape, 'F', directed toward a location on the body (here the shoulder). The name of a second referent would be spelled, followed by that same handshape directed toward a different location on the body (the chest, perhaps). These 'F' handshapes articulated at distinct locations on the body could function as pronouns, and could be used in utterances like the one in (8-1). In principle, there is no reason this type of system for referring to individuals in the discourse would not work. However, there are no known natural signed languages that are structured this way; all natural signed languages take full advantage of the spatial medium to refer to referents within a discourse.

The powerful effects that language medium has on the structure of reference are evidenced in two additional situations: the signing of deaf children exposed only to Manual Codes for English (MCEs), and the emerging natural sign language in Nicaragua. MCEs are English-based systems of manual communication developed by hearing educators to provide deaf students with visible, manual equivalents of English words and affixes. Though the lexicons of MCEs borrow heavily from ASL, the inflectional morphology is largely sequential, and spatial locations do not play any grammatical role (e.g. verbs are not moved between locations in the signing space to mark subject and object). Supalla (1991) studied a group of deaf children exposed only to one particular MCE (Signing Exact English 2, or SEE 2), and found that the children modified the sign system into a more spatially based structure, quite similar to that found in ASL. Of particular interest to the present thesis are the modifications Supalla's subjects demonstrated in the area of reference. In SEE 2, pronouns are based on English words and do not make use of locations in the signing space. For example, the sign HE (third person masculine subject) is formed by placing an 'E' handshape at

the signer's temple (a location reserved, in both ASL and SEE 2, for signs referring to males). In contrast, the sign SHE (third person feminine subject) uses an 'E' handshape placed on the chin (a location reserved for signs referring to females). Unlike ASL, SEE 2 encodes case distinctions in third person pronouns; the handshape 'E' is replaced by the handshape 'M'. Supalla asked his subjects to describe a series of simple events involving people performing actions with each other. In the children's spontaneous signing, locations in the signing space were used for pronominal reference to individuals, and verbs were spatially modified to indicate grammatical agreement. As Supalla writes, 'SEE 2's nonspatial grammatical devices were replaced with essentially spatial ones ... the use of space and movement apparently was independently devised and added to their use of SEE 2' (1991:101). The fact that deaf children learning artificial sign systems spontaneously use space in ways that are characteristic of ASL and other natural signed languages is strong support for the idea that the medium of a language can influence, in a very direct way, the structure of that language.

A second example of the spatial medium asserting its influence on the structure of language can be seen in the natural sign language that has recently emerged in Nicaragua. Following the establishment of Nicaragua's first school for the deaf in the late 1970s, deaf children from rural areas around the country (most, if not all, of whom had been isolated from other deaf people) came together for the first time. None of the children had been exposed to a sign language, though some had developed simple family gestural communication (homesign) systems. When brought together, the deaf children began gesturing with each other, and within a relatively short period of time, a rudimentary sign language had emerged. Since the mid 1980s, linguist Judy Kegl and colleagues have been studying the newly formed deaf community and the language that is emerging within it (Kegl, 1994; Senghas, 1994; Kegl et al., 1999; Senghas, 2000). Senghas et al. (1997) studied the nature of the linguistic structures used by first and second generation signers (first generation signers entered the community in 1980 or earlier, while those in the second generation arrived in 1985 or later). In particular, Senghas et al. focused on grammatical devices used for expressing basic argument structure, and how these linguistic structures might have changed between the first and

second generation. While there were notable differences in word order use, most relevant to the current thesis are developments in the use of spatial locations and directional movement of verbs. With first generation signers, directional movements on the verbs were not used consistently, and thus spatial direction did not appear to be grammaticalized as a morphological device. In contrast, the second generation signers showed consistent use of directional movement. While these second generation signers did not explicitly index nouns to locations in the signing space, the directional consistency ‘may ... be evidence of an emerging morphological system that allows signers to link verbs with their arguments’ (Senghas et al., 1997:559). While the development of this language is still underway, the fact that successive generations of signers are utilizing spatial locations for the marking of arguments is strong evidence of the robust and powerful affordances that the medium of space provides.

The study of signed languages can reveal a great deal about the nature of human language. In this thesis, I have addressed one central question concerning the nature of human language: what are the effects of modality and medium on the structure of language? I have argued that signed languages are typologically distinct from spoken languages in one small but significant domain of language. In the domain of reference, signed languages appear to be structured quite differently from spoken languages. Because signed languages are fully anchored in three-dimensional space, they are uniquely equipped to capitalize on the deictic capacities of the human language faculty. Whereas spoken languages rely on person deixis to identify referents, signed languages rely on spatial deixis; the result is a system of reference that is largely indexical. In the domain of reference, then, we see that the medium of signed languages affords a more direct identification of referents within a discourse.

References

- AARONS, DEBRA, BENJAMIN BAHAN, JUDY KEGL and CAROL NEIDLE. 1992. Clausal structure and a tier for grammatical marking in American Sign Language. *Nordic Journal of Linguistics*, 15.103-142.
- AHLGREN, INGER. 1990. Deictic pronouns in Swedish and Swedish Sign Language. In *Theoretical Issues in Sign Language Research, I: Linguistics*, ed. by Susan D. Fischer, Patricia Siple and James J. DeCaro, 167-174. Chicago, IL: University of Chicago Press.
- ANDERSON, STEPHEN R. 1993. Linguistic expression and its relation to modality. In *Current Issues in ASL Phonology (Phonetics and Phonology 3)*, ed. by Geoffrey R. Coulter, 273-290. London, UK: Academic Press.
- ANDERSON, STEPHEN R. and EDWARD L. KEENAN. 1985. Deixis. In *Language Typology and Syntactic Description, Vol. III: Grammatical Categories and the Lexicon*, ed. by Timothy Shopen, 259-308. Cambridge, UK: Cambridge University Press.
- ARMSTRONG, DAVID F., GORDON W. HEWES, CHARLES R. PETERS and WILLIAM C. STOKOE. 1983. Iconicity, arbitrariness, and duality of patterning in signed and spoken language: perspectives on language evolution. *Sign Language Studies*, 12.51-83.
- ARONOFF, MARK, IRIT MEIR and WENDY SANDLER. 2000. Universal and particular aspects of sign language morphology. *University of Maryland Working Papers in Linguistics*, 10.1-33.
- AUSTING, JOHN and RANDOLPH UPIA. 1975. Highlights of Ömie morphology. In *Studies in Language of Central and South-East Papua*, ed. by Tom E. Dutton, 513-598. Canberra: Australian National University.
- BAHAN, BENJAMIN. 1996. *Non-manual realization of agreement in American Sign Language*, Boston University: Ph.D. dissertation.
- BAHAN, BENJAMIN and LAURA A. PETITTO. 1980. Aspects of rules for character establishment and reference in ASL storytelling. Salk Institute for Biological Studies, La Jolla CA.
- BAKER, CHARLOTTE and DENNIS COKELY. 1980. *American Sign Language: A Teacher's Resource Text on Grammar and Culture*. Silver Spring, MD: T.J. Publishers, Inc.
- BARLOW, MICHAEL and CHARLES A. FERGUSON. 1988. *Agreement in Natural Language : Approaches, Theories, Descriptions*. Stanford, CA: Center for the Study of Language and Information.
- BATTISON, ROBIN. 1978. *Lexical Borrowing in American Sign Language*. Silver Spring, MD: Linstok Press.
- BAUMAN, JAMES J. 1975. *Pronouns and Pronominal Morphology in Tibeto-Burman*, University of California at Berkeley: Ph. D. dissertation.
- BELLUGI, URSULA and EDWARD S. KLIMA. 1982. From gesture to sign: deixis in a visual-gestural language. In *Speech, Place, and Action : Studies in Deixis and*

- Related Topics*, ed. by Robert J. Jarvella and Wolfgang Klein, 297-313. New York, NY: Wiley.
- BENTON, RICHARD A. 1971. *Pangasinan Reference Grammar*: PALI language texts. Honolulu, HA: University of Hawaii Press.
- BENVENISTE, EMILE. 1966. *Problèmes de Linguistique Générale*. Paris: Gallimard.
- . 1971. *Problems in General Linguistics*. Coral Gables, FL: University of Miami Press.
- BERENZ, NORINE. 2002. Insights into person deixis. *Sign Language & Linguistics*, 5.203-227.
- BERENZ, NORINE and LUCINDA FERREIRA BRITO. 1990. Pronouns in BCSL and ASL. In *SLR '87 : Papers from the Fourth International Symposium on Sign Language Research, Lappeenranta, Finland July 15-19, 1987*, ed. by William Edmondson and Fred Karlsson, 26-36. Hamburg: Signum-Press.
- BERGMAN, BRITA. 1982. On localisation in the Swedish Sign Language. In *Papers from the First International Symposium on Sign Language Research, June 10-16, 1979, Skepparholmen, Sweden.*, ed. by Inger Ahlgren and Brita Bergman, 81-92. Skepparholmen, Sweden: Swedish National Association of the Deaf.
- . 1990. Grammaticalization of location. In *SLR '87 : Papers from the Fourth International Symposium on Sign Language Research, Lappeenranta, Finland July 15-19, 1987*, ed. by William Edmondson and Fred Karlsson, 37-56. Hamburg: Signum-Press.
- BOS, HELEEN. 1990. Person and location marking in Sign Language of the Netherlands: some implications of a spatially expressed syntactic system. In *Current Trends in European Sign Language Research : Proceedings of the Third European Congress on Sign Language Research, Hamburg, July 26-29, 1989*, ed. by Siegmund Prillwitz and Tomas Vollhaber, 231-246. Hamburg: Signum-Press.
- . 1995. Pronoun copy in Sign Language of the Netherlands. In *Sign Language Research, 1994 : Proceedings of the 4th European Congress on Sign Language Research, Munich, September 1-3, 1994*, ed. by Heleen Bos and Gertrude Schermer, 121-147. Hamburg: Signum.
- BOS, HELEEN F. 1993. Agreement and prodrop in Sign Language of the Netherlands. In *Linguistics in the Netherlands 1993*, ed. by Kees Hengeveld and Frank Dijkonings, 37-47. Amsterdam, Netherlands: John Benjamins.
- BRENNAN, MARY. 1981. Grammatical processes in British Sign Language. In *Perspectives on British Sign Language and Deafness*, ed. by Bencie Woll, James Kyle and Margaret Deuchar, 120-135. London: Croom-Helm.
- BRENTARI, DIANE. 1998. *A Prosodic Model of Sign Language Phonology*: Language, speech, and communication. Cambridge, MA: MIT Press.
- BRENTARI, DIANE and JOHN GOLDSMITH. 1993. Secondary licensing and the non-dominant hand in ASL phonology. In *Current Issues in ASL Phonology*, ed. by Geoffrey R. Coulter, 19-41. New York, NY: Academic Press.
- BRENTARI, DIANE, GARY LARON and LYNN MACLEOD (eds.) 1988. *CLS 24 : Papers from the 24th Annual Regional Meeting of the Chicago Linguistic Society : Part Two, Parasession on Agreement in Grammatical Theory*. Chicago: The Society.

- BUHLER, KARL. 1982. The deictic field of language and deictic words. In *Speech, Place, and Action : Studies in Deixis and Related Topics*, ed. by Robert J. Jarvella and Wolfgang Klein, 9-30. New York, NY: Wiley.
- BURING, DANIEL. to appear. *The Syntax and Semantics of Binding Theory*. Cambridge, UK: Cambridge University Press.
- BYBEE, JOAN. 1985. Diagrammatic iconicity in stem-inflection relations. In *Iconicity in Syntax : Proceedings of a Symposium on Iconicity in Syntax, Stanford, June 24-6, 1983*, ed. by John Haiman, 11-47. Amsterdam, Netherlands: John Benjamins.
- . 2003. Cognitive processes in grammaticalization. In *The New Psychology of Language. Volume 2 : Cognitive and Functional Approaches to Language Structure*, ed. by Michael Tomasello, 145-167. Mahwah, NJ: Lawrence Erlbaum Associates.
- BYBEE, JOAN and WILLIAM PAGLIUCA. 1985. Cross-linguistic comparison and the development of grammatical meaning. In *Historical Semantics: Historical Word-Formation*, ed. by Jacek Fisiak, 59-83. Berlin, Germany: Mouton de Gruyter.
- BYBEE, JOAN L., REVERE D. PERKINS and WILLIAM PAGLIUCA. 1994. *The Evolution of Grammar: Tense, Aspect, and Modality in the Languages of the World*. Chicago, IL: University of Chicago Press.
- CARLSON, ROBERT. 1994. *A Grammar of Supyire*. Berlin: Mouton de Gruyter.
- CARSTAIRS-MCCARTHY, ANDREW. 1998. Paradigmatic structure: inflectional paradigms and morphological classes. In *The Handbook of Morphology*, ed. by Andrew Spencer and Arnold M. Zwicky, 322-334. Oxford, UK: Blackwell.
- CHINCHOR, NANCY ANN. 1979. *Morphological Theory and Numeral Incorporation in American Sign Language*, Brown University: Ph.D. dissertation.
- CHOMSKY, NOAM. 1980. *Rules and Representations*. New York, NY: Columbia University Press.
- . 1981. *Lectures on Government and Binding*. Dordrecht, Holland: Foris Publications.
- . 1993. A minimalist program for linguistic theory. In *The View from Building 20*, ed. by Kenneth L. Hale and Samuel J. Keyser, 1-52. Cambridge, MA: MIT Press.
- . 1995. *The Minimalist Program*. Cambridge, MA: MIT Press.
- CLAIRIS, C. 1985. *El Qawesqar: Lingüística Fueguina, Teoría y Descripción: Estudios Filológicos*, Anejo 12. Valdivia: Universidad Austral de Chile.
- COMRIE, BERNARD. 1989. *Language Universals and Linguistic Typology, 2nd Ed.* Chicago, IL: University of Chicago Press.
- COOKE, JOSEPH R. 1968. *Pronominal Reference in Thai, Burmese, and Vietnamese*. Berkeley: University of California Press.
- CORBETT, GREVILLE G. 1991. *Gender: Cambridge textbooks in linguistics*. Cambridge, UK: Cambridge University Press.
- . 1995. Agreement. In *Syntax : An International Handbook of Contemporary Research*, ed. by Joachim Jacobs, 1235-1244. Berlin: Walter de Gruyter.
- . 1998. Morphology and agreement. In *The Handbook of Morphology*, ed. by Andrew Spencer and Arnold M. Zwicky, 322-334. Oxford, UK: Blackwell.

- . 2000. *Number*: Cambridge textbooks in linguistics. Cambridge, UK: Cambridge University Press.
- . 2003. Agreement: the range of the phenomenon and the principles of the Surrey Database of Agreement. *Transactions of the Philological Society*, 101.155-202.
- CORINA, DAVID. 1993. To branch or not to branch: underspecification in ASL handshape contours. In *Current Issues in ASL Phonology*, ed. by Geoffrey R. Coulter, 63-95. New York, NY: Academic Press.
- . 1996. ASL syllables and prosodic constraints. *Lingua*, 98.73-102.
- CORINA, DAVID and WENDY SANDLER. 1993. On the nature of phonological structure in Sign Language. *Phonology*, 10.165-207.
- CORMIER, KEARSY. 1998. How does modality contribute to linguistic diversity? University of Texas at Austin. Manuscript.
- . 2002. *Grammaticization of Indexic Signs: How American Sign Language Expresses Numerosity*, University of Texas: Ph.D. dissertation.
- . 2004a. Exclusive pronouns in ASL and BSL. Paper presented at DGFS 2004. Mainz, Germany
- . 2004b. Exclusive pronouns in American sign language
- CORMIER, KEARSY, STEPHEN WECHSLER and RICHARD P. MEIER. 1999. Locus agreement in American Sign Language. In *Lexical and Constructional Aspects of Linguistic Explanation*, ed. by Gert Webelhuth, Jean-Pierre Koenig and Andreas Kathol. Stanford, CA: Center for the Study of Language and Information.
- CROFT, WILLIAM. 2001. Typology. In *The Handbook of Linguistics*, ed. by Mark Aronoff and Janie Rees-Miller, 337-368. Malden, MA: Blackwell Publishers.
- . 2002. *Typology and Universals, 2nd Ed.*: Cambridge textbooks in linguistics. Cambridge, UK: Cambridge University Press.
- CRYSTAL, DAVID. 1997. *A Dictionary of Linguistics and Phonetics, Fourth edition*: The language library. Oxford, UK: Blackwell.
- CYSOUW, MICHAEL. 2001. *The Paradigmatic Structure of Person Marking*, University of Nijmegen: Ph. D. dissertation.
- . 2002. 'We' rules: the impact of an inclusive/exclusive opposition on the paradigmatic structure of person marking. In *Pronouns: Grammar and Representation*, ed. by Horst J. Simon and Heike Wiese, 41-62. Amsterdam, Netherlands: John Benjamins.
- . 2003. *The Paradigmatic Structure of Person Marking*. Oxford, UK: Oxford University Press.
- DELANCEY, SCOTT. 1997. Mirativity: the grammatical marking of unexpected information. *Linguistic Typology*, 1.33-52.
- DEUCHAR, MARGARET. 1984. *British Sign Language*. London: Routledge & Kegan Paul.
- DIESSEL, HOLGER. 1997. Predicative demonstratives. In *Proceedings of the Twenty-Third Annual Meeting of the Berkeley Linguistics Society*, 72-82. Berkeley: BLS.

- . 1999. *Demonstratives: Form, Function, and Grammaticalization*. Amsterdam, Netherlands: John Benjamins.
- DJENAR, DWI NOVERINI. 2001. Indonesian 'locative' pronouns: deictic or anaphoric? *Australian Journal of Linguistics: Journal of the Australian Linguistic Society*, 21.49-71.
- DOTTER, FRANZ. 1995. Nonarbitrariness and iconicity: coding possibilities. In *Syntactic Iconicity and Linguistic Freezes: The Human Dimension*, ed. by Marge E. Landsberg, 47-55. Berlin, Germany: Walter de Gruyter.
- . 1999. Sign language 'between' gestures (nonverbal behavior) and spoken language? *Sprachtypologie und Universalienforschung*, 52.3-21.
- DRYER, MATTHEW. 1997. Why statistical universals are better than absolute universals. *Chicago Linguistic Society*, 33.123-145.
- EMMOREY, KAREN. 1996. The confluence of space and language in signed languages. In *Language and Space*, ed. by Paul Bloom, 171-209. Cambridge, MA: MIT Press.
- . 1999. Do signers gesture? In *Gesture, Speech, and Sign*, ed. by Lynn S. Messing and Ruth Campbell, 133-159. Oxford, UK: Oxford University Press.
- . 2001. Space on hand: the exploitation of signing space to illustrate abstract thought. In *Spatial Schemas and Abstract Thought*, ed. by M. Gattis, 147-174. Cambridge, MA: MIT Press.
- . 2002a. *Language, Cognition, and the Brain : Insights from Sign Language Research*. Mahwah, NJ: Lawrence Erlbaum Associates.
- . 2002b. The effects of modality on spatial language: how signers and speakers talk about space. In *Modality and Structure in Signed and Spoken Languages*, ed. by Richard P. Meier, Kearsy Cormier and David Quinto-Pozos, 405-421. Cambridge, UK: Cambridge University Press.
- ENGBERG-PEDERSEN, ELISABETH. 1986. The use of space with verbs in Danish Sign Language. In *Signs of Life : Proceedings of the Second European Congress on Sign Language Research, Amsterdam, July 14-18, 1985*, ed. by Bernard Tervoort, 32-41. Amsterdam: Institute of General Linguistics.
- . 1993. *Space in Danish Sign Language : The Semantics and Morphosyntax of the Use of Space in a Visual Language*. Hamburg: Signum.
- . 1996a. Iconic motivations in conflict: language-specific structure and influence from the medium. In *Content, Expression and Structure: Studies in Danish Functional Grammar*, ed. by Elisabeth Engberg-Pedersen, Michael Fortescue, Peter Harder and Lars Jakobsen Lisbeth Falster Heltoft, 39-64. Amsterdam, Netherlands: John Benjamins.
- . 1996b. Iconicity and arbitrariness. In *Content, Expression and Structure: Studies in Danish Functional Grammar*, ed. by Elisabeth Engberg-Pedersen, Michael Fortescue, Peter Harder and Lars Jakobsen Lisbeth Falster Heltoft, 453-468. Amsterdam, Netherlands: John Benjamins.
- FANT, LOUIE. 1994. *The American Sign Language Phrase Book*. Chicago: Contemporary Books Inc.
- FARNELL, BRENDA M. 1995. *Do You See What I Mean? : Plains Indian Sign Talk and the Embodiment of Action*. Austin: University of Texas Press.

- FARRIS, MICHAEL. 1998. Models of person in signed languages. *Lingua Posnaniensis*, 40.47-59.
- FAUCONNIER, GILLES. 1985. *Mental Spaces : Aspects of Meaning Construction in Natural Language*. Cambridge, MA: MIT Press.
- . 1997. *Mappings in Thought and Language*. Cambridge, UK: Cambridge University Press.
- FILLMORE, CHARLES J. 1975/1997. *Lectures on Deixis*: CSLI lecture notes ; no. 65. Stanford, CA: CSLI Publications.
- . 1982. Towards a descriptive framework for spatial deixis. In *Speech, Place, and Action: Studies in Deixis and Related Topics*, ed. by R. J. Jarvella and Wolfgang Klein, 31-59. Chichester West Sussex: Wiley.
- FISCHER, SUSAN D. 1973. Two processes of reduplication in American Sign Language. *Foundations of Language*, 9.469-480.
- . 1996. The role of agreement and auxiliaries in Sign Language. *Lingua: International Review of General Linguistics*, 98.103-119.
- FISCHER, SUSAN D. and BONNIE GOUGH. 1978. Verbs in American Sign Language. *Sign Language Studies*, 7.17-48.
- FISCHER, SUSAN D. and YUTAKA OSUGI. 2000. Thumbs up vs. giving the finger: indexical classifiers in NS and ASL. Paper presented at the 7th International Conference on Theoretical Issues in Sign Language Research. July 23rd-27th, 2000, Amsterdam.
- FORCHHEIMER, PAUL. 1953. *The Category of Person in Language*. Berlin, Germany: Mouton de Gruyter.
- FRAWLEY, WILLIAM J. (ed.) 2003. *International Encyclopedia of Linguistics, Second edition*: Oxford University Press.
- FRIEDMAN, LYNN A. 1975. Space, time, and person reference in American Sign Language. *Language*, 51.941-961.
- FRIEDMAN, VICTOR A. 1994. *Ga* in Lak and the three "there"s: deixis and markedness in Daghestan. In *NSL. 7: Linguistic Studies in the Non-Slavic Languages of the Commonwealth of Independent States and the Baltic Republics*, ed. by Howard I. Aronson, 79-93. Chicago, IL: Chicago Linguistic Society.
- GIRIDHAR, P. P. 1994. *Mao Naga Grammar*. Mysore: Central Institute of Indian Languages.
- GIVÓN, TALMY. 1976. Topic, pronoun and grammatical agreement. In *Subject and Topic*, ed. by Charles N. Li, 147-188. New York, NY: Academic Press.
- . 1979. *On Understanding Grammar*. New York: Academic Press.
- GLÜCK, SUSANNE and ROLAND PFAU. 1999. A distributed morphology account of verbal inflection in German Sign Language. In *Proceedings of Console 7*, ed. by Tina Cambier-Langeveld, Anikó Lipták, M. Redford and E.J. van der Torre, 60-85. Leiden: Sole.
- GORDON, MATTHEW J. 1995. The phonological composition of personal pronouns: implications for genetic hypotheses. In *Proceedings of the Twenty-First Annual Meeting of the Berkeley Linguistics Society February 17-20, 1995*, ed. by

- Jocelyn Ahlers, Leela Bilmes, Joshua S. Guenter and Barbara A. Namkung Ju Kaiser, 117-128: Berkeley Ling. Soc., Berkeley, CA.
- GREENBERG, JOSEPH H. 1963. Some universals of grammar with particular reference to the order of meaningful elements. In *Universals of Language: Report of a Conference Held at Dobbs Ferry, New York, April 13-15, 1961*, ed. by Joseph Harold Greenberg, 73-113. Cambridge, MA: MIT Press.
- . 1993. The second person is rightly so called. In *Principles and Prediction: The Analysis of Natural Language*, ed. by Mashura Eid and Gregory K. Iverson, 9-24. Amsterdam: John Benjamins.
- HAEGEMAN, LILIANE M. V. 1994. *An Introduction to Government and Binding Theory, Second edition*. Oxford, UK: Blackwell.
- HAIMAN, JOHN. 1980. The iconicity of grammar: isomorphism and motivation. *Language*, 56.515-540.
- . 1983. Iconic and economic motivation. *Language*, 59.781-819.
- (ed.) 1985a. *Iconicity in Syntax*. Typological studies in language, 6. Amsterdam, Netherlands: John Benjamins.
- . 1985b. *Natural Syntax: Iconicity and Erosion*. Cambridge, UK: Cambridge University Press.
- HALE, KENNETH L. 1966. Kinship reflections in syntax. *Word*, 22.318-324.
- HALLIDAY, M.A.K. and RUQAIYA HASAN. 1976. *Cohesion in English*. London: Longman.
- HARBERT, WAYNE. 1995. Binding theory, control and pro. In *Government and Binding Theory and the Minimalist Program*, ed. by Gert Webelhuth, 179-240. Oxford, UK: Blackwell.
- HARLOW, RAY. 1996. Maori. *Languages of the World/Materials*, 20. München: Lincom.
- HARRIS, MARTIN. 1978. *The Evolution of French Syntax: A Comparative Approach*. London: Longman.
- HASPELMATH, MARTIN. 1993. *A Grammar of Lezgian*. Berlin, Germany: Mouton de Gruyter.
- HEINE, BERND and MECHTHILD REH. 1984. *Grammaticalization and Reanalysis in African Languages*. Hamburg: Helmut Buske Verlag.
- HEWITT, GEORGE B. 1979. *Abkhaz: Lingua descriptive studies*. Amsterdam: North Holland Publishing Company.
- HOCKETT, CHARLES F. 1958. *A Course in Modern Linguistics*. New York: Macmillan.
- . 1960. The origin of speech. *Scientific American*, 203.89-96.
- HOFFMEISTER, ROBERT and RONNIE WILBUR. 1980. The acquisition of sign language. In *Recent Perspectives on ASL*, ed. by Harlan L. Lane and Francois Grosjean, 61-78. Hillsdale, NJ: Lawrence Erlbaum Associates.
- HOLM, JOHN A. 1988. *Pidgins and Creoles, Vol. 1: Theory and Structure*: Cambridge Language Surveys. New York, NY: Cambridge University Press.
- HOPPER, PAUL J. and ELIZABETH CLOSS TRAUGOTT. 1993. *Grammaticalization*: Cambridge textbooks in linguistics. Cambridge, UK: Cambridge University Press.

- HOUSEHOLDER, FRED W. 1955. Review of 'The Category of Person in Language'. *Language*, 31.93-100.
- HUANG, C.T. JAMES. 1984. On the distribution and reference of empty pronouns. *Linguistic Inquiry*, 15.531-574.
- . 1989. Pro-drop in Chinese: a generalized control theory. In *The Null Subject Parameter*, ed. by Osvaldo Jaeggli and Kenneth J. Safir, 185-214. Dordrecht, Holland: Kluwer Academic Publishers.
- INGRAM, DAVID. 1978. Typology and universals of personal pronouns. In *Universals of Human Language*, ed. by Joseph H. Greenberg, Charles A. Ferguson and Edith A. Moravcsik, 213-247. Stanford, CA: Stanford University Press.
- INNES, G. 1966. *An Introduction to Grebo*. London: School of Oriental and African Studies.
- ISENHATH, JOHN O. 1990. *The Linguistics of American Sign Language*. Jefferson, NC: MacFarland and Co.
- JAKOBSON, ROMAN. 1948/1971. *Selected Writings*. The Hague: Mouton.
- . 1957/1971. Shifters, verbal categories, and the Russian verb. In *Selected Writings, Vol. ii: Word and Language*, 130-147. The Hague: Mouton.
- JANDA, RICHARD D. 2001. Beyond 'pathways' and 'unidirectionality': on the discontinuity of language transmission and the counterability of grammaticalization. *Language Sciences*, 23.265-340.
- JANIS, WYNNE D. 1992. *Morphosyntax of the ASL Verb Phrase*, State University of New York: Ph.D. dissertation.
- . 1995. A crosslinguistic perspective on ASL verb agreement. In *Language, Gesture, and Space*, ed. by Karen Emmorey and Judy S. Reilly, 195-223. Hillsdale, NJ: Lawrence Erlbaum Associates.
- JANNEDY, STEFANIE, ROBERT POLETTI and TRACEY L. WELDON (eds.) 1994. *Language Files, Sixth Edition*. Columbus, OH: Ohio State University Press.
- JANZEN, TERRY. 1995. *The polygrammaticalization of FINISH in ASL*, University of Manitoba: Diploma thesis.
- JANZEN, TERRY and BARBARA SHAFFER. 2002. Gesture as the substrate in the process of ASL grammaticization. In *Modality and Structure in Signed and Spoken Languages*, ed. by Richard P. Meier, Kearsy Cormier and David Quinto-Pozos, 199-223. Cambridge, UK: Cambridge University Press.
- JESPERSEN, OTTO. 1922. *Language: Its Nature, Development and Origin*. London: Allen and Unwin.
- . 1924. *The Philosophy of Grammar*. London: Allen & Unwin.
- JOHNSTON, TREVOR. 1989. *Auslan: the Sign Language of the Australian Deaf Community*, University of Sydney: Ph.D. dissertation.
- . 1991a. Function and medium in the forms of linguistic expression found in a sign language. In *International Review of Sign Linguistics. Volume 1*, ed. by William H. Edmondson and Ronnie Bring Wilbur, 57-94. Mahwah, NJ: Lawrence Erlbaum Associates.

- . 1991b. Spatial syntax and spatial semantics in the inflection of signs for the marking of person and location in Auslan. *International Journal of Sign Linguistics*, 2.29-62.
- JOHNSTON, TREVOR and PETER WILKIN. 1998. *Signs of Australia: A New Dictionary of Auslan (The Sign Language of the Australian Deaf Community)*. North Rocks, NSW, Australia: North Rocks Press.
- JOHNSTON, TREVOR and ADAM SCHEMBRI. 1999. On defining lexeme in a signed language. *Sign Language & Linguistics*, 2.115-185.
- JØRGENSEN, J. 1910. *Tegnsproget - Dets Vaesen og dets Grammatik*. København.
- KEGL, JUDY. 1986. Clitics in American Sign Language. In *Syntax and Semantics 19: The Syntax of Pronominal Clitics*, ed. by Hagit Borer, 285-309. New York, NY: Academic Press.
- . 1990. Predicate argument structure and verb-class organization in the ASL lexicon. In *Sign Language Research: Theoretical Issues*, ed. by Ceil Lucas, 149-175. Washington, DC: Gallaudet University Press.
- . 1994. The Nicaraguan Sign Language Project: an overview. *Signpost*, 7.24-31.
- KEGL, JUDY, ANN SENGHAS and MARIE COPPOLA. 1999. Creation through contact: sign language emergence and sign language change in Nicaragua. In *Language Creation and Language Change: Creolization, Diachrony, and Development*, ed. by Michel DeGraff, 179-237. Cambridge, MA: MIT Press.
- KELLER, JORG. 1998. Using space in German Sign Language. *Sign Language & Linguistics*, 2.249-257.
- KENDON, ADAM. 1972. Some relationships between body motion and speech. In *Studies in Dyadic Communication*, ed. by Aron Wolfe Siegman and Benjamin Pope, 177-210. New York: Pergamon Press.
- KLIMA, EDWARD S., URSULA BELLUGI, ROBIN BATTISON, PENNY BOYES-BRAEM, SUSAN FISCHER, NANCY FRISHBERG, HARLAN LANE, ELLA MAE LENTZ, ELISSA NEWPORT, CARLENE CANADY PEDERSEN and PATRICIA SIPLE. 1979. *The Signs of Language*. Cambridge, MA: Harvard University Press.
- KOEHN, EDWARD and SALLY KOEHN. 1986. Apalai. In *Handbook of Amazonian Languages, Vol. 1*, ed. by D.C. Derbyshire and Gregory K. Pullum, 33-127. Berlin: Mouton de Gruyter.
- KYLE, JAMES and BENCIE WOLL. 1985. *Sign Language: The Study of Deaf People and their Language*. Cambridge, UK: Cambridge University Press.
- LAMBRECHT, KNUD. 1981. *Topic, Antitopic and Verb Agreement in Non-Standard French*. Amsterdam, Netherlands: John Benjamins.
- LANE, HARLAN L. 1984. *When the Mind Hears: A History of the Deaf*. New York, NY: Random House.
- LAST, MARCO. in prep. Expressions of numerosity: a cognitive approach to crosslinguistic variation in grammatical number marking and numeral systems. Doctoral dissertation. University of Amsterdam
- LAYCOCK, DONALD C. 1965. *The Ndu Language Family*. Canberra: Australian National University.
- . 1977. Me and you versus the rest. *Irian*, 6.33-41.

- LEFEBVRE, CLAIRE. 1998. *Creole Genesis and the Acquisition of Grammar: The Case of Haitian Creole*: Cambridge Studies in Linguistics 88. Cambridge, UK: Cambridge University Press.
- LEHMANN, CHRISTIAN. 1982/1995. *Thoughts on Grammaticalization*: LINCOM studies in theoretical linguistics ; 01. München: LINCOM Europa.
- LEVINSON, STEPHEN. 1983. *Pragmatics*: Cambridge textbooks in linguistics. Cambridge, UK: Cambridge University Press.
- LIDDELL, SCOTT K. 1977. *An Investigation into the Syntax of American Sign Language*, University of California, San Diego: Ph.D. dissertation.
- . 1980. *American Sign Language Syntax*: Approaches to semiotics ; 52. The Hague: Mouton.
- . 1984. THINK and BELIEVE: sequentiality in American Sign Language. *Language*, 60.372-392.
- . 1990a. Four functions of a locus: reexamining the structure of space in ASL. In *Sign Language Research: Theoretical Issues*, ed. by Ceil Lucas, 176-198. Washington, DC: Gallaudet University Press.
- . 1990b. Structures for representing handshape and local movement at the phonemic level. In *Theoretical Issues in Sign Language Research, Vol. 1*, ed. by Susan Fischer and Patricia Siple, 37-65. Chicago, IL: University of Chicago Press.
- . 1993. Holds and positions: comparing two models of segmentation in ASL. In *Current Issues in ASL Phonology*, ed. by Geoffrey R. Coulter, 189-211. New York, NY: Academic Press.
- . 1994. Tokens and surrogates. In *Perspectives on Sign Language Structure: Papers from the Fifth International Symposium on Sign Language Research: Held in Salamanca, Spain, 25-30 May 1992. Volume 1*, ed. by Inger Ahlgren, Brita Bergman and Mary Brennan, 105-119. Durham, England: International Sign Linguistics Association : Deaf Studies Research Unit University of Durham.
- . 1995. Real, surrogate, and token space: grammatical consequences in ASL. In *Language, Gesture, and Space*, ed. by Karen Emmorey and Judy S. Reilly, 19-41. Hillsdale, NJ: Lawrence Erlbaum Associates.
- . 1996a. Spatial representations in discourse: comparing spoken and signed languages. *Lingua*, 98.145-167.
- . 1996b. Numeral incorporating roots and nonincorporating prefixes in American Sign Language. *Sign Language Studies*, 25.201-225.
- . 1998. Grounded blends, gestures, and conceptual shifts. *Cognitive Linguistics*, 9.283-314.
- . 2000a. Blended spaces and deixis in sign language discourse. In *Language and Gesture*, ed. by David McNeill, ix, 409. Cambridge, UK: Cambridge University Press.
- . 2000b. Indicating verbs and pronouns: pointing away from agreement. In *The Signs of Language Revisited: An Anthology to Honor Ursula Bellugi*, ed. by Karen Emmorey, Harlan L. Lane and Ursula Bellugi, 303-320. Mahwah, NJ: Lawrence Erlbaum Associates.

- . 2003. *Grammar, Gesture, and Meaning in American Sign Language*. Cambridge, UK: Cambridge University Press.
- LIDDELL, SCOTT K. and ROBERT E. JOHNSON. 1986. American Sign Language compoound formation processes, lexicalization, and phonological remnants. *Natural Language & Linguistic Theory*, 4.445-513.
- . 1989. American Sign Language: the phonological base. *Sign Language Studies*, 18.195-277.
- LIEB, HANS-HEINRICH. in press. Notions of paradigm in grammar. In *Lexicology Volume 2*, ed. by Gruse et al. Berlin, Germany: Mouton de Gruyter.
- LILLO-MARTIN, DIANE. 1986. *Parameter Setting: Evidence from Use, Acquisition, and Breakdown in American Sign Language*, University of California, San Diego: Ph.D. dissertation.
- . 1990. Parameters for questions: evidence from Wh-movement in ASL. In *Sign Language Research: Theoretical Issues*, ed. by Ceil Lucas, 211-222. Washington, DC: Gallaudet University Press.
- . 1991. *Universal Grammar and American Sign Language: Setting the Null Argument Parameters*: Studies in theoretical psycholinguistics ; v. 13. Dordrecht, Holland: Kluwer Academic Publishers.
- . 1995. The point of view predicate in American Sign Language. In *Language, Gesture, and Space*, ed. by Karen Emmorey and Judy S. Reilly, 155-170. Hillsdale, NJ: Lawrence Erlbaum Associates.
- . 1999. Modality effects and modularity in language acquisition: the acquisition of American Sign Language. In *Handbook of Child Language Acquisition*, ed. by William C. Ritchie and Tej K. Bhatia, 531-567. San Diego: Academic Press.
- . 2002. Where are all the modality effects? In *Modality and Structure in Signed and Spoken Languages*, ed. by Richard P. Meier, Kearsy Cormier and David Quinto-Pozos, 241-262. Cambridge, UK: Cambridge University Press.
- LILLO-MARTIN, DIANE and EDWARD S. KLIMA. 1990. Pointing out differences: ASL pronouns in syntactic theory. In *Theoretical Issues in Sign Language Research, I: Linguistics*, ed. by Susan D. Fischer, Patricia Siple and James J. DeCaro, 191-210. Chicago, IL: University of Chicago Press.
- LOEW, RUTH C. 1984. *Roles and Reference in American Sign Language: A Developmental Perspective*, University of Minnesota: Ph.D. dissertation.
- LYONS, JOHN. 1968. *Introduction to Theoretical Linguistics*. Cambridge: Cambridge University Press.
- . 1977. *Semantics*. Cambridge, UK: Cambridge University Press.
- MACFARLANE, JAMES. 1998a. The grammaticization of WRONG in American Sign Language. *High Desert Linguistics Society*, 1.17-23.
- . 1998b. *The Grammaticization of Predicative Possession and Existentials in American Sign Language*, University of New Mexico: Master's thesis.
- MACLAUGHLIN, DAWN. 1997. *The Structure of Determiner Phrases: Evidence from American Sign Language*, Boston University: Ph.D. dissertation.
- MADSEN, WILLARD J. 1972. *Conversational sign language: an intermediate manual*. Washington DC, Gallaudet College, ms.

- MANDEL, MARK. 1977. Iconic devices in American Sign Language. In *On the Other Hand: New Perspectives on American Sign Language*, ed. by Lynn Friedman, 57-107. New York, NY: Academic Press.
- MARCONNÈS, FRANCISQUE. 1931. *A Grammar of Central Karanga: The Language of Old Monomotapa as at Present Spoken in Central Mashonaland, Southern Rhodesia*. Johannesburg: Witwatersrand University Press.
- MARSCHARK, MARC. 1994. Gesture and sign. *Applied Psycholinguistics*, 15.209-236.
- MATHUR, GAURAV. 2000. *Verb Agreement as Alignment in Signed Languages*, Massachusetts Institute of Technology: Ph.D. dissertation.
- MATHUR, GAURAV and CHRISTIAN RATHMANN. 2001. Why not GIVE-US: an articulatory constraint in signed languages. In *Signed Languages: Discoveries from International Research*, ed. by Valerie Dively, 1-25. Washington, D.C.: Gallaudet University Press.
- MATTHEWS, P. H. 1991. *Morphology: Cambridge textbooks in linguistics*. Cambridge, UK: Cambridge University Press.
- MCBURNEY, SUSAN LLOYD. 2001. William Stokoe and the discipline of sign language linguistics. *Historiographia Linguistica*, XXVIII.143-186.
- . 2002. Pronominal reference in signed and spoken language: are grammatical categories modality-dependent? In *Modality and Structure in Signed and Spoken Languages*, ed. by Richard P. Meier, Kearsy Cormier and David Quinto-Pozos, 329-369. Cambridge, UK: Cambridge University Press.
- MCKAUGHAN, HOWARD P. 1959. Semantic components of pronoun systems: Maranao. *Word*, 15.101-102.
- MCKAY, GRAHAM R. 1978. Pronominal person and number categories in Rembarnga and Djeebbana. *Oceanic Linguistics*, 17.27-37.
- MCNEILL, DAVID. 1992. *Hand and Mind: What Gestures Reveal about Thought*. Chicago, IL: University of Chicago Press.
- MEIER, RICHARD P. 1981. Icons and morphemes: models of the acquisition of verb agreement in ASL. *Papers and Reports on Child Language Development*, 20.92-99.
- . 1982. *Icons, analogues, and morphemes: the acquisition of verb agreement in American Sign Language*, University of California: Ph.D. dissertation.
- . 1990. Person deixis in American Sign Language. In *Theoretical Issues in Sign Language Research, I: Linguistics*, ed. by Susan D. Fischer, Patricia Siple and James J. DeCaro, 175-190. Chicago, IL: University of Chicago Press.
- MEIER, RICHARD P., KEARSY CORMIER and DAVID QUINTO-POZOS (eds.) 2002. *Modality and Structure in Signed and Spoken Languages*. Texas Linguistics Society. Conference (2000 : University of Texas at Austin). Cambridge, UK: Cambridge University Press.
- MEIR, IRT. 1998. Syntactic-semantic interaction in Israeli Sign Language verbs: the case of backwards verbs. *Sign Language & Linguistics*, 1.3-37.
- . 2002. A cross-modality perspective on verb agreement. *Natural Language & Linguistic Theory*, 20.413-450.

- MERLAN, F.C. 1994. *A Grammar of Wardaman: A Language of the Norther Territory of Australia*. Berlin, Germany: Mouton de Gruyter.
- MILLER, GEORGE A. 1956. The magical number seven, plus or minus two: Some limits on our capacity for processing information. *Psychological Review*, 63.81-97.
- MITHUN, MARIANNE. 1987. The grammatical nature and discourse power of demonstratives. *Berkeley Linguistics Society*, 13.184-194.
- MORAVCSIK, EDITH. 1978. Agreement. In *Universals of Human Language: IV: Syntax*, ed. by Joseph H. Greenberg, 331-374. Stanford, CA: Stanford University Press.
- MÜHLHÄUSLER, PETER. 2001. Personal pronouns. In *Language Typology and Language Universals: An International Handbook*, ed. by Martin Haspelmath, Ekkehard König, Wulf Oesterreicher and Wolfgang Raible, 741-747. Berlin, Germany: Mouton de Gruyter.
- MÜHLHÄUSLER, PETER and ROM HARRÉ. 1990. *Pronouns and People: The Linguistic Construction of Social and Personal Identity*. Oxford, UK: B. Blackwell.
- NAGARAJA, K. S. 1985. *Khasi, A Descriptive Analysis*. Pune: Deccan College Post-Graduate & Research Institute.
- NEIDLE, CAROL, BENJAMIN BAHAN, DAWN MACLAUGHLIN, ROBERT LEE and JUDY KEGL. 1998. Realizations of syntactic agreement in American Sign Language: similarities between the clause and the noun phrase. *Studia Linguistica*, 52.191-226.
- NEIDLE, CAROL, JUDY KEGL, DAWN MACLAUGHLIN, BENJAMIN BAHAN and ROBERT G. LEE. 2000. *The Syntax of American Sign Language: Functional Categories and Hierarchical Structure*. Cambridge, MA: MIT Press.
- NEWMAYER, FREDERICK J. 1998. *Language form and Language Function*. Cambridge, MA: MIT Press.
- NEWPORT, ELISSA L. 1996, September. Sign language research in the third millennium. Keynote address presented at the Fifth International Conference on Theoretical Issues on Sign Language Research, Montreal, Canada.
- NEWPORT, ELISSA L. and RICHARD P. MEIER. 1987. The acquisition of American Sign Language. In *The Crosslinguistic Study of Language Acquisition: Volume 1: The Data*, ed. by Dan Isaac Slobin, 881-938. Hillsdale, NJ: Lawrence Erlbaum Associates.
- NEWPORT, ELISSA L. and TED SUPALLA. 2000. Sign language research at the millennium. In *The Signs of Language Revisited: An Anthology to Honor Ursula Bellugi*, ed. by Karen Emmorey, Harlan L. Lane and Ursula Bellugi, 103-114. Mahwah, N.J.: Lawrence Erlbaum Associates.
- OKRENT, ARIKA. 2002. A modality-free notion of gesture and how it can help us with the morpheme versus gesture question in sign language research (or at least give us some criteria to work with). In *Modality and Structure in Signed and Spoken Languages*, ed. by Richard P. Meier, Kearsy Cormier and David Quinto-Pozos, 175-198. Cambridge, UK: Cambridge University Press.
- PADDEN, CAROL A. 1983/1988. *Interaction of Morphology and Syntax in American Sign Language*. New York: Garland Publishing.

- . 1988. Grammatical theory and signed languages. In *Linguistics: The Cambridge Survey, I: Linguistic Theory: Foundations*, ed. by Frederick J. Newmeyer and R. H. Robins, 250-266. Cambridge, UK: Cambridge University Press.
- . 1990. The relation between space and grammar in ASL verb morphology. In *Sign Language Research: Theoretical Issues*, ed. by Ceil Lucas, 118-132. Washington, DC: Gallaudet University Press.
- PADDEN, CAROL A. and TOM HUMPHRIES. 1988. *Deaf in America: Voices from a Culture*. Cambridge: Harvard University Press.
- PEIRCE, CHARLES S. 1885/1980. On the algebra of logic: a contribution to the philosophy of notation. *American Journal of Mathematics* 7.180-202. In *The Writings of Charles S. Peirce, Vol. 5*, ed. by Christian Kloesel et al. Bloomington: Peirce Edition Project.
- . 1896/1933. The regenerated logic. In *Collected Papers of Charles Sanders Peirce, Vol. 3*, ed. by Charles Hartshorne and Paul Weiss. Cambridge: Harvard University Press.
- . 1901/1931. Dictionary of Philosophy and Psychology, Vol. 1. In *Collected Papers of Charles Sanders Peirce, Vol. 2*, ed. by Charles Hartshorne and Paul Weiss. Cambridge: Harvard University Press.
- . 1911/1998. A sketch of logical critics. Manuscript. In *The Essential Peirce. Selected Philosophical Writings. Vol. 2*, ed. by The Peirce Edition Project, 451-462. Bloomington: Indiana University Press.
- PEIRCE, CHARLES S., CHARLES HARTSHORNE, PAUL WEISS and ARTHUR W. BURKS. 1960. *Collected Papers of Charles Sanders Peirce*. vol. 1 and 2. Cambridge, MA: Belknap Press of Harvard University Press.
- PERLMUTTER, DAVID. 1993. Sonority and syllable structure in ASL. In *Current Issues in ASL Phonology*, ed. by Geoffrey R. Coulter, 227-261. New York, NY: Academic Press.
- PETRONIO, KAREN M. 1993. *Clause Structure in American Sign Language*, University of Washington, Seattle: Ph.D. dissertation.
- PFAU, ROLAND and MARKUS STEINBACH. 2004. On grammaticalization: do sign languages follow the well-trodden paths? Poster presented at the 8th Conference on Theoretical Issues in Sign Language Research (TISLR), Barcelona, September 2004.
- PINKER, STEVEN and PAUL BLOOM. 1990. Natural language and natural selection. *The Behavioral and Brain Sciences*, 13.707-784.
- PIZZUTO, ELENA. 1986. The verb system of Italian Sign Language (LIS). In *Signs of Life: Proceedings of the Second European Congress on Sign Language Research, Amsterdam, July 14-18, 1985*, ed. by Bernard Th M. Tervoort, 17-31. Amsterdam, Netherlands: Institute of General Linguistics.
- PIZZUTO, ELENA, ENZA GIURANNA and GIUSEPPE GAMBINO. 1990. Manual and nonmanual morphology in Italian Sign Language: grammatical constraints and discourse processes. In *Sign Language Research: Theoretical Issues*, ed. by Ceil Lucas, 83-102. Washington, DC: Gallaudet University Press.

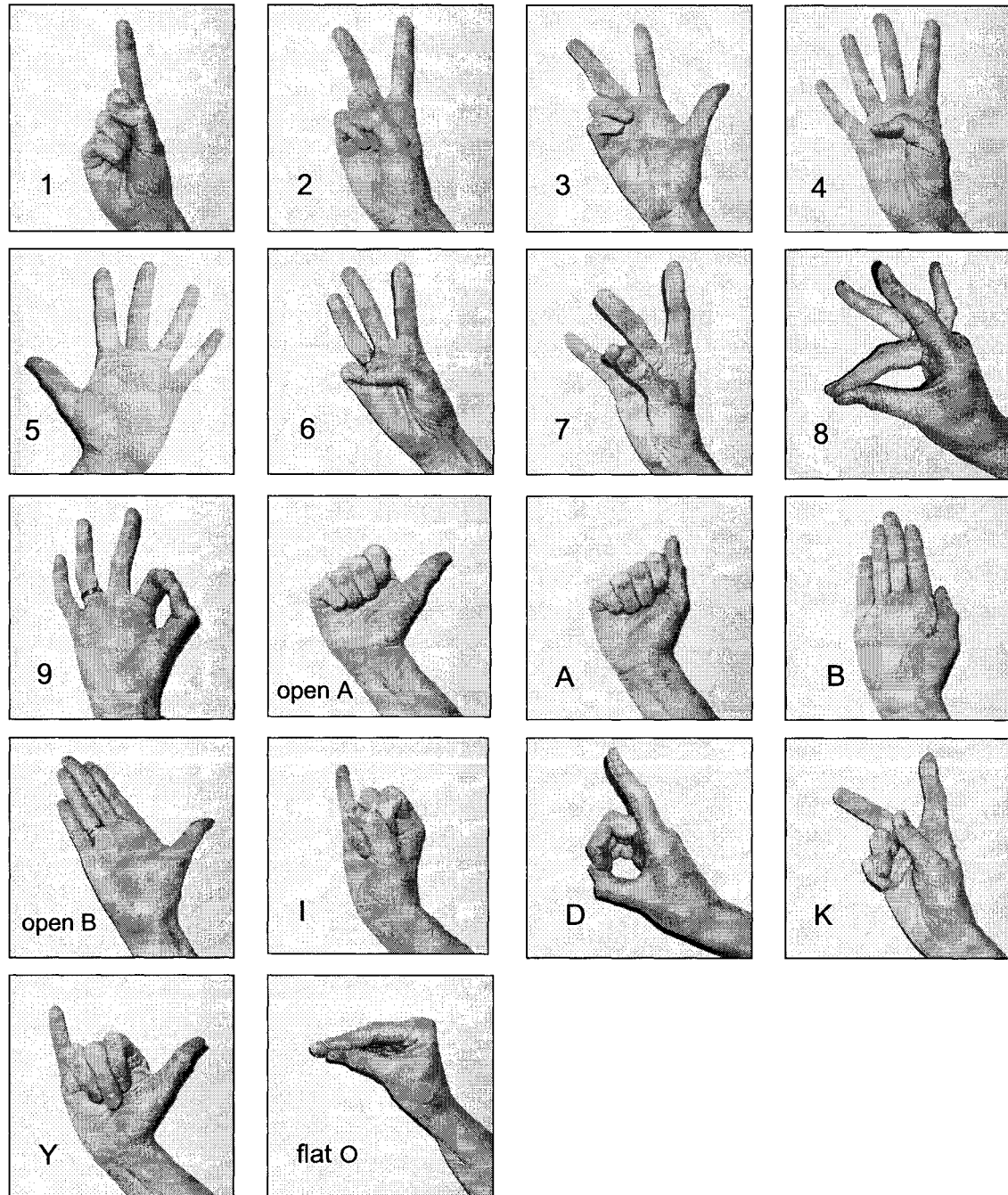
- POIZNER, HOWARD, EDWARD S. KLIMA and URSULA BELLUGI. 1987. *What the Hands Reveal about the Brain*. Cambridge, MA: MIT Press.
- PRILLWITZ, SIEGMUND. 1986. Die gebärde der gehörlosen. Ein geitrag zur Deutschen Gebärdensprache und ihrer grammatik. In *Die Gebärde in Erziehung und Bildung Gehörloser*, ed. by Siegmund Prillwitz, 55-78. Hamburg: Signum Verlag.
- RABEL, LILI. 1961. *Khasi, A Language of Assam*: Louisiana State University studies. Humanities series, no. 10. Baton Rouge, LA: Louisiana State University Press.
- RATHMANN, CHRISTIAN and GAURAV MATHUR. 2002. Is verb agreement the same crossmodally? In *Modality and Structure in Signed and Spoken Languages*, ed. by Richard P. Meier, Kearsy Cormier and David Quinto-Pozos, 370-404. Cambridge, UK: Cambridge University Press.
- RAY, SIDNEY HERBERT. 1926. *A Comparative Study of the Melanesian Island Languages*. London, UK: Cambridge University Press.
- REED, JUDY and DAVID L. PAYNE. 1986. Asheninca (Campa) pronominals. In *Pronominal Systems*, ed. by Ursula Wiesmann, 323-331. Tübingen: Narr.
- REHG, KENNETH L. 1981. *Ponapean Reference Grammar*. Honolulu: University of Hawaii Press.
- RHODES, RICHARD A. 1997. On pronominal systems. In *Indo-European, Nostratic, and Beyond: Festschrift for Vitalij V. Shevoroshkin*, ed. by Irén Hegedus, Peter A. Michalove and Alexis Manaster Ramer, 291-319. Washington, DC: Institute for the Study of Man.
- ROBERTS, JOHN R. 1987. *Amele*. London: Croom Helm.
- SANDLER, WENDY. 1987. *Sequentiality and Simultaneity in American Sign Language Phonology*, Linguistics, University of Texas, Austin: Ph.D. dissertation.
- . 1989. *Phonological Representation of the Sign: Linearity and nonlinearity in American Sign Language*. Dordrecht, Holland: Foris Publications.
- . 1993. Sign language and modularity. *Lingua: International Review of General Linguistics*, 89.315-351.
- SAUSSURE, FERDINAND DE. 1916. *Cours de Linguistique Générale*. Paris: Payot.
- SCHUH, RUSSELL G. 1977. Bade/Ngizm determiner system. *Afroasiatic Linguistics*, 4.1-74.
- SENGHAS, ANN. 1994. The development of Nicaraguan Sign Language via the language acquisition process. In *Proceedings of the 19th Annual Boston University Conference on Language Development, I-II*, ed. by Dawn MacLaughlin and S. McEwen, 543-552. Somerville, MA: Cascadilla Press.
- . 2000. The development of early spatial morphology in Nicaraguan Sign Language. In *Proceedings of the 24th Annual Boston University Conference on Language Development, I-II*, ed. by S. Catherine Howell, Sarah A. Fish and Thea Keith-Lucas, 696-707. Somerville, MA: Cascadilla Press.
- SENGHAS, ANN, MARIE COPPOLA, ELISSA L. NEWPORT and TED SUPALLA. 1997. Argument structure in Nicaraguan Sign Language: the emergence of grammatical devices. In *Proceedings of the 21st Annual Boston University*

- Conference on Language Development, I-II*, ed. by Elizabeth Hughes, Mary Hughes and Annabel Greenhill, 550-561. Somerville, MA: Cascadilla Press.
- SEXTON, A. L. 1999. Grammaticalization in American Sign Language. *Language Sciences*, 21.105-141.
- SHEPARD-KEGL, JUDY. 1985. *Locative Relations in American Sign Language Word Formation, Syntax, and Discourse*, Massachusetts Institute of Technology: Ph.D. dissertation.
- SIMON, HORST J. 2003. From pragmatics to grammar: tracing the development of respect in the history of the German pronouns of address. In *Diachronic Perspectives on Address Term Systems*, ed. by Irma Taavitsainen and Andreas H. Jucker, 85-123. Amsterdam, Netherlands: John Benjamins.
- SKAVLAN, S. 1875. Thronhjems døvstumme-institute. Program, udgivet i anledning av institutets 50-arrige bestaaen. Throndhjem, Norway
- SMITH, WAYNE H. 1990. Evidence for auxiliaries in Taiwan Sign Language. In *Theoretical Issues in Sign Language Research, I: Linguistics*, ed. by Susan D. Fischer, Patricia Siple and James J. DeCaro, 211-228. Chicago, IL: University of Chicago Press.
- SOKOLOVSKAYA, N.K. 1980. Nekotorye semanticeskie universalii v sisteme licnyx mestoimenij [Some semantic universals in systems of personal pronouns] In *Teorija i Tipologija Mestoimenij [Theory and Typology of Pronouns]* ed. by I.F. Vardul, 84-102. Moscow: Nauka.
- SPENCER, ANDREW. 1991. *Morphological Theory: An Introduction to Word Structure in Generative Grammar*. Cambridge, UK: Blackwell.
- STOKOE, WILLIAM C. 1960. *Sign Language Structure: An Outline of the Visual Communication Systems of the American Deaf*. Buffalo, NY: Dept. of Anthropology and Linguistics University of Buffalo.
- . 1990. An historical perspective on sign language research: a personal view. In *Sign Language Research: Theoretical Issues*, ed. by Ceil Lucas, 1-8. Washington D.C.: Gallaudet University Press.
- STOKOE, WILLIAM C., DOROTHY CASTERLINE and CARL CRONEBERG. 1965. *A Dictionary of American Sign Language on Linguistic Principles*. Washington D.C.: Gallaudet University Press.
- STUMP, GREGORY T. 1998. Inflection. In *The Handbook of Morphology*, ed. by Andrew Spencer and Arnold M. Zwicky, 13-43. Oxford, UK: Blackwell.
- SUPALLA, SAMUEL J. 1991. Manually Coded English: the modality question in sign language development. In *Theoretical Issues in Sign Language Research, Vol. II: Psychology*, ed. by Patricia Siple and Susan D. Fischer, 85-110. Chicago, IL: University of Chicago Press.
- SUPALLA, SAMUEL J. and CECILE MCKEE. 2002. The role of Manually Coded English in language development of deaf children. In *Modality and Structure in Signed and Spoken Languages*, ed. by Richard P. Meier, Kearsy Cormier and David Quinto-Pozos, 143-165. Cambridge, UK: Cambridge University Press.

- SUPALLA, TED. 1982. *Structure and Acquisition of Verbs of Motion and Location in American Sign Language*, University of California, San Diego: Ph.D. dissertation.
- . 1986. The classifier system in American Sign Language. In *Noun Classes and Categorization*, ed. by Colette Craig, 181-214. Amsterdam, Netherlands: John Benjamins.
- . 1997. An implicational hierarchy for verb agreement in American Sign Language. 49. University of Rochester, Department of Linguistics
- SUPALLA, TED and ELISSA L NEWPORT. 1978. How many seats in a chair? The derivation of nouns and verbs in American Sign Language. In *Understanding Language through Sign Language Research*, ed. by Patricia Siple, 91-132. New York, NY: Academic Press.
- SWEETSER, EVE. 1988. Grammaticalization and semantic bleaching. *Berkeley Linguistics Society*, 14.389-405.
- TAUB, SARAH F. 1999. Path directions in ASL agreement verbs are predictable on semantic grounds. *LACUS Forum*, 25.73-86.
- . 2000. Iconicity in American Sign Language: concrete and metaphorical applications. *Spatial Cognition and Computation*, 2.31-50.
- . 2001. *Language From the Body: Iconicity and Metaphor in American Sign Language*. Cambridge, UK: Cambridge University Press.
- TORIGOE, TAKASHI. 1994. Resumptive X structures in Japanese Sign Language. In *Perspectives on Sign Language Structure: Papers from the Fifth International Symposium on Sign Language Research. Vol. 1 (May 1992, Salamanca, Spain)*, ed. by Inger Ahlgren, Brita Bergman and Mary Brennan, 187-198. Durham: International Sign Linguistics Association.
- TRAUGOTT, ELIZABETH CLOSS and EKKEHARD KÖNIG. 1991. The semantics-pragmatics of grammaticalization revisited. In *Approaches to Grammaticalization, I: Focus on Theoretical and Methodological Issues*, ed. by Elizabeth Closs Traugott and Bernd Heine, 189-218. Amsterdam, Netherlands: John Benjamins.
- VALLI, CLAYTON and CEIL LUCAS. 1995. *Linguistics of American Sign Language: An Introduction. Second edition*. Washington D.C.: Galladet University Press.
- VAN DER AUWERA, JOHAN. 2002. More thoughts on degrammaticalization. In *New Reflections on Grammaticalization*, ed. by Ilse Wischer and Gabriele Diewald. Amsterdam: John Benjamins.
- VAN HOEK, KAREN. 1992. Conceptual spaces and pronominal reference in American Sign Language. *Nordic Journal of Linguistics*, 15.183-199.
- VASISHTA, MADAN M., JAMES D. WOODWARD and KIRK L. WILSON. 1978. Sign language in India: regional variations within the deaf population. *Indian Journal of Applied Linguistics*, 4.66-74.
- WANG, JUN and ZHENG GUOQIAO. 1993. *An Outline of Mulao*. Canberra: Australian National University.
- WEBELHUTH, GERT (ed.) 1995. *Government and Binding Theory and the Minimalist Program*. Oxford: Blackwell.

- WEBER, DAVID J. 1986. Huallaga Quechua pronouns. In *Pronominal Systems*, ed. by Ursula Wiesmann, 333-349. Tübingen: Narr.
- WELMERS, WILLIAM E. 1973. *African Language Structures*. Berkeley: University of California Press.
- WIESE, HEIKE and HORST J. SIMON. 2002. Grammatical properties of pronouns and their representation. In *Pronouns – Grammar and Representation*, ed. by Horst J. Simon and Heike Wiese, 1-21. Amsterdam, Netherlands: John Benjamins.
- WIESEMANN, URSULA. 1986. *Pronominal Systems*. Tübingen: G. Narr.
- WILBUR, RONNIE B. 1993. Syllables and segments: hold the movement and move the holds! In *Current Issues in ASL Phonology*, ed. by Geoffrey R. Coulter, 13-68. New York, NY: Academic Press.
- WILBUR, RONNIE B. and CYNTHIA G. PATSCHKE. 1998. Body leans and the marking of contrast in American Sign Language. *Journal of Pragmatics*, 30.275-303.
- WILCOX, SHERMAN and PHYLLIS WILCOX. 1995. The gestural expression of modality in ASL. In *Modality in Grammar and Discourse*, ed. by Joan Bybee and Suzanne Fleischman, 135-162. Amsterdam, Netherlands: John Benjamins.
- WINSTON, ELIZABETH A. 1995. Spatial mapping in comparative discourse frames. In *Language, Gesture, and Space*, ed. by Karen Emmorey and Judy S. Reilly, 87-114. Hillsdale, NJ: Lawrence Erlbaum Associates.
- WOODWARD, JAMES C. 1978a. Historical basis of American Sign Language. In *Understanding Language through Sign Language Research*, ed. by Patricia Siple, 333-348. New York, NY: Academic Press.
- . 1978b. All in the family: kinship lexicalization across sign languages. *Sign Language Studies*, 7.121-138.
- ZESHAN, ULRIKE. 1998. Functions of the index in IPSL. University of Cologne, Germany, Ms.
- . 1999. Indo-Pakistani Sign Language. Canberra, Australian National University, Research Centre for Linguistic Typology, Ms.
- ZIERVOGEL, D. 1952. *A Grammar of Swazi*. Johannesburg: Witwatersrand University Press.
- ZIMMER, JUNE and CYNTHIA PATSCHKE. 1990. A class of determiners in ASL. In *Sign Language Research: Theoretical Issues*, ed. by Ceil Lucas, 201-210. Washington, DC: Gallaudet University Press.

Appendix A: Handshapes discussed



VITA

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