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# VERB CATEGORIES IN IRISH SIGN LANGUAGE

PATRICK MCDONNELL ©

**Thesis submitted to the**
**Centre for Language and Communication Studies,**
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**in fulfillment of the requirements of the degree of**
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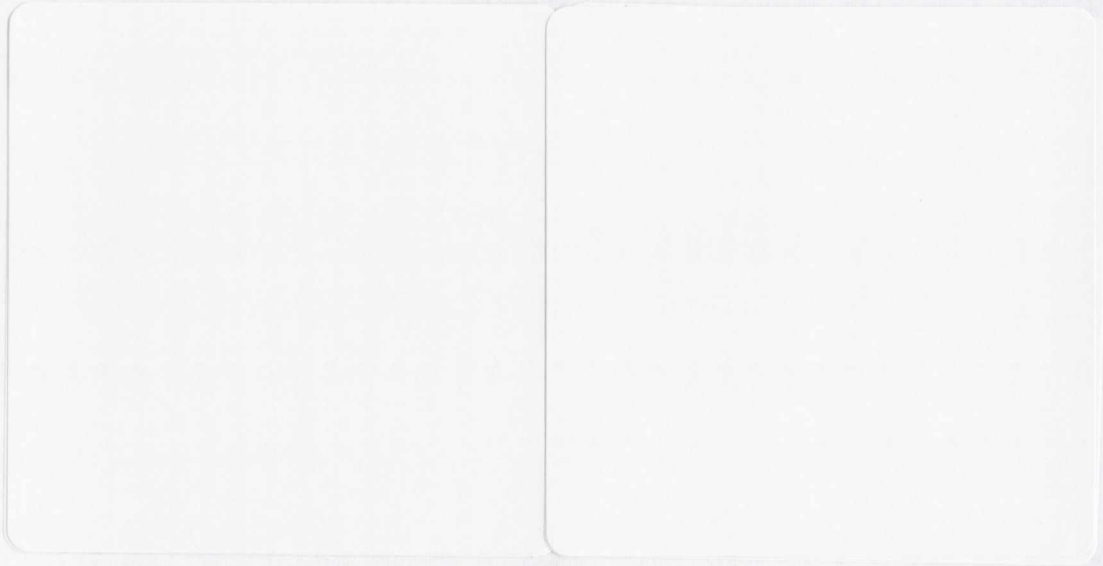
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**Summary**

The principal aim of this study is the identification of verb categories in Irish Sign Language. The data was collected on videotape from six deaf informants, three men and three women, all of whom regard themselves as native signers in Irish Sign Language.

In discussing its linguistic properties, we argue that Irish Sign Language is a primary sign language in that it shares the basic structural features typical of other primary sign languages. We show, for example, that handshape, location and movement are key parameters in sign formation and that linguistic constraints determine the acceptability of certain combinations of features in the language.

With regard to verb categories in Irish Sign Language, we identify a group of verbs which remain constant in different syntactic contexts. These are plain verbs. Typically, plain verbs are body-anchored signs, tend to occur in semantically related fields, and often express a motivated relationship between form and meaning.

Agreement verbs, on the other hand, take affixes which alter the form of the verb in different contexts and which mark for the category of person or for location. Although their surface forms are phonologically similar, person agreement verbs and locative agreement verbs have distinct and prototypical sets of relations with their controller nominals. In a two-tier analysis we show that person agreement verbs associate with the action tier and locative agreement verbs with the thematic tier. We find too, that the semantic roles marked on person agreement verbs map on to grammatical relations such as subject, direct object and indirect object, while roles marked on locative agreement verbs map on to oblique grammatical relations.

We identify a further category of verbs which we call classifier predicates of motion and location. Although these verbs can mark for locative agreement they differ significantly from locative agreement verbs: in classifier predicates hand configuration has both a phonological and a morphological function; in locative agreement verbs hand configuration has a phonological function only. Finally, we identify a group of classifier predicates which do not mark for locative agreement but which in other respects are typical classifier predicates.

Although we express some reservations about the term *classifier predicate* we retain it as a descriptive term. We propose that classifier predicates have two structural components - a hand configuration and a movement. We identify four types of

classifier predicate stems: Whole-entity stems refer to entities as wholes; Handle-entity stems denote how objects are held or touched; Extension stems represent the shape or extent of objects; and Body stems refer to particular ways in which the signer's body is used to represent animate entitities.

We also identified four categories of movement: MOVE signifies an entity's own motion or motion caused by an external agent; BE-LOCATED denotes the location of an entity; EXIST indicates the presence of an entity without any particular reference to its location; and EXTENT indicates the shape and / or dimensions of an entity.

Finally, we propose an outline for an autosegmental approach to verb structure in Irish Sign Language. We suggest that the Hand-Tier model (Sandler 1989) is particularly useful for an analysis of this kind because of the way in which locations (L) and movements (M) are represented on a segmental tier. We show that an L M L template is characteristic of typical agreement verbs and that complex MOVE forms are generated by reduplication and affixation processes from a basic L M L pattern.

We argue that BE-LOCATED forms are best represented by gemination of L slots and that distributive meaning is expressed by reduplication of the basic L L pattern. We suggest that EXIST is most typically represented by a single L slot but point out that distinctions between EXIST and BE-LOCATED have yet to be explored in detail. We also suggest that the basic form of extent is characterised by an L L M L L pattern.

In discussing the verb root in classifier predicates we argued that the hand configuration component expresses both predicative and classificatory information and note that Irish Sign Language is not unusual in incorporating abstract features as elements in a minimal specification of these verb forms. We propose that a minimal specification of a classifier predicate consists of a Motion root, a classificatory marking and a coding for transitivity, and that such a specification, encoded in the hand configuration, constitutes the verb stem.

To provide an appropriate social, political and cultural context for the study, an appendix is included in which we discuss the emergence of the modern deaf community in Ireland and identify formative influences on the development of modern Irish Sign Language. In particular we suggest that residential schools for deaf pupils have played an important role in the transmission of the language.

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Errata: Chapters 2 - 7 in the text read as Chapters 3 - 8 on the videocassette; examples (2.80) - (2.83) and (6.130) in the text read as (3.84 - 3.87) and (7.131) respectively on the videocassette.

**Timing of Examples on the Videocassette**

Approximate timings are given in minutes and seconds. The signed examples from chapters 2 - 6 are provided by Stephen Bates and Helena Saunders and those in chapter 7 by the researcher.

**Approximate Timing of Examples**

| | | | mins. | secs. |
|---|---|---|---|---|
| **Chapter 2:** | **Examples** | **(2.1) - (2.25)** | **00.00** | **01.24** |
| | | **(2.26) - (2.50)** | **01.25** | **03.05** |
| | | **(2.51) - (2.83)** | **03.06** | **06.10** |
| **Chapter 3:** | **Examples** | **(3.1) - (3.25)** | **06.12** | **08.09** |
| | | **(3.28) - (3.50)** | **08.25** | **09.38** |
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| | | | |
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# 1 AIM AND DESIGN OF THE STUDY

## 1.1 Introduction

In Ireland, language is a sensitive matter and, since the end of the nineteenth century, has been a source of recurring conflict and debate. Controversy has attended issues such as the implementation of Irish language revival policies, the role of Irish in modern society and, in particular, its role in education. While the relationship between a minority language, Irish, and a dominant language, English, may have sensitised people to issues such as identity, community and power, the existence in Ireland of another minority language, Irish Sign Language, has never been part of the language debate. Only very recently has Irish Sign Language become part of public awareness about language in Ireland.

In international terms this situation is not exceptional. The first modern linguistic studies of sign languages date from the 1950's (Stokoe 1960; Tervoort 1994) yet many current textbooks in linguistics continue to describe language as a purely vocal / aural phenomenon (see for example, Akmajian, Demers and Harnish1984; Clark and Yallop 1990; O'Grady, Dobrovolsky and Aronoff 1993). Given the history of Irish, however, one might have expected a much greater sympathy on the part of the state towards the linguistic needs of the deaf community; Irish Sign Language, for example, does not yet have an official role in the education of deaf children.[1]

Irish Sign Language is a matter of great concern to the deaf community especially in relation to the development of interpreter services and bilingual education. It has also become a subject of academic interest to deaf and hearing researchers as well as to the general public, and classes in Irish Sign Language taught by native signers are now a regular feature of adult education programmes. The first formal training course for Irish Sign Language interpreters and tutors was completed during 1992-1994 (HORIZON Deaf Studies Project 1994). A general survey of Irish Sign Language was undertaken in 1993 and completed in 1994, the results of which have yet to be published (Institiuid Teangeolaiochta Eireann 1993).

## 1.2 Aims of the Study

The principal aim of this study is to identify verb categories in Irish Sign Language on the basis of their grammatical properties. A related objective is to examine approaches to verb classification used in studies of other sign languages and to establish a suitable framework for conducting a similar analysis in Irish Sign Language. It is hoped too, that the study will contribute to the growing body of knowledge in relation to sign

languages in general, and in particular that it will stimulate further research in the language of the Irish deaf community.

There are several reasons for conducting research which has a particular focus on verbs. Firstly, verbs are of intrinsic interest because they constitute one of the most important lexical categories, and one that is apparently universal in human languages. Secondly, morphological and syntactic properties are often expressed through verbs since in a high proportion of languages they serve as the locus of marking for categories such as tense, aspect and mood, and for agreement with subjects and other NPs (Bybee 1985). Thirdly, in semantic terms, verbs are related in various ways to the constituents in a sentence, and in formal linguistics there is a tradition of expressing co-occurrence restrictions in terms of the Predicator. In identifying thematic roles for example, the verb is seen as the focal point through which roles such as agent, experiencer, patient, source or goal can be assigned to various arguments. Thus, verbs constitute an essential key in analysing structural features of a language.

In sign language research verbs are of particular interest since they appear to be among the most morphologically complex of lexical categories (Klima and Bellugi 1979; Brennan 1990; Engberg-Pedersen 1993). A focus on verbs is intended to constitute a productive introduction to research in Irish Sign Language since it involves a major class of signs as well as constituents essential to clause structure. An investigation of verb categories will almost certainly tell us something about other grammatical properties of Irish Sign Language and will suggest avenues for further research.

The study has an introductory character since research in the grammatical structure of Irish Sign Language has not been undertaken before. Such a character entails a number of additional objectives. A sign language is first and foremost the language of a deaf community and because a deaf community constitutes a minority linguistic and cultural grouping within a larger hearing society, sign language normally exists in a close contact relationship with a dominant spoken language. Consequently, an important objective of an introductory study is to place the research in an appropriate linguistic and cultural context.

A final objective is related to persistent and widespread misconceptions about the linguistic nature of sign languages and about Irish Sign Language in particular. This study sets out to show that Irish Sign Language shares those structural characteristics which typify other languages, including other primary sign languages.

## 1.3 Research Design

There has been considerable debate among researchers regarding the collection of data for sign language research. Particular reservations have been have been expressed about using elicitation materials based on spoken language. Liddell (1985) suggests that the use of such materials can be useful, provided the researcher is aware of the potential influence of spoken language in this context.

There are several other areas in relation to the conduct of research in sign languages, where researchers must exercise caution. Firstly, there is usually a considerable range and variety of sign usage in a deaf population as well as a considerable variation in attitudes to, and understanding of, sign language. Secondly, there is the complexity of the sociolinguistic relations that apply in interactions between researchers and deaf informants. Thirdly, there is the specific context in which sign language data is elicited and collected. In research contexts, as Lucas and Valli (1992: 62-66) point out, interaction involving only native signers is not a guarantee that only native sign language will be produced; neither does interaction with hearing researchers necessarily preclude the use of native sign language by deaf informants.

It is possible however, to employ research procedures which facilitate the collection of valid and reliable data. It is of course necessary to find informants who are fluent signers and it is a decided advantage if informants are aware of the existence and significance of sign variation in the Irish deaf community. It is also an advantage if the formality associated with the data collection is reduced as much as possible and if informants and researchers know one another (Lucas and Valli 1992: 63). Finally, we should accept that an introductory description of linguistic structures and processes in Irish Sign Language is not going to be the last word on the subject; future research may amend or perhaps contradict some of the findings of this particular study.

The main body of data was collected from four deaf informants, two men and two women. Two of the informants, one man and one woman, completed their schooling before the introduction of oral teaching methods into the school system and two completed schooling after the introduction of oralism.[2] There were two reasons for deciding upon this particular combination of informants. Firstly, there is evidence that the introduction of oralism in schools has influenced the signing styles of deaf people (Woll 1990). Secondly, there is also evidence of lexical differences between the signing of deaf men and deaf women in the Dublin deaf community (LeMaster 1990). Two other informants who wished to contribute to the research provided additional data.

All the informants are deaf from birth and attended residential schools for deaf pupils from a very young age. They regard Irish Sign Language as their first and primary language and consider themselves to be fluent signers. In the Irish context (see also footnote 3 in this chapter and Appendix 1, especially A1.3.10) these circumstances, for the purposes of this study, are taken as indicative of native Irish Sign Language usage.

The informants have a general interest in the international debate on issues relating to sign language and are aware of the significance of sign variation in deaf communities. They also have a specific interest in Irish Sign Language and have participated in a considerable amount of national discussion around issues such as education, bilingualism, interpreter services and Irish Sign Language as a distinct language. Informants are all active members of the deaf community in Ireland and hold official positions in deaf organisations. Biographical details about the informants are summarised in Figure 1.1.

| Informant | Sex | Age | Parents[3] | Deafness | School | Family |
|---|---|---|---|---|---|---|
| A | F | >35 | Hearing | Born deaf | Residential | Deaf spouse |
| B | M | >35 | Hearing | Born deaf | Residential | Deaf spouse |
| C | F | <35 | Hearing | Born deaf | Residential | ------ |
| D | M | <35 | Hearing | Born deaf | Residential | ------ |
| E | F | <35 | Hearing | Born deaf | Residential | Deaf siblings |
| F | M | <35 | Deaf | Born deaf | Residential | Deaf spouse |

Figure 1.1 Informants: Summary Biographical Details

Since we all knew one another personally, it was possible to create a relatively informal atmosphere around the collection of material. Four different kinds of data were videotaped:

- Basic vocabulary list

Five informants each supplied a basic vocabulary list of 256 items. The list was the same as that used in a cross-linguistic study of other sign languages in Europe (Woll 1984). It was administered in order to elicit citation forms of signs and to provide data on the basic parameters of sign production in Irish Sign Language. Four informants were videotaped at a research location and one videotaped himself at home. Approximately 68 minutes of vocabulary material was recorded.

- Guided narrative

Informants were invited to consider the comic strip story "The Snowman" (Briggs, 1980) over a period of several days. They were then asked to narrate the story in Irish Sign Language. Six informants provided approximately 42 minutes of video-recorded data under this heading.

- Unguided narrative

Informants were invited to describe an event or experience or narrate a story in Irish Sign Language. Five informants contributed approximately 34 minutes of video-recorded narrative of this kind.

- Elicitation materials

Informants were invited to consider a list of sentences designed to elicit specific features of Irish Sign Language such as numeral incorporation, verb / noun pairs, pronominalisation, number, person and location agreement, aspect and tense. The materials were presented in written English and were distributed to informants several weeks before being videotaped to allow time for consultation and discussion with colleagues on how best to render the sentences in Irish Sign Language. Five informants provided about 42 minutes of video-recorded data under this heading. As it turned out, these elicited materials were not used as primary source data since I felt that the samples might have been influenced by the written English of the original stimulus sentences.

I did however, use data that was elicited in a different context. Sometimes no appropriate example could be found in the guided or unguided narratives to illustrate specific points in the discussion. When this arose I consulted the informants and they provided the additional material.

- Consultation

The four primary informants were consulted on a regular basis and were asked to make judgements on the grammaticality of examples in the text. Thus, it was possible to clarify any queries that arose in relation to the data. As I have already noted, informants provided valuable additional material during periods of consultation and discussion.

There were several stages in the progression from raw data to the transcribed examples which appear throughout this study. As a first step I looked at all the videotapes. At this point it became clear that the most relevant source material for a discussion on verb categories was to be found in the six guided and four unguided narratives. The second stage of the analysis involved looking at the narratives again along with one of the deaf informants. At this stage we carried out a draft gloss in English of the whole of two of

the narratives, mainly to get a feel for the material and to work out suitable glossing procedures.

The third stage involved repeated viewing of the narratives in order to select and extract data relevant to the identification of verb categories. During this phase each selected sequence of manual signs was glossed and non-manual features were noted or entered if this was required. The data was then translated into English. During the fourth stage the glossed examples were again compared with the original data on videotape and were checked for grammaticality by two deaf informants. Some of the translations into English were also discussed with the informants.

The examples of Irish Sign Language selected for this study are presented in three complementary ways. All examples are given English glosses and many appear as line drawings in the text. In addition, a videotaped version of each example of Irish Sign Language is provided. Although the practice of providing English glosses has the advantage of being fairly simple and intelligible it also has a number of drawbacks. For example, a spoken language gloss may only approximate the meaning of the sign and there is also the danger of confusion between the morphology of an English gloss and that of the relevant sign.

A notation system must take account of the fact signers may use more than one articulator at the same time. For this reason a transcription 'score' is often used (see for example, Engberg-Pedersen 1993: 322). The number of features included in the score will depend on the amount of detail required in the analysis. A very detailed transcription would include the activities of the following features:

body
head
eyebrows / forehead
eye-gaze
mouth
dominant hand
non-dominant hand

A number of examples from other sign languages are included in the text. In some of these examples the notation conventions are similar to those used in this study. Where the conventions are different, I have used two approaches: in cases where it is not directly relevant to the point being made, I retain the original notation; in cases where examples from different sign languages are being compared I adapt the notation to

accord with the conventions used in this study. A notation guide is contained in Appendix 2 which also includes an explanation of the symbols used in the line drawings.

The line drawings are intended to help the reader towards a fuller understanding of sign formation in Irish Sign Language and are modelled after diagrams used in Baker-Shenk and Cokely (1991). The videotape of examples is also intended as supplementary illustrative material since drawings are limited in the extent to which they can reveal the dynamic nature of signing. Where possible, examples from sign languages other than Irish Sign Language are included on the tape but in some cases there was not enough information given with the original source to record an accurate version.

With regard to a theoretical model for the study, current research offers no undisputed framework for the identification of verb categories in sign languages. In morphological analyses, for example, verbs have been categorised firstly, according to whether they do or do not inflect; and secondly, if they do inflect, what grammatical categories they inflect for (Padden 1988, 1990; Liddell 1990). In semantic approaches the focus has been on argument structure typology so that verbs have been classified on the basis of the number and type of semantic arguments which they take (Friedman 1975, 1976; Kegl 1990). In developing an appropriate theoretical framework for the analysis of verb structures in Irish Sign Language these studies served as important points of reference.

Although Irish Sign Language is the primary language of the deaf community in Ireland, its current position is very much that of a marginalised, minority language. The status of the language as well as attitudes towards it, is strongly influenced by the fact that there is a contact relationship with English. The minority status of Irish Sign Language has given rise in the past to considerable misunderstanding as to its linguistic nature but several developments in recent years have brought about a different perspective. The active involvement of deaf people in public discussion on education and other social issues, the establishment of sign language classes, new initiatives in sign language interpreter and tutor training, and the beginning of linguistic research are among the developments that have contributed to a new understanding of Irish Sign Language. A more detailed discussion regarding the cultural and social background to the study may be found in Appendix 1: Irish Sign Language and the Deaf Community.

**Chapter Outlines**

The study contains eight chapters, including this introductory chapter, and three appendices. The main objective in Chapter 2 is to demonstrate in a general way that Irish Sign Language shares those structural characteristics which typify other primary

sign languages. We focus in particular on key parameters in sign formation and briefly refer to recent research in this area. We include a brief discussion on non-manual features and iconicity and we refer to the notion of locus and its importance in the structure of sign language.

In Chapter 3 we briefly describe the central role of the verb in linguistic structure and in language acquisition and language learnability studies. We then examine a number of different approaches to the classification of verbs firstly, in linguistic research and secondly, in different sign languages. We discuss the nature of verb agreement in sign languages and describe a number of specific studies in this area. We also look at an important group of verbs which are often referred to as classifier predicates and compare several different research perspectives on these particular verbs. In a concluding section we propose a framework for the categorisation of verbs in Irish Sign Language.

Chapter 4 describes the first of these categories, that of plain verbs. We argue that plain verbs are distinguished by a number of prototypical features. They do not take affixes which mark for agreement; they are typically body-anchored or contact signs; they tend to occur in semantically related fields and there is often a motivated relationship between the form of the verb and its meaning.

In Chapter 5 we examine the characteristics of agreement verbs in Irish Sign Language. We identify two different types - person agreement and locative agreement verbs - and we show that the two types can be distinguished by morphophonological and semantic differences and by differences in terms of grammatical relations.

In discussing classifier predicates in Chapter 6 we acknowledge that the term classifier predicate is not entirely satisfactory but for a number of reasons we retain it as a descriptive term. Classifier predicates are shown to have two basic components, a hand configuration and a movement. The hand configuration component incorporates the verb root as well as classificatory information about a specific entity. The movement component provides information about the state, extent, location or motion of that entity. We distinguish between different types of verb stems and describe how different stems combine with different movements.

Chapter 7 is devoted to a theoretical discussion of the structures and processes described in Chapters 4, 5 and 6. Sandler's (1989, 1990, 1993) autosegmental approach is chosen for the purpose of comparing verb structures in Irish Sign Language. This model is particularly attractive since hand configuration is represented

on one tier and movements and locations are represented as segments on a different tier. We suggest that particular location (L) and movement (M) patterns are associated with different verb functions. The final chapter contains a brief summary of the main findings and conclusions of the study.

Because this is the first major linguistic study involving Irish Sign Language, it is important to place the work within a social and cultural context. In Appendix 1 therefore, we discuss the emergence of the modern deaf community in Ireland and we try to identify some of the major formative influences on the development of modern Irish Sign Language. We also look at the sociolinguistic implications of contact between sign and spoken language with particular reference to the Irish situation.

Appendix 2 includes information about the notation system and the glosses used in the text. It also contains explanations of the symbols used in the various illustrations as well as diagrams of handshapes referred to in the study. The study is accompanied by a videocassette which includes all the examples from Irish Sign Language quoted in the text as well as some examples from other sign languages. The total viewing time of the cassette runs to approximately 52 minutes. Appendix 3 contains a list of all the examples recorded on the videocassette and includes approximate timings for sets of examples.

**Notes**

1. Some researchers (e.g. Padden and Humphries 1988; Brennan 1990) have used the term 'Deaf' (with upper case 'D') to refer to membership of a particular community and culture, and 'deaf' (with lower case 'd') in the context of a loss of hearing but without reference to community or culture. Others (e.g. Kyle and Woll 1985; Engberg-Pedersen 1993) have used the term 'deaf' in both contexts. I have also used the term 'deaf' throughout this study since there were many occasions, especially in Appendix 1, when I did not feel I was in a position to make a distinction between 'Deaf' and 'deaf'.

2. Oral teaching methods focus on the development of receptive and productive skills in spoken language. They exclude the use of all forms of signing and emphasise auditory training and speech reading. There is heavy reliance on sound amplification and the use of hearing aids. Attempts to teach spoken language skills were a sporadic feature of deaf schooling in many countries including Ireland during the 19th century (1st Annual Report, National Institution 1817: 31; British Parliamentry Papers 1889, vol. II, Appendix 2: 53; The Education of Children Who Are Handicapped by Impaired Hearing 1972, Appendix V). However, oralism was not implemented on a large scale

until after the Congress of Milan in 1880 (Lane 1984, chap.12) and from the late 1950s in Ireland. (McDonnell 1992).

3. The fact that the parents of most of the informants were hearing rather than deaf might be regarded as problematic in relation to the transmission and acquisition of sign language. However, even if most of the parents were deaf, the issue of transmission and acquisition of Irish Sign Language in family settings would remain problematic. Firstly, the introduction of oral approaches in education was accompanied by the development of audiological clinics and guidance services. An important element in the advice given to all parents, hearing and deaf, was that their pre-school children should not be exposed to signing of any kind. The communication patterns of deaf parents with their deaf children have been influenced by this advice (Irish Deaf Society 1993a). Secondly, during the period before the introduction of oralism in schools, most of the teaching was conducted through manually coded English (see A1.3.8). This particular form of signing seems to have had a powerful influence on the attitudes of deaf people to sign language. One consequence was that manually coded English came to regarded as "grammatical" signing while Irish Sign Language was seen as an "informal system" (LeMaster and Foran 1987: 83; see also A1.4.5). Attitudes such as these may also have influenced the communication patterns of deaf parents with their children. Therefore, I have given less weight to the biographical backgrounds of informants and much more to the perceptions of informants themselves as current members of the deaf community and as native users of Irish Sign Language.

# 2 THE STRUCTURAL PARAMETERS OF SIGN LANGUAGES

## 2.1 Introduction

The main purpose of this chapter is to describe in general terms the structural parameters of sign languages, with particular reference to Irish Sign Language. A small number of studies have been conducted in this area (Matthews 1995; Leeson 1993; McDonnell 1993; Nolan 1993; Maguire 1991) and the findings suggest that the structural parameters of Irish Sign Language are similar to those found in other more widely studied sign languages.

The term sign language is used here to refer to primary sign languages which are the languages of deaf communities all over the world. They are learned as first languages, are used for a variety of functions and are not derived from or related to spoken languages.

Before Stokoe's (1960) research, sign forms were regarded as analogous to words in spoken languages. It was also thought that signs unlike words, had no internal structure and could not be broken down into smaller discrete units. Stokoe's work showed that signs could be analysed in the same way as the units of spoken languages are analysed, that the sub-lexical elements in signs had no meaning in themselves and that they existed in contrast with each other and could combine to make larger meaningful units.

The potential for significant contrast in body actions is very great. One reason for this is the complexity of human facial, skeletal and muscular systems whose parts can act individually or in concert, simultaneously or sequentially. Hands and arms can be in one of many configurations while the face and the body indicate separate movements or positions. The other reason is the nature of vision itself. People can see heads, eyes, faces, arms and hands all at once and can comprehend a whole array of large or subtle differences.

Individual sign languages only use a small part of all the possible contrasting combinations. The complexity of the interaction among the parameters has led researchers to use a 'transcription score' (see Appendix 2) in an attempt to describe sign language data in detail. Stokoe (1987: 34) calculates the number of potential handshapes alone at over one thousand. This figure can be multiplied by the variety of positions that can be assumed by the wrist, elbow and shoulder. If the various possible movement patterns and locations are calculated in, then far more possibilities for contrast exist than any sign language could use.

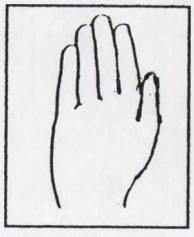
## 2.2 Parameters of Sign Formation

A good deal of research in sign languages since the 1960s has been based on the use of Stokoe's framework. The parameters of sign structure suggested by Stokoe remain valid but have been incorporated into more recent theories of phonological organisation in sign languages (Liddell and Johnson 1989; Sandler 1989). According to Stokoe's analysis the explicit parameters at this level of analysis were handshape, location and movement. Stokoe referred to handshape as the designator (dez), location as the tabula (tab) and movement as signation (sig). Later, other researchers added two further parameters, orientation and non-manual features.

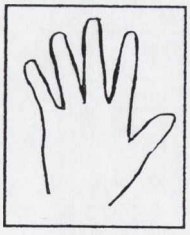
### *2.2.1 Handshape*

Signs can be articulated with one hand or two. Articulation can also involve a dominant and a non-dominant hand, the dominant hand normally being the right hand in right-handed people and the left in left handed people. As we have noted, the hand is capable of assuming a large number of configurations, ranging from a closed fist to widely spread extended fingers.

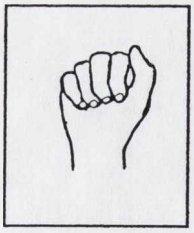
Linguists researching sign languages have explored the structure of hand configurations in terms of features such as +/- compact (extension or non-extension of fingers), +/- spread (whether or not fingers are spread apart), +/- concave (bending or straightening of finger joints) (Kegl and Wilbur 1976; Lane et. al. 1976). Kyle and Woll (1985: 108) note that in British Sign Language, four handshapes (examples 2.1 - 2.4) account for fifty percent of all signs. These four handshapes are maximally contrasting and are also among the first to be mastered by deaf children learning American Sign Language (Mc Intire 1977) and British Sign Language (Carter 1980, quoted in Kyle and Woll 1985).



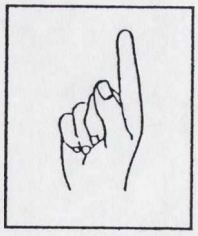
(2.1)



(2.2)



(2.3)



(2.4)

Preliminary investigation suggest that there are between 55 and 60 distinct handshapes in Irish Sign Language (McDonnell 1993; Matthews 1995). These descriptions are based on an analysis of minimal pairs. The distinctive handshapes identified so far are illustrated in Figure 2.1.

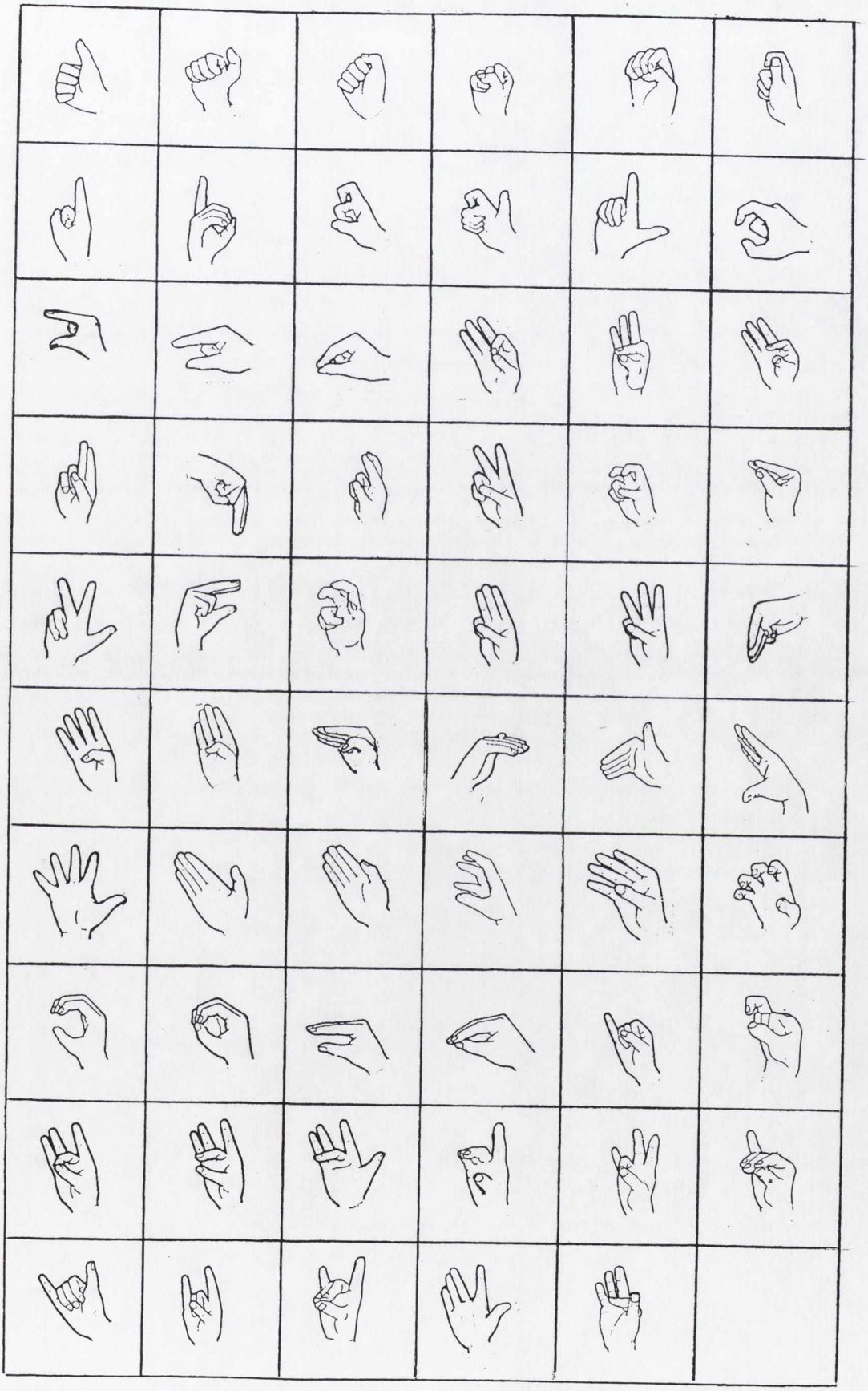
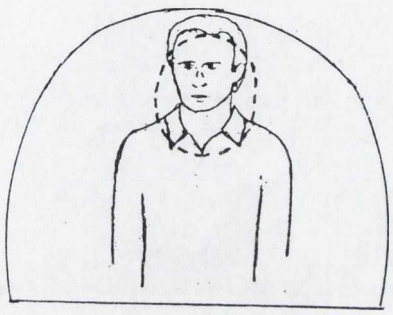


Figure 2.1 Handshapes in Irish Sign Language (after McDonnell 1993 and Matthews 1995)

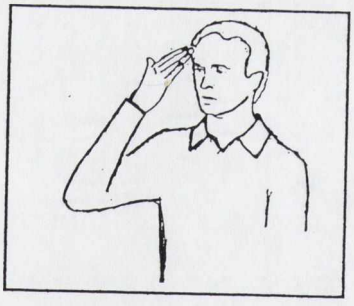
### *2.2.2 Location*

Location refers to the point in signing space where each sign is articulated. Signs are made in a specific area called 'signing space' which forms a quarter sphere in front of the signer. It extends vertically from the hips to just above the head, and horizontally from the signer's extended elbow on the right to that on the left as illustrated in (2.5). Around the face and the upper chest there is a focal area where signs exhibit the most subtle handshape, location and movement distinctions (Isenhath 1990: 10).

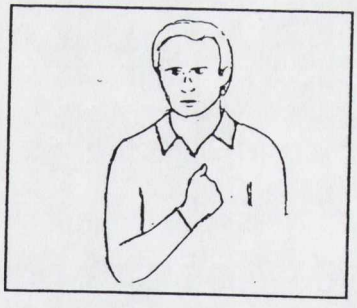
(2.5) Signing space



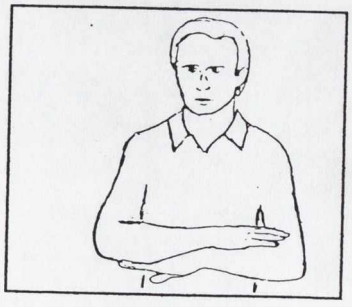
Locations may be divided into contact and non-contact locations some of which are indicated in examples (2.6 - 2.9). There are four major areas on the body where signs make contact - the head, trunk, arm(s) and hand(s). Non-contact locations occur in 'neutral' signing space, that is the area directly in front of the signer, and in locations in signing space related to, but not in actual contact with, particular body areas.



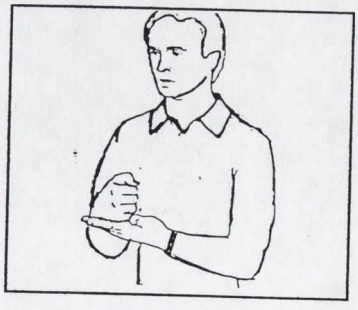
(2.6) KNOW



(2.7) MY



(2.8) WAIT



(2.9) SUPPORT

### *2.2.3 Movement*

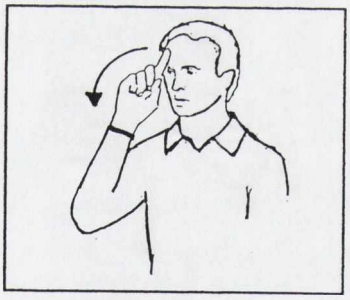
Movement is a very complex parameter in sign formation and it may be discussed under three general headings - direction, manner and dynamics. These may occur as distinct and separate kinds of movement, or they may combine in a variety of ways. Thus, some movements are relatively simple while others are much more complex in terms of the simultaneous or sequential features involved.

#### *2.2.3.1 Direction of Movement*

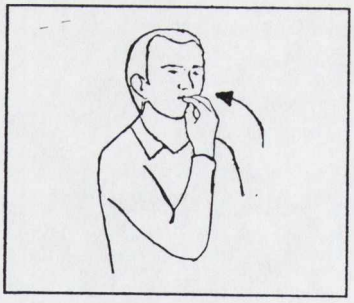
Several categories of movement come under this heading. Direction of movement may be:-

vertical with up, down, and up and down contrasts;
horizontal with right, left, and side to side contrasts;
horizontal with contrasts towards, away from, and to-and-fro in relation to the signer;
circular on vertical, horizontal or oblique planes in relation to the signer.

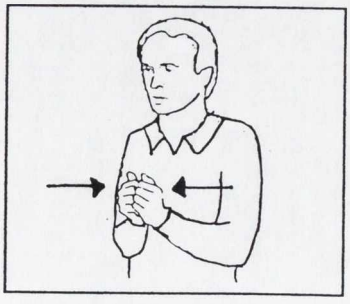
Examples of direction of movement from Irish Sign Language are shown in (2.10) - (2.15). Vertical contrasts are shown in examples (2.10) and (2.11), horizontal contrasts in (2.12) and (2.13) and circular contrasts in (2.14) and (2.15).



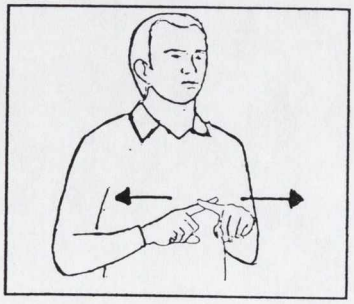
(2.10) DON'T-KNOW



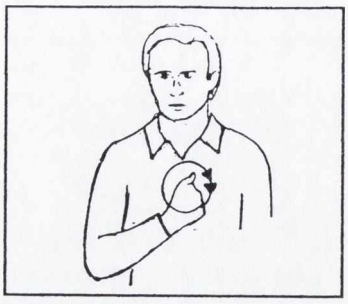
(2.11) EAT



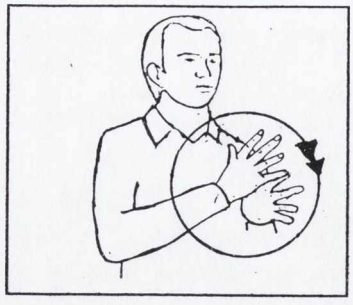
(2.12) MEET



(2.13) DIFFERENT



(2.14) SORRY



(2.15) SIGN

### *2.2.3.2 Manner of Movement*

Several categories of movement also come under this heading. Manner of movement may involve:-

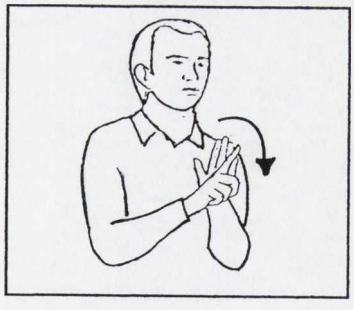
action(s) of the finger joints with bending, closing, opening and wiggling contrasts;

action(s) of the wrist with contrasts such as pronation (palm down), supination (palm up), twisting, nodding and rotation of the hand(s);

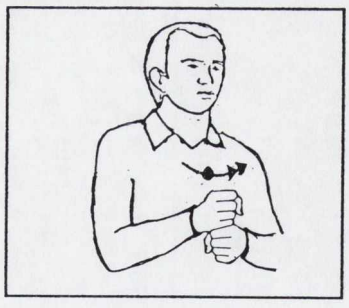
a contact feature with contrasts such as touching, brushing, grasping or maintaining contact between the hands or between the hands and body;

a particular kind of interaction between the hands with contrasts such as convergence, divergence, interlocking, crossing, linking or covering.

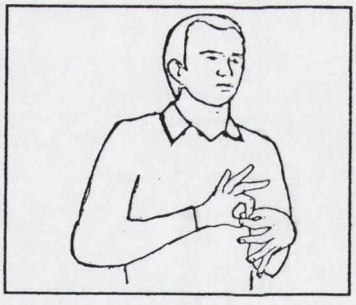
Some examples of manner of movement from Irish Sign Language are shown in (2.16) - (2.18).



(2.16) DELAY



(2.17) NUMBER



(2.18) HOME

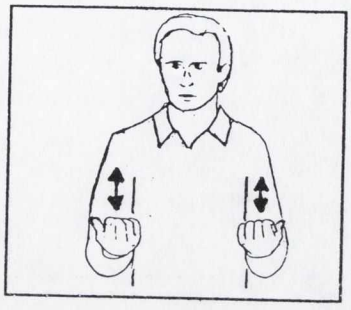
### *2.2.3.3 Dynamics of Movement*

A full description of movement features should include reference to the dynamic qualities of the movement. Dynamic quality refers to features such as the tension, 'size' and repetition of the movement.

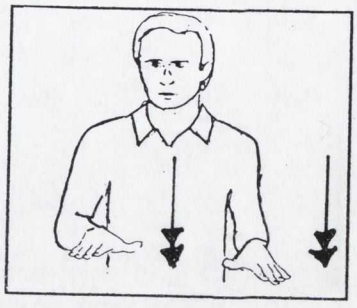
Examples (2.19) - (2.21) indicate different movement dynamics in signs in Irish Sign Language. SHARP requires a brisk action, JUDGE requires repetition and SLOW requires a deliberate movement.



(2.19) SHARP



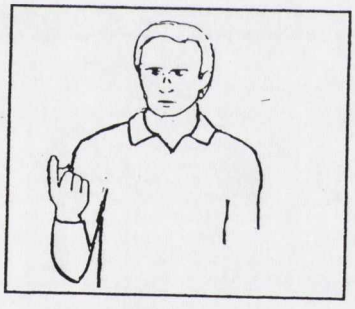
(2.20) JUDGE



(2.21) SLOW

### *2.2.4 Orientation*

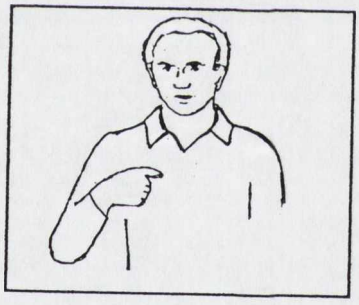
Orientation refers to the position of the hand(s) in relation to the signer's body. In the formation of a sign it is possible to orient the fingers and palm in different ways. In a number of signs, orientation of the hand expresses a phonologically significant contrast, as we see in examples (2.22) - (2.26).



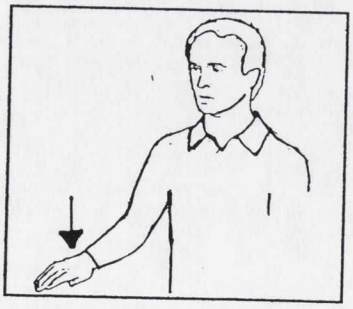
(2.22) ONE



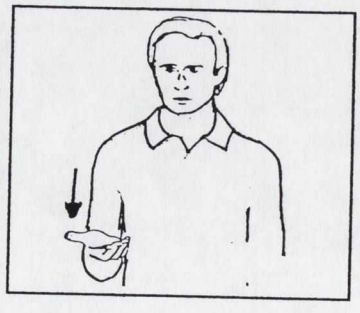
(2.23) YOU



(2.24) I



(2.25) SMALL (person)



(2.26) NOW (one-handed version)

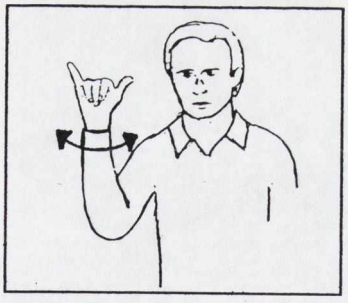
## 2.3 Constraints on Sign Formation

It is obvious that a vast number of sign forms would be produced if all possible combinations of parameter features were used. Like other sign languages, Irish Sign Language draws on only a proportion of possible combinations and imposes constraints on particular combinations of features.

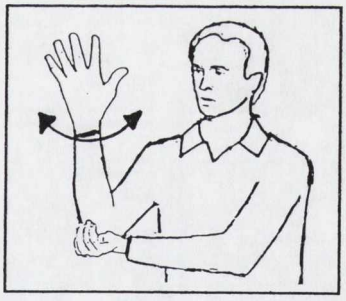
Constraints on sign formation are of two kinds. There are physical limitations of a kind that apply to all sign languages and there are specific limitations imposed by the rules of a particular language. Physical constraints are related the manner in which we can perceive and produce spatial and visual data.

### *2.3.1 Perceptual Constraints*

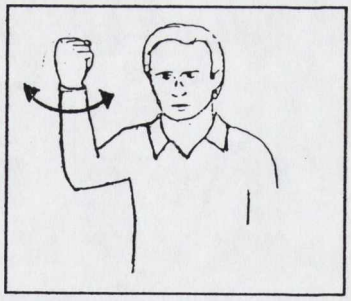
In the first place, the articulation space is confined to that area at or near the signer's body which the addressee can see. Secondly, signs made at the periphery of signing space tend to be made more 'visible'. These signs are characterised by larger handshape distinctions, larger movements and thereby, increased temporal duration. Thirdly, there is a focal area in signing space, an area of optimal visual acuity, where it is easier to detect relatively smaller distinctions in handshape and location. Woll and Kyle (1994: 3893) note that the greatest number of contrasting locations are to be found on the face. Signs in Irish Sign Language which illustrate 'large' contrasting features at the periphery of signing space are seen in examples (2.27) - (2.29) and 'small' contrasting features in the focal area in examples (2.30) - (2.32).



(2.27) PARTY (celebration)



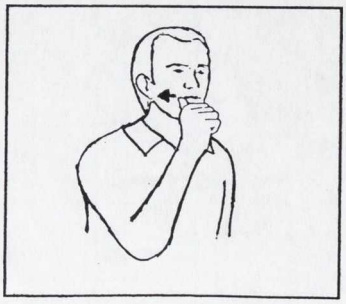
(2.28) TREE



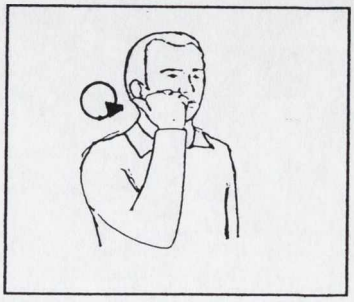
(2.29) SUN



(2.30) ORANGE



(2.31) YESTERDAY



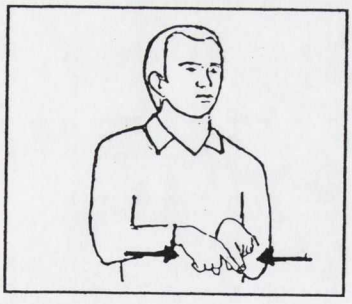
(2.32) APPLE

### *2.3.2 Production Constraints*

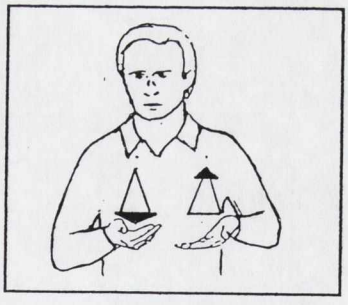
There are certain obvious physical constraints which apply to sign production. Signed utterances must be produced in a manner that makes them visible to an addressee. Signers for example, normally face their addressees. Certain other constraints are imposed by linguistic rather than physical criteria. Some signs for example, involve two sequential contacts with the body. If the body is divided into four locations - the head, trunk, arm and hand, only certain combinations are specified. Thus, in American Sign Language, a sign may have the first contact to the head and the second to the chest area, but a move from the head to the the edge of the hand may not be permitted (Wilbur 1987: 29). A constraint of this kind is determined by linguistic considerations.

Similar sequential contact constraints appear to exist in Irish and other sign languages but it is not yet clear if this is a universal feature. Battison (1978) proposes two other constraints on sign form in American Sign Language, a symmetry constraint and a dominance constraint. These constraints also appear to hold as general features of other sign languages although of course the feature inventories differ from language to language. The dominance and symmetry constraints may be regarded as a single feature which applies to restrictions on two-handed signs.

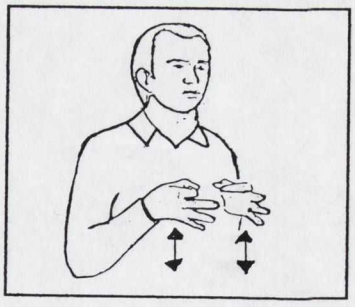
The symmetry constraint applies to signs made by two active hands. It specifies that in such signs both hands must have the same handshape, be in the same relative location and perform similar motor acts. Examples (2.33 - 2.36) from Irish Sign Language reflect symmetry constraint.



(2.33) SAME



(2.34) CONSULT

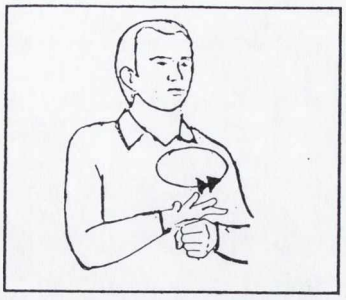


(2.35) POLITICS

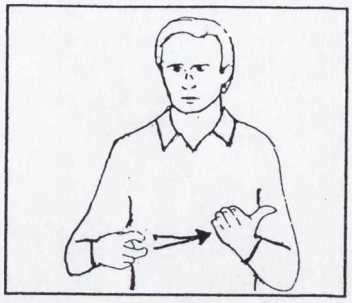
The dominance constraint also applies to two-handed signs. In these signs one active or dominant hand acts upon the second, inactive hand. The constraint specifies that the dominant hand may assume any handshape compatible with contact signs. The non-dominant hand is restricted with respect to handshapes; it must have the same handshape as the dominant hand or one of a restricted set of handshapes. Examples of the dominance constraint in Irish Sign Language are shown in (2.36) - (2.38).



(2.36) MEAT



(2.37) FULL



(2.38) TICKET

## 2.4 Recent Research in the Analysis of Sign Formation

In sign language research there has always been an awareness of the parallels between sign and spoken languages. Early research in sign languages, however, noted one significant difference. The building blocks of spoken languages are structured in a sequential pattern; in sign languages they appear to be composed of elements that are produced simultaneously. Thus, a sign was thought to be a simultaneous expression involving the hand(s) in a particular configuration and orientation, moving in a particular way, in relation to a particular location in signing space.

More recent studies of the structure of signs have stressed their sequential features (Liddell and Johnson 1989; Liddell 1990, 1993; Sandler 1989, 1990, 1993). A sequential analysis parallels the approach used in the study of spoken languages and substantiates the view that sign and spoken languages are similar in their basic structures. It is argued that a sequential analysis of signs solves many of the descriptive problems posed by the Stokoe system. It is also argued that these models provide clearer and more precise ways for describing regional or generational variations of the same sign.

The Movement-Hold (MH) model proposed by Liddell and Johnson (1989) shows that sign forms consist of sequential patterns of movements and holds on a segmental tier. Information about handshape, location, orientation and other parameters are represented on an articulatory tier through bundles of features which are associated with M and H segments. Movements are defined as periods of time when articulatory features are in transition; holds are periods when articulatory features are in a steady state. Movements and holds can combine to form sequences, some of the more obvious being MH, HMH, MHMH. To illustrate the sequential aspect of sign formation a partial analysis of the Irish Sign Language sign FORGET in MH terms is shown in Figure 2.1.

| | Segments | | |
|---|---|---|---|
| | Hold | Movement | Hold |
| handshape | O | ----------> | 5 |
| location | r. forehead | | r. forehead |
| orientation | palm in | | palm in |
| non-manual features | - | | - |

Figure 2.1 MH Analysis of FORGET

In further elaboration of the MH model Liddell (1990) divides the articulatory bundle tier into several independent tiers. This proposal is shown diagramatically in Figure 2.2 and illustrated in example (2.39) below for the ASL sign LIKE:

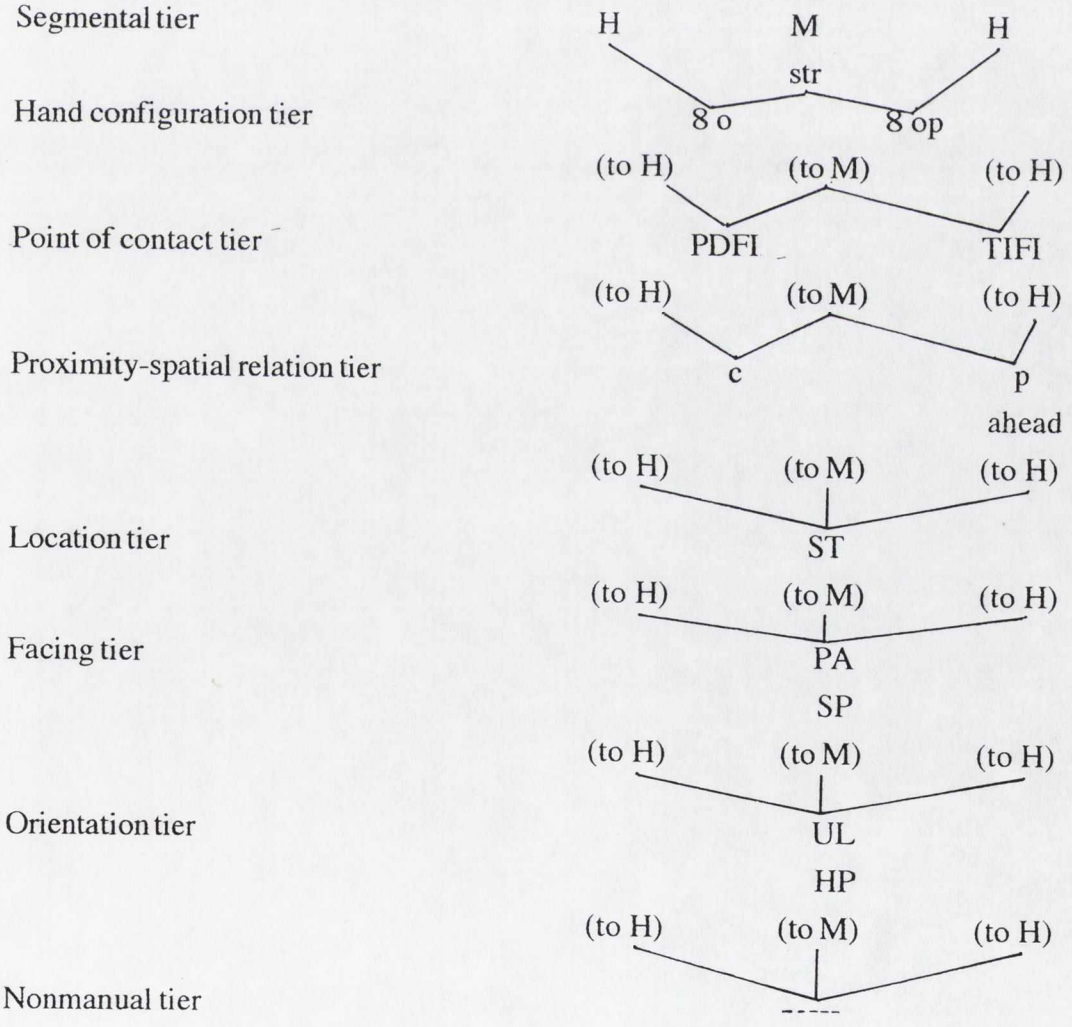


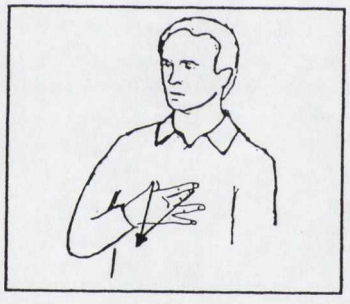

Figure 2.2 MH Analysis of LIKE (after Liddell 1990: 43)

In this underlying representation of LIKE, the hand configuration, point of contact, and proximity-spatial relation tiers have two sets of features, because they change during the articulation of the sign. Only a single entry is needed for the location, facing, and orientation tiers, since those features do not change.

As we can see in Figure 2.2 and in example (2.39), articulation of LIKE begins with an open-8 (8 o) handshape. The pads of the middle finger and thumb (PDFI) are in contact (c) with the sternum (ST). The palm of the hand (PA) faces the surface plane of the body (SP), and the ulnar surface of the hand (UL) is oriented downward towards the horizontal plane (HP). This bundle of features is associated with the initial hold segment and with the beginning of the movement segment.

The hand moves in a straight line (str) and the sign ends with an 8 handshape (8 op) with the tip of the middle finger proximal to (p) and ahead of the sternum. The values for location, facing and orientation remain the same. After the movement, the hand is briefly held in this final configuration.

(2.39)



LIKE (ASL)

Sandler (1989, 1990, 1993) also proposes a framework which focuses on the sequential structure of American Sign Language. In her Hand Tier (HT) model the segments are considered to be movements (M) and locations (L) rather than movements and holds. Movements and locations are represented as M and L slots on a skeletal or timing tier. Hand configuration (HC) is represented on an independent tier and associates with all the M and L slots. The characteristics of the HT model are illustrated in the analysis of the ASL sign LIKE in Figure 2.3 below.

In the HT representation, hand configuration is an autosegment which associates with each slot on the L and M tier. The hand is oriented towards the body [+in] and the configuration is characterised by an internal closing movement which is captured by the features [+open] and [+closed]. The representation is intended to reveal that this closing movement occurs simultaneously with the sequential articulation of the three segments on the M L tier.

In the first location, the hand (open 8) touches [+contact] the middle of the chest, [-high], [-low], [-ipsilateral], [-contralateral], [+trunk], where [ipsilateral] refers to the dominant hand side of the body and [contralateral] to the non-dominant side, [trunk] refers to the place of articulation, and [high] and [low] refer to the relative height at the specified place.

The hand moves in a straight line [-arc] to a location at a medial distance, [-proximal], [-distal], from the chest, where [proximal] is within inches and [distal] is a comfortable arm's length from the specified place. Redundant features are omitted from the representation.

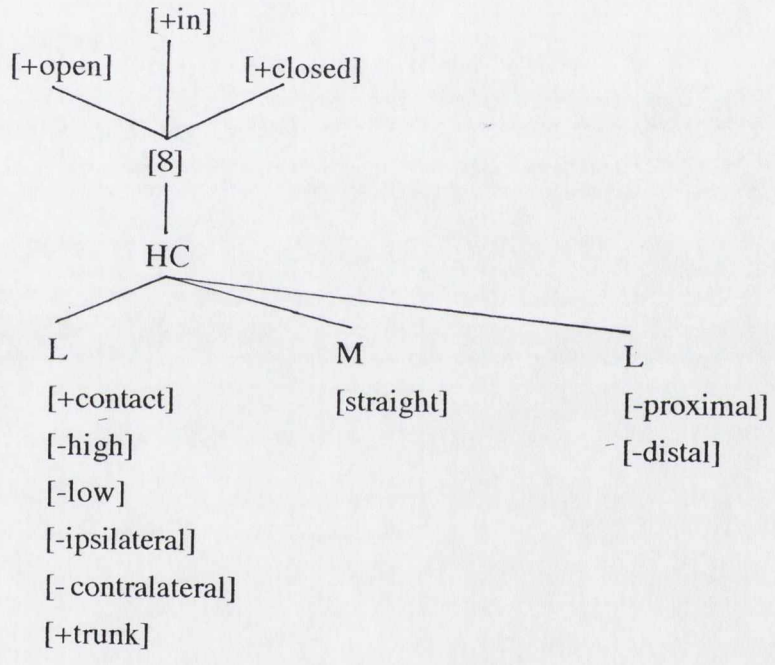



Figure 2.3 HT Analysis of LIKE (after Sandler 1989: 25)

Sandler (1989, 1990) argues that a model which incorporates location segments is to be preferred to a model which incorporates holds. She contends that the features that characterise movements and holds are almost identical and that often there are no clear phonological criteria by which holds can be identified. Liddell (1990) on the other hand claims that the hand configuration component is much more complex than indicated in a HT analysis and that particular types of local movement (wiggling of the fingers and changes in the orientation of the hand, for example) cannot be adequately represented in this model.

One of the major strengths of the HT model is its representation of location on the segmental tier. Traditionally, location has been considered to be a major parameter in

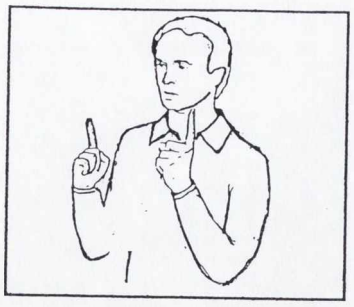
the analysis of signs (Stokoe et al. 1965; Battison 1978; Brennan et al. 1980). Location also has a distinctive role in the structure of verbs in Irish Sign Language. For these reasons the HT model will be used later in this study (see chap. 8) to compare the structures of different types of verbs.

## 2.5 Non-manual Features in Sign Formation

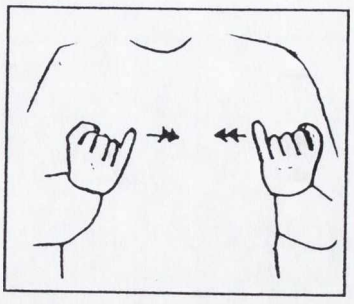
Non-manual signs are, by definition, signs produced by parts of the body other than the hands. Brennan (1992) states that non-manual features are actions of the head, face or body which may be exploited in the same way as manual signs within the grammar and lexis of British Sign Language. Actions such as furrowed brows, narrowed eyes, puffed cheeks, pursed lips, hunched shoulders are all members of the category of non-manual features. Liddell (1980) shows that in American Sign Language non-manual activity is not simply a characteristic of the style of individual signers. Non-manual activity performs very important linguistic functions in the language and the same appears to be true for all other sign languages that have been studied.

However, it is not always easy to establish a dividing line between non-manual activity which has a grammatical function and that which is non-grammatical and is used to express emotions. People may communicate their feelings by the expressions on their faces. Ekman and Friesan (1975) argue that the facial expressions for states such as anger, fear, happiness, sadness and surprise are universal. This is as true for signers as it is for speakers. Of course the culture of communication will determine the appropriateness of non-manual activity in public. Baker-Shenk (1987) reports that both deaf and hearing people show equal capacity to interpret expressions that show emotions.

Spoken language may be accompanied by gestures which are motivated in that they physically represent some abstract thought or intention. A study of French natural gestures (Calbris 1990) suggests that conflict for example, is represented by the two hands in antagonistic opposition. These symbolic representations in a spoken language are echoed in Brennan's (1990) study of British Sign Language. In British Sign Language the hands in opposition can represent either physical contrast, as when two people stand opposite each other (2.40) or they can represent symbolic opposition, as in QUARREL (2.41). The symbolic power which can be seen in human gesture generally, is exploited to a much greater degree by the sign languages of the world (see Iconicity, 2.6).



(2.40) TWO-PERSON-BE-LOCATED-OPPOSITE-EACH-OTHER



(2.41) QUARREL

Non-manual features (NMFs) exist at different levels in sign languages; some NMFs are shared with spoken languages and some are specific to sign language. At a basic level both signers and speakers use physical postures, facial expressions and gestures to express emotion. They may lean forward in a threatening attitude, smile with happiness or wave a fist in anger.

At another level, physical movements or facial expression may express linguistic content equally for signers and speakers. Both may use a headshake to express negation, a nod to indicate assent, a shrug of the shoulders to express lack of concern or knowledge. The thumbs up sign is used to indicate success, and the V-victory sign indicates celebration. These gestures or emblems are used by both signers and speakers in similar contexts and in similar ways. For the most part emblems are very restricted in number and content and most of them have an interactional function.

However, there are levels at which NMFs in sign languages have no gestural parallels in spoken languages. These NMFs have a grammatical as distinct from a communicative function. Preliminary studies (Leeson 1993; Nolan 1993) show that a range of grammatical NMFs exist in Irish Sign Language and that these have a function at different levels in its structure.

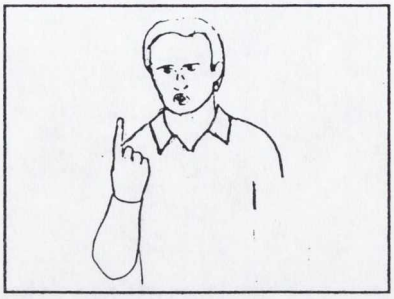
### *2.5.1 Non-manual Features in Phonology*

Non-manual features operate in several different ways at a phonological level. In Swedish Sign Language Bergman (1984: 50) shows that NMFs must be included as an articulatory feature of some manual signs: in the sign VERKLIGEN 'really' there is a simultaneous mouth movement from a position of tense, closed lips to one of tense spread lips (as in the pronunciation of 'e'). In Irish Sign Language the non-manual blowing action is the only articulatory feature that distinguishes LIGHT (as in bulb) from ONE (examples 2.42 - 2.43); indrawn breath, tensed lips and slight eyelid closure accompanies the manual sign PAIN (2.44); eyelid closure and a slight backward head

tilt accompanies the sign FEEL-ONE'S-WAY (2.45). In examples (2.43) - (2.45) the non-manual features are obviously motivated by the semantic content of the manual signs.



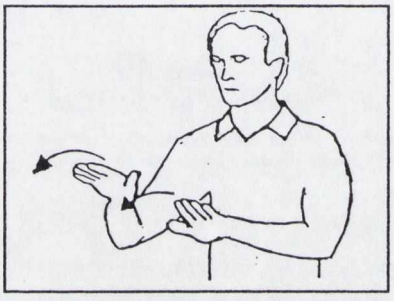
(2.42) ONE



(2.43) LIGHT



(2.44) PAIN



(2.45) FEEL-ONE'S WAY

In American Sign Language certain non-manual activities are associated with specific lexical items (Liddell 1980). The sign BITE is accompanied by a biting action of the mouth, BEG by a pleading expression and RELIEVED by a rapid exhalation (phew!). Liddell suggests that such non-manual features provide some redundancy to the language signal. However, not all lexical items that could be accompanied by non-manual features are actually accompanied by such features. The Irish Sign Language signs EAT and DRINK for example, are not accompanied by swallowing actions.

A small number of signs are articulated only by non-manual features. In Swedish Sign Language LIE ('tell an untruth') is expressed by the tongue being pressed twice against the inside of the cheek (Bergman 1984: 50); 'DON'T KNOW' is made by puffing out one cheek and letting the air pop out (Baker-Shenk 1987: 37). In American Sign Language, YEAH-I-KNOW-THAT is made by twitching one side of the nose (ibid.).

Woll (1990: 758) argues that because of the exposure of deaf people to spoken language through speech training, many signers use mouth patterns while signing. Occasionally, and as a consequence of historical change, these mouth patterns may serve as the only contrastive element between two signs. In British Sign Language the

signs NINE and FOUR are distinguished solely by the use of associated mouth patterns which resemble the articulation patterns of the words 'nine' and 'four'.

Tervoort (1994) points out that elements of spoken languages find their way into native sign languages. They are sometimes incorporated into the language to assume functions which they do not have in the spoken language (Vogt-Svendsen 1983; Schermer 1990).

### *2.5.2 Non-manual Modifications of Verbs*

Non-manual features can function at morphological, syntactic and discourse levels in sign languages. Verbs can be modified by specific non-manual markers. Distinctions between 'ease' and 'effort' for example, are marked by non-manual features associated for example, with the verb WALK (Figure 2.4).

| Non-manual features | WALK-WITH-EASE | WALK-WITH-DIFFICULTY |
|---|---|---|
| mouth / tense | - | + |
| head / rigid | - | + |
| brows / lowered | - | + |

( + / - : presence / absence of feature)

Figure 2.4 Non-manual Modifications of WALK (after Kyle and Woll 1985: 152)

Other manual signs may be modified by different sets of non-manual features. Baker-Shenk (1987) reports that there appear to be at least twenty such markers in American Sign Language. Brennan (1992) also reports the existence of similar sets of markers in British Sign Language, though of course the specific features of the markers and their linguistic functions differ between the two languages.

Similar kinds of markers exist in Irish Sign Language (Leeson 1993; Nolan 1993). In the '**th**' marker the tongue protrudes through the lips and the head is slightly tilted backwards. It indicates carelessness, clumsiness or stupidity. In some contexts it can indicate 'incredibly easy' or 'no problem'. The '**mm**' marker carries the meaning 'as normal'. In it the lips are closed and pushed out, without being puckered. In the '**c s**' marker the cheek is turned towards the shoulder, hence the term '**c s**'. This marker indicates proximity in time and space. The '**e e**' marker carries the meaning 'with great effort and intensity'. In this marker the mouth is open and the lips are tense and spread. Leeson (1993) gives the following examples (2.46) - (2.49) from Irish Sign Language.

(2.46) (ISL) ... NOTHING UNBALANCED (th)
(ISL) is not a clumsy language.

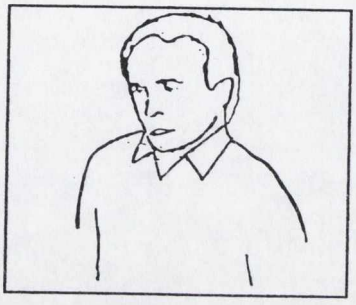
(2.47) TRAIN ARRIVE (cs)
The train just arrived.

(2.48) LIKE SNOOKER (mm)
I enjoy snooker.

(2.49) ...DRIVE (ee)
... drive hard



'**th**' marker



'**c s**' marker

### *2.5.3 Non-manual Features in Syntax and Discourse*

In syntactic terms Irish Sign Language uses non-manual markers to indicate certain kinds of sentences. The negation marker '**n**' is characterised by an obligatory headshake from side to side and by a non-obligatory down-turning of the mouth. The '**n**' marker is produced simultaneously with the appropriate manual sign(s), as in example (2.50).

(2.50) BOY COME HOME (n)
The boy did not come home.

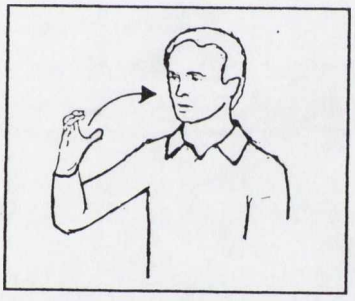
Similarly, yes / no interrogatives and wh-question interrogatives are distinguished from each other and from other sentences by using a specific set of non-manual markers. Even if interrogative manual signs are included in the utterance the appropriate non-manual markers are obligatory.

It is likely too, that non-manual features are used at a pragmatic level in Irish Sign Language. Engberg-Pedersen (1987) found that in Danish Sign Language squinted eyes indicate that the signer assumes the addressee already knows the referent but may have problems accessing it; raised eyebrows are used to mark certain important themes in discourse; she also notes that eye-blinks have a central function as sentence marker boundaries.

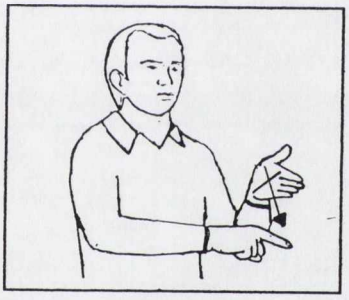
## 2.6 Iconicity

In sign language research iconicity is understood as a relationship between the form of a sign and its meaning. Researchers have described different degrees and kinds of iconicity. Klima and Bellugi (1979) for example, distinguish between transparent, translucent and opaque signs.

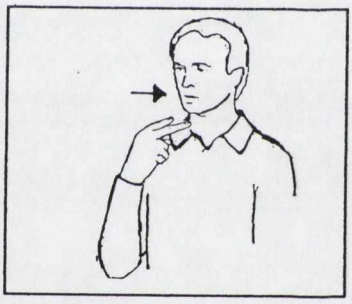
In a transparent sign the relation between the form of the sign and its meaning is clear to a naive viewer; in other words the viewer can easily guess the meaning of the sign from its form. The sign DRINK (2.51) in Irish Sign Language is a good example. In a translucent sign the relation between form and meaning is not immediately clear to the viewer. However, when the meaning of the sign becomes known the link between form and meaning can be perceived. An example from Irish Sign Language is the sign CANCEL (2.52). In opaque signs there is no obvious relation between form and meaning. In the Irish Sign Language sign BE-DISAPPOINTED (2.53) the relation between the form and the meaning is arbitrary.



(2.51) DRINK



(2.52) CANCEL



(2.53) BE-DISAPPOINTED

In their study of the iconicity of sign forms in American Sign Language, Klima and Bellugi (1979) asked a group of ten hearing subjects with no prior knowledge of sign language to guess the meaning of 90 common signs. Both concrete and abstract items were included in the list, for example APPLE, BIRD, IDEA, SENTENCE, TREE, GRAVY. All of the subjects failed to guess the meaning of 81 of the 90 signs. In a UK study Deuchar (1984: 17) found a similar level of response.

Klima and Bellugi describe another experiment in which the same items were administered to a different group of subjects. This was a multiple choice test in which the correct English translation was listed with four alternatives for each item, most of the alternatives being selected from among the responses given in the first experiment. In this test the correct answer rating of 18.2% was no better than chance.

In a third task the 90 signs and their correct English translations were presented to a further group of ten subjects. This time subjects were asked to describe what they considered to be the basis for a relation between the sign and its English translation. For more than half of the signs presented there was agreement among the subjects as to the basis of the relation between the form of the sign and its meaning.

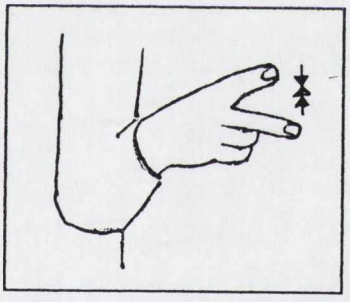
Klima and Bellugi concluded that "although an ASL sign is not usually so unambiguously representational that a non-signer can guess its correct meaning - not even when the meaning is presented as one of several possibilities - characteristics of the form of an ASL sign are often related (or relatable) to characteristics of its referent" (p. 26). Clearly iconicity is not the same as transparency.

### *2.6.1 Iconicity, Convention and Motivation*

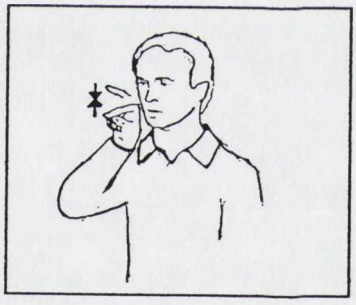
Mandel (1977) describes several different kinds of iconic devices used in American Sign Language. In virtual depiction the signer traces the outline of a referent or part of a referent in signing space, as in HOUSE (2.54). In substitutive depiction the signer's articulator(s) (i.e. finger, hand or arm) assumes the shape of a referent or of part of a referent, as in SCISSORS (2.55) and BIRD (2.56).



(2.54) HOUSE



(2.55) SCISSORS



(2.56) BIRD

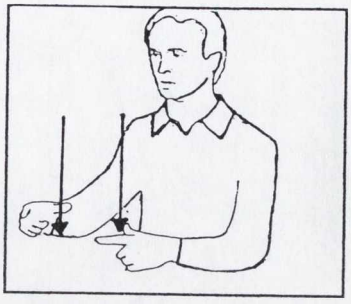
Another iconic device is indexing where the signer points directly at a referent. In Irish Sign Language the sign YOU is made by pointing at the addressee and HE or SHE by pointing at the third person, or at a specific location associated with that person if he or she is not present. Some parts of the body, such as SHOULDER and EYE, are signed by indexing, that is, by pointing to the object in question.

Deuchar (1984) stresses the importance of conventionality in the relationship between a sign form and its meaning. The physical characteristics of an iconic relationship between a sign and its referent may not be universally similar. Klima and Bellugi (1979: 21-2) describe the sign for 'tree' in three different sign languages - American Sign Language, Danish Sign Language and Chinese Sign Language. In each case the

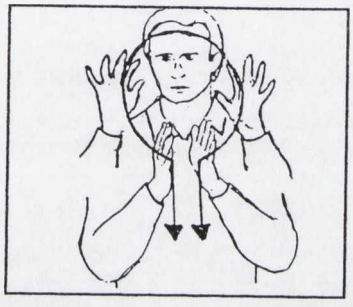
relation between form and meaning is iconic, but we can see in examples (2.57) - (2.60) that each is iconic in a very different way.



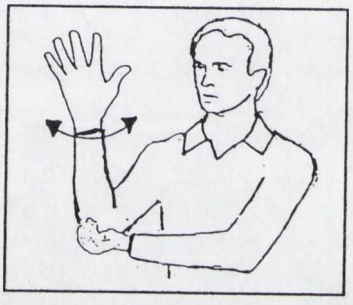
(2.57) TREE (ASL)



(2.58) TREE (Chinese Sign Language)

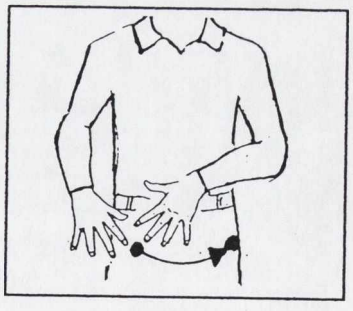


(2.59) TREE (Danish Sign Language)

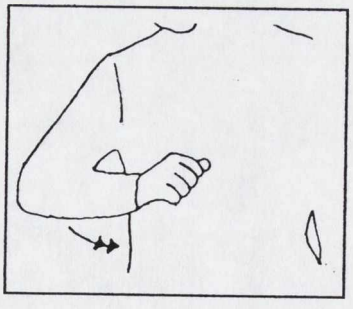


(2.60) TREE (ISL)

Boyes-Braem (1986) points out that the association between a sign form and a referent is iconic only for persons who share a similar cultural background. The Irish Sign Language and British Sign Language signs for SCOTLAND (examples 2.61 and 2.62 respectively) is iconic only to those who know that Scots wear kilts and play bagpipes!



(2.61) SCOTLAND (ISL)

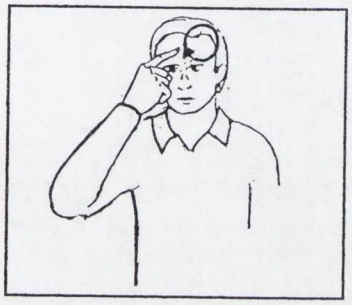


(2.62) SCOTLAND (BSL)

Since our usual understanding of iconic is that the sign is similar to the the shape or action of the referent, there is a tendency to focus on signs which refer to objects (MUG, SCISSORS), to actions associated with objects (CUT-WITH-SCISSORS, DRINK-FROM-MUG), or to imitations of human actions (SWIM, SKI, DRIVE-

VEHICLE). There is also a tendency to assume that only referents with visual characteristics lend themselves to iconic representation.

Boyes-Braem (1986) argues that it is important not to equate iconic with concrete. The characteristics of the referent (whether it is concrete or abstract, for example) must be distinguished from the characteristics of the relationship between form and meaning (whether it is iconic or arbitrary). The Irish Sign Language sign DREAM (2.63) may be considered iconic, yet the referent 'to dream' cannot be considered concrete; the sign BREAD (2.64) has a concrete referent, yet its form is not obviously iconic.



(2.63) DREAM



(2.64) BREAD

### *2.6.2 Types of Form - Meaning Relations*

In sign linguistics much of the debate has been concerned with the contrast between iconicity and arbitrariness. Brennan (1990) claims that in sign languages, the particular relationship between form and meaning usually referred to as iconic, is in fact much more complex. She argues that it is probably more appropriate to see iconicity as "merely one of a number of principled relationships" between sign forms and their meanings (p. 16). She agrees with Lyons' suggestion (1977: 105) that the best term for any non-arbitrary relationship between form and meaning is the term 'motivation'.

Drawing on the work of Bergman in Swedish Sign Language (Bergman, 1978) Brennan illustrates the different types of form-meaning relationships in diagrammatic form (Figure 2.5). Brennan argues that visual metaphor constitutes a rich source of creativity in sign languages and states that "the degree of metaphorical structuring within the language (BSL) is far more pervasive and complex than has previously been understood" (p.19).

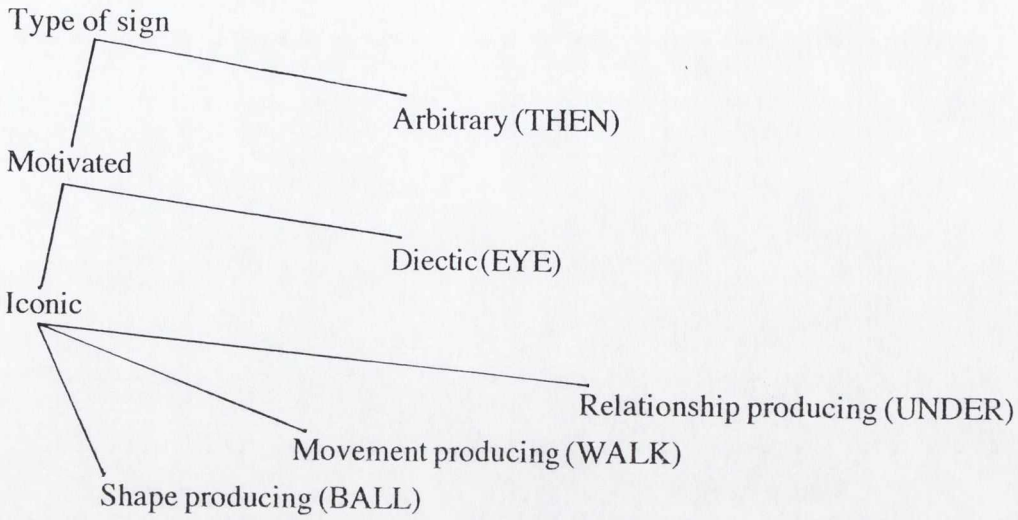
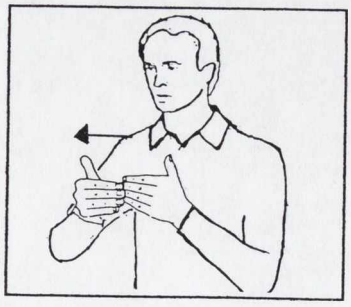


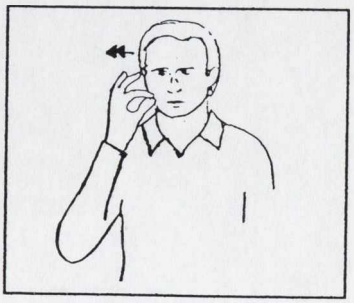

Figure 2.5 Form / Meaning Relationships (From Brennan 1990: 16)

Lakoff and Johnson (1980) and Lakoff and Turner (1989) have shown how in spoken languages, metaphor pervades everyday communication. Lakoff and Johnson argue in particular that spatial metaphors are fundamental to the way we structure our concepts. Both Brennan (1990) and Wilbur (1987, chap. 7) point out that because sign languages are visual-gestural-spatial systems, metaphors are expressed more directly, and are more easily apprehended than is the case in spoken languages.

Brennan illustrates the point by noting how in British Sign Language the concept of time is organised along a spatial dimension. In English we may say 'in the near future'. The underlying metaphor is spatial but the words do not bring this fact to the surface. In Irish Sign Language a phrase meaning 'in the near future' would be expressed in a spatial dimension (2.65) and thus the visual properties of the metaphor can be apprehended in a more direct and immediate way.



(2.65) '... in the near future'



(2.66) CAT (ASL)

Klima and Bellugi (1979) refer to two aspects of sign formation in American Sign Language and use the sign CAT (2.66) as an example. On the one hand there is the

iconic aspect which, globally, appears to represent the whiskers of a cat. On the other hand there is the component aspect in which the sign is made with a pinching handshape, repeatedly brushing the cheek at the right side of the mouth. This handshape, this movement and this location recur as elements in other signs in American Sign Language.

Evidence from acquisition studies and from psycholinguistic research indicates that for signers, it is the component element of sign that is significant, not the iconic element (Deuchar 1984: 18; Klima and Bellugi 1979: 27; Newport and Meier 1986). Historically too, signs in American Sign Language have tended to become less iconic and more arbitrary over time (Frishberg 1975).

Although the iconic content of sign languages should not be overestimated, iconicity also constitutes a rich source for the creation of new signs. Indeed it would be surprising if visual imagery were not exploited to a substantial degree by sign languages.

## 2.7 Sign Formation and Grammatical Features

At this point it is necessary to briefly consider the relationship between the formational properties of sign languages and their grammatical structures. One of the most important structural features in relation to sign language grammar is the category of locus. Locus refers to a specific location in signing space which may have a phonological, morphological, syntactic or discourse function. Phonologically, each sign is articulated at a particular location; in morphological terms, locus markers have an important role in the structure of agreement verbs, and syntactic units such as pronouns are specified by pointing towards particular locations in signing space.

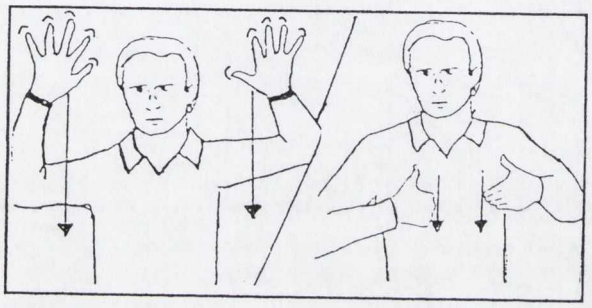
### *2.7.1 Loci and Referents*

A conversation in sign language reflects the canonical communication situation. In order to communicate, participants in the exchange must be in visual contact. The signer locus marks the deictic centre of the utterance because the act of utterance, the 'here' and the 'now' converge at this locus. In some studies the signer locus is termed the c-locus (see for example, Engberg-Pedersen 1993). I will also use this term and will intend it to refer to the canonical locus.

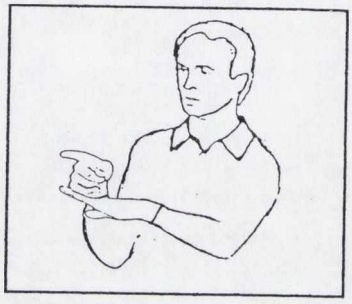
In a discourse a signer may refer to persons, objects and locations actually present by pointing to them. A signer may point by using the index finger or other part of the hand, by eye-gaze or by movement of the head and / or body. The signer may point to himself or herself to indicate first person singular, to the addressee for second person

singular, and to other(s) present for third person singular or plural. These are deictic expressions in a classical sense.

Signers can refer to entities which are not present by 'establishing an index' (Liddell 1990: 176). Establishing an index which is also a form of deictic pointing, creates a relationship between a referent and a particular location in space. This can be done, as shown in example (2.67), in which the signer first names the referent and then points to a particular place in space. The term 'locus' has been generally accepted as the term for such a location in space.



SNOW^MAN

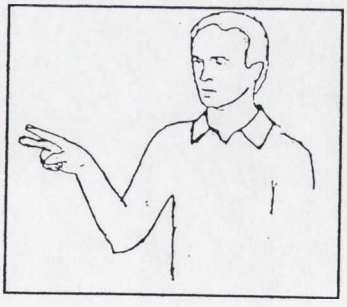


BE-THERE + f

(2.67) SNOW^MAN BE-THERE + forward (f)
The snowman was there

When the relationship between the referent and the locus has been established a subsequent reference to that locus means a reference to the 'snowman'. A subsequent reference, such as that shown in (2.68), constitutes anaphoric rather than deictic pointing.

(2.68)

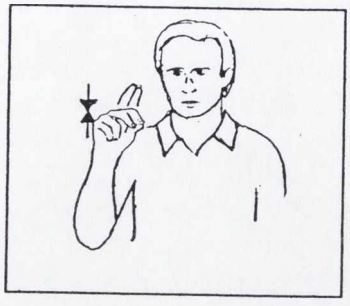


Signer locus (c-locus) + LOOK-AT + f
I looked at the snowman

### *2.7.2 Definitions of Locus*

There has been some disagreement about how a locus should be defined (Klima and Bellugi 1979; Liddell 1990; Engberg-Pedersen 1993). Liddell (p. 176-7) defines a locus as "a point on the body" or a "point in space". He describes a locus as having a

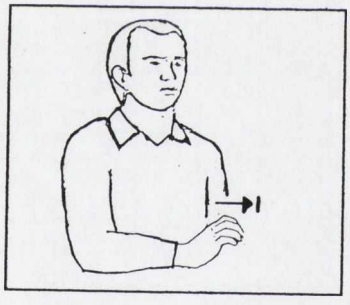
number of functions. It can, for example, have an articulatory function; the sign NO (2.69) is produced in neutral signing space, at a locus about a foot or so in front of the signer's chest.



(2.69) NO

Liddell argues that a locus can have a 'location fixing function'. This means that a particular referent is conceived of as being *at* a particular location, as in example (2.66) above. If a locus is defined as a point in signing space, Liddell shows convincingly that a locus with a location fixing function does not *represent* a referent.

A locus also can have a three-dimensional function. In this case a locus *represents* a spatial location as shown in example (2.70).



(2.70) T-V 3D-entity-CL + BE-LOCATED + fl
The television was there on my left.

In this case, signing space represents another three-dimensional space and loci can exist in an up/down, a left/right and a forward/back relationship. The locus *fl* in utterance (2.70) shows three functions simultaneously. It serves an articulatory function since that is the articulatory point in signing space toward which the dominant hand is directed in the production of the sign BE-LOCATED. It serves a location fixing function since the T-V is now 'located' at that locus. It also serves a three-dimensional function since it stands in a relationship with other locations in an abstract three-dimensional space.

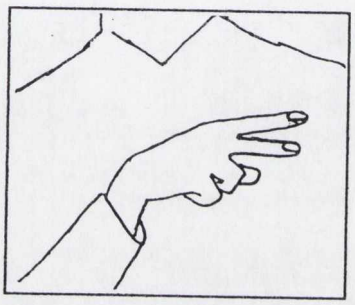
Engberg-Pedersen (1993) however, disagrees with Liddell's definition of a locus as a point in space. She claims that it is not possible to define a locus only in terms of a

specific point or distance from the signer; a locus must also be understood as a projection of a referent into space. This definition asks us to consider a locus as a vertical plane radiating from the signer's body.

Engberg-Pedersen's analysis is plausible for two reasons. Firstly, the extent of movement of the hands differs lexically from verb to verb. Some verbs are characterised by long movement; others have a short movement and some have no movement at all. Yet verbs of each kind can be modified for the same grammatical locus as indicated in examples (2.71) and (2.72). The locus *fl* modifies the verbs ASK and LOOK-AT in exactly the same way although only ASK has movement.



(2.71) c + ASK + fl
I asked (someone)



(2.72) c + LOOK-AT + fl
I looked at (someone)

Secondly, some loci are established closer to the signer than others because they are imagined as being closer. Examples relate to referents with which the signer empathises or in situations characterised by intimacy, as in (2.73). Such distinctions do not reflect grammatical differences.

(2.73)

| | f / lo |
|---|---|
| MOTHER | c+GIVE+f / lo FOOD |

Mother gave him his dinner.

A locus then can refer to different directions radiating from the signer as well as to specific points in signing space. It is a category whose members are specific loci in paradigmatic contrast. It can be understood as a meaningful direction from the signer or a meaningful point or area in signing space.

### *2.7.3 Locus Markers*

In grammatical terms, a locus can only be realised through a locus marker. A locus marker is a morpheme that is expressed through the way it influences the position and / or orientation of the hand(s) in the production of a sign. Because of this, Engberg-

Pedersen uses directional expressions to symbolise the most commonly used locus markers (Figures 2.6 and 2.7).

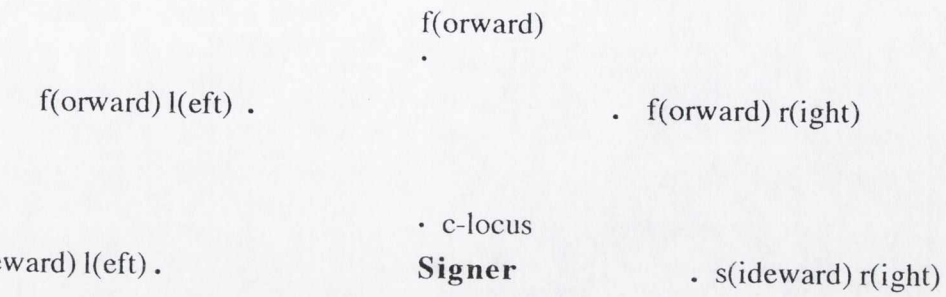



Figure 2.6 A 'plan' view of locus markers

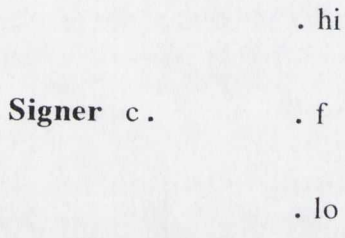



Figure 2.7 An 'elevation' view of locus markers

### *2.7.4 Locus Marking for Person and Location in Irish Sign Language*

An important consideration at this point is the question of how locus markers are to be interpreted in Irish Sign Language. In the context of the canonical communication situation each locus has the potential to be marked for the categories of location, person or time. Since similar surface forms are used to express values in each of these categories, the particular interpretation of any locus marker must depend on information found elsewhere in the language. Such information can be found in characteristics of the accessing sign; person agreement verbs, for example, access the person system; classifier predicates access the location system; and time signs access the temporal system.

Since tense in Irish Sign Language appears to be expressed through time signs and time lines rather than through verb inflection, the main focus of discussion here will be on the person and location systems. There is evidence that, like American Sign Language (Meier 1990), Irish Sign Language has a category of person and that it distinguishes between first person and non-first person. The pattern of articulation of deictic signs suggests a distinction of this kind.

Articulation at the signer locus means that the sign is articulated in contact with, or proximal to, the signer's body; articulation at a non-signer locus means that the sign is articulated away from the signer, meaning at a distance that is medial or distal from the signer's body (Liddell and Johnson 1989). In Irish Sign Language the deictic signs translated in English as 'I', 'me' and 'my' are all articulated at the c-locus. The deictic signs translated as 'you', 'him' / 'her' / 'it', 'your' / 'his' / 'hers', 'them' and 'theirs' are all articulated at non c-loci.

There is no evidence that Irish Sign Language distinguishes between second and third person categories. The set of locus markers we might classify as second person overlaps with the set we might classify as third person. In other words there is no location in signing space that is reserved specifically for second person as opposed to third person. Of course in Irish Sign Language, it is possible to distinguish among non-first person referents, but this distinction is not expressed at the level of morphology.

There is a convention in Irish Sign Language that YOU is articulated at a point directly in front of the signer and that THIRD PERSON ('he' / 'him', 'she' / 'her' or 'it') is articulated at an angle of approximately 45º to the left or right of this point (Figure 2.8). However, this is not always necessarily the case in actual discourse and many alternative arrangements are possible (Figure 2.9).

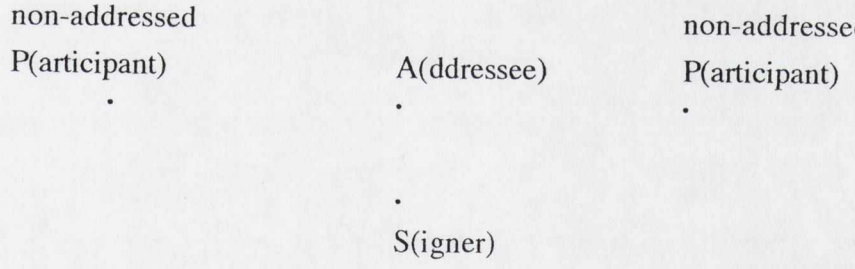



Figure 2.8 Conventionalised Location of S, A and Ps

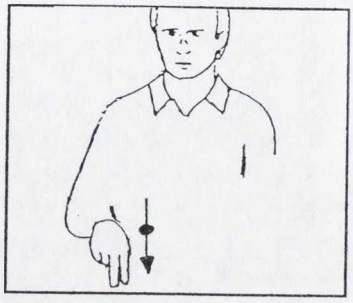



Figure 2.9 Possible S and A Arrangements (after Meier 1990: 185-6)

With regard to location, the lexical signs HERE (2.74) and NEAR (2.75) are articulated at the signer locus; the signs THERE (2.76) and FAR (2.77) are articulated at non-signer loci. Significantly too, the sign TO (2.78) involves an articulatory movement towards the signer while the sign FROM (2.79) involves a movement away from the signer.



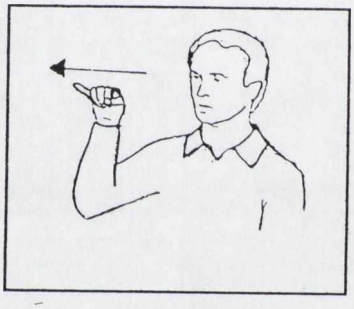
(2.74) HERE



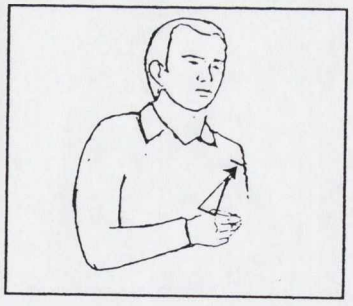
(2.75) NEAR



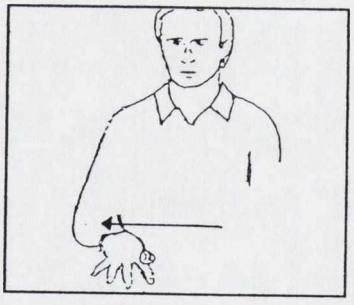
(2.76) THERE



(2.77) FAR



(2.78) TO



(2.79) FROM

In the category of person in Irish Sign Language therefore, two values, first person and non-first person, can be realised through locus markers. Similarly, locus markers can express two location values, 'here' and 'not-here'. Each set of values derives from the primary distinction between the signer locus and the non-signer locus.

### *2.7.5 Referential Shift in Irish Sign Language*

Two other structural features of Irish Sign Language are relevant to an analysis of verb categories - referential shifting and subject deletion. It is common in Irish Sign

Language conversation to use the signer locus to indicate a referent other than the signer. This feature exists in other sign languages and has been referred to as role-shifting (Padden 1990), role-playing (Meier 1990), body-shifting (Liddell 1990) or role-switching (Mandel 1977). Poulin and Miller (1995) find that terms such as role-shift and body-shift are ambiguous and adopt the term referential shift to account for structures where the signer uses a first person pronoun to refer to a third person referent.

When a referential shift occurs the signer normally breaks gaze with the addressee. It is often, but not always accompanied by a change in the non-manual features of the signer. The signer may assume a posture or facial expression associated with the third person referent and may change his / her body position by rotating to the left or right. Sometimes there is no change of body position and the referential shift is signalled by a movement of the head and shoulders or by a change in head position and gaze direction.

The terms role-shifting, role-playing, body-shifting and role-switching have been used as global terms which incorporate a range of different features and which express different functions. Engberg-Pedersen (1993, 1995) identifies three different structures which have distinct functions in Danish Sign Language. While these structures may co-occur they may also occur separately. Firstly, in *shifted reference*, pronouns are used from a quoted sender's point of view. This term is reserved for reported speech. Secondly, in *shifted attribution of expressive elements*, the signer's body and face are used to express the mood or attitude of a referent other than the signer. Its use is not restricted to reported speech but can be found in reports of a person's thoughts, actions or feelings.

The third structure, *shifted locus*, is unique to sign languages because of its spatial parameters. It is used when signers want to report their own or someone else's interaction with a referent associated with another locus. A signer can, for example, use the signer locus 'c' to denote someone else and a locus other than the signer locus (e.g. 'fl' instead of 'c') to denote herself. Until further research determines whether similar distinctions can be made in Irish Sign Language I will use the term referential shift in the context of reported actions and states as well as reported speech.

Example (2.80) shows how referential shift can be used to denote direct quotation. In this example the signer's body is first in a neutral posture. As he signs MOTHER his head and shoulders rotate to the left; then he leans forward in the posture of an adult addressing a child. After signing 'put on coat+c' the signer resumes a neutral posture.

During the referential shift (indicated by square brackets) each sign is articulated at a non-neutral *fl* locus.

(2.80) (BOY) V-CL+c / hi+MOVE+f / lo TO RUN+c+MOVE+f /

head and shoulders lean forward and down

body oriented left

[MOTHER-fl WAIT-fl FIRST-fl Handle-entity-CL+MOVE-imit: put on coat+c

Handle-entity-CL+MOVE-imit: put on coat+c

Body-CL+EXIST+shoulders-fl ---------- ] /

c+RUN+f OUT^FOR

(The boy) hurried downstairs to run out. His mother said, "Wait! First put on your coat." Then he ran outside.

Referential shift is also used to describe events or situations witnessed by a narrator. In example (2.81) the signer is describing an incident which he witnessed. There is no reported utterance. First the signer describes his own reaction. Then, adopting a referential shift, he expresses the mood and attitude of another referent. After PRAY the signer breaks gaze with the addressee and assumes a very still, solemn posture and maintains this expression until he signs OFF. At that point the signer resumes his unmarked expression and posture. This is a good example of how signers in Irish Sign Language move into and out of narrator and participant modes. In this instance, during the referential shift the signer's body faces forward in an unmarked position and is rotated neither to the left nor to the right.

(2.81)

n

DAY DET-f DAY NOTHING PRON1 KNOW WHY / WE PRAY /

[ BE-IN-A-PRAYERFUL-POSTURE ... Handle small entity-CL+

MOVE-imit: push button-sr / BE-IN-A-PRAYERFUL-POSTURE /

Handle small entity-CL+MOVE-imit: push button-sr OFF ] /

WE BE-UNCERTAIN fr+LOOK-AT+fl ...

fl+LOOK-AT+fr ...

This particular day there was none (no overhead projector). I don't know why. We prayed. The priest stood there in a prayerful attitude ... He switched on the cassette and resumed his prayerful posture. Then he switched off the cassette. We were uneasy and looked at one another.

Referential shift is frequently associated with agreement verbs. A verb such as LOOK-AT takes agreement markers for its subject and direct object arguments. In utterances which involve two non-first person arguments one of the arguments, usually the subject argument, can be shifted to the 'c' locus. Thus, a first person surface form expresses a non-first person argument (2.82).

(2.82) (BOY) (SNOWMAN-f) c+LOOK-AT+f
The boy looked at the snowman

Through referential shifts, locus values designated at some previous point in a discourse can be altered later in the discourse. An index directed inward, which normally refers to first person, can be used to indicate third person. The use of surface first person forms to mark third person referents is common in Irish Sign Language discourse. Furthermore, through head and body movements, by eye gaze or by pointing, a signer may use first person surface forms to denote more than one third person referent.

### *2.7.6 Subject Deletion*

Another important feature of Irish Sign Language discourse is that there may be no surface specification of the subject of every predicate. Friedman (1976) and Edge and Herrmann (1977) claim that in American Sign Language the last indicated subject is associated with all verbs until a new subject is indicated. If in the context of the utterance the subject last specified seems incongruous with the verb, the new subject is that entity which in the context is the most logical one to be associated with that verb. When a verb is signed in neutral signing space and no other subject is specified, the signer is assumed to be the subject. If the signer wishes to indicate that the subject is a referent other than himself / herself the signer must establish a nominal or pronominal as the referent (Edge and Herrmann 1977: 146). Woll and Kyle (1994: 3905) refer to subject deletion in British Sign Language; when a subject referent for a verb is established it may be deleted if it remains the same for following verbs. The following example (2.83) illustrates subject deletion in Irish Sign Language:

(2.83) BOY YOUNG BOY (t) V-CL + MOVE+under-left-hand ----------
Flat-surface-CL + BE-LOCATED+over-right-hand

SLEEP WAKE V-CL + BE-LOCATED+on-left-hand+orientation change
Flat surface entity-CL + BE-LOCATED+under-right-hand

This young boy went to bed. He slept. He woke up and rolled over ...

In example (2.83) the only nominal BOY is signed at the very beginning of the utterance. The NP is followed by a sequence of predicates without any other overt nominal being indicated. The fact that the signs BOY YOUNG BOY are accompanied by a slight backward tilt of the signer's head suggests that this phrase is topicalised.

## 2.8 Conclusion

In this chapter we have described the general formational properties of sign languages. We have shown that the typical structural characteristics of Irish Sign Language are similar to those found in other primary sign languages and that in Irish Sign Language handshape, location and movement are key parameters of sign formation.

We established that production constraints exist in Irish Sign Language and while this area requires much more study, it is clear that only a small proportion of possible handshape, location and movement combinations are used. For example, on the basis of preliminary descriptions outlined in McDonnell (1993) and Matthews (1995) Irish Sign Language uses between fifty and sixty handshapes, considerably less than the number of all possible configurations.

We have seen that non-manual features have an important function in the grammar of Irish Sign Language and specific sets of non-manual features are used to modify verbs and to distinguish between interrogative, negative and declarative utterances. We have also seen that spatial metaphors are fundamental to the structure of sign languages, and that Irish Sign Language, like other sign languages, exploits such visual imagery for linguistic purposes. Although there is clearly a motivated relationship between many signs and their meanings in Irish Sign Language, this is much more complex than a simple iconic association.

The category of locus is a significant structural feature in sign languages. We suggested that in Irish Sign Language locus is best understood as a meaningful direction from the signer or a meaningful point or area in signing space, standing in paradigmatic contrast with some other direction, point or area. Locus markers play an important role in the verb morphology of Irish Sign Language and in particular we noted that the grammatical categories of person and location are realised through loci which are denoted by locus markers.

Throughout this chapter we have used the terms 'signer locus' and 'non-signer locus' because they made sense in that particular context. However, in the light of our discussion on referential shifting these terms do not seem wholly satisfactory. When a signer uses a referential shift the 'signer locus' does not refer to the signer but to some

other referent. Furthermore, there appears to be something of a contradiction in the term 'non-signer locus'. For these reasons we shall use the term 'sender' to refer to loci associated with the signer and the term non-sender to refer to loci which are associated with referents other than the signer.

We identified two discourse features - referential shift and subject deletion - as being specially relevant to an analysis of verb morphology in Irish Sign Language. It is common for example, for signers to use the sender locus to denote a referent other than the signer. Thus, first person surface forms do not always refer to the signer. Referential shift in Irish Sign Language is usually indicated by changes in the signer's posture, in facial expression and / or in gaze direction.

Finally, we pointed out that in Irish Sign Language subject nominals and pronominals are deletable. When a subject is specified it is assumed that it will remain the subject until a new one is established. A verb sign with no overt subject implies a first person reference. In the next chapter we look in more detail at verbs and verb categories.

# 3 VERB CATEGORIES IN SIGN LANGUAGES

## 3.1 Introduction

In this chapter we briefly discuss the pivotal role of the verb in theories of grammar and in research on language acquisition and language learnability. We then review a number of representative studies of verb categorisation in different sign languages. We move on to discuss the nature of verb agreement in sign languages and to describe some of the properties of agreement verbs referred to in these studies. We also refer to research perspectives on a large and important group of verbs which have been called classifier predicates and which appear to occur in all sign languages.[1] In conclusion, we outline and briefly discuss a framework for the categorisation of verbs in Irish Sign Language.

Verbs are of intrinsic importance in human languages because it is difficult to imagine how languages could function without them. They constitute a lexical category that is apparently universal. Verbs also have important semantic and grammatical functions and an analysis of these functions provides crucial information about the structure of languages. In terms of language universals, for example, the position of verbs in relation to subjects and objects has been used to classify languages, permitting six possible language types - SVO, SOV, VSO, VOS, OVS and OSV (Greenberg 1966).

Verbs have been given a central role in both traditional and modern theories of grammar particularly because of their capacity to associate with other constituents in a sentence. Traditionally, sentences were divided into two parts, the subject and the predicate. The predicate consisted of a verb or of a more complex structure at the core of which was a verb. Modern linguistic research has involved an exploration of the mapping that occurs between semantic argument structure and syntactic argument structure and the role of the Predicator / verb phrase is of central importance in this project. In addition, the more central role given to the lexicon in current theories of grammar has enhanced the importance of the verb.

In the Government / Binding framework, for example, language is understood as an interconnected set of principles and parameters and D-structure is assumed to be a representation of the pure argument structure of the verb. In GB theory two principles are particularly associated with the function of the verb. Firstly, the Projection Principle specifies that the properties of lexical entries project onto the syntax of the sentence (Chomsky 1986). Secondly, theta-theory deals with the assignment of theta-roles to elements in the sentence (Chomsky 1981).

Since verbs are essential to clause structure, they are linked in crucial respects to the Projection Principle: in 'Sarah likes flowers', for example, the properties of the lexical entry 'like' [_NP] require that the verb is followed by an NP in the sentence. In turn, the theta-grid of the verb - the list of thematic relations with which the verb is associated - underlies the constraints imposed by the Projection Principle: 'give' has a recipient but 'smile' does not. While theta-roles are concerned with the relationships between different parts of a sentence, the verb is the fulcrum about which theta theory turns. Theta-roles are defined in terms of the verb: the Agent theta-role refers to the person or thing that carries out the action of the verb; the Patient role refers to the person or thing affected by the action of the verb.

Theories which are primarily concerned with semantic structures and relations give considerably more prominence to the verb (Fillmore 1968; Foley and Van Valin 1984; Jackendoff 1990). According to the GB framework the theta-criterion requires that 'each argument bears one and only one theta-role, and each theta-role is assigned to one and only one argument' (Chomsky 1981: 36). Jackendoff (1990), on the other hand, proposes multiple thematic roles for single arguments. Jackendoff's analysis is based on the meaning of the verb in terms of the roles it assigns to its arguments and he proposes that such roles can be expressed on two tiers - a thematic tier which deals with motion and location, and an action tier which deals with Actor / Patient relations.

In the following examples, Jackendoff (op. cit.: 126) illustrates how multiple thematic roles can be assigned to single arguments.

| | | | |
|---|---|---|---|
| Sue | hit | Fred | |
| Theme | | Goal | Thematic tier |
| Actor | | Patient | Action tier |
| | | | |
| Peter | threw | the ball | |
| Source | | Theme | Thematic tier |
| Actor | | Patient | Action tier |

However, research which sets out to deploy evidence from sign languages in relation to modern theories of grammar is only beginning (see for example, Lillo-Martin 1990 and Aarons, et. al. 1995) and most theorists have not yet looked to sign languages for supporting data (Comrie 1981: 229ff). Since sign language research has a relatively short history (see A1.3.2) the primary concern to date has been to identify processes and structures in particular sign languages and while modern theory has provided a framework for research, the principal focus has been the language rather than theory.

In their attempts to categorise verbs, sign language researchers have drawn extensively on studies of spoken languages. One common approach has been to classify verbs in terms of the situation types that they describe (Lyons 1977). Stative situations refer to the way people or things are, to intellectual, emotional or perceptual conditions, and so on. In contrast, dynamic situations refer to action and change. Thus, in classifications of this kind, a general distinction can be made between verbs which describe states and verbs which describe events or processes.

Further distinctions can be made between different types of dynamic situations. A durative / punctual distinction separates situations which last for a period of time from those that are momentary, while a telic / atelic distinction separates processes that have a natural conclusion from those that can continue indefinitely. Smith (1991: 30) uses the semantic categories [stative], [duration] and [telic] to characterise the following five situation types:

| **Situations** | **Static** | **Durative** | **Telic** |
|---|---|---|---|
| States | [+] | [+] | n. a. |
| Activity | [-] | [+] | [-] |
| Accomplishment | [-] | [+] | [+] |
| Semelfactive | [-] | [-] | [-] |
| Achievement | [-] | [-] | [+] |

Distinctions of this kind have been particularly important in research on aspect in sign languages (Klima and Bellugi 1979; Bergman 1983; Brennan 1983, 1992; Kyle and Woll 1985). Kyle and Woll for example, (pp. 146 - 7) examine the effects of fast and slow reduplication on both punctual and durative verbs in British Sign Language. A punctual verb undergoing slow reduplication conveys iterative meaning, of the action being repeated; a durative verb undergoing slow reduplication conveys continuous action, of one action maintained over a period of time. Fast reduplication with a punctual verb suggests repetition or frequency of the action while with a durative verb it suggests habitual action.

However, the inherent semantic properties of the verb may combine with other elements in sentences to produce very subtle distinctions (Saeed 1997: 112-3). Thus, Brennan (1992: 106) presents a somewhat different analysis of reduplication in British Sign Language, summarised as follows:

| **Movement** | **Durative** | **Punctual** |
|---|---|---|
| Fast reduplication | Durational | Habitual |
| Slow reduplication | Continuative | Iterative |

Another common approach has been to analyse verbs in terms of transitivity. In an analysis of this kind, verbs are classified on the basis of the type and number of arguments with which they are associated. Intransitive verbs are one-place predicates and they occur in frames with one argument. Transitive verbs are two-place predicates and occur in frames with two arguments. Ditransitive verbs are three-place predicates and can be further distinguished on the basis of their theta-roles - whether Theme, Locative, or Instrument is specified in the theta-grid.

Transitivity constitutes an important criterion in Kegl's (1990; see also 3.1.3 below) classification of verbs in American Sign Language. Kegl argues that in classifying verbs it is necessary to consider the thematic role borne by the arguments of the verb as well the grammatical relations involved. For example change-of-state verbs and creation verbs in English both have transitive / intransitive alternation patterns. They can be distinguished however in terms of the particular patterns in which they participate. Change of state verbs participate in a transitive (x<y>) / unaccusative (<y>) alternation while creation verbs participate in a transitive (x<y>) / unergative (x< >) alternation, in which x represents an external argument and y a direct argument. Similar alternation patterns are found in American Sign Language.

A very different framework for the analysis of verbs is proposed in the work of Talmy (1985) and McDonnell (1996) has used this approach to investigate the lexicalization patterns of verbs of motion and location in Irish Sign Language. Talmy's exploration of lexicalization patterns addresses the manner in which meaning is related to surface expression. With particular reference to expressions of motion and location, he compares lexicalization patterns across a number of languages with a view towards describing the typological and universal principles that they embody. Referring to both movements and locations as motion events, Talmy states that a motion event contains several different kinds of information. A typical motion event consists of the following elements:-

| | |
|---|---|
| the movement or the location of an object: | Motion (move / be L) |
| an object that moves or is located: | Figure |
| a background against which the object moves or is located: | Ground |
| a path where the object moves or a site where it is located: | Path |
| an external feature: | Manner / Cause |

Talmy finds that English verbs typically conflate Motion and Manner / Cause and that this is a consistent pattern for the expression of Motion in English (Figure 4.1):

| The snow | blew | into | the hall |
|---|---|---|---|
| Figure | Motion+Cause | Path | Ground |

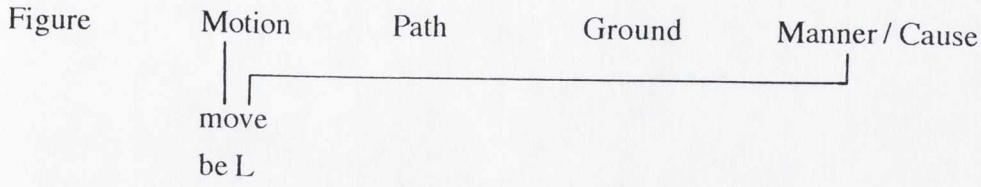



Figure 4.1 Lexicalization Pattern in English (Figure 2.1 in Talmy, op. cit.: 62)

Other languages have different patterns. As the following list (adapted from Talmy: 69) indicates, verbs in Spanish conflate Motion and Path rather than Motion and Manner / Cause (Figure 4.2):

| | |
|---|---|
| entrar: | move-in |
| salir: | move-out |
| subir: | move-up |
| bajar: | move-down |

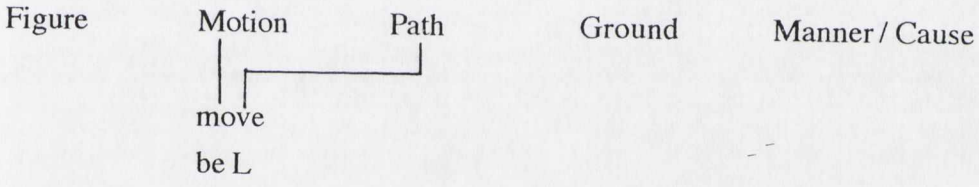



Figure 4.2 Lexicalization Pattern in Spanish (Figure 2.2 in Talmy: 69)

A third lexicalization pattern is found in Atsugewi, where Motion is conflated with Figure in the verb roots (adapted from Talmy: 73 and shown in Figure 4.3).

| | |
|---|---|
| -t'- | small flat entity (e.g. stamp, cloth patch, button) move / be-located; |
| -lup- | small shiny spherical entity (e.g. eyeball, hailstone, round sweet) move / be-located; |
| -qput- | loose dry dirt move / be-located; |
| -staq- | runny messy entity (e.g. mud, rotten tomatoes, guts, manure) move / be-located; |

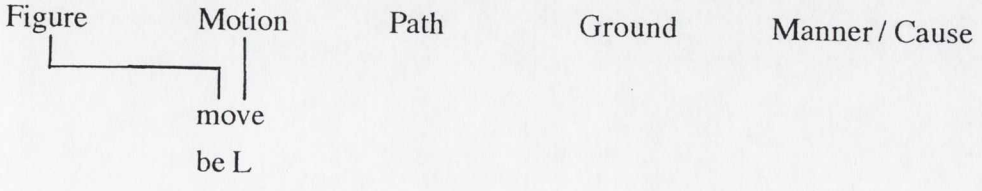



Figure 4.3 Lexicalization Patterns in Atsugewi (Figure 2.3 in Talmy: 73)

Talmy claims that these are three basic lexicalization patterns for Motion verbs and that all languages accommodate to one or other of these patterns. McDonnell (1996) suggests that verbs of motion and location in Irish Sign Language conflates Motion and Figure and argues that a lexicalization pattern of this kind has a specific influence on the lexical choices available to signers when they refer to the movement or location of entities. In her study of Danish Sign Language, Engberg-Pedersen (1993) uses Talmy's analysis of conflation patterns to argue that verbs of motion and location in Danish Sign Language incorporate classificatory verb stems and that Figure and Ground are conflated in these verbs.

The verb has also been the focus of attention in language acquisition studies. Evidence of early grammatical development is shown in the simplest two-word utterences of children. People, objects and actions preoccupy children at this stage and among the most typical semantic relations expressed in their two-word utterances are Agent+ Action, Action+Object and Action+Location (Brown 1973).

In a large proportion of languages morphological properties are often expressed through verbs and crosslinguistic data on the acquisition of verb morphology has pointed up interesting variations between children acquiring different languages (Tager-Flushberg 1996). In Italian, for example, children appear to acquire verb inflections which mark for person, tense and number with relative ease while English speaking children seem to acquire verb inflections more slowly and in a more fragmented way. Similarly, studies of the acquisition of languages in which passive constructions are very frequent show that chlidren can acquire such constructions much earlier that children who are acquiring English.

Slobin (1985) suggests that children are sensitive to the typology of their language and they adjust their acquisition strategies accordingly. This in turn affects the sequence of acquisition of particular structures. In a study of the acquisition of Motion verbs, Choi and Bowerman (1991) show that Korean and English children are sensitive to language specific patterns in the way they talk about motion from as early as 17 - 20 months. Children acquiring English identify Path as an independent component of motion events at a relatively earlier stage than do Korean children. The difference is attributed to the fact that English isolates Path as a component of motion events in a clear and consistent way. In contrast, Korean does not single out Path as a separate component of Motion events in such a consistent way. In transitive verbs of caused motion, for example, it conflates Motion with Path and with elements of Figure and Ground, making it more difficult for children to identify Path as a specific component of these verbs.

The semantic and syntactic functions of the verb have also been of particular interest to researchers in the area of language learnability. Since the verb phrase plays such an important role in syntactic structure one of the central questions concerning the child's acquisition of syntax is the question of how children acquire lexical entries for verbs. Pinker (1984; 1994) proposes that children use meaning to help them break into the language system: 'semantic bootstrapping' enables them to use their experience of a situation to determine the meaning of a word. By observing correspondences between world and word the child can proceed to assign lexical items to categories - an action is likely to be categorised as a verb and a thing as a noun.

Gleitman (1990), on the other hand, claims that children use a process of 'syntactic bootstrapping', an analysis of the utterance, to enable them to determine the argument structure of the verb. In this process children generalise from their existing and partial knowledge of syntax and verb argument structure. Grimshaw (1994) suggests a lexical reconciliation: where possible, the learner uses semantics to predict syntactic structure and syntax to eliminate wrong semantic configurations.

As we have noted, studies which relate evidence from sign languages to modern theories of grammar are now beginning to appear. An increasing amount of research is also being conducted in the acquisition of sign languages by deaf children (see for example, Newport and Meier 1985; Volterra 1986; Ackerman et. al. 1990; Bonvillian and Folven 1990; Volterra and Erting 1990; Coerts and Mills 1994; Mayberry 1995). Much of this research has focused on the stages of acquisition and has compared these stages with stages of acquisition found in spoken languages.

Data from sign languages is of essential importance in establishing the validity of theories of grammar, of language acquisition and of language learnability, primarily because such data constitutes evidence from languages expressed in a different modality. Studies of verbs in sign languages are of particular interest because of their complex morphology, and because of the potential of verbs to establish complex sets of relations with other constituents. A study of verb categories in a particular sign language will help to set the stage for broader investigations of the grammar, acquisition and learnability of human languages.

### 3.2 Approaches to Verb Categorisation in Sign Languages

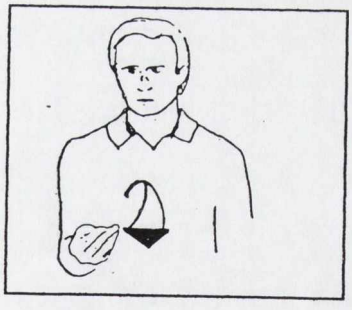
Many different classifications of verbs are possible. Early studies of verbs in sign languages tended to be primarily concerned with their formational properties. Friedman (1975, 1976) for example, suggested that verbs in American Sign Language could be

analysed in terms of formational properties and that these properties could be related to thematic roles of source, goal and location.

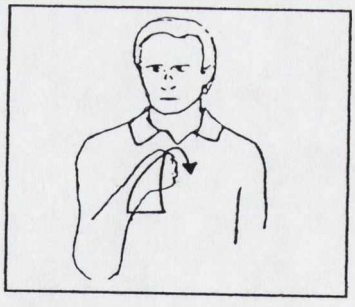
Later research has been shaped by two different theoretical approaches. One line of research has involved a classification based on semantic argument structure where verbs are categorised in terms of their semantic content and alternation patterns (Kegl 1985, 1990). A more common approach however, has been to adopt a morphological classification based on inflection (Padden 1988, 1990; Liddell 1990; Janis 1995). In this analysis verbs have been distinguished firstly, in terms of whether or not they inflect and secondly, in terms of the grammatical categories they inflect for (Padden 1988, 1990; Liddell 1990; Janis 1995). In a morphological classification however, the formational properties of verbs remain an important part of the analysis since morphological features are expressed through such properties.

### *3.2.1 Friedman (1975, 1976)*

In her proposed classification Friedman (1975, 1976) distinguished between multidirectional and non-multidirectional verbs. She pointed out that multidirectional verbs have a core hand configuration and place of articulation but the movement path and orientation of the sign are determined by the loci of the source and goal of the action. These features are shown in examples (3.1) and (3.2) from American Sign Language.



(3.1) c+GIVE+f
I gave (someone) ...

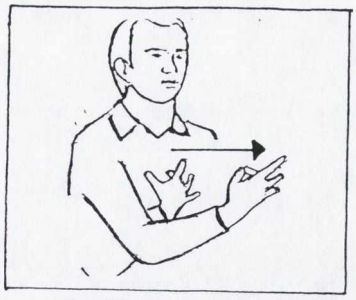


(3.2) f+GIVE+c
(Someone) gave me ...

Among the non-multidirectional verbs are verbs which involve body contact in the formation of the sign. Although these verbs are often semantically transitive there is no path movement from source to goal. In examples (3.3) and (3.4) from American Sign Language the form of LIKE remains the same in both utterances; subject and object arguments are indicated by separate pronominal signs.

(3.3) PRON1 LIKE PRON-f
I like (someone)

(3.4) PRON-f LIKE PRON1
(Someone) likes me

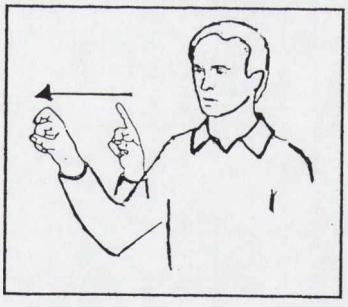


LIKE

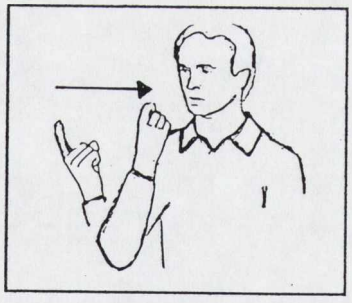
Friedman concluded that verb categorisation in American Sign Language was determined by semantic criteria: multidirectional verbs involve movement and represent, in an iconic way, actual movement; body anchored verbs are stative and iconically, do not represent any movement.

### *3.2.2 Fischer and Gough (1978)*

In another early study Fischer and Gough (1978) also analysed the formational properties of verbs in American Sign Language. They identified directional, reversible and locational verbs and distinguished these from body-anchored verbs. In directional verbs, such as GIVE (examples 3.1 and 3.2 above), the movement path of the sign can change. Reversible verbs involve a change in the orientation of the hands instead of, or in addition to, a change in direction, as in ASK in (3.5) and (3.6). In locational verbs, the hand(s) first moves to the required location. The sign is then articulated, the location of the hand(s) marking the location of the argument of the verb, as in example (3.7).



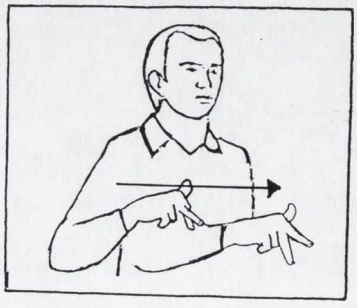
(3.5) c+ASK+fr
I asked (someone)



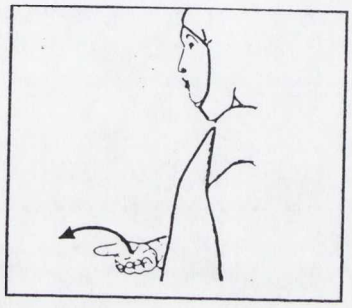
(3.6) fr+ASK+c
(Someone) asked me

(3.7)

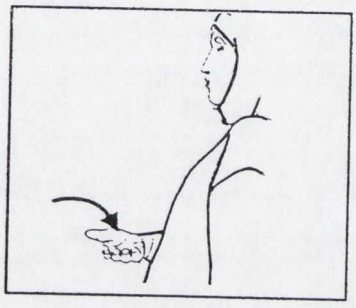
BOY sr+WALK+fl
The boy walked (from location a to location b)



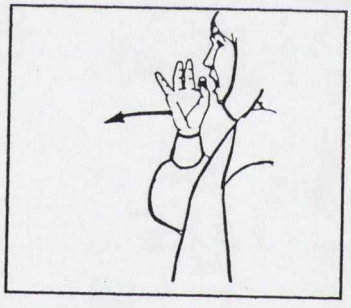
Analyses based on formational properties of verbs have also been highlighted in studies of British Sign Language (Kyle and Woll 1985; Woll 1990; Brennan 1992). Brennan refers to directional verbs in which the direction of movement provides "information on the arguments of the verb, i.e. subject, direct object and indirect object" (p. 108). Kyle and Woll refer to directional and reversing verbs (pp. 138-41). In directional verbs such as GIVE, examples (3.8) and (3.9), the direction of movement can vary between loci but the orientation of the hand(s) remains the same; in reversing verbs such as ASK, examples (3.10) and (3.11), both the direction of movement and the orientation of the hand(s) can vary between loci.



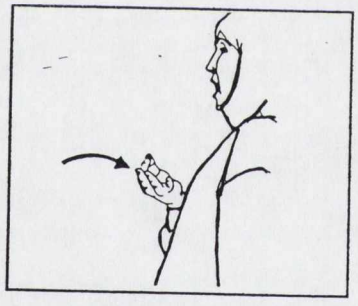
(3.8) c+GIVE+f
I gave (someone) ...



(3.9) f+GIVE+c
(Someone) gave me ...



(3.10) c+ASK+f
I asked (someone) ...



(3.11) f+ASK+c
(Someone) asked me ...

(Examples 3.8 - 3.11 after Kyle and Woll 1985: 139)

### *3.2.3 Kegl (1985, 1990)*

Kegl (1985, 1990) and others (Gee and Kegl 1982; Gee and Goodhart 1988) have emphasised a classification of verbs in American Sign Language in terms of their semantic properties. Gee and Kegl (1982: 185) argue that the verbal system in American Sign Language supports a localist theory of language. Localism hypothesises "that spatial expressions are more basic, grammatically and semantically, than various kinds of non-spatial expressions ... They serve as structural templates, as it were, for other expressions" (Lyons 1977: 718). Thus, all verbs in American Sign Language,

whether or not they literally refer to motion or location, can be related to underlying spatial concepts.

According to this analysis American Sign Language contains six basic locative / directional verb stems from which all other forms are derived. These stems are characterised as IN, ON, AT, WARD, TO and FROM. Thus, 'give' (Gee and Kegl, op. cit., 194) is glossed as LOC $_i$ [FROM ^ TO] LOC $_j$ and 'look at' as LOC $_i$ [FROM ^ WARD] LOC $_j$ where LOC $_i$ and LOC $_j$ specify two different locations, FROM denotes 'repulsion from a source', TO denotes 'movement to a goal, WARD denotes a direction and ^ indicates a combination of stems whereby each stem contributes an independent argument position. An example of an analysis of this kind is given in Figure 3.1. for the sentence 'Sue hit Mary' (after Kegl 1985: 129, example 3.15).

In this example the glosses 'g-CL' and 's-CL' denote classifying handshapes which provide information about the entities to which they refer; 'SBP' denotes the signer's body position which is marked to agree with 'Sue' at location 20. The signer's body position functions as a role prominence marker which indicates the person from whose perspective the action of the verb is viewed and relates to the use of the signer's body to agree with some location in space.

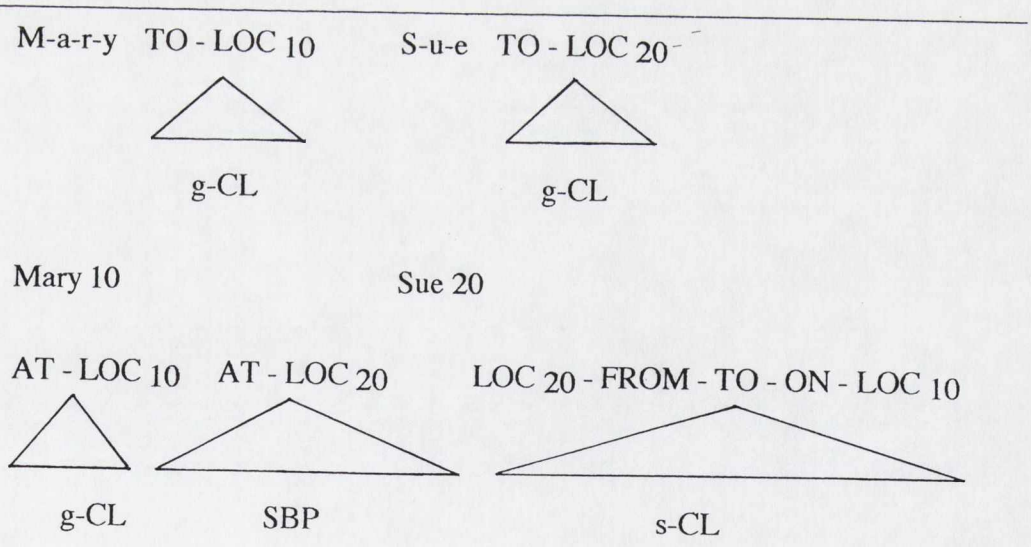
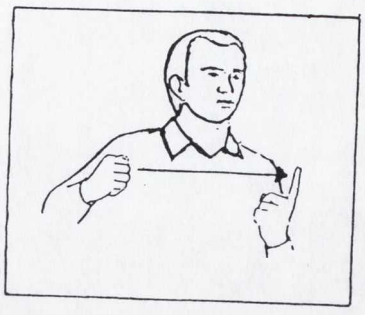



Figure 3.4 A Localist Analysis in ASL (after Kegl 1985: 129)

The example glossed in Figure 3.4 can be further illustrated as follows:

AT - LOC 10 AT-LOC 20
g-CL SBP

LOC 20 FROM - TO - ON - LOC 10



In a later study Kegl (1990) proposes an argument-structure typology for American Sign Language which classifies verbs on the basis of their semantic properties and in terms of the number and types of arguments that they take. She defines a verb class as "a set of verbs that share some aspect of their meaning ... and, as a result, behave similarly in terms of the kinds of sentences they appear in. Certain verb classes exhibit systematic syntactic alternations, having both a transitive and an intransitive construction associated with the same sense (meaning) of the verb. These syntactic alternations can be used as evidence for class membership" (p. 150).

Examples of verb classes cited by Kegl are change of state (BREAK, MELT), creation (SEW, KNIT), appearance (SINK, DISAPPEAR) and psych verbs (PLEASE, HATE). The syntactic alternation patterns of each verb class are represented in sets of schemas referred to as 'Predicate-argument structures' (PASs) and shown in Figure 3.5. In the PAS, x = external argument and y = direct argument.

| Verb class | Example | PAS Pattern | Semantics |
|---|---|---|---|
| Change of state | ICE MELT<br>The ice melted | <y> unaccusative | inchoative |
| Change of state | t<br>STICK, M-a-r-i-s-a BREAK<br>Marisa $_x$ broke the stick $_y$ | x<y> transitive | causative |
| Activity | JANE RUN<br>Jane $_x$ ran | x< > unergative | activity |

Figure 3.5 Predicate Argument Structures in ASL (after Kegl 1990: 153-5)

Using the change of state verb BREAK, Kegl shows that a causative / inchoative alternation exists in American Sign Language. The transitive verb is explicitly marked for causation by a handling classifier (for a discussion on classifiers see 3.3) which is

articulated simultaneously with the movement of the verb. This construction indicates the involvement of a causer and an affected element which can be seen in (3.12).

(3.12) topic / STICK 10, head nod / M-A-R-I-S-A 0 SBP 0 10 CL: HAND [S/S] + BREAK
stick-topic Marisa RP- (round-solid-object)causative-break
Marisa broke the stick
(From Kegl 1990: 157, [11]).

Kegl explains that the articulation of sentence (3.12) involves four components. First, the sign STICK is made at a non-neutral location 10, and is articulated using two classifier handshapes which are initially in contact and then move apart, representing a long thin entity. Second, the name 'Marisa' is fingerspelled at a neutral location indicating that Marisa is not being set up for a further role in the discourse. Third, 'SBP 0' indicates the signer's body position which is unmarked for role prominence (RP), signalling co-reference with Marisa. Fourth, BREAK is signed at location 10 indicating agreement with STICK and is articulated with two fists (CL: HAND [S/S]), palms oriented downward, which separate and turn upward in a 'breaking' gesture. The hand configuration 'S/S' signals handling and serves to mark causation.

The inchoative alternation is given in (3.13). In this sentence there is no agent / causer argument. The RP marker is negated by a head turn and aversion of the eyes which indicate the non-involvement of an agent. The classifier handshape represents a long thin object indicating that the verb theme is concerned with the entity that is broken rather than with the agent of the action.

(3.13) t / STICK 10, avert / SBP 0 10 CL: G/G + BREAK [inchoative]
stick-topic RP-negated-long-thin-object-break
The stick broke
(From Kegl 1990: 158, [12])

The morphology associated with the causative form of BREAK involves an agent argument and a SBP handling-classifier / causative marker while the morphology associated with the inchoative form involves a theme argument, averted SBP and a regular classifier.

As we have seen, Kegl's analysis is placed within a localist theory of language so the agreement features in sentences (3.12) and (3.13) are expressed in terms of locative

relations. The sign BREAK is articulated at the location 10 thereby indicating agreement with STICK while MARISA is unmarked for agreement. Another example of locative agreement is given in (3.14). The SBP which agrees with JOHN signals agentivity although in this instance the SBP is optional. The verb SCARE is articulated at another location to agree with the patient, MARY.

(3.14) JOHN $_5$ (SBP $_5$) SCARE $_4$ MARY $_4$
John scared Mary

### *3.2.4 Padden (1988, 1990)*

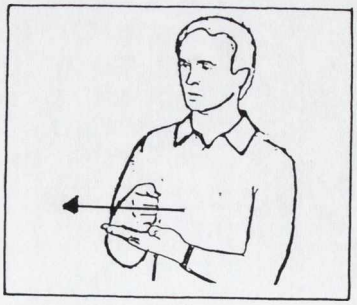
In her analysis Padden (1988, 1990) argues that verbs in American Sign Language fall into three categories on the basis of the affixes which can be attached to them. Agreement verbs inflect for person and number but do not accept locative affixes; spatial verbs accept locative and classifier affixes but do not inflect for person or number; plain verbs do not accept affixes in any of these categories.

Plain verbs have been described as 'body-anchored', that is, involving body contact (Friedman 1976) and as 'invariant' (Kyle and Woll 1985; Brennan 1992). Padden (1988: 38) argues that a term such as 'body anchored' is not satisfactory because not all plain verbs involve body contact. The term 'invariant' is not wholly satisfactory either, since it is difficult to find any verb which cannot be modified in some way. In Padden's analysis plain verbs are distinguished from other verbs, not by these phonological properties, but by the fact that they do not accept person, number, locative or classifier affixes.

Agreement verbs have a typical structure which incorporates information about the arguments of the verb. The form of the verb HELP, as in example (3.15), includes information about the subject and object of the sentence.

(3.15) c+HELP+f (ASL)

I help (someone) ...



(From Valli and Lucas (1992: 232). Glosses have been adapted to correspond with the notation used in this study).

The onset locus of HELP refers to the first person (in this case the subject); the offset locus refers to a non-first person (in this case the object). The structure of the sentence might therefore be described as follows: 'first person marker+VERB+non-first person marker'.

A defining characteristic of spatial verbs is that they take locative affixes. Thus, they differ from plain verbs which do not take locative affixes, and from agreement verbs which inflect for person and number. Padden (1990) identified five sub-classes of spatial verbs in American Sign Language (Figure 3.6). Although each sub-class is defined in terms of the particular combination of affixes which the verbs can take, all are characterised by the fact that a locative affix is always a part of the combination.

| Sub-class | Characteristic Affixes | Examples |
|---|---|---|
| 1 | Locative | MOVE; PUT |
| 2 | Locative; Manner; Instrument classifier | CARRY-BY-HAND; HOLD-ERASER-BY-HAND |
| 3 | Locative; Manner; Noun Classifier | VEHICLE-MOVE-IN-STRAIGHT-PATH |
| 4 | Locative; Body Classifier | HIT-IN-THE-EYE |
| 5 | Locative; Body-part Classifier | CLENCHED-FIST |

Figure 3.6 Spatial Verbs in American Sign Language (after Padden 1990: 119)

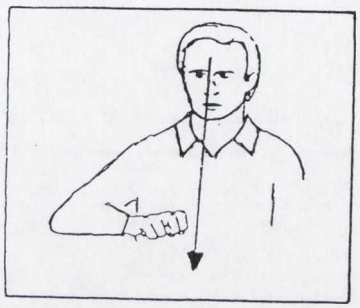
While there is broad agreement among sign language researchers in relation to the general characteristics of verbs of this kind, there is considerable variation in the terminology used. There is also considerable variation in the identification of sub-groups within the broad category of spatial verbs.

In British Sign Language Brennan (1992) identified a large category of verbs which she and others (see for example, Supalla 1978) have termed verbs of motion and location and which refer to the movement and location of entities in space. Verbs of this kind largely correspond to those in Padden's sub-classes 2 and 3. Some researchers refer to verbs of motion and location as classifier predicates (see Valli and Lucas 1992; Liddell 1990). Verbs of this kind have a capacity to incorporate a large number of morphemes

and for this reason have been termed polymorphemic (Engberg-Pedersen 1993: 227ff.) or multi-morphemic (Brennan 1992: 76ff.).

Classifier predicates can be seen as having two basic formational elements - a hand configuration element and a movement element. In example (3.16) from Irish Sign Language, the handshape is glossed as V-CL and the movement element is contained in brackets.

(3.16)



BOY V-CL+(c / hi+MOVE+f / lo)
The boy went downstairs

In this verb complex the handshape V-CL is used to refer to two-legged animate entities. The movement element begins at a locus 'c' relatively high in signing space, just above the signer's head. The hand moves from this locus to a lower locus 'f', in front of the signer's sternum. Literally, the sentence means 'two-legged entity move from location a to location b'.

### *3.2.5 Bos (1990)*

In formational terms, a verb which expresses double agreement, such as example (3.15) above, consists of an onset point, an offset point and a movement linking these two points. In her discussion of marking for person and location in Sign Language of the Netherlands, Bos (1990) makes an interesting distinction between these points and the linking movement between them arguing that the onset and offset points mark for the category of person but do not, by themselves, mark for subject or object relations. Since the same locus can signal an NP with either subject or object function, the grammatical relations assigned to the NP can only be inferred from the direction of the movement.

Bos goes on to observe that the inflectional processes associated with person agreement verbs in Sign Language of the Netherlands is quite similar to that found in agreement verbs in Algonquian languages (Anderson 1985). In Ojibwa, for example, verb forms incorporate affixes which express agreement with first and non-first person arguments. A further affix determines the orientation of the action: whether, for example, first person acts on third person plural, or whether third person plural acts on first person.

Bos points out, however, that there is a significant difference between the direction of movement element in Sign Language of the Netherlands and the orientation affixes in Ojibwa. In Ojibwa the orientation affixes remain constant in terms of the relations they express. In person agreement verbs in Sign Language of the Netherlands the relations expressed by the direction of movement depends on the type of verb with which it occurs. In one type, such as GEVEN ('give'), the onset point is associated with the subject and the offset point with the object. In the second type, KIEZEN ('choose') for example, these associations are reversed. (See 6.3.3 for examples of these two types of verbs in Irish Sign Language).

Bos (1990) has also drawn attention to some of the difficulties involved in establishing a clear distinction between marking for person and marking for location and thus, between inflecting verbs (i.e. person agreement verbs in Padden's model) and spatial verbs (i.e. verbs which express locative agreement). Bos (p. 237) refers to the verb KIJKEN ('look at') which is generally marked to agree with its subject and object arguments but which in some instances is marked to agree with location. The question, according to Bos, is how to account for these two patterns of verb behaviour. Janis' (1995) model, discussed in the next section, appears to offer a solution to this difficulty by proposing that agreement markers consist of a locus and either a locative or a non-locative morpheme.

### *3.2.6. Janis (1995)*

In a study of American Sign Language, Janis (1995) argues that an analysis of agreement, such as that proposed by Padden, is inadequate since it cannot account for verbs that occur in more than one class. Furthermore "the analysis misses important generalisations about nominals that can control agreement" (p. 201). Janis proposes an analysis in which the primary focus is on features of the controller nominals rather than on features of the agreeing verbs.

The reference to controllers makes it opportune at this point to consider a definition of agreement. Moravcsik (1978: 333) defines agreement in the following way: " a grammatical constituent A will be said to agree with a grammatical constituent B in properties C", where the B element determines agreement and is referred to as the controller; the form of the A element is determined by agreement and is referred to as the target; and C refers to agreement features or categories.

Agreement is widespread in natural languages (Mallinson and Blake 1981) and has certain typical characteristics. The typical agreement controllers are nominals or pronominals. Targets on the other hand vary widely. Anderson (1988) identifies two

types of association between targets and controllers - agreement of modifiers with their heads and agreement of predicates with their arguments. Our concern is with the second type.

According to Janis, agreement markers consist of two parts, a locus and either a locative or a non-locative morpheme. In this analysis, agreement verbs differ from spatial verbs, not because they have different morphophonological properties, but because verbs become agreement verbs (direct agreement in Janis' analysis) when they take a marker with a non-locative morpheme and become spatial verbs (locative agreement in Janis' analysis) when they take a marker with a locative morpheme. Both markers therefore are essentially agreement markers which refer to two different kinds of agreement.

Janis argues that verb class is determined by properties of the controller nominals rather than by properties of the verbs. Identification of controller nominals is made on the basis of grammatical case, where a distinction is made between locative case and direct case (e.g. subject, direct object and indirect object). Nominals with locative case control locative agreement; nominals with direct case control non-locative or direct case agreement. Grammatical relations, semantic roles and animacy are listed along with case as controller features, and a hierarchy of such features is proposed.

The agreement system in American Sign Language is therefore quite similar to agreement systems in other languages. Three of the controller features used by American Sign Language - semantic roles, grammatical relations and animacy - are among the most commonly found controller features in the world's languages. The fourth feature, case, has also been found to have a role in agreement in other languages. However, American Sign Language differs from other languages in which case has a role in the agreement system by not having corresponding case markers on the nouns. Janis claims that the syntactic function of case is subsumed by agreement markers in American Sign Language.

The rank order of controller features in American Sign Language is also comparatively rare. In agreement systems, direct cases are usually ranked above oblique cases and subjects are ranked above objects. In American Sign Language however, locative is ranked above direct case and object is ranked above subject (Figure 3.7).

case: direct case < locative case

grammatical relations: subject < direct object < indirect object
semantic roles: agent, experiencer [1], patient [2], recipient
(1: only with a verb that is not body anchored; 2: only if animate)

Figure 3.7 Ranking of Controller Features in American Sign Language (after Janis 1995: 219)

In American Sign Language a verb assigns locative case to a nominal when location is crucial to the action. Obvious examples are when the verb refers to movement to or from a location, such as in the verb GO-TO, or when the verb refers to a spatial arrangement as in the verbs BE-ON or BE-UNDER. Locatives also occur when the signer wishes to express a particular focus in relation to the action, as in DRIVE-TO as opposed to DRIVE, and in CARRY-BY-HAND as opposed to GIVE. Other locatives occur in American Sign Language with verbs such as PAINT, as in PAINT WALL, and BRUSH, as in BRUSH HAIR. In these examples, PAINT and BRUSH are articulated at non-neutral locations in signing space and are marked for locative agreement.

In effect then, Janis is proposing two general categories of verbs in American Sign Language, agreement verbs and plain verbs, and two sub-categories of agreement verbs, locative agreement verbs and non-locative (direct) agreement verbs. Although their analyses differ, both Padden and Janis accept agreement features as important criteria for determining verb category membership in American Sign Language. The next section examines in more detail the nature of verb agreement in sign languages.

### 3.3 Verb Agreement in Sign Languages

Several descriptions of verb agreement in sign languages other than American Sign Language have been based on the approach suggested by Padden (see 3.1.4). A similar analysis for example, has been adopted in Italian Sign Language (Pizzuto 1986) and in Taiwan Sign Language (Smith 1989). Other researchers too, have identified verb agreement features similar to those which Padden identified in American Sign Language (Bos 1990; Woll 1990; Engberg-Pedersen 1993; Meir 1994).

Engberg-Pedersen (op. cit. 154-5) provides the following example from Danish Sign Language (17):

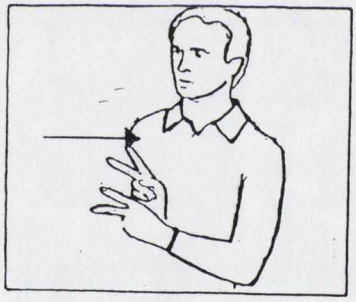
(3.17) ANNE fr+ANSWER+c
Anne answered me.

Engberg-Pedersen states that verbs like ANSWER constitute a category which express one kind of agreement in Danish Sign Language, semantic agreement, which shows unambiguously the semantic roles of the arguments of the verb. She uses the symbols A to refer to the argument of a transitive construction that correlates most highly with agent and P to refer to the argument that correlates most highly with patient (p. 51). With ditransitive verbs the symbol IO is used to refer to the third argument. Thus, the verb ANSWER in (3.17) is marked for an A argument by the locus marker 'fr' and for a P argument by the locus marker 'c' .

In British Sign Language the verb SUPERVISE, example (3.18), is an agreement verb (Woll 1990: 768) and Meir (1994: 3) gives an example, SHOW (3.19), from Israeli Sign Language.

(3.18) f+SUPERVISE+c
(You) supervise me.

(3.19) fr+SHOW+f
(He) shows you.



(18) f+SUPERVISE+c

In Irish Sign Language the verb ASK (3.20) is one of a category of verbs which shares this structure and which marks the arguments of the verb in a similar way.

(3.20) c+ASK+fr
I asked (someone).

### *3.3.1 Agreement Markers, Case Markers or Incorporated Pronouns?*

Different attempts have been made to define the modifications which are found in agreement verbs. Deuchar (1984) describes the directions of movement in verbs such as EXPLAIN (3.21) and GIVE (3.22) in British Sign Language as case markers. If for

example, the first person is agent there is movement away from the signer and if the first person is patient the movement is towards the signer. Woll (1990: 766-8) also refers to the direction of movement as a case marker in British Sign Language.

(3.21) c+EXPLAIN+fl
I explained to (someone)

(3.22) fl+GIVE+c
(Someone) gave me ...
(These examples have been elicited)

Janis (1995) points out that in American Sign Language case is a controller feature in verb agreement but, unlike other languages in which case has a role in determining agreement, nouns in American Sign Language do not take case markers. Janis refers to the modifications associated with the verb as agreement markers and argues that agreement markers function syntactically as case markers do in other languages; in American Sign Language the syntactic function of case is subsumed by the agreement markers.

In a discussion on the nature of modifications in agreement verbs, Engberg-Pedersen (1993) concludes that in Danish Sign Language such modifications are agreement markers rather than case markers. She points out that case markers can signal information about a syntactic relation between a verb and its arguments; agreement markers on verbs, however, have a dual nature. They identify a syntactic relation such as that between the subject and the verb; they also carry information that is independent of the syntactic relation.

Engberg-Pedersen notes that agreement markers in Swahili for example, identify the subject or object of the verb, the syntactic relation. They also identify the noun class of the subject or object, information that is independent of the syntactic relation. In contrast, in Tagalog, verb prefixes identify the semantic case of the topic nominal but carry no information that is independent of this relation. Therefore, the verb prefixes in Tagalog are not agreement markers.

In Danish Sign Language, agreement verb markers carry two kinds of information (Engberg- Pedersen 1993: 174-5). They identify the relation between the A or source argument and the P, IO, or goal argument and the verb. They also signal information about person and locus which is independent of the relation between the arguments and the verb. The verb EXPLAIN (3.23) for example, has cells for two markers, one for

the A referent and one for the IO referent. The position of the cells on the verb root determines which argument a given nominal has with the verb. The locus information which is signalled by the fact that each marker is independent of whether a cell is marked for A or for P / IO arguments.

(3.23) DAN fl+EXPLAIN+c
Dan explained it to me.

The modifications on agreement verbs have also been described as incorporated pronouns (Deuchar 1984: 208). However, the presence of null argument constructions in sign languages suggests that these modifications are agreement markers rather than incorporated pronouns. In constructions which involve agreement verbs, agreement markers can show the relationship between the verb and its arguments without the overt presence of NPs either as full NPs or as pronouns. In similar constructions, plain verbs (i.e. non-agreement verbs) require overt NPs or pronouns. In American Sign Language Lillo-Martin (1986) compares the agreement verb BITE (3.24) with the plain verb LIKE (3.25).

(3.24) (DOG-fl) (CAT-fr) fl+BITE+fr
The dog bites the cat

(3.25) (DOG-fl) (CAT-fr) PRON-fr LIKE PRON-fl
The cat likes the dog

(Adapted from Lillo-Martin (1986: 419-420, figs. 1, 2). Glosses have been altered to correspond with the notation used in this study).

In (3.24) the subject and object arguments are not overtly specified but are signalled by the agreement verb BITE; in (3.25) LIKE is not an agreement verb so the arguments must be specified. Similar patterns are found in Danish Sign Language (Engberg-Pedersen, 1993, 181-2). The non-agreement verb KNOW (3.26) must take a nominal; the agreement verb INVITE (3.27) is not so obliged.

(3.26) _____t
KRESTEN / SUSSI SAY ANNE KNOW PRON-fr
As for Kresten, Sussi says that Anne knows him.

(3.27) _____t _____affirm
PALLE / BRITTA SAY SUSSI c+INVITE+fr /
As for Palle, Britta says that Sussi has already invited him.

Furthermore, in both American Sign Language and Danish Sign Language it is possible for an overt pronoun or nominal to co-occur with agreement markers. In the following examples from Danish Sign Language (Engberg-Pedersen 1993: 180) there is no difference between the presence of the first person pronoun in (3.28) and its absence in (3.29).

(3.28) ANNEGRETHE neu+EXPLAIN+c .. 1p (1p: first person pronoun)
Annegrethe will explain it to me.

(3.29) fl+EXPLAIN+c
He told me.
(Engberg-Pedersen's examples 12 and 13)

There has been some speculation that the orientation, movement or locus features of verbs which serve to mark arguments in American Sign Language have their origins in pronominal clitics. It has been suggested (Klima and Bellugi 1979: 396) that the presence of such clitic pronouns brought about a change in the formational properties of verbs and that at some later stage the pronouns were dropped but the formational change survived as an argument marker.

Kegl (1995) also discusses the relationship between cliticization and the development of agreement. Basing her argument on data from Nicaraguan Sign Language, she identifies a form of cliticization different from that suggested by Klima and Bellugi. Kegl states that a gestural pidgin, Lenguaje de Signos Nicaragüense, is in use before the emergence of a fully fledged sign language, Idioma de Signos Nicaragüense (ISN). In the pidgin form, verbs are not inflected for agreement, but are followed by pointing gestures, first to the subject / agent and then to the object / recipient. From these verbs two distinct categories of verbs emerge in ISN - agreement verbs and plain verbs. In terms of prototypical formational properties and semantics they are comparable to agreement and plain verbs in American Sign Language.

In her discussion Kegl implies that clitics and agreement markers are found as features in American Sign Language and she appears to endorse Padden's proposal that the modifications expressed on plain verbs are clitics and the modifications expressed on agreement verbs are agreement markers. Since plain verbs are typically body-anchored

and therefore not suitable candidates for agreement marking, she suggests that cliticization remains a productive process in this category of verbs. Agreement verbs such as GIVE behave differently from plain verbs such as LIKE: with GIVE the object position can be left null while LIKE does not allow its object to be null.

Padden (1988: 136-7) notes that in American Sign Language the agreement marker which refers to the subject may be omitted but the marker referring to the object is obligatory (see also 5.3.1). She suggests that subject marker omission is indicated by a reduced linear movement in the verb. However, a description of agreement marker omission in terms of reduced movement is problematic. For several reasons it is difficult to determine how much reduced movement is required to constitute marker omission.

Firstly, if we accept an argument made by Liddell (1990: 180-1 and 6.2.1 below), we can establish a distinction between agreement and spatial verbs on the basis of reduced linear movement. This argument would allow for reduced movement which would not affect the marking on the verb. Secondly, some agreement verbs (IGNORE and GET-ATTENTION -OF, for example) are characterised by relatively short movements and in these cases it is especially difficult to decide what degree of movement would constitute agreement marker omission. Finally, as Baker-Shenk and Cokely (1991: 98) point out, in ordinary conversation the movement in a sign may be reduced anyway. It is thus hard to establish if a reduced movement indicates a morphological change or is merely a stylistic variation. For these reasons I have been unable to identify clear examples of agreement marker omission in the data in this study.[2] Further research may establish more explicit criteria for identifying agreement marker omission in Irish Sign Language.

### *3.3.2 Agreement Verb Arguments*

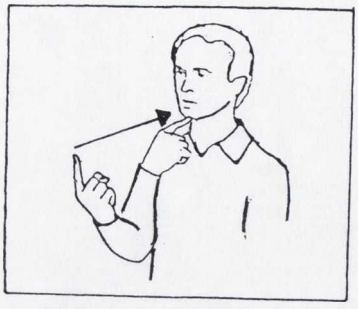
An important issue to be considered here is whether the arguments which are marked on agreement verbs are best analysed in terms of grammatical relations such as subject, direct object and indirect object, in terms of semantic roles such as agent, patient, experiencer, recipient and location, or in terms of case.

As we have already noted (3.1.1), Friedman (1975; 1976) suggested that verb agreement in American Sign Language should be analysed in terms of semantic roles. She pointed out that the direction of movement and / or orientation of verbs such as TELL (3.30) are determined by the loci of the source and goal of the action. The direction of movement of TELL and of other verbs in this category "always and

unambiguously indicates agent / experiencer / source and patient / beneficiary / goal" (Friedman 1976: 129)

(3.30) f+TELL+c
(Someone) told me

(ASL)



Padden (1988: 165) argued that an analysis in terms of grammatical relations offered a simpler and more general statement of rules than an analysis in terms of semantic roles. Thus, in American Sign Language agreement verbs, specifically person agreement verbs, "include information about subject and object in the verb and do not require or do not allow separate signs for subjects and objects" (Valli and Lucas 1992: 236). Some agreement verbs include information about subject and object; others include information about the object only (ibid. 230-36).

In her study of Danish Sign Language, Engberg-Pedersen (1993: 22) avoids using the terms 'subject' and 'object' . Her approach however, is somewhat confusing since it seems to be based partly on the notion of semantic roles and partly on the notion of grammatical relations. In her discussion of the properties of agreement verbs she states that the argument cells of the verb roots can, for example, be labelled for A or P (semantic roles) or for IO (a grammatical relation).

Meir (1994) attempts to reconcile semantic and syntactic perspectives in her study of the morphology of agreement verbs in Israeli Sign Language. She proposes that a distinction can be made between syntactic and semantic relations on the basis of morphophonological properties of the verbs. Firstly, Meir distinguishes a *facing* characteristic of the dominant hand which refers to the direction in which the palm of the hand or the tips of the fingers are pointing. Secondly, she analyses direction of movement and facing as distinct features. Meir states that direction of movement and facing serve different functions in Israeli Sign Language: direction of movement marks the semantic relations and facing marks the syntactic relations between the verb and its arguments.

Consequently, she describes two agreement morphology principles in Israeli Sign Language: firstly, the direction of movement in agreement verbs is from source to goal; secondly, the facing of the hands is towards the object of the verb. (See also 6.3.2).

Meir argues that these principles establish a clear syntactic / semantic distinction and allow for optional subject deletion in surface forms.

Janis (1995) on the other hand proposes that features of controller nominals can be specified in terms of both grammatical relations and semantic roles. The grammatical relations of subject, object and indirect object associate with the semantic roles of agent, experiencer, recipient and animate patient. In order to control agreement, a nominal must have a feature from each list (see 3.1.5). Janis argued that the necessity of incorporating both grammatical relations and semantic roles in an account of agreement in American Sign Language is evident from the behaviour of a verb such as WASH. The verb WASH expresses locative agreement in that it can be modified to agree with the particular location where the action occurs, as in example (3.31).

(3.31) WASH $_a$ (WALL) (a)
(Someone) washed (the wall)
(Janis 1995: 206, example 16)

In this example, the nominal WALL controls the agreement of the verb WASH. Here, locative agreement is controlled by a nominal that has the semantic role of patient and the grammatical relation of direct object, not of locative. It is assumed that oblique grammatical relations such as locative will associate only with semantic roles which have the same oblique relation. Thus, a nominal will have a locative grammatical relation only if it also has a locative semantic role.

An analysis of nominals in terms of grammatical relations such as that proposed by Padden, would predict that the verb WASH is an agreement rather than a spatial verb, or alternatively, that the nominal WALL has an oblique grammatical relation with WASH. As we have seen however, WASH is a spatial verb and WALL has a direct rather than an oblique grammatical relation with the verb. In order to overcome this difficulty, Janis proposes an analysis in terms of case. Typically, nominals with locative semantic roles are assigned locative case but some nominals with a patient semantic role can also receive locative case. In a case analysis, nominals with locative case would control locative agreement and nominals with direct case would control non-locative or direct case agreement. In Janis' analysis therefore, grammatical relations, semantic roles and case all operate as controller features of verb agreement.

Another issue to be considered here is the question of defective paradigms associated with person agreement verbs. Researchers in American Sign Language and Danish Sign Language have identified two general types of person agreement verbs, double

agreement verbs where the verb agrees with two arguments and single agreement verbs where the verb agrees with one argument.

In Danish Sign Language Engberg-Pedersen (1993) points out that defective paradigms are associated with certain double and single agreement verbs. These patterns are linked to generational differences among signers and can be understood in terms of diachronic development. In the earlier pattern the verb agrees with its P / IO argument but not when this argument has first person reference. This is the prevailing pattern for all agreement verbs among signers over fifty and is the defective pattern of single agreement verbs among younger signers.

At the next stage the verb can indicate agreement with a first person P / IO argument and thus it acquires the full agreement pattern for single agreement verbs. At this stage the verb also develops the capacity to mark for double agreement. It can show agreement with a first person P / IO argument and agreement with a non-first person A argument but not agreement with a first person A argument and a non-first person P / IO argument. This is the defective paradigm of double agreement verbs. The latest development is when the verb acquires the full double agreement paradigm including the capacity to mark the verb for two non-first person arguments.

Further research is required to establish whether marking for person agreement has developed along comparable lines in Irish Sign Language. Nevertheless at this stage a number of general points can be made. Firstly, as we shall see (6.3.3), both double and single agreement verbs are found in Irish Sign Language but it is not yet clear if defective paradigms are associated with any of these verbs. Secondly, agreement is more typically marked in relation to the direct / indirect object relation and seems to be required by both double and single agreement verbs. Thirdly, signers report that there is a generational difference in the occurrence of person agreement marking on verbs and that a greater range of agreement marking is found among younger signers. (See also 5.5).

### *3.3.3 Other Forms of Agreement in Sign Languages*

Some plain verbs can be articulated at more than one location. These verb forms may be non-neutral with regard to particular loci in ways that are usually associated with the behaviour of agreement verbs. Padden (1990: 121) gives an example from American Sign Language (3.32).

(3.32) WOMAN $_{a}$WANT $_{b}$WANT $_{c}$WANT

The women $_{i, j, k}$ are each wanting.

The woman wants this $_{i}$, that $_{j}$ and that one $_{k}$, too.

(The loci in this example are understood as different points in signing space and are identified by the letters a, b and c.)

The plain verb WANT does not involve body contact and in citation form is articulated in neutral signing space. In example (3.32), the verb WANT is articulated in three different locations and resembles the forms taken by some agreement verbs. However, the sentence is ambiguous since it is not clear whether the subject or object is being marked. Padden argues that the form of WANT in (3.32) does not express agreement morphology but instead, contains pronoun clitics.

The citation form of WANT can be executed by the dominant hand and overt pronouns by the non-dominant hand as shown in (3.33). Again, the sentence is ambiguous.

(3.33) WOMAN WANT WANT WANT

$_{a}$PRO $_{b}$PRO $_{c}$PRO

The women $_{i, j, k}$ are each wanting.

The woman wants this $_{i}$, that $_{j}$ and that one $_{k}$, too.

Padden (p. 122) argues that the features associated with WANT in (3.32) can also be found in nouns and adjectives. Thus, they resemble the distribution pattern of clitics rather than that of inflectional affixes. If overt pronouns co-occur with an agreement verb, the verb form (3.34) must be inflected accordingly and the interpretation of the agreement markers is unambiguous.

(3.34) WOMAN GIVE $_{a}$ GIVE $_{b}$ GIVE $_{c}$

$_{a}$PRO $_{b}$PRO $_{c}$PRO

The woman gave it to her, him and her, too.

In contrast, the unmarked form of GIVE shown in (3.35), is ungrammatical (Padden 1990: 123)

(3.35) * WOMAN GIVE GIVE GIVE

$_{a}$PRO $_{b}$PRO $_{c}$PRO

The woman gave it to her, him and her, too

According to Padden (p. 123) plain verbs in ASL lack agreement morphology and the non-neutral marking of plain verbs is best understood, not as agreement, but in terms of pronoun clitics.

Engberg-Pedersen (1993) identifies modifications in Danish Sign Language similar to Padden's pronoun clitics but refers to them as expressions of pragmatic agreement. She distinguishes between agreement of this kind and semantic agreement. Semantic agreement establishes an unambiguous relationship between a verb and its argument(s) and is realised through agreement markers on the verb. Pragmatic agreement indicates a relationship of some kind between a controller and its target but does not make clear the semantic nature of the relationship. Furthermore, while signs other than verbs can show pragmatic agreement, only verbs can show semantic agreement.

Engberg-Pedersen states that there are formational differences between the two kinds of agreement. In semantic agreement the orientation of the hands and the direction in which the hands move are the significant formational features. In pragmatic agreement the orientation of the hands is not important; what matters is where the sign is articulated in signing space.

The differences between the two forms of agreement are shown in (3.36) and (3.37). In (3.36) the semantic relationship between the verb PAY and its arguments is unambiguous. In (3.37) the semantic relation between the controller (PRON + fr) and the target (PAY) must be deduced from the context of the utterance.

(3.36) ... c+PAY+fr TEACHER ...
... he could pay the teacher ...

(3.37) ... PRON+fr PAY+pragmatic agreement+fr WHOLE+fr ...
... he would pay it all ...
... he should be paid it all ...
(From Engberg-Pedersen, 1993, 215)

Engberg-Pedersen argues that pragmatic agreement has discourse functions. It is used to underline a contrast between two situations, entities or locations. It is also used for persuasive or imperative purposes or to establish a mental distance in situations or activities of which the signer does not approve. Engberg-Pedersen points out that while agreement verbs can show either semantic or pragmatic agreement, only pragmatic agreement can be expressed on plain verbs.

As we have seen, verbs which take person agreement markers constitute an important category in different sign languages. Another important category of verbs, often referred to as classifier predicates, has also been identified in several sign languages. Verbs of this kind are discussed in the next section.

### *3.4 Research Perspectives on Classifier Predicates*

Frishberg (1975, 715) noted that some handshapes in American Sign Language were used to signal "certain semantic features of noun arguments". She pointed out that the verb MEET for example, in citation form means "one self-moving object with a dominant vertical dimension meets one self moving object with a dominant vertical dimension". Frishberg referred to the handshapes associated with these signs as classifiers.

In subsequent studies of sign language other researchers began to use the term *classifier* to describe certain handshapes and the term *classifier predicate* to refer to verb forms which incorporated these handshapes (Supalla 1978, 1986, 1990; McDonald 1983; Wilbur 1987; Padden 1988, 1990; and Schick 1990, in American Sign Language; Kyle and Woll 1985; Woll 1990; and Brennan 1990, 1992, in British Sign Language; Corazza 1990, in Italian Sign Language; Collins-Algren 1990, in Thai Sign Language; Smith 1990, in Taiwan Sign Language).

The view that the handshape element is a classifier is based primarily on Allan's (1977) definition of classifiers in which he concludes that Athapaskan languages such as Navaho are predicate classifier languages (see examples 3.38 - 3.40 below). Engberg-Pedersen (1993) and Engberg-Pedersen and Pedersen (1985) argue that Allan's analysis of a language such as Navaho as a predicate classifier language does not in fact meet his own criteria for defining classifiers. They point out that since classificatory and predicative meaning are merged in one form in Athapaskan languages, such a form does not merit the term classifier predicate. On these grounds they claim that the handshape element in spatial verbs in sign languages is not a classifier but is more appropriately termed a classificatory verb stem. Other researchers however (McDonald 1983; Supalla 1986; Schick 1990; Brennan 1990, 1992) appear to have accepted Allan's analysis and have applied his definition in descriptions of spatial verb forms in sign languages.

The issue is complicated by the fact that there is no general agreement on a particular definition of classifiers. Definitions are often related to a specific language or group of languages and as such may not apply to other languages or language groups in the same way. The term is also used in a more general sense to refer to classifying features in

languages such as English; it may for example, be applied to affixes such as 'un-' meaning 'not' or 'the opposite' (Chalker and Weiner 1994: 62). In sign language research the term *classifier predicate* is widely used and, although it is now a disputed term, it remains very much part of a popular view of what constitutes sign languages. The absence of more accurate alternative term is one of the strongest reasons for its continued use. (See also 6.1).

A further point of disagreement among sign language researchers relates to the question of predication. Is the handshape element a classificatory verb stem to which various movement morphemes are added? Or is the handshape element an affix attached to a verb root which is to be found in the movement element? There are other issues to be considered also. How are the various types of classifying handshapes to be categorised? The number of categories that can be created is potentially very large; it is also possible to create sub-categories and sub-sub-categories. How a researcher distinguishes one category from another will depend on prior definitions. If, for example, a category of instrument classifiers is established it is possible to distinguish between a sub-category which refers to instruments in terms of the shape of the hand as it manipulates them, and to another sub-category which determines membership on the basis of the specific shape of the entity itself. In discussing these questions I will refer to the following key studies of this verb form in sign languages: McDonald (1983), Supalla (1986), Schick (1990), Brennan (1990), Wallin (1990) and Engberg-Pedersen (1993).

### *3.4.1 McDonald (1983)*

McDonald identified two general components in these verb forms: a handshape which expressed information about the shape of a concrete entity, and a movement which expressed information about the state, location or motion of that entity. McDonald argued that classificatory handshapes constituted verb stems and these she compared with verb stems in Navaho which may specify entities as animate or reflect certain physical characteristics such as size and shape (3.380 - (3.43).

Examples from Navaho (McDonald: 34) :-

(3.38) *Its'id independent movement of a round solid object

(3.39) *Ødeel independent movement of a slender flexible object

(3.40) Øna independent movement of a flat flexible object

In American Sign Language certain handshapes can combine with movement, location and orientation features (McDonald: 36) to produce distinguishable sequences such as:

(3.41) 'motion or location of a narrow curved object'

(3.42) 'motion or location of a flat wide object'

(3.43) 'motion or location of a wide cylindrical object'

McDonald pointed out that over time certain forms in Navaho become frozen and are used in a much more general sense than originally. For example, the form '-niih' which means 'act with hand and arm' has now come to be used in verbs which mean 'distribute', 'buy', 'sell' and 'trade'. According to McDonald a similar process has occurred in American Sign Language. The form meaning 'handle a compact or small cylindrical object' is now used in lexicalised verbs which mean 'practice', 'work' and 'make'.

In her analysis, McDonald claimed that the handshape element "is the core or stem of the ASL verb and is used to signal the motion or location of a given type of object" (p. 35). She shows that the handshape element contributes to the predicative meaning of the verb complex by comparing two verb forms which describe respectively the handling and the location of entities. One form means 'move x-type of object in a certain way in a certain location' (3.44); the other form means 'x-type of object exists in a certain way in a certain location' (3.45).

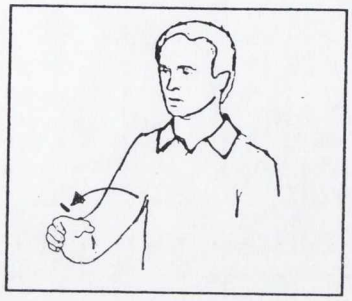
The movement element is the same in both examples, 'a slightly arcing forward movement with an abrupt held end'. If the movement element constituted the verb root the two verb forms should denote the same type of motion. But they do not. The first expresses caused motion; the second expresses independent motion. Only the handshapes are different and McDonald's point is that the combination of a particular handshape with a particular movement establishes the predicative meaning and that both handshape and movement contribute to this meaning.

(3.44) Handle-cylindrical entity-CL+MOVE-arc+BE-LOCATED+f
(I) placed a tumbler on (the table)

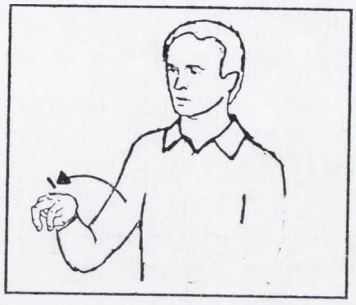
(3.45) V-CL+MOVE-arc+BE-LOCATED+f
(A bird) landed on (a table)

(3.44 and 3.45 are elicited examples)

(3.44)



Handle-cylindrical-entity-CL+
MOVE-arc+BE-LOCATED+f



(3.45)

V-CL+MOVE-arc+
BE-LOCATED+f

### *3.4.2 Supalla (1978, 1986)*

In a study of verbs of motion and location in American Sign Language, Supalla also identifies these verb forms as having two general components, handshape and movement. However, Supalla concludes that the handshape element is a classifier affix and that the movement element of the verb complex constitutes the predicate root. The full set of predicate roots consists of seven basic forms (see Figure 3.8 below), some of which can combine simultaneously to create more complex forms.

Supalla also states that there are three types of roots which correlate with the general semantic categories of existence, location and motion. Stative roots, which are expressed by a hold or by a tracing movement of the articulator, denote existence; contact roots denote location and are expressed by a contact feature or by a 'stamping' movement at a particular locus; active roots denote motion and are expressed by path movement of the articulator(s).

The handshape element is the classifier morpheme which classifies the noun as a two-legged entity, for example, or a round three-dimensional entity. The classifier morpheme is obligatorily affixed to the predicate root. Supalla identifies size and shape, semantic, instrument, body, and body-part as general categories of classifiers.

| Name | Form | Meaning | Example |
|---|---|---|---|
| Hold root | zero movement: the hand remains in one place | 'be stationary' | V-CL+hold<br>'a small animal is stationary' |
| Contact root | a brief movement before the hand stops at a specific location | 'be located' | V-CL+be-located+f<br>'a small animal is located there' |
| Linear root | hand moves in a straight path from onset to offset points | 'motion from a to b' | V-CL+c+move-line+fr<br>'a small animal moves from here to there' |
| Arc root | hand moves in an arc from onset to offset points | 'motion through an arc' | V-CL+c+move-arc+fr<br>'a small animal jumps from here to there' |
| Circle root | hand moves through a circular path | 'motion in a circle' | V-CL+move-circle<br>'a small animal moves in a circle' |
| End-Pivot root | one end of the articulator is fixed; the other moves across space | 'to swing' | Thin-vertical-entity+move+end-pivot<br>'a lamp-post falls' |
| Mid-Pivot root | hand changes orientation along one of its own axes | 'to orient to vertical or to horizontal' | V-CL+move+mid-pivot<br>'a small animal turns upside down' |

Figure 3.8 Predicate Roots in ASL and BSL (after Supalla 1978, 1986 and Brennan 1990: 51

Supalla's categorisation of handshape elements is based on semantic and morphemic criteria and his analysis of size and shape classifiers, or as they are sometimes called, size and shape specifiers (SASSes), offers a good example of his approach. Supalla argues that SASSes are multi-morphemic. In a SASS, each finger, the thumb and the forearm is a possible morpheme which can combine in specific ways to form a configuration. The morphemes each denote a different aspect or dimension of the referent. The salient property of a referent may be 0-dimensional (i.e. a dot, a speck),

1-dimensional, 2-dimensional or 3-dimensional; it may be flat, straight, round or spherical in shape or may have dimensions that are thin, thick, long or short. Supalla identifies three levels of SASSes each of which is established by a derivational process (Figure 3.9).

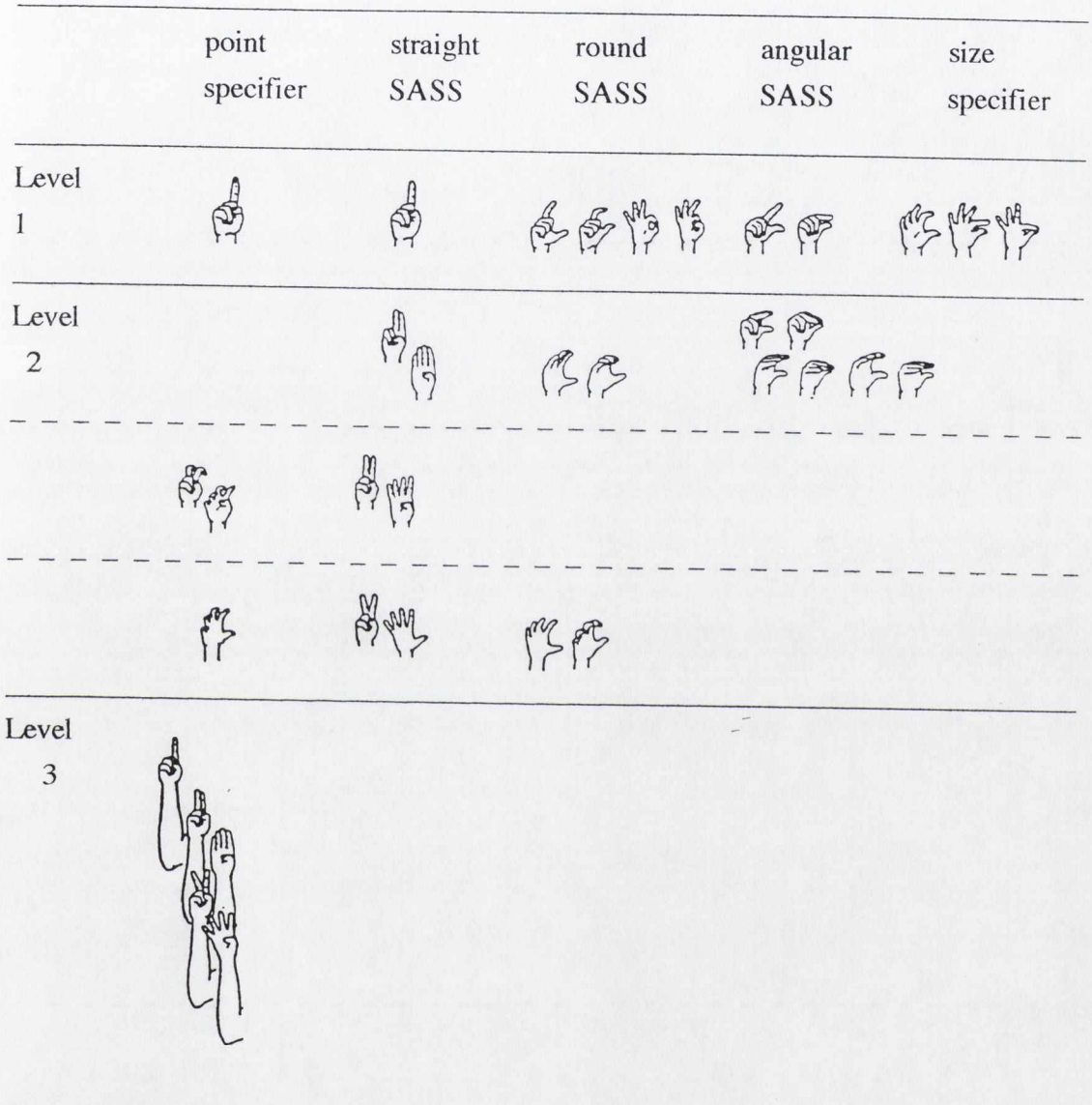



Figure 3.9 Static Size and Shape Specifiers in ASL (Supalla 1986: 206)

First level SASSes involve one finger or a finger and thumb and classify referents in terms of being 0-dimensional, 1-dimensional or 2-dimensional. Second level SASSes incorporate the other fingers - middle, ring and little - and add an extra dimension to the stem. For very wide or very long entities there is a further derivational level which involves the forearm or the second hand. These introduce additional 2 or 3-dimensional characteristics to second level SASSes.

Static SASSes can undergo another derivational process in which a tracing movement is added to represent features of the referent not marked by handshape alone. Grammatical limitations are placed on the particular movements that are acceptable. For example, the tracing movement must start with both hands at the same locus: one hand then moves away in one direction or the two hands move in opposite directions. The hands may not move from different onset points towards each other. If they did they would refer to two independent entities in motion and would not therefore represent tracing SASSes. Supalla states that, unlike SASSes, semantic classifiers are composed of a single morpheme and are somewhat more abstract than SASSes. Semantic classifiers denote semantic categories, the most prominent members being the categories of legged entities (humans, animals, for example), manoeuvreable horizontal entities (airplane, bird in flight) and manoeuvreable vertical entities (humans, vehicles).

Supalla distinguishes between two sub-categories of instrument classifiers. Instrument classifiers as such, refer to the shape of the hand as it handles or manipulates objects such as keys, suitcases, jugs and tumblers. Tool classifiers reflect the shape of the tool or instrument itself. The V hand with extended index and middle fingers can, for example, represent a scissors or compass.

Supalla identifies two further types - body-part and body classifiers. Body-part classifiers have two components: an articulation of the hand(s) and a particular location on the body. A signer can point to a specific body part or trace the outline of a body-part on his / her body. For example, a signer can trace a circle round her face to refer to 'face'. Limb classifiers constitute another sub-category of body-part classifiers. In the latter particular handshapes are used to refer to the hands and fore-limbs, or to the legs and feet, of animate beings.

Supalla claims that the body itself can function as an independent morpheme. A body classifier differs from other classifiers in that it is not represented through handshapes. Supalla notes that there are several restrictions on the use of the body as classifier: it cannot combine with a path movement across space, the referent must be animate and only one referent can be marked at a time.

### *3.4.3 Brennan (1990, 1992)*

In her analysis of verbs of motion and location in British Sign Language, Brennan (1990, 1992) also sees these verb forms as consisting of two general elements - a handshape element and a movement or location element. Brennan identifies six types of classifiers which can combine with five different sets of movement and / or location morphemes. In some instances her classification is similar to that established by

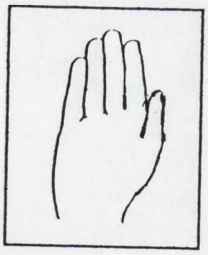
Supalla, in others it differs to a substantial degree. It is worth looking at this analysis in some detail since it is a well worked out example of this approach. It also provides an opportunity to indicate aspects of Supalla's analysis which have been questioned.

### *3.4.3.1 Classifier types in British Sign Language*

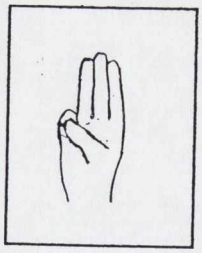
The six types of classifier proposed by Brennan are: semantic, size and shape, tracing size and shape, handling, instrumental and touch. *Semantic classifiers* refer to handshapes which are used to denote the major semantic categories of person, people and vehicles. In this group there is a link between form and meaning, though the link is translucent rather than transparent (see 2.6). The flat, open hand for example, which denotes VEHICLE can be seen as representing an entity that is typically longer than it is wide.

Brennan argues that it is difficult to justify Supalla's inclusion of AIRPLANE and TREE in this category and that these may be lexical signs rather than classificatory handshapes. Supalla argues that TREE is a classifier for trees of all kinds. Brennan however, points out that on those grounds signs such as HOUSE and BIRD, usually considered to be lexical items, could with equal justification be seen as classifiers.

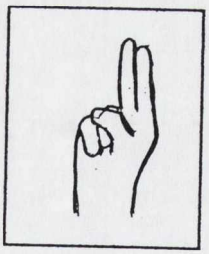
*Size and shape specifiers* (SASSes) denote something of the size and shape of objects. Flat objects are represented by handshapes B (3.46), Wm (3.47) and H (3.48) and round objects by handshapes O (3.49) and F (3.50). Solid, compact and round objects are represented by handshapes such as A (3.51).



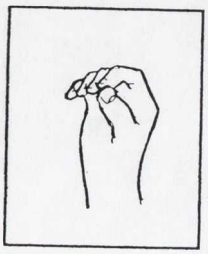
(3.46) B hand



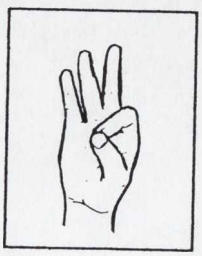
(3.47) Wm hand



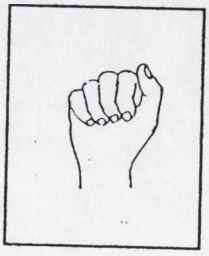
(3.48) H hand (in BSL)



(3.49) O hand



(3.50) F hand

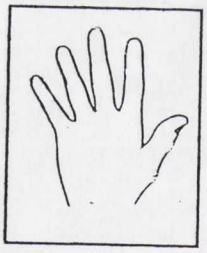


(3.51) A hand (in BSL)

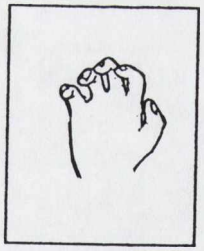
Brennan doubts that Supalla's morphological analysis of SASSes in which each finger is said to constitute a possible morpheme, is applicable in British Sign Language. The semantic or lexical values suggested by handshape are not absolute; the same entity can be represented by a variety of handshapes. An entity identified by the signer as narrow or wide depends on the signer's choice which in turn is related to the context, the perspective and the focus required, as well as characteristics of the entity itself. Brennan argues that at a morphological level, each handshape should be seen as a whole, while at a phonological level a handshape can consist of sets of features such as the number of fingers involved in expressing the form.

*Tracing size and shape specifiers* use the hand(s) to trace the size and shape of the whole object or of some significant part of it. The G hand (i.e. index finger extended from closed fist) for example can show the outline of a room, a table or a window.

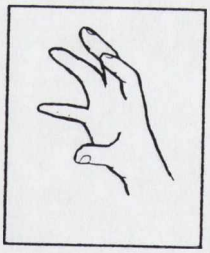
*Handling classifiers* denote objects in terms of how humans handle them. The handshape represents, not the shape of the object, but the shape of the hand as it handles the object. The handshape A for example, indicates how humans hold narrow cylindrical objects such as a snooker cue or the handle of a bag or jug; variations (3.53) - (3.54) of the 5 handshape (3.52) represent how objects such as knobs, taps and jar-lids are manipulated. This category is similar to Supalla's instrumental category.



(3.52) 5 hand



(3.53) 'clawed' 5 hand



(3.54) 'curved' 5 hand

*Instrumental classifiers* are similar to SASSes in that they classify instruments such as tools, utensils or other implements in terms of their physical characteristics. The V handshape denotes instruments with two narrow extensions such as scissors, forks and compasses. Supalla refers to these as tool classifiers.

*Touch classifiers* represent the manner in which objects may be touched. They are similar to handling classifiers but they focus on the object as being touched rather than being handled or moved. The 'curved' 5 hand(s) indicates how a piano is played and the G hand shows how to operate a push-button telephone or a calculator. Brennan points out that these six classifier categories can be reduced to three more general

categories - semantic, SASSes (including tracing and instrumental) and handling (including touch) classifiers.

Brennan does not include separate categories similar to Supalla's body-part and body classifiers. She argues that the body-part examples given by Supalla can be described as SASSes and shows that in many cases a particular physical feature of an animate entity is expressed by the use of an existing SASS placed at an appropriate location on the body. Thus, the SASS meaning 'several long thin entities' placed at the signers mouth represent the teeth of a tiger. With regard to the category, body classifier, Brennan sees little supporting evidence at this point in time for including the body as a classifier in British Sign Language (1990: 54).

#### *3.4.3.2 Motion and location morphemes in British Sign Language*

Brennan identifies five categories of motion and location morphemes in British Sign Language: existence, be-located, path, imitation and extent. The examples used to illustrate this particular analysis are taken from the Irish Sign Language data. Brennan's *existence* category denotes the existence or presence of a referent. Location as such is not emphasised. Existence is expressed by zero movement and the articulator is simply placed at a location in signing space (3.55). The category *be-located* indicates that a referent is located at a specific place. Location is expressed by a 'stamping' action of the articulator (3.56).

(3.55) Cylindrical-entity-CL+EXIST+fr g-l-a-s-s
There was a tumbler ...

(3.56) HOUSE COUNTRY FAR General-3D-entity-CL+BE-LOCATED+fr
The house was situated in the middle of the countryside

The *path* category denotes a path movement by the hand(s) from one locus to another in signing space. This movement may be linear, circular or arc shaped, denoting the motion or the shape of an entity (3.57).

(3.57) WE Multiple-entity-CL+c+PATH+fl ...
Multiple-entity-CL+c+PATH+fl ...
We all went out ...

The *imitation* category focuses on the manner of an articulatory movement which in some sense is an idealised representation of an action in the real world (3.58).

(3.58) Tall-thin-vertical-entity-CL+f+IMIT: recoil+contact+c
Body-CL+EXIST+face ----------
(The punch ball) swung back and hit him in the face

The *extent* category expresses information about the dimensions of a referent. It may also indicate that a referent is of a specific shape (3.59).

(3.59) Trace-long-narrow-entity-CL+EXTENT+sr
Trace-long-narrow-entity-CL+EXTENT+sl
(There was) a skateboard ...

### *3.4.4 Schick (1990)*

Schick (1990) agrees with other researchers in describing classifier predicates as having two primary components, "handshape morphemes which vary according to the characteristics of the noun referent" and "other morphemes representing spatial relationships and manner of movement" (p. 15). Schick regards the former element as constituting the classifier and the latter as containing the predicate root in American Sign Language. She proposes three categories of classifiers - CLASS, HANDLE and SASS.

CLASS forms categorise nominals on the basis of semantic information and represent the free movement in space of the object category. HANDLE and SASS categorise nominals on the basis of visual - geometric information: HANDLE predicates signal the handling of the object category and SASS forms indicate adjectival information.

Schick assumes three kinds of movement morphemes: movement through space (MOV); a stylised imitation, but not a complete analogue, of real world action (IMIT); and a single point in space (DOT). MOV indicates the path or extent of a referent and DOT indicates the location or position of a stationary referent.

Schick argues that Supalla's distinction between existence and location roots is primarily a matter of emphasis. The DOT category incorporates the notions of both existence and location while the MOV root corresponds to Supalla's motion category. The IMIT category gives particular attention to the role of visual imagery in American Sign Language and Schick claims that it gives formal recognition to predicate forms not easily captured in other analyses (Schick 1990: 27-8).

The classifier handshapes and the movement roots combine to produce particular morpho-syntactic structural patterns (Figure 3.10).

| Handshape Roots | | Movement Morphemes | |
|---|---|---|---|
| | MOV | IMIT | DOT |
| CLASS | S - V (+LOC) | S - V | S -V : be (+LOC) |
| SASS | V : adjective | S - V | V : adj + LOC |
| HANDLE | (S+) V - O (IO) | (S+) V-O (+LOC) | (S+) V-O + LOC |

Figure 3.10 Morpho-syntactic Structural Patterns in ASL (Schick 1990: 20)

### *3.4.5 Wallin (1990)*

In his study of polymorphemic predicates in Swedish Sign Language Wallin (1990) provides important data relating to the morphemic status of the handshape element in these verb forms. He concludes that different morphemes can be expressed through the shape, the orientation and the various parts of the hand. Wallin avoids using the term classifier to refer to the handshape element in polymorphemic predicates in Swedish Sign Language. However, these handshape elements are similar to the elements termed classifiers in the work of other researchers.

In Swedish Sign Language the handshape itself can be a morpheme in these predicate forms. The flat hand for example, refers to objects that are saliently two-dimensional - a car, a book, a plate, a postcard, a bicycle. The 'clawed' 5 handshape denotes saliently three-dimensional objects such as a stone or a bun; the index hand refers to objects such as pencils, which are saliently one-dimensional.

The particular orientation of the hand can indicate a morphemic value. The orientation of the fingertips denotes the orientation of the referent, seen from the signer's perspective. Thus, the largest dimension of a two-dimensional object is represented by the largest dimension - from base to fingertips - of the hand. The orientation of the palm is also significant and indicates the moveability of an object. Palm orientation towards the signer denotes that the object, such as a painting on a wall, is moveable; palm orientation away from the signer indicates that an object, such as a wall-tile, is not easily moved.

Wallin shows that the fingertips and the base of the hand can constitute morphemes. They can for example, denote the short sides of a two-dimensional object. However, in relation to an entity with an intrinsic front and back, the fingertips and the base of the

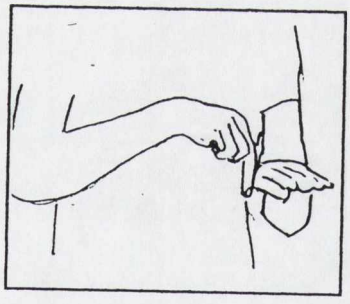
hand do not always maintain a fixed fingertips / front and base of the hand / back relationship. For example, an arrangement indicating 'many cars parked side by side' can be represented by two hands with fingertips oriented away from the signer. This fingertip orientation does not imply that the cars were all facing in the same direction, only that they were parked side by side.

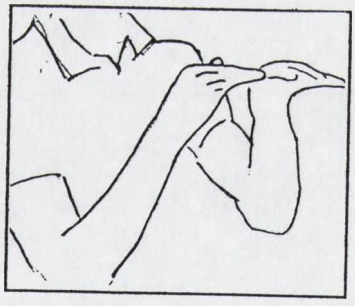
In some instances, the orientation of the fingertips and the base of the hand do in fact denote respectively the front and the back of objects. Wallin gives examples from Swedish Sign Language, shown here in (3.60) and (3.61). In these two examples the fingertips and the base of the hands denote the front and back of the vehicles.

(3.60) Index-CL+BE-LOCATED+by left hand
Vehicle-CL+EXIST+fingertips
... a person is located by the front of the car

(3.61) Vehicle-CL+sr+MOVE+sl+fingertips+contact left hand
Vehicle-CL+EXIST+mid-part of hand
... the front of one car drove into the side of another car

(3.60)





(3.61)

Wallin's analysis of polymorphemic predicates shows that the morphemic composition of these forms is more complex than that suggested by Supalla for comparable forms in American Sign Language. He shows for example, that handshape forms similar to Supalla's semantic classifiers may consist of more than one morpheme.

### *3.4.6 Engberg-Pedersen (1993)*

For Engberg-Pedersen (1993) the major distinction between verbs in Danish Sign Language is the distinction between polymorphemic and non-polymorphemic verbs. Typical non-polymorphemic verbs include plain verbs, agreement verbs and locative verbs. Typical polymorphemic verbs are those which have been termed classifier predicates by other researchers. Engberg-Pedersen regards both types as extremes on a

continuum where as we move towards the polymorphemic end " verbs become increasingly locative in meaning and start to be potentially polymorphemic" (p. 161).

Although Engberg-Pedersen's analysis of polymorphemic verbs in Danish Sign Language differs substantially from the analyses discussed above (3.3.1 - 3.3.5), it is similar in two important respects. Firstly, the verbs which she terms polymorphemic are similar in structure to those referred to by others as classifier predicates. Secondly, regarding features that all researchers seem to agree on, polymorphemic verbs in Danish Sign Language are characteristically verbs of motion and location and consist of two primary components, a handshape component and a movement component.

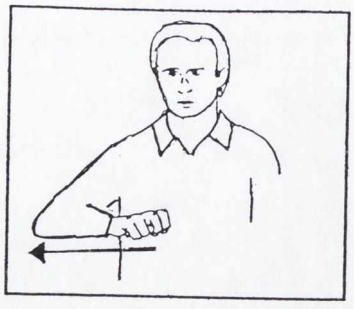
Engberg-Pedersen disagrees with the view that the movement component constitutes the verbal element in polymorphemic verbs and argues that the movement component does not communicate a constant unambiguous 'verbal' meaning across handshapes. The particular meaning expressed depends on the specific handshape that is associated with the movement. A linear movement, for example, can denote an entity's own motion (3.62), its distribution (3.63), its extent (3.64) or the motion caused by an agent (3.65). Thus, the same type of movement can denote different meanings depending on the handshape so that the handshape has a controlling influence on the meaning of the verb. In Danish Sign Language the predicative meaning in polymorphemic verbs derives from the interaction of the handshape and movement components.

(3.62) V-CL+('motion'-line+sr)
The small animal moved away

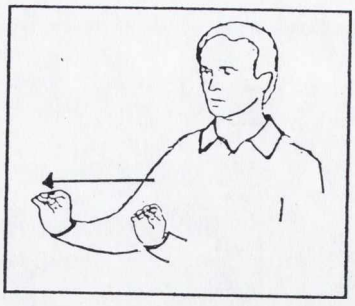
(3.63) Two-dimensional-entity-CL+('distribution'-line+sr)
The books were on the shelf

(3.64) Flat-surface-entity-CL+('extend'-line+sr)
Flat-surface-entity-CL+(hold ----------)
... a board of this length ...

(3.65) Handle-small-entity-CL+('motion'-line+sr)
(Someone) moved the bead along



(3.62) V-CL+motion-line



(3.65) Handle ... CL+motion-line

Furthermore, Engberg-Pedersen states that the handshape cannot be seen as a classifier. In an earlier study (1987) she uses the term 'proform' rather than 'classifier' to refer to the handshape in polymorphemic verbs, arguing firstly that it is impossible to assign only a classificatory meaning to the handshape and secondly, that the handshape contributes to the predicative meaning of the verb complex. At the same time she notes that the handshape feature can be seen as a replacement for a referent in polymorphemic verbs and thus the term proform is appropriate.

In later work, Engberg-Pedersen (1993) avoids explicit use of the term 'proform' in relation to handshapes in polymorphemic verbs. However, she does use the notation 'Pm' in glosses of handshapes in these verbs. Thus, one of the handshapes referring to humans is glossed as V-Pm. She notes that her transcription of the morphemes of polymorphemic verbs is preliminary.

Engberg-Pedersen goes on to argue that both classificatory and predicative meaning are merged in the handshape component of polymorphemic verbs in Danish Sign Language and in this it resembles the classificatory verb stems of an Athapaskan language such as Koyukon. Therefore she characterises the handshape component as a verb stem which can combine with a variety of movement affixes.

### *3.4.6.1 Movements in polymorphemic verbs*

Movement in a movement component in polymorphemic verbs refers to movement of the hand(s). It does not normally refer to internal hand movement such as wiggling of the fingers for example, in the articulation of the V-Pm handshape, but to the movement from one locus to another in space. The movement component does not necessarily denote only motion. It is also used to denote the location, the extent or the distribution of an entity, or the manner in which an entity moves or is moved (Figure 3.11).

| Morphemes denoting ... | Representative examples |
|---|---|
| Location | 1.p V-Pm + (loc + c) gesture ...<br>I stand innocently ... |
| Motion | V-Pm + (c + move-line + forward)<br>(Someone) went (somewhere) |
| Manner | Handle-large-cylindrical-entity-Pm + (at-a-loss)<br>What should we do with (the children)? |
| Distribution | V-Pm + (distribution-line + neu)<br>(They) stood in a line |
| Extension | BAD ROAD Curved-surface-Pm + (extension-hemispherical + distribution-line<br>It was a bad road having many bumps |

Figure 3.11 Movement Morphemes in Polymorphemic Verbs in Danish Sign Language (after Engberg-Pedersen 1993: 227ff.)

#### *3.4.6.2 Verb stems in polymorphemic verbs*

Engberg-Pedersen categorises verb stems on the basis of their meaning and the types of movement morphemes that they can combine with. She identifies four main categories (Figure 3.12). In whole entity stems the handshape represents the whole entity. These stems occur in stative and process verbs. They can combine with many different kinds of movement units but do not combine with extension or with some manner morphemes. Three particular whole entity stems which denote human or human-like animates and which are very productive are the 1-Pm, the V-Pm and the Index-Pm stems.

These stems overlap in terms of the contexts in which they can occur. Both Index-Pm and V-Pm stems for example, are acceptable in the context of a person moving in a certain direction. In other contexts they contrast and it is not possible to substitute stems across some movement units. The choice of stem does not depend solely on the choice of the nominal in argument of the verb; it reflects a particular aspect of the motion event or a particular perspective on that event.

| Verb stems | Representative examples |
|---|---|
| Whole entity stems | Car-Pm; Mass-Pm (of people, cattle); Short-thin-entity-Pm (pencil); Cylindrical-entity-Pm (glass); General-entity-(B hand)-Pm (inanimates of all kinds); Flat-entity-Pm (piece of paper) |
| Handle stems | Handle-3D-entity-Pm (a book); Handle-handle-Pm (a mug); Handle-lumplike-entity-Pm (potato); Handle-large-cylindrical-entity-Pm (child) |
| Limb stems | Legs-Pm (human limping, walking in high heels); Feet-Pm (human walking); Arms-Pm (human waiting, walking determinedly) |
| Extension stems | Size and shape specifiers (see ); Flat-surface-Pm (landscape feature); Curved-surface-Pm (a bump, a hole) |

Figure 3.12 Verb Stems in Polymorphemic Verbs in Danish Sign Language (after Engberg-Pedersen 1993: 273-279)

Iconically, handle stems express how something is handled. They can represent the actions of human or animal limbs or certain kinds of instruments. Handle stems occur principally in process verbs and frequently combine with movement morphemes which denote motion or distribution.

Limb stems represent the motion or state of animate limbs. They occur in process and in some stative verbs and overlap with handle stems. However, limb stems are restricted to denoting the referent represented by the signer's body, whereas handle stems can denote a referent other than that represented by the signer's body.

Extension stems depict the outline or the extent of an entity. They occur in stative verbs and cannot combine with movement morphemes denoting motion.

Some of the studies described in sections 3.1 - 3.3 are competing analyses of the same sign languages while others are models for different sign languages. A summary of these analyses is given in Figure 3.13.

Multidirectional and Non-Multidirectional Verbs in American Sign Language
(Friedman 1975, 1976)

Directional, Reversible and Locational Verbs in ASL
(Fischer and Gough 1978)

Verbs of Motion and Location in ASL
(Supalla 1978, 1986)

Classifier Predicates in ASL
(McDonald 1983)

Morphology of Verbs in British Sign Language (BSL)
(Kyle and Woll 1985)

A Localist Analysis of Verbs in ASL
(Kegl 1985; Gee and Kegl 1982)

Predicate Argument Structures in ASL
(Kegl 1990)

Verb Morphology in ASL
(Padden 1988, 1990)

Person and Location Marking in Verbs in Sign Language of the Netherlands
(Bos 1990)

Classifier Predicates in BSL
(Brennan 1990, 1992)

Classifier Predicates in ASL
(Schick 1990)

Polymorphemic Predicates in Swedish Sign Language
(Wallin 1990)

Polymorphemic and Non-Polymorphemic Verbs in Danish Sign Language
(Engberg-Pedersen 1993)

Verb Agreement in ASL
(Janis 1995)

Figure 3.13 Verb Categories in Sign Languages: Summary of Research Discussed

Many of the studies outlined in Figure 3.13 will serve as major points of reference in the description of verb categories in Irish Sign Language contained in this study. Such an approach offers the possibility of a productive analysis of verb behaviour at this early stage of research. While the examples taken from the research data and included above (see sections 3.2 and 3.3) show that verbs in Irish Sign Language do relate to analyses of other sign languages the approach proposed in this study will not draw exclusively on any one model. The key parameters for determining verb categories in Irish Sign Language are outlined in the next section.

### 3.5 Identifying Verb Categories in Irish Sign Language

In the next three chapters we discuss the classification of verbs in Irish Sign Language. It may be useful however, to conclude this chapter with a preliminary outline of this classification. The categories proposed in this study and the relationship between them is illustrated in Figure 3.14.

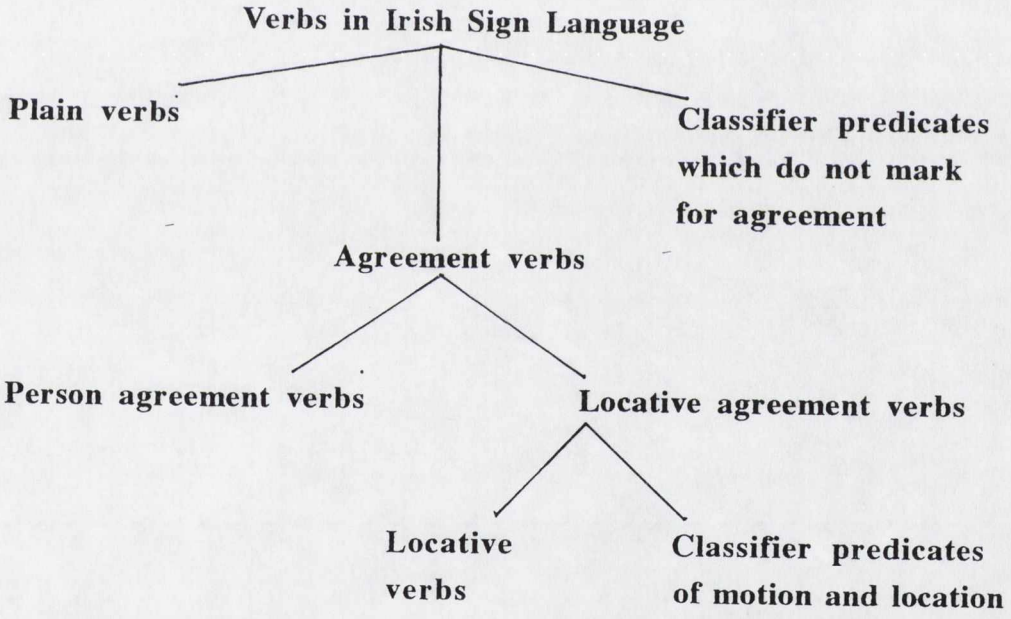



Figure 3.14 Categories of Verbs in Irish Sign Language

As shown in this figure the distinctions between categories of verbs are established at three levels. Different criteria are used to distinguish between categories at each of these levels. If for the moment we leave aside classifier predicates which do not mark for location, the first distinction to be made is the distinction between plain verbs and agreement verbs. The criterion here is morphophonological. Plain verbs do not take agreement affixes so that the phonological form of the verb remains constant in different syntactic contexts. Agreement verbs on the other hand take affixes which mark for person or location and which alter the form of the verb in different contexts.

The second distinction is made between two different types of agreement verbs. Since agreement can be expressed in relation to the categories of person or location an analysis in terms of features of controller nominals is the criterion here. A third distinction is made between locative verbs and classifier predicates of motion and location. The criterion here is morphological and relates to hand configuration. In classifier predicates hand configuration has both a morphological and a phonological function. In plain verbs and in agreement verbs (apart from a few exceptions which are discussed in 5.3.3.5) hand configuration has a phonological function only.

Finally, there is a category of verbs which do not mark for locative agreement but which are typical classifier predicates in that the hand configurations have a morphological function. Where movement components are associated with these predicates they denotes the shape and / or extent rather than the motion or location of entities. (See section 6.2.1).

It may not be possible to assign every verb in Irish Sign Language to a particular category in a discrete and absolute way. Some verbs may be in transition from one category to another or may belong in different categories for different signers. Some verbs, for example, may appear as plain verbs in the signing of older members of the deaf community but as agreement verbs in the signing of younger members (see 4.5); other verbs may belong to more than one category for individual sigers (see 5.3.4).

Furthermore, it is rare to find a verb in Irish Sign Language which cannot be modified in some way. Even if a verb is anchored to an articulatory locus on the body it is still possible to carry out a modification by altering the manner of the articulatory movement. Because similar surface forms can represent different modifications it is difficult at this stage of research to distinguish between modifications that are morphological and modifications that 'have an *emphatic* function stress[ing] the semantic content of the verb concerned' (Brennan 1992: 104). Brennan goes on to point out that the latter are best described as modifications rather than inflections since they can occur across a range of sign classes.

In this study therefore, membership of each verb category is determined in terms of prototype theory (Rosch et al 1976; Rosch 1978). The implications of prototype theory for linguistic analysis have been discussed by Taylor (1989) and Givón (1984), amongst others. Prototype theory "concedes that natural cognitive and linguistic categories are not always - and perhaps are seldom - defined in terms of a single or a few, critical ('sufficient and necessary') properties" (Givón, op. cit. 14). Those members which possess a number of significant 'characteristic' or 'typical' features

constitute the category prototype. Degrees of prototypicality can be determined by two distinct measures: the *importance* and the *number* of features displayed by members of the category. Prototype theory recognises that categoriality is an important characteristic of human languages but it also allows for the fact that categories in human language are characterised by exceptions and fuzzy edges.

In Irish Sign Language the semantic and phonological properties of verbs are two factors which have an important underlying role in determining verb category membership. The semantic properties of a verb affect the type of markers that it can accept; the phonological properties determine whether in fact such marking can be realised. On the basis of these two sets of properties we can make certain general predictions about the potential of a verb to belong to a particular category. To illustrate the role of semantic and phonological properties in the determination of verb categories we will examine the behaviour of four verbs in Irish Sign Language - ASK, ANSWER, RUN and RESPECT.

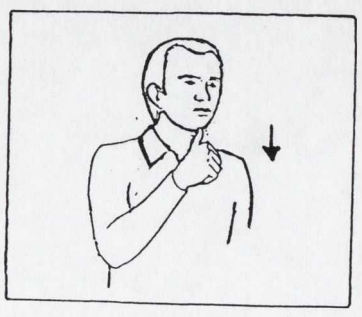
We might expect that verbs such as ASK and ANSWER, which semantically can relate two participants, would take person markers. We might expect too, that a verb like RUN, being a motion verb, would take markers for spatial location. However, as we shall see, the form of a verb affects its capacity to accept such marking; in other words, the phonological properties of the verb may block or may facilitate its potential to mark for person or for location.

In citation form, ASK involves a horizontal movement from the c-locus to a non c-locus in signing space. Thus, the formational properties of ASK make it possible for this verb to meet the parameter requirements needed to express person agreement (3.66). ASK has the potential to be classed as an agreement verb. On the other hand, the citation form of ANSWER involves a short downward movement from the signer's chin. These formational properties do not permit it to accept person agreement markers (3.67). ANSWER is, potentially, a plain verb.

(3.66) fr + ASK + fl
(Someone) asked (someone).

(3.67) PRON-fl ANSWER PRON-fr
(Someone) answered (someone).

(Elicited examples)

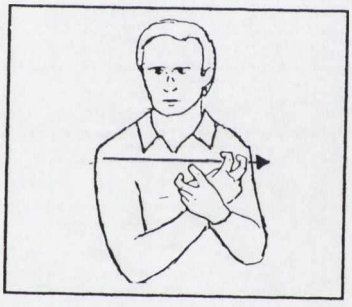


ANSWER

The semantic properties of the verb RUN indicate that it could inflect for location and therefore could belong to the category of spatial verbs. In fact there are two different verbs in Irish Sign Language which appear to correspond to the English verb 'run'. We can refer to these verbs as RUN 1 and RUN 2, illustrated in (3.68) and (3.69) respectively. The phonological properties of RUN 1 (3.68) enable it to meet the requirements for inflection for location while the properties of RUN 2 (3.69) do not permit it to meet those requirements; RUN 1 is, potentially, a locative agreement verb and RUN 2 a plain verb. The form chosen by signers will depend on the particular focus which they wish to confer on the action.

(3.68) PRON-fr sr+RUN+sl
(Someone) ran from there $_1$ to there $_2$.

(3.69) PRON-fr RUN OUT^FOR
(Someone) ran outside.



(3.68) RUN 1



(3.69) RUN 2

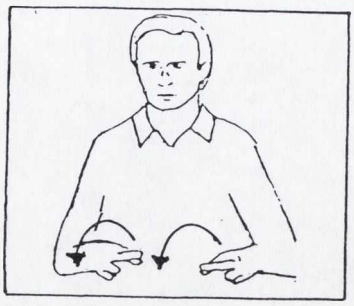
Thus, while the semantic properties of a verb can indicate its potential to mark for agreement, the phonological properties of the verb may block or facilitate this potential. However, it is important to remember that these properties indicate a potential only and the presence of appropriate semantic and phonological properties are not in themselves indicators that a particular verb can be assigned automatically to a particular category. A good example in this regard is the verb RESPECT (3.70).

The verb RESPECT can relate two participants; it is formed by a movement, outward from the signer's body. Although it has the semantic and phonological properties which would enable it to function as an agreement verb, RESPECT does not accept person agreement markers and in fact functions as a plain verb.

(3.70) PRON-fr RESPECT PRON-fl
(Someone) respected (someone)

(Elicited example)

RESPECT



At a general level therefore, there is a relationship between the semantic properties of verbs and category membership. This criterion will indicate the potential of a verb to mark for person or for location and distinctions at this level determine membership of the categories of person agreement and locative agreement verbs. There is also a relationship between the phonological properties of verbs and verb category membership. The phonological properties criterion functions as a device which may block the potential of some verbs to accept person or locative affixes. In body-anchored verbs, for example, it is not easy to affix movements which have the onset and offset points required to express agreement. Similarly, certain types of movements do not appear to be suitable for expressing agreement: vertical movement, for example, is unsuitable since horizontal movement is typically required by person agreement verbs. Thus, the semantic and phonological properties of verbs are important criteria in determining verb category membership.

### 3.6 Conclusion

In the introduction to this chapter we briefly discussed the pivotal role of the verb in theories of grammar and in research on language acquisition and language learnability. We then went on to examine different approaches to verb categorisation in sign languages. We noted that the first efforts to categorise verbs were based largely on their formational properties and were conducted mainly in American Sign Language. These studies established that while some verb forms remained constant in terms of articulation others could be articulated at non-neutral locations.

We have seen that subsequent research has characterised this difference in terms of inflection: agreement verbs inflect either for person or location and plain verbs do not inflect for either of these categories. In particular we briefly described Padden's (1988, 1990) influential classification of verbs in American Sign Language. We also discussed the proposal by Janis (1995) that categories of agreement verbs are determined by properties of controller nominals and that such properties must be specified in terms of both grammatical relations and semantic roles.

With regard to agreement verbs, we referred to the distinction between onset and offset points and the linking movement between them (Bos 1990). At this point, it is not clear how such a distinction relates to a definition of locus as a significant *direction* in signing space, a definition we have adopted for this study (see 2.7.2). In addition, agreement verbs in Irish Sign Language are characterised by a variety of movement types (see 6.3.2) and the implications of making a distinction between onset and offset points and the linking movement is not apparent for each verb. While an analysis of this kind is beyond the scope of this study - requiring "information on the full paradigm and the exact function of verb modulations" (Bos, p. 232) - we note that it constitutes an important area for future research.

We observed too, that researchers have distinguished between verbs in which hand configuration has a phonological function only and verbs in which hand configuration has a morphological as well as a phonological function. Verbs in the latter category are widely referred to as classifier predicates. We discussed a number of key studies of this verb form and we drew particular attention to the argument (Engberg-Pedersen 1993) that the hand configuration element constitutes the verb stem. We also drew attention to the problems surrounding the use of the term *classifier predicate* and decided to retain it in the absence of a more accurate alternative term.

Although the identification of verb categories in this study draws on similar research in other sign languages it does not draw exclusively on any one model. It acknowledges that the semantic and phonological properties of verbs are important criteria in determining category membership. It recognises that categories of verbs can be established in terms of 'typical' features but it also allows that categories are characterised by exceptions and fuzzy edges.

In identifying verb categories in Irish Sign Language the first broad distinction we propose is the distinction between plain verbs and agreement verbs. The characteristics of plain verbs are described in the next chapter.

**Notes**

1. In the context of current research in sign language, 'classifier predicate' is a disputed term (see for example, Wallin 1990 and Engberg-Pedersen 1993) and although there are considerable doubts about its accuracy in a strict linguistic sense, there are some arguments for retaining it as a descriptive term for particular types of verbs. Firstly, there is no obvious alternative term that captures the particular characteristics of these verb forms. Secondly, it has been and continues to be widely used both in research and

in discussion about sign language. Thirdly, it has been used in a very general sense by some researchers (see Brennan 1992: 53 - 67, for example) to refer to a wide range of handshapes.

2. An example of INVITE with an untypical structure occurred in the data:

> ABOUT TEN YEAR LATE timeline-f INVITE+c WEDDING
> About ten years after that I was invited to a wedding

Typically, the verb INVITE is a double agreement verb. In this example however, no subject argument is specified and the object argument (understood from the context to be PRON1) is marked for the 'c' locus. No subject marker is present since there is no movement to a non-sender locus. Thus, INVITE seems to have a passive-like form that is best glossed as 'I was invited ...'

# 4 PLAIN VERBS IN IRISH SIGN LANGUAGE

## 4.1 Introduction

Our main objective in this chapter is to describe plain verbs in terms of their prototypical features. We begin with a description of the morphophonological properties of a number of plain verbs. In this description we show firstly, that plain verbs do not take affixes which mark for agreement with person or location and secondly, that they are typically contact or body-anchored signs.

We then move on to discuss verbs which we categorise as plain but which incorporate certain atypical features. We suggest that some of these plain verbs have developed from polymorphemic forms through a process of lexicalisation and that others are 'in transition' to agreement verbs.

Finally, we discuss the semantic properties of plain verbs. We note that plain verbs tend to occur in semantically related fields and that there is often a motivated relationship between the forms which these verbs take and their meanings. We conclude with a brief look at how plain verbs can be modified by non-manual features.

## 4.2 Morphophonological Properties

The verb LIKE is a typical plain verb. Examples (4.1 - 4.4) show that the form of the verb LIKE remains constant in different syntactic contexts and that it does not accept affixes which mark for agreement with person or location.

(4.1) PRON1 LIKE PRON-f
I like you

(4.2) PRON-fr LIKE PRON-fl
She likes him

(4.3) LIKE PRON-f
PRON-fl ----------
She likes you.

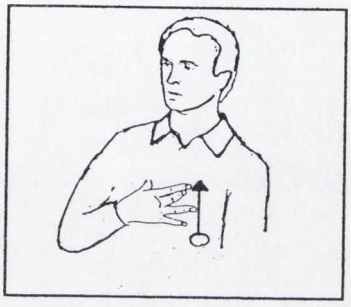


LIKE

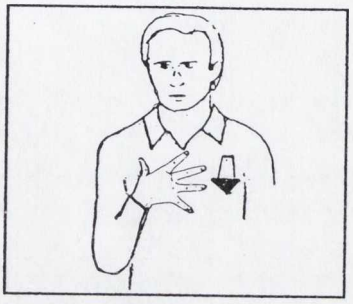
(4.4) _____q
PRON-f LIKE PRON-fr PRON-f
Do you like him?

(Examples 4.1 - 4.4 have been elicited)

The verb LIKE is a contact or body-anchored verb. It is also one of a set of verbs which refer to emotional states and which have an articulatory locus in the chest / sternum area. Among the other verbs in the set are FEEL (4.5), BE-ANGRY (4.6), HATE (4.7), BE-HAPPY (4.8) and BE-FRUSTRATED (4.9). (For a more detailed discussion on the relationship between form and meaning see 4.7).



(4.5) FEEL



(4.7) HATE

The verb SAY in examples (4.10) - (4.12) is another typical plain verb.

n

(4.10) PRON-f EXAGGERATE NOT TRUE FATHER D- PRON-sl SAY
"You are exaggerating! It's not true," Fr. D. said.

h/n

(4.11) PRON 1 SAY TRUE+reduplicate
I said, "It's certainly true."

(4.12) PRON-sl SAY LIE+reduplicate RUBBISH+reduplicate
He said it was completely untrue ... utter nonsense

REMEMBER in examples (4.13) - (4.15) is also a plain verb.

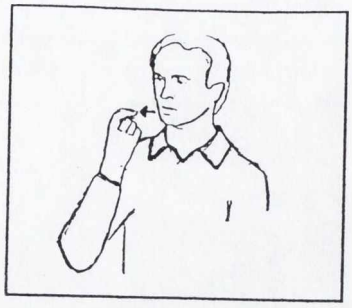
(4.13) COLD DAY PRON1 REMEMBER PRON-fl
I remember it was a cold day.

(4.14)

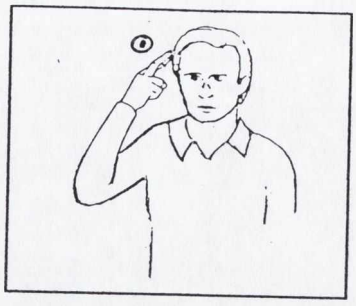
q

EVENING LATE PRON1 c+GET-ATTENTION+sr REMEMBER PRON-sr
Later in the evening I asked him, "Do you remember ?"

(4.15) PRON-sr YES / REMEMBER VERY WELL
He said, "Certainly! I remember very well."



SAY as in (4.10) - (4.12)



REMEMBER as in (4.13) - (4.15)

In the examples (4.1) - (4.4) and (4.10) - (4.15) the forms of the verbs LIKE, SAY and REMEMBER remain constant, the arguments of these verbs are indicated by separate lexical signs and no agreement markers appear on the verb.

In phonological terms, typical plain verbs are contact or body-anchored signs in which articulation involves the hand(s) touching the head, face, trunk or contralateral arm. Examples of plain verbs involving body contact are shown in (4.16) - (4.19).

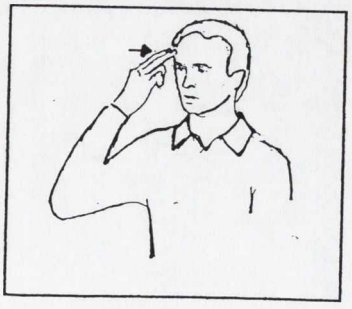
(4.16) PRON1 UNDERSTAND
I understood

(4.17) BOY ... BE-SHOCKED
The boy ... was astonished

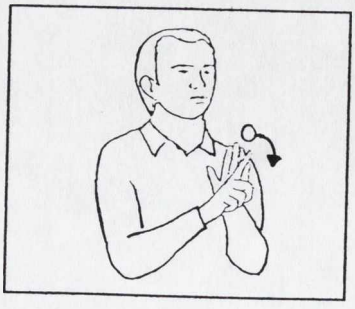
(4.18) CONTINUE+reduplicate Handle-general-entity-CL+MOVE-imit: roll
Handle-general-entity-CL+MOVE-imit: roll
(The boy) went on rolling (the snowball)

(4.19) PLANE DELAY
The plane was delayed

(Elicited example)



(4.16) UNDERSTAND



(4.19) DELAY

Some plain verbs are body-anchored in that they are articulated in proximity to, but not in actual contact with, particular body locations. Examples LAUGH (4.20), BE-LARGE (4.21), PUNISH (4.22) and FINISH (4.23) illustrate this feature.

(4.20) BOY ... LAUGH
LAUGH
The boy ... laughed and laughed

(4.21) PRON1 Multiple-entities-CL+(f / lo+MOVE-to mouth)+reduplicate
Multiple-entities-CL+(f / lo+MOVE-to mouth)+reduplicate

Handle-small-entity-CL+(f / lo+MOVE-to mouth)+reduplicate
Handle-small-entity-CL+(f / lo+MOVE-to mouth)+reduplicate

BE-LARGE

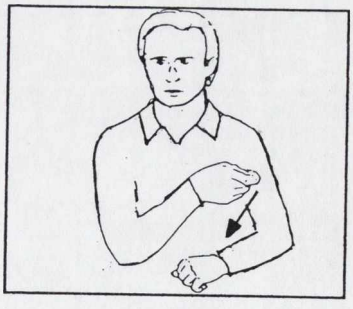
I've been stuffing myself. I put on weight.

(4.22) _____n
WAVE-'No'+reduplicate PRON-f PUNISH
Don't do that! You'll be punished (Elicited example)

(4.23) _____n
(PRIEST) MASS FINISH
(The priest) did not finish Mass



LAUGH (citation form)



(4.22) PUNISH

Another group of verbs in Irish Sign Language are body anchored in a different sense. In the formation of verbs such as STAND-STILL (4.24), WAIT (4.25) and RUN (4.26), the signer's body has a function that can be compared to the function of the hands in the formation of two-handed manual signs.

(4.24) BOY c+LOOK+fr ... [STAND-STILL]
The boy looked at (the snowman). It stood there, motionless.

(4.25) PRON1 WAIT
I waited

(4.26) BOY GO RUN OUT^FOR
The boy ran outside

A Figure and Ground analysis brings out the comparison between the function of the signer's body and the function of the hands in sign formation. Talmy (1985: 61) defines Figure as "a moving or conceptually movable object whose path or site is at issue; the Ground is a reference-frame, or reference-point stationary within a reference-frame, with respect to which the figure's path or site is characterized."

In the formation of manual signs such as STOP and ARRIVE the dominant hand interacts with the non-dominant hand and in the interaction the dominant hand can be said to constitute a Figure element and the non-dominant hand a Ground element.

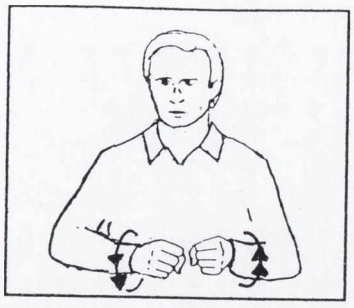


STOP

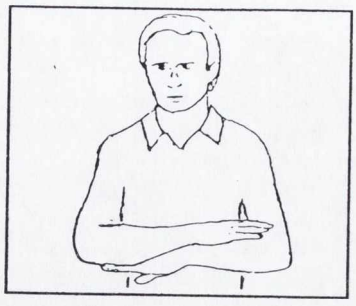


ARRIVE

In the formation of verbs such as RUN and WAIT there is also a relationship between a Figure element and a Ground element. In a verb like RUN the Figure element is expressed through the actions of the signer's hands and arms in relation to the reference-frame of the signer's body. In WAIT the Figure element is expressed through the site of the signer's hands and arms, again in relation to the reference-frame of the signer's body. In both WAIT and RUN the signer's body constitutes the Ground element.



RUN



WAIT

The Figure element can also be expressed through the actions of the signer's body as in the verbs LOOK (4.27) and BOW (4.28). In Irish Sign Language therefore, the signer's body can have an articulatory function similar to that of the hands.

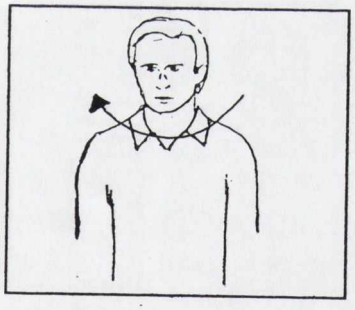
sr

(4.27) (BOY) LOOK

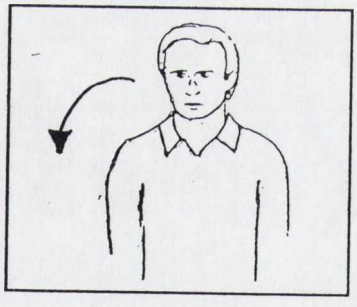
(The boy) looked out

(4.28) SNOW^MAN DOFF-HAT BOW

The snowman doffed his hat and bowed



(4.27) LOOK



(4.28) BOW

There has been some disagreement about how the action or disposition of the signer's body can be accommodated in a description of the morphology of verbs in sign languages. Supalla (1986: 193-4) refers to body and bodypart classifiers in American Sign Language; Brennan (1990: 54) does not include body classifiers in her analysis and doubts whether there are bodypart classifiers in British Sign Language.

Supalla gives the verb HIT-IN-THE-EYE as an example which incorporates both body and bodypart classifiers. In HIT-IN-THE-EYE the signer's closed fist moves towards the signer's eye (Supalla 1986: 208, figure 7) so that "the signer's body can be used as a marker to refer to the body of the referent object" (p. 193). In addition, the verb "includes one eye of the signer as the location towards which the signer moves his hand

articulator" (p. 194). Supalla suggests that this location functions as a bodypart classifier within the verb. Padden (1990: 119) gives GUN-DIRECTED-TO-TORSO and GUN-DIRECTED-TO-HEAD as examples similar to HIT-IN-THE-EYE and refers to them as "predicates with locative affixes".

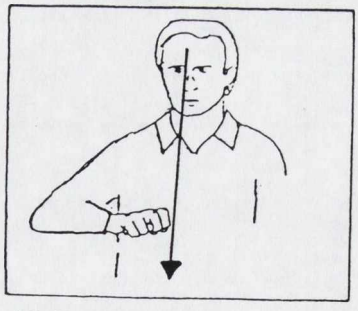
I want to make a distinction between "predicates with locative affixes" and plain verbs where the signer uses his / her body to denote a particular physical action or state. (See also the discussion in 7.4). In Irish Sign Language the behaviour of verbs in this latter group, such as WAIT (4.25) and RUN (4.26), is typical of the behaviour of plain verbs. In phonological terms they are body-anchored verbs in which the signer's body functions as an articulator; they do not accept person or location markers and they typically refer to physical actions or states.

In Irish Sign Language different types of verbs can be used to refer to the 'same' motion event. Plain verbs such as WAIT and RUN express, as it were, a 'close-up' perspective on the action and refer in a particular way to the manner of *locomotion*. On the other hand, verbs which take locative affixes reflect the wider spatial environment in which the motion event occurs and enable the signer to refer to features such as location or direction of motion. The existence of different verbs which can refer to the 'same' motion event gives flexibility and allows the signer to focus on particular aspects of the action. The following examples (4.29) - (4.31) illustrate this flexibility.

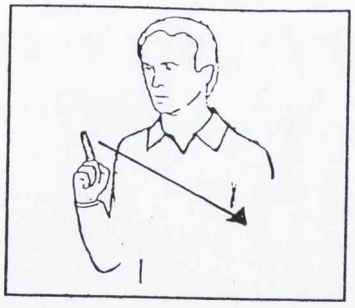
(4.29) BOY V-CL+c / hi+MOVE+f / lo+rapid) ... Index-CL+(sl+MOVE+fr)
The boy hurried downstairs ... and went out

(4.30) <u>ee</u>
RUN ... Index-CL+(sr+MOVE+fl) ... RUN
He ran ... out

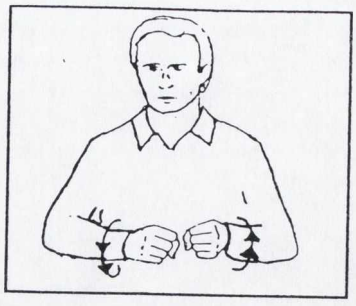
(4.31) BOY RUN OUT^FOR
The boy ran outside


V-CL+MOVE

In these examples three different verbs are used to refer to the boy's motion :
(i) V-CL+c / hi+MOVE+f / lo+rapid)
(An animate entity uses its two legs to move quickly from one location to another)
(ii) Index-CL+(sr+MOVE+fl)
(A saliently one dimensional entity moves from one location to another)
(iii) RUN
(A person runs)

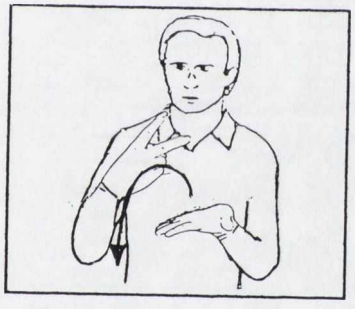


Index-CL+MOVE as in (4.30)



RUN as in (4.31)

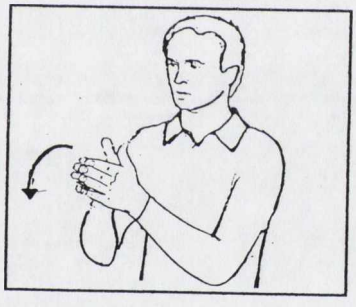
Of these three verbs only RUN is a plain verb where the primary focus is on the manner of locomotion. Unlike the other two, RUN cannot take a locative affix. (See also discussion in 3.4 on different forms of RUN). Other plain verbs which share the same characteristics are DIVE, LOOK, STAND, SWIM and WALK. In the case of each of these verbs there is an alternative verb which can situate the 'same' motion event in a wider spatial context. Alternative forms of 'dive' and 'stand' are illustrated below.



V-CL+BE-LOCATED+hi+on left hand+
Flat-surface-entity-CL+ EXIST+hi ------

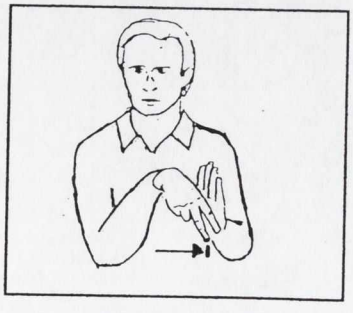
MOVE-arc+orientation-change+lo ('dive')

---



DIVE

(Elicited examples)



V-CL+BE-LOCATED+by left hand
Vertical-2D-entity-CL+EXIST -----
('stand by a wall')



STAND-IN-PRAYER

### 4.3 Plain Verbs Articulated in Neutral Signing Space

Some plain verbs, such as the verbs BREAK (4.32) and MEET (4.33), are articulated in neutral signing space, that is, they are not anchored in terms of body contact or proximity to a specific location on the trunk of the signer's body. They do, however, involve the articulation of one hand in contact with or in proximity to the other hand. Signs which involve contact between the hands differ from signs which involve contact with a location on the trunk because only the former can be articulated in neutral signing space. Another example is the verb FIND (4.34) which is articulated with one hand and is not associated with any body location. Since verbs such as BREAK, MEET and FIND can be articulated in neutral signing space they are unlike other plain verbs. They do however, have an important prototypical feature of other plain verbs: they do not take affixes which mark for person or locative agreement.

(4.32) T-V BREAK
The television is broken

(4.33) MEET CHRISTIAN-BROTHER MEET
(He) met a Brother

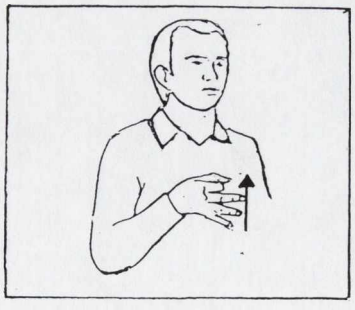


BREAK (citation form)

If verbs are not anchored they can be articulated at different locations in signing space and thus they can be modified. In (4.34) and (4.35) the verbs FIND and COLLECT are articulated at the locus 'sl'. The other constituents of the verb phrases, ORANGE and c-o-a-l, are modified in a similar way.

(4.34) BOY ... FIND-sl ORANGE-sl
The boy ... found an orange

(4.35) BOY ... COLLECT-sl c-o-a-l -sl
The boy ... gathered coal(s)



FIND (citation form)

Engberg-Pedersen (1993: 214ff) states that in Danish Sign Language markers such as 'sl' in (4.34) and (4.35) are not obligatory and are used express pragmatic agreement. The 'sl' markers in these examples from Irish Sign Language appear to serve a similar function. In this discourse the signer has established two contrasting locations in

signing space. Locations to the signer's right (sr) represent the outdoors where a boy has made a snowman. Locations to the signer's left (sl) represent the house where the boy goes indoors for extra clothing, for meals and for items with which to decorate the snowman. Pragmatic agreement is a matter of choice so that not all the actions described by the signer are necessarily marked 'sr' or 'sl'; markers occur in the verb phrase only when the signer chooses to emphasise a contrast or to organise a narrative in a particular way.

Plain verbs which are normally articulated in neutral signing space can accept markers which express pragmatic agreement but cannot accept markers which express other forms of agreement (see chap. 6). Markers for pragmatic agreement are exceptional in that they tend to occur across all or most of the other signs in the verb phrase and thus, the marker which appears on the verb also appears on associated nouns, pronouns and adjectives. Another example of pragmatic agreement from Irish Sign Language (4.36) shows how the markers can occur across all the constituents of the verb phrase.

(4.36) _____sl

BOY EAT-sl ALL-sl FINISH-sl sl+GO-TO+fr

When the boy had eaten everything he went back outside

### 4.4 Lexicalised Plain Verb Forms

Another group of plain verbs in Irish Sign Language are atypical in that they have what can be described as a recognisable internal structure and are composed of potentially separable elements. However, the internal elements have not retained any distinct meanings and the verb forms have become lexicalised as whole entities. Although verbs of this kind can be articulated in neutral signing space they do not take affixes which mark for person or locative agreement.

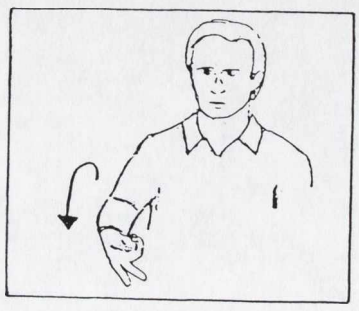
Supalla (1978: 41-2) refers to these signs in American Sign Language as 'frozen' signs and cites FALL (4.37 - 4.38) as an example; the form of the verb FALL remains the same in both sentences.

(4.37) MAN FALL

The man fell (ASL)

(4.38) CUP FALL

The cup fell (ASL)



FALL as in (4.37) and (4.38)

In verbs which refer to motion the V handshape usually functions as a classificatory verb stem which denotes animate beings with two legs. However, FALL can now be used to refer to anything that falls, whether it is a person or a cup, and thus the V handshape no longer has a separate significance in the structure of this verb.

To illustrate the point further we can compare the lexicalised plain verb EAT (4.39) with the polymorphemic verb POP-INTO-ONE'S-MOUTH (4.40) from Irish Sign Language. The internal structure of EAT can be analysed in the following way:

(4.39) Handle-small-entity-CL+MOVE-towards mouth
Body-CL+EXIST+mouth
(EAT)

Although the hand configuration and movement suggest that pieces of food of a certain size are being placed in the mouth by hand, the verb EAT can refer to eating food of different kinds in different ways and not necessarily placing the food in the mouth with the hand. In other words, the lexicalised verb EAT expresses a more generalised meaning than the phonological form of the verb might suggest. On the other hand the verb POP-INTO-ONE'S-MOUTH expresses a very specific meaning. In example (4.40) it literally means putting something of a certain size into the mouth with the hand.

(4.40) Handle-small-entity-CL+MOVE-towards mouth
Body-CL+EXIST+mouth+open+close)
(POP-SOMETHING-INTO-ONE'S-MOUTH)

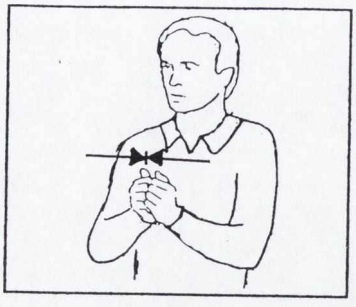
Several plain verbs in Irish Sign Language appear to fit into the category of 'frozen' or lexicalised signs. STOP (4.41), MEET (4.42), ARRIVE (4.43) and MEND (4.44) are some examples.

(4.41) AND gesture STOP
Then (he) stopped

(4.42) MEET CHRISTIAN-BROTHER MEET
(He) met a Brother



(4.41) STOP



(4.42) MEET

(4.43)

whq

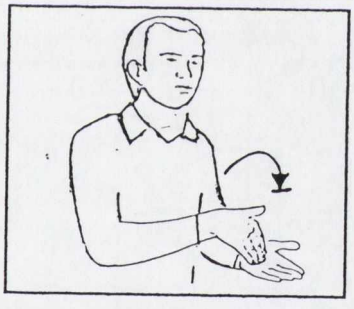
WHEN S-h-e-i-l-a ARRIVE DUBLIN WHEN

When did Sheila arrive in Dublin?

(4.44) TO-MORROW CAR MEND

The car will be fixed to-morrow

(Elicited examples)



(4.43) ARRIVE



(4.44) MEND

Each of these verbs consists of two elements in what can be termed a Figure and Ground association (Talmy 1985: 61). In examples (4.45 - 4.48) the dominant hand constitutes the Figure (F) and the non-dominant hand the Ground (G) element. Each example can be analysed and glossed in the following manner:

(4.45)

STOP: (F) Two-dimensional-entity-CL+(path-downwards+palm-edge+locate on left hand)

(G) Flat-surface-entity-CL+(hold)

A two-dimensional entity drops on to a stationary flat surface.

(4.46)

MEET: (F) Three-dimensional-entity-CL+(path-leftwards+contact with left hand)

(G) Three-dimensional-entity-CL+(path-rightwards+contact with right hand)

Two three dimensional entities approach each other from opposite directions and make contact.

(4.47)

ARRIVE: (F) Two-dimensional-entity-CL+(path-arc+fingertips+locate on left hand)

(G) Flat-surface-entity-CL+(hold) ----------

A two-dimensional entity approaches and makes contact with a location on a stationary flat surface.

(4.48)

MEND: (F) Flat-surface-entity-CL+(orientation change+contact left hand)

(G) Flat-surface-entity-CL+(hold)

A flat surface entity makes contact with another flat surface entity.

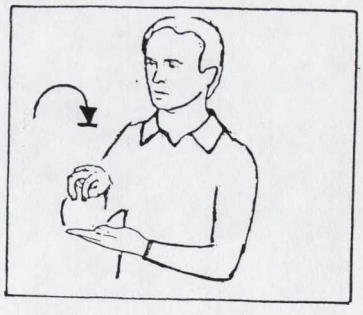
The phonological structure of these verb forms is similar to that found in polymorphemic verbs. Although their surface forms may be similar, lexicalised plain verbs composed of elements which have lost their separate meanings should be distinguished from polymorphemic verbs composed of elements which have retained their separate meanings. To illustrate the difference we can compare the lexicalised plain verb ARRIVE (see 4.47 above) with the polymorphemic verb illustrated in (4.49):

(4.49) V-CL+MOVE-arc+BE-LOCATED-on left hand

Flat-surface-entity-CL+EXIST ----------

(A bird) landed on (the bird table)

(Elicited example)



(4.49) 'land on'

In ARRIVE (4.47), the configuration of the dominant hand is the same as that used in classificatory verb stems for vehicles. However, this handshape does not have the separate significance in the structure of ARRIVE which it would have in the structure of

a polymorphemic verb. The use of the verb ARRIVE is not restricted to the arrival of vehicles but can also be used to refer to the arrival of persons.

Lexicalisation of a similar kind has occurred in relation to the verb MEND. This verb is frequently used to refer to the repair of objects, such as putting a sole on a shoe or a patch on a coat. Indeed, the formational properties of MEND suggest that it is strongly associated with contexts of that kind. However, MEND is now also used to refer to 'settling differences' or 'making up' after a quarrel.[1] Again it is clear that the hand configuration associated with MEND, which once may have had a meaning independent of the rest of the verb, no longer has such a meaning.

The phonological form taken by the verbs ARRIVE and MEND is the same in each of the following pairs of examples (4.50) - (4.53):

(4.50) (SNOW^MAN BOY) ARRIVE V-CL+BE-LOCATED+c
V-CL+BE-LOCATED+c
(The snowman and the boy) arrived back (at the house)

(4.51) B-u-s ARRIVE
The bus arrived

(4.52) SHOE PRON1 MEND
I mended the shoe

(4.53) TWO-OF-THEM QUARREL FINISH MEND
They ended their quarrel and made up

(Examples 4.52 and 4.53 have been elicited)

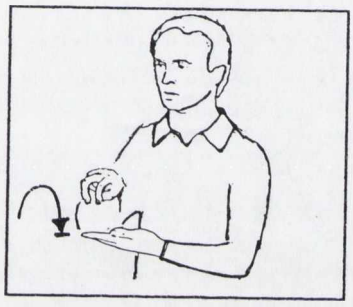
### 4.5 Verbs in Transition

The phonological properties of lexicalised verb forms indicate that there is a close relationship between these plain verbs and polymorphemic verbs with comparable surface forms. In polymorphemic verbs for example, the non-dominant hand functions as a classificatory verb stem which expresses a morpheme denoted by the phonological feature 'hold'. In plain verbs the non-dominant hand functions as an articulatory feature which forms the 'ground' element in lexicalised constructions. However, in the case of plain verbs the internal elements do not have separate significance. Furthermore, plain verbs tend to have acquired a more generalised range of usage than polymorphemic verbs with comparable surface forms.

This close relationship suggests that over time some polymorphemic verbs are lexicalised and become plain verbs. It also suggests that at any period certain verb forms may be in transition from one category to another. Two examples from the data, (4.54) and (4.55), appear to confirm the existence of a process of this kind.

(4.54) V-CL+MOVE-arc+orientation change+BE-LOCATED+on left hand Flat-surface-entity-CL+EXIST ----------
(Someone) got up / out of bed

(4.55) V-CL + BE-LOCATED-on left hand+orientation-change+reduplicate Flat-surface-entity+EXIST ----------
(Someone) tossed and turned / slept restlessly



(4.54) GET-UP / GET-OUT-OF-BED



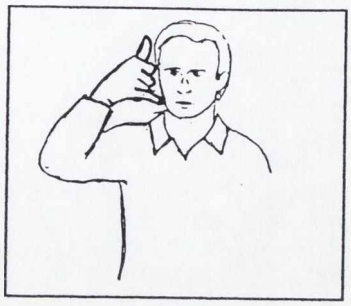
(4.55) TOSS-AND-TURN / SLEEP RESTLESSLY

These verbs are consistently used in the data to refer respectively to 'getting up' / 'getting out of bed' and to 'tossing and turning' / 'sleeping restlessly'. However, it is not yet clear if these particular verbs have become lexicalised or acquired a more generalised range of usage or a more generalised meaning in Irish Sign Language.

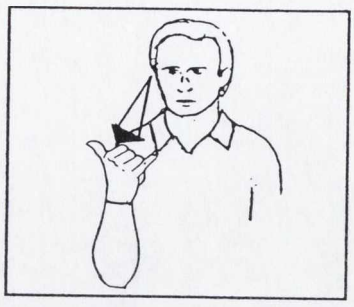
There is also evidence in this study to suggest that over time some plain verbs may become agreement verbs. The verb PHONE is one such example that appears to be in a process of transition. Deaf informants agree that there is a form of PHONE (which we may refer to as PHONE 1) which is a prototypical plain verb. It is articulated at the side of the head and does not take any agreement affix.

Informants also agree that there is another form of the verb, PHONE 2, which has the same hand configuration and meaning as PHONE 1 but which does take agreement affixes. It might be argued that two different verbs are involved here or that different forms of the same verb, PHONE, are associated with a particular argument structure rule. However, a pattern of usage whereby PHONE 1 seems to be usual among older

signers and PHONE 2 among younger signers, suggests that the plain verb PHONE 1 is in the process of becoming an agreement verb.



PHONE 1



PHONE 2

One other instance of mixed usage occurred in the data. Examples (4.56) and (4.57) show a mixed pattern for the verb SEE but in this instance it is not clear whether a transition process is involved. According to informants, the forms of SEE shown in (4.56) and (4.57) do not have the same generational pattern of usage as PHONE.

(4.56) SEE+f AGAIN
(I) will see (you) again

(4.57) (SNOW^MAN) OPEN-DOOR SEE CLOTHES

PRON-sl FATHER CLOTHES

The snowman opened the door and saw clothes, his (the boy's) father's clothes

At this stage there is not enough information or data available in Irish Sign Language to discuss these morphological variations in a more principled way. Several possibilities remain to be explored: the question of diachronic development in Irish Sign Language, whether variations can be accounted for in terms of individual differences in usage among signers, or in terms of generational or other group differences.

Similar examples of mixed usage involving plain and agreement verbs have been reported in other sign languages. Janis (1995: 203) gives the following examples from American Sign Language (4.58) and (4.59).

(4.58) $\text{TOM}_{(a)}$ $\text{aTEACH}_{b}$ $\text{(STUDENTS H-S)}_{(b)}$
Tom teaches high school students

(4.59) TOM TEACH MATH
Tom teaches math

(Examples (4.58) and (4.59) refer to (13a) and (13b) respectively, in Janis (1995: 203). Subscripts denote agreement markers. If a nominal is associated with a locus its subscript is in brackets).

Since TEACH in (4.58) has a marker that expresses agreement with its object STUDENTS H-S, it is an agreement verb. However, in (4.59) TEACH is a plain verb because it has no similar marker to indicate agreement with its object MATH or with any other nominal. Janis argues that the crucial factor here is that STUDENTS H-S is animate while MATH is inanimate and that animacy is an important feature of nominals that control agreement. However, there appears to be a difference between (4.58) and (4.59) in terms of the grammatical relations of STUDENTS H-S and MATH with the verb TEACH: STUDENTS H-S is an indirect object while MATH is a direct object and this difference may account for the fact that the verb in (4.58) has a marker while the verb in (4.59) does not. Further research is needed to explore in more detail relationships between objects and animacy.

Engberg-Pedersen (1993: 215-6 and Ill. 45b) gives a very similar pair of examples, (4.60) and (4.61), from Danish Sign Language.

(4.60) fl+EXPLAIN+c
(Dan) explained it to me

(4.61) PRON+fsl GOOD+fsl EXPLAIN+pragmatic agreement-fsl
GOOD+fsl ----
PRON+fsr SO-SO+fsr
---

One group was good at exposing their ideas, whereas the other one wasn't really so good

(Examples (4.60) and (4.61) refer to Ill. 45b, p. 389 and (2) p. 215 respectively in Engberg-Pedersen 1993).

In (4.60) EXPLAIN is a double agreement verb. In agreement verbs the orientation and / or direction of movement of the hands are important. In EXPLAIN (4.60) the bases of the hands are oriented towards the locus of its A argument and the fingertips are

oriented towards the locus of its IO argument. In (4.61) EXPLAIN shows pragmatic agreement. In (4.61) the orientation of the hands is irrelevent; what is important in this example is where the hands are positioned in signing space.

In examples (4.60) and (4.61) the verb EXPLAIN appears to function in a way that is similar to how the verb TEACH functions in (4.58) and (4.59). It seems likely, as Janis (1995) argues in the case of TEACH, that animacy is an important feature in determining agreement between a verb and its argument(s). It is also possible, as we have pointed out, that an indirect object relation between the verb and its argument is another determining factor. (Grammatical relations and verb agreement is discussed in 5.2.3 and animacy as a feature of verb agreement is discussed in 5.3.4).

## 4.6 Semantic Properties of Plain Verbs

Many plain verbs in ISL denote what Jackson (1990: 10) calls private states, that is, subjective states of mind and feeling. Such verbs refer to intellectual, emotional and perceptual states as well as states of bodily sensation. Verbs which refer to intellectual states are shown in (4.62) - (4.66) and typical examples THINK and BE-STUPID are illustrated below.

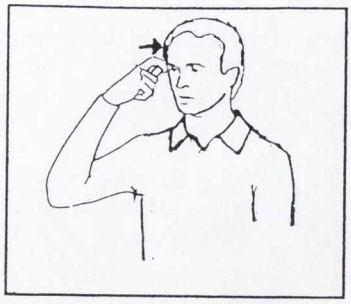
(4.62) _____n
PRON1 DON'T-KNOW WHY
I don't know why

(4.63) HAVE-IDEA AROUND f-e o-r j- THERE+timeline
I think it was around January or February, about that time

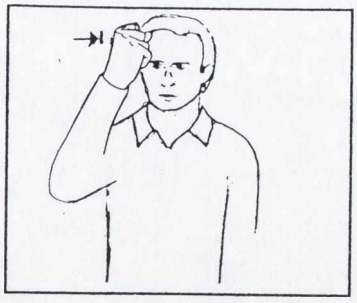
_____n
(4.64) PRON1 BELIEVE PRON-f (Elicited example)
I don't believe you

(4.65) LIE-IN-BED ...DREAM ... V-CL+BE-LOCATED+on left hand+orientation
Flat-surface-entity-CL+EXIST ----------
change+reduplicate
---
(He) lay in bed ... dreamed ... and tossed and turned

(4.66) P-e-t-e-r BE-STUPID (Elicited example)
Peter was stupid



THINK (citation form)



BE-STUPID as in (4.66)

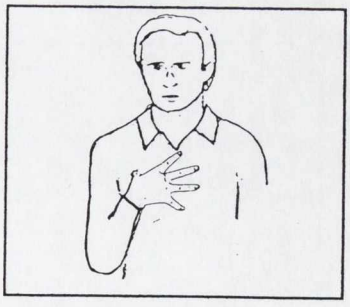
Verbs which denote emotional states are shown in examples (4.67) - (4.70) of which (4.67) - (4.69) were elicited.

(4.67) PRON1 BE-ANGRY
I was angry

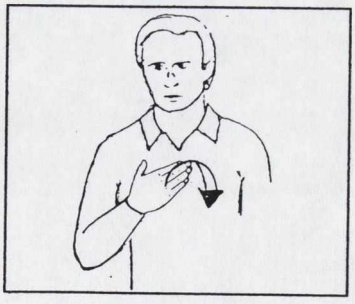
(4.68) A-l-a-n WORRY LITTLE
Alan was somewhat worried

(4.69) LOVE PRON-fr
PRON-sl ----------
She loves him

(4.70) SURPRISE / Multiple-small-entities-CL+f / hi+MOVE+f / lo+fingers
Multiple-small-entities-CL+f / hi+MOVE+f / lo+fingers
He was surprised. It was snowing



(4.68) WORRY



(4.70) SURPRISE

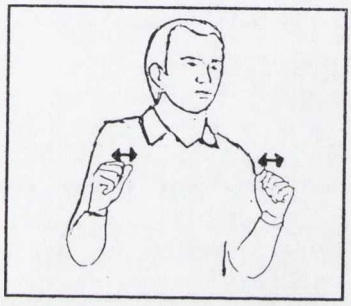
Verbs which denote physical states are shown in examples (4.71) - (4.74).

(4.71) DAY BE-COLD
It was a cold day

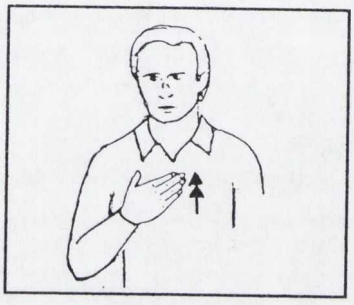
(4.72) FIRE BE-HOT
The fire was hot

q
(4.73) PRON-f BE-ILL PRON-f (Elicited example)
Were you ill?

(4.74) LIVE+reduplication SNOW^MAN LIVE
He was alive! The snowman was alive.



(4.71) BE-COLD



(4.74) LIVE

Plain verbs often denote concrete actions which typically refer to the use of parts of the body as in examples (4.75) - (4.77).

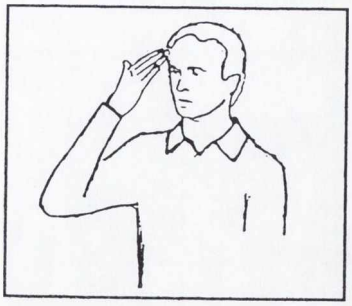
(4.75) BOY EAT-sl ALL-sl FINISH-sl ...
When the boy had eaten everything ...

(4.76) ee ee
RUN Index-CL+sr+MOVE+fl RUN
He rushed out

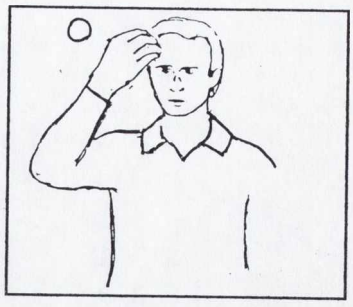
(4.77) SNOW^MAN [STAND-WITH-HANDS-ON-HIPS]
The snowman stood with his hands on his hips

### 4.7 Form-Meaning Relations

A significant number of plain verbs which denote private states express a motivated relationship between form and meaning. Verbs such as KNOW (4.78) and FORGET (4.79) which denote intellectual states are articulated in contact with, or in proximity to, the head; verbs such as LOVE (4.80) and BE-ANGRY (4.81) which denote emotional states are associated with the trunk area.



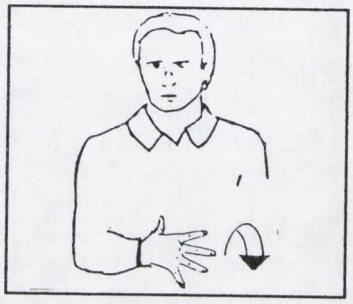
(4.78) KNOW



(4.79) FORGET



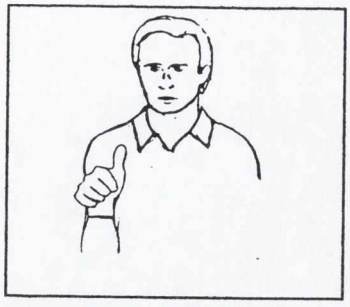
(4.80) LOVE



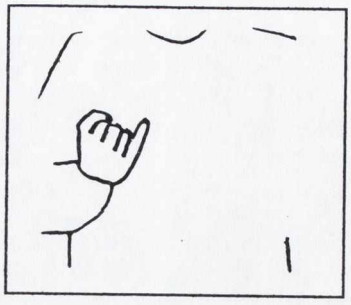
(4.81) BE-ANGRY

Klima and Bellugi (1979) in American Sign Language and Woll (1983) in British Sign Language have identified signs with 'generalised meaningful parameter values', that is, signs which have related meanings and which share some constituent element. For example, many signs which refer to emotional processes in British Sign Language are articulated on the chest and signs which relate to cognitive processes are articulated at the forehead (Woll, op. cit. 41). Thus, these two groups of signs express a relationship between meaning and the constituent element, location.

Woll argues that generalised meaningful parameter values should not be regarded as a mere curiosity such as sound symbolism in spoken language but rather "as an organising principle for the representation of meaning in sign language" (p. 55). She shows for example, that particular handshapes are significantly associated with semantic notions of goodness (4.82) and badness (4.83). She also points out that signs with connotations of goodness and badness which in the past had distinct handshapes, have changed handshapes to conform to the prevailing pattern. In the light of the discussion in section 4.6 it is clear that generalised meaningful parameter values also function as organising principles for plain verbs expressing cognitive and emotional states in Irish Sign Language.



(4.82) 'goodness'



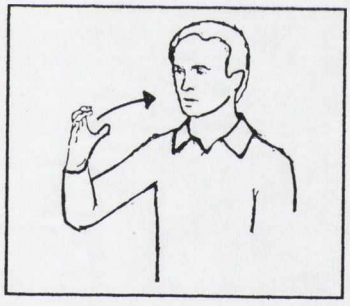
(4.83) 'badness'

A further aspect of the non-arbitrary relationship between the form of a sign and its meaning is evident when a particular action or activity is represented by the movement or posture of the body or part of the body, as in examples (4.84) - (4.86).

(4.84) DRINK

(4.85) DIVE

(4.86) BOY SLEEP Handle-entity-CL+EXIST+c
Handle-entity-CL+EXIST+c
Body-CL+EXIST+upper chest
The boy was under the blankets asleep



(4.84) DRINK



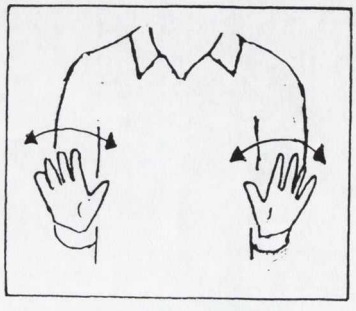
(4.86) SLEEP

In the representation of some concrete actions the relationship between form and meaning may be so clear that the same signs can be used in similar communicative contexts by both signers and speakers. Other examples which occurred in the data collected for this study are given in (4.87) - (4.89).

(4.87) (BOY) SHAKE-HANDS
The boy shook hands

(4.88) (SNOWMAN) BOW
The snowman bowed

(4.89) (SNOWMAN) WAVE 'No'
The snowman said, 'No, no!'



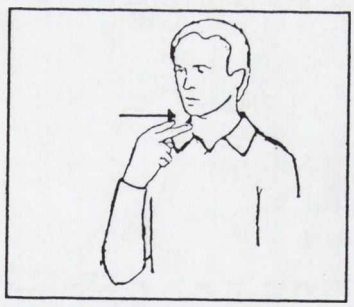
(4.89) WAVE-'No'

In Irish Sign Language the plain verb CRY (4.90) is articulated at the cheek(s), SMELL (4.91) at the nose, and KILL (4.92) at the neck with a 'beheading' movement of the hand. However, it is important not to over-emphasise any form / meaning relationship expressed by plain verbs. Although it is clear that Irish Sign Language draws on visual metaphor as a source for lexicalisation, it is equally clear that this is not an exclusive pattern. The relationship between the form and meaning of plain verbs can also be entirely arbitrary. Plain verbs such as BE-DISAPPOINTED (4.93), TRY (4.94), and BE-READY (4.95) do not express any obviously motivated relationship between the form of the verb and its meaning. These verbs are illustrated in sentences (4.96) - (4.98).

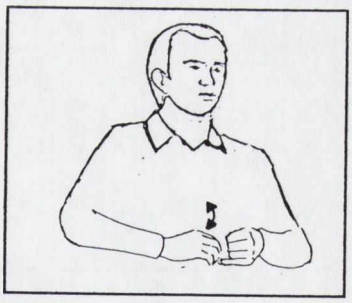
(4.96) BOY ... BE-DISAPPOINTED / SNOWMAN MELT
The boy ... was dismayed. The snowman had melted

(4.97) (BOY) ... SLEEP TRY SLEEP
(The boy) ... tried to sleep

(4.98) _____q
PRON-f BE-READY
Are you ready?

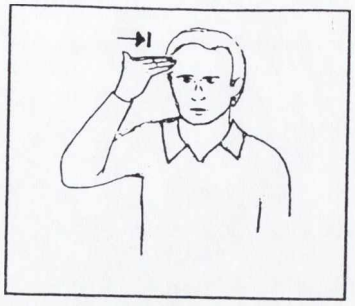


(4.96) BE-DISAPPOINTED



(4.97) TRY

Physical states, which on the face of it might be expected to be the strongest candidates for expressing iconic content, seem in fact to be more varied in terms of expressing a form / meaning relationship. The verb BE-COLD (4.99) is articulated in neutral space; BE-HOT (4.100) and BE-ILL (4.101) are articulated in the head area while BE-WELL (4.102) expresses no iconic content.



(4.101) BE-ILL



(4.102) BE-WELL

### 4.8 Non-manual Modification

Non-manual features can be used to modify plain verbs in a way that is similar to how they may be modified by being articulated at non-neutral locations in signing space (see 4.4). In examples (4.103) and (4.104) the signer's gaze, head and body movement and orientation are used to modify the verb STARE.

(4.103)

fr
STARE
He stared at ...
He stared in this direction ...

(4.104)

fl------fr
STARE
He stared at ...
He stared in this direction ...

In example (4.103) the plain verb STARE is executed with the signer's head and gaze oriented towards the locus 'fr'. In (4.104) the signer's head rotates from left to right and his gaze shifts from loci 'fl' through 'fr'. In both sentences the signer's gaze has a pronominal function. In these particular examples, the judgement about the meaning is derived from the pragmatic context of the utterance. The utterances therefore consist of syntactic elements from two sources, the manual sign STARE and the non-manual features related to head, gaze and body orientation.

### 4.9 Conclusion

In this chapter we have seen that in Irish Sign Language prototypical plain verbs do not take affixes which mark for person or locative agreement. Typically, they are body-anchored signs. They tend to occur in semantically related fields and there is often a motivated relationship between the form of the verb and its meaning.

Not every plain verb in Irish Sign Language shares all of these features. We noted one sub-group of plain verbs which are not body-anchored and which can be articulated in non-neutral locations in signing space. These plain verbs, like verbs from other categories, can be modified for pragmatic agreement. Markers for pragmatic agreement are not specifically related to verb signs but can occur on other signs in the verb phrase, such as nouns, pronouns and adjectives.

We identified a second sub-group consisting of plain verbs which have a recognisable internal structure. We suggested that these forms have become lexicalised and consequently the structural elements do not have separate meanings. Their use has become more generalised than the internal composition might indicate. These verbs are best categorised as plain verbs since they do not accept agreement markers for person or location. A small number of verbs seem to be in transition from a polymorphemic to a lexicalised state and although they have not acquired the generalised usage characteristic of lexicalised plain verbs, they otherwise appear to function as plain verbs.

We distinguished a third sub-group of verbs which, in some contexts and among certain groups of signers, can surface either as agreement or as plain verbs. It is not clear how many verbs in Irish Sign Language fall into this sub-group, but the number appears to be quite small.

Finally, we suggested that in semantic terms plain verbs typically denote subjective states of body, mind and feeling. These verbs have related meanings and share a place of articulation as a constituent element. Plain verbs denoting intellectual states are typically articulated in contact with, or in proximity to, the signer's head; verbs referring to emotional states are articulated in contact with, or in proximity to, the signer's trunk.

A summary of prototypical features of plain verbs is contained in Figure 4.1.

Prototypical plain verbs ...

- do not mark for person or locative agreement;
- are body anchored signs;
- occur in semantically related fields;
- denote subjective states of body, mind or feeling;
- express a motivated relationship between form and meaning.

Figure 4.1 Prototypical Features of Plain Verbs in Irish Sign Language

In this chapter we have suggested a number of directions for further research. Firstly, in the interests of reliability, it is necessary to relate a larger sample of plain verbs to the prototypical features identified in this chapter. Secondly, it would be useful to explore in more detail the fuzzy edges associated with the categorisation of certain plain verbs. Are some polymorphemic verb forms in the process of being lexicalised as plain verbs? Why do some verbs surface as plain verbs or as agreement verbs? Are these processes associated with particular semantic or syntactic contexts? Are there factors other than generational differences involved?

**Notes**

1. Informants disagreed about the use of MEND in this context. Some felt that a more acceptable version of example (4.53) is -

TWO-OF-THEM QUARREL FINISH BE-FRIEND
They ended their quarrel and made up

and that a more acceptable use of MEND is that which translates as 'repair' or 'fix' as in the example below.

TOMORROW CAR MEND
The car will be fixed to-morrow

# 5 AGREEMENT VERBS IN IRISH SIGN LANGUAGE

## 5.1 Introduction

In the last chapter we distinguished between plain verbs and agreement verbs in Irish Sign Language. We proposed that this distinction could be made on the basis of prototypical features of the verbs, the principle distinguishing feature being that plain verbs do not take affixes which mark for agreement.

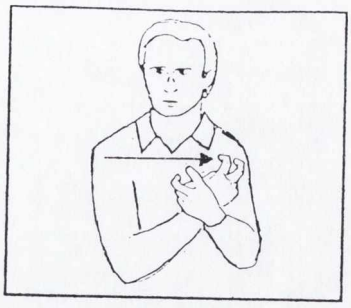
In this chapter we discuss two different types of agreement verbs, person agreement verbs and locative agreement verbs. We try to show that person agreement verbs differ from locative agreement verbs in terms of their morphophonological and semantic properties. We also try to show that each type can be identified on the basis of the relationship between the agreement markers and the controller nominals. We then describe the morphological structure of the two types of agreement verbs.

In Irish Sign Language affixes which mark for agreement are phonetically realised by moving or orienting the hand(s) in a direction towards or away from the signer, or by moving or orienting the hand(s) between two non-sender loci. In example (5.1), the signer has specified a referent HOUSE at a locus 'fr' and a referent SCHOOL at a locus 'fl'. The markers 'fr' and 'fl' are attached to the verb RUN and agree with the nominals HOUSE and SCHOOL respectively. The verb is articulated by placing the hands at a locus 'fr' and then moving them in a straight line to the locus 'fl'.

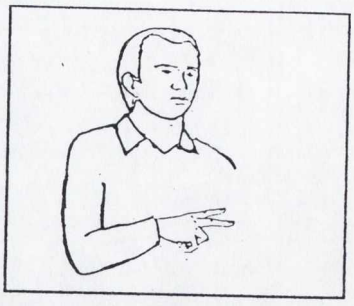
In example (5.2) the signer has specified two referents, SNOW^MAN at a locus 'sl' and BOY at a locus 'c'. The agreement markers 'sl' and 'c', which are attached to the verb LOOK-AT, agree with the nominals SNOW^MAN and BOY respectively. The verb is articulated by orienting the hand from locus 'c' towards locus 'sl'. This example also includes a referential shift in which the referent BOY is represented by 'c', the sender locus.

(5.1) (HOUSE-fr) (SCHOOL-fl) fr+RUN+fl (Elicited example)
(I) ran from the house to the school

(5.2) (BOY) (SNOW^MAN-sl) c+LOOK-AT+sl
The boy looked at the snowman



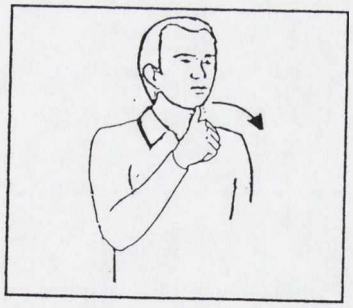
fr+RUN+fl



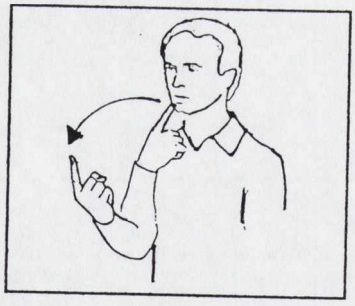
c+LOOK-AT+sl

In Irish Sign Language the articulation of some signs can exploit movements and locations in signing space which are also characteristic of agreement verbs. However, movements and locations which are part of the articulation of a sign do not always have a separate significance in terms of meaning. It is important therefore, to distinguish between a location which has both an agreement and a phonological function, and a location which has only a phonological function in the production of a sign. We can make this distinction by comparing signs which have similar phonological properties but which differ morphologically.

The sign NOTHING, in example (5.3), has the following form: the hand moves outwards from a contact point at the signer's chin. Neither the onset location nor the offset location of the sign have any separate significance for meaning. They constitute part of the articulation of the sign and do not affect its morphology.



(5.3) NOTHING
nothing



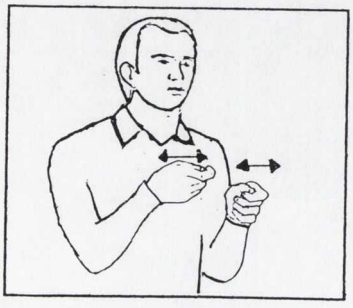
(5.4) SAY-TO + f
(I) told (someone)

The verb SAY-TO+f, in example (5.4) has very similar phonological properties. In the production of SAY-TO+f the hand moves outwards from a point near the signer's mouth. The onset location has an articulatory function. The offset location which completes the articulation also refers to the object argument of the verb and therefore has morphological as well as phonological significance.

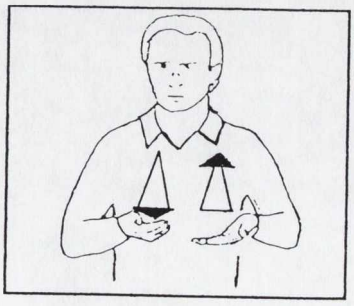
Figure 5.1 contains a list of signs (A) which involve articulatory movements and locations, and a list of agreement verbs (B) with broadly comparable features involving the use of loci as agreement markers. All the signs (except examples 5.9 and 5.10) in Figure 5.1 involve a movement towards or from the locus 'c', or an orientation in relation to this locus. In (A) the locations and the associated movements are elements in the articulation of the signs. In (B) the locations and movements are morphologically significant. Two pairs of examples, (5.7) / (5.8) and (5.11) / (5.12), are illustrated below.

| Articulatory movement / locations (A) | Agreement verbs (B) |
|---|---|
| (5.5) BE-PREGNANT<br>to be pregnant | (5.6) c+ASK+f<br>(I) asked (someone) |
| (5.7) CONTROL<br>to control | (5.8) c+CONSULT+f<br>f+CONSULT+c<br>(We) consulted (each other) |
| (5.9) ASSESS<br>to assess | (5.10) fr+ARGUE+fl<br>fl+ARGUE+fr<br>(They) argued with (each other) |
| (5.11) DESTROY<br>to destroy | (5.12) PAY+fr<br>(I) paid (someone) |
| (5.13) EARN<br>to earn | (5.14) Index-CL+fr+MOVE+c<br>A person came from there to here |

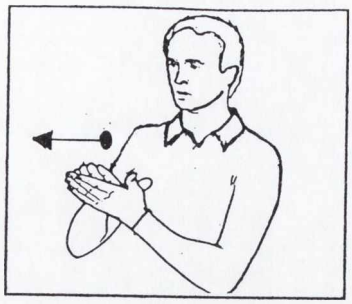
Figure 5.1 Phonological / Morphological Distinctions in Signs



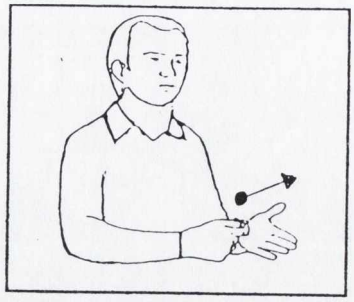
(5.7) CONTROL



(5.8) c+CONSULT+f
f+CONSULT+c



(5.11) DESTROY

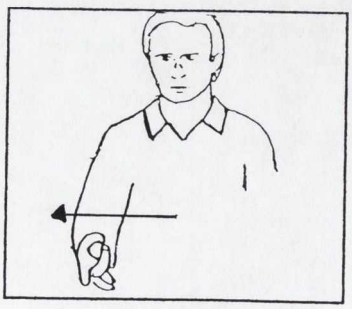


(5.12) PAY+fr

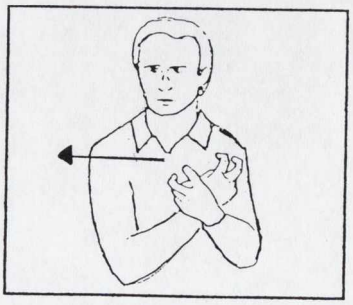
Apart from some exceptions (see 4.5), affixes are obligatory in agreement verbs in two senses. At a phonological level they are required to enable pronounceable forms of the verb to be articulated and at a morphological level they are required in order to mark for agreement on the verb. In agreement verbs such as ASK (5.6) the hand configuration and the height of articulation are lexically specified but the onset and offset loci and the movement path are variable and are determined by the subject and object arguments of the verb. ASK therefore has an underspecified root with slots for two markers. To convert the root into a pronounceable form onset and offset loci must be specified, and movements relative to these loci indicate the subject and indirect object arguments respectively. Not all agreement verb roots have two empty slots; verbs such as SEE and SAY-TO have one slot which takes a marker to agree with the object argument (see 5.3.3).

## 5.2 Two Types of Agreement Verbs in Irish Sign Language

Verbs which can mark for agreement constitute an important group of verbs in Irish Sign Language. This category of verbs consists of two sub-categories which can be identified on the basis of morphophonological and semantic differences and on the basis of the relationship between the agreement markers and the controller nominals. The verbs ASK and RUN, in (5.15) and (5.16) below, are prototypical examples of verbs in each sub-category.



(5.15) c+ASK+fr (FATHER-fr)
(I) asked my father



(5.16) c+RUN+fr
(I) ran from here to there

In phonological terms the agreement features in the two verbs are realised through a movement between two loci. Although the onset and offset loci of the two verbs are phonologically similar there is a difference in interpretation. The features of the arguments to which the loci refer are very different. In (5.15), for example, the locus 'c' refers to the subject and locus 'fr' to the object of the verb. In (5.16) both loci refer to a locative relationship between the verb and its arguments.

### *5.2.1 Morphophonological Differences between Agreement Verbs*

Although the surface forms of the two types of agreement verbs may be similar, a number of studies (Liddell 1990; Padden 1990; Valli and Lucas 1992; Janis 1995) show that their morphology is quite different. In one type of agreement, which we have called locative agreement, verb markers express locative relations with controller nominals; in the other type, which we have called person agreement, relations between the verb and controller nominals are expressed in terms of the category of person.

Liddell (1990) and Padden (1990) for example, show that in American Sign Language loci associated with locative relations differ from loci associated with subject and / or object argument relations. Morphophonological distinctions between the two kinds of loci can be shown diagrammatically in Figures 5.2 - 5.5 below.

| Person agreement verb loci | Locative agreement verb loci |
|---|---|
| 5.2 A ----------->B | 5.4 P ----------->Q |
| 5.3 A ----------> B<br>ASK | 5.5 P ---------->R<br>WALK |

Figures 5.2 - 5.5 Agreement Verb Loci (Based on Liddell 1990: 180-1)

In Figure 5.2 locus A refers to the subject, and B to the object of a person agreement verb in Irish Sign Language. The arrowed line indicates the movement path of the hand between the two loci. If we assume that Figure 5.2 represents an utterance of the verb ASK, the movement path of the verb need not be exactly from locus A to locus B; it may move from a position that is relatively near to A to a position that is relatively near to B. In person agreement verb morphology such a relative variation in the movement path of the verb, as indicated diagrammatically in Figure 5.3 does not affect the meaning. The utterances as represented in Figures 5.2 and 5.3 mean the same thing: '(someone) VERB (someone else)'.

This is not the case in relation to the verb WALK as represented in Figures 5.4 and 5.5. The sentence represented in Figure 5.4 indicates that a person, for example, walks from one location, P, to another location, Q. If the sign were modified so that the person moved from P to R, a location 'near to' Q as indicated in Figure 5.4 then the utterance would represent a different event. In locative verb morphology, the utterances represented in Figures 5.4 and 5.5 mean different things because two different sets of locations are denoted. In locative relations "... placing the hand *near*, *far from* , or *at* a locus all contrast" (Liddell 1990: 182).

Padden (1990: 125-6) distinguishes between the two types of agreement verbs on the basis of the meanings expressed through reduplication. In American Sign Language the person agreement verb GIVE, example (5.17), contrasts with the locative agreement verb PUT, examples (5.18) and (5.19), although the surface forms of both verbs may be similar. Sentences (5.17) to (5.19) involve articulations of the verb forms with reduplications in each case. The articulation patterns are shown diagrammatically in Figures 5.6, 5.7 and 5.8.

(5.17) I $_{c}$GIVE$_{d}$ exhaustive
I gave one to each of them

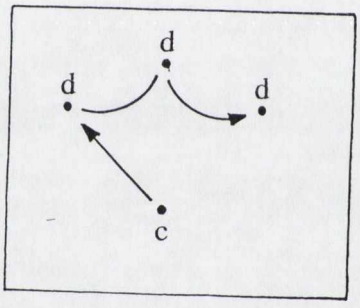


Figure 5.6

(5.18) I $_{c}$PUT$_{d}$ ; $_{c}$PUT$_{e}$ ; $_{c}$PUT$_{f}$
I put one in each of those places

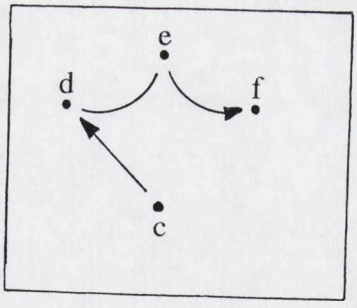


Figure 5.7

(5.19) I $_{c}$PUT$_{d}$ ; $_{c}$PUT$_{g}$ ; $_{c}$PUT$_{h}$
I put one here; I put one near the first, and I put a third item at some distance from the other two

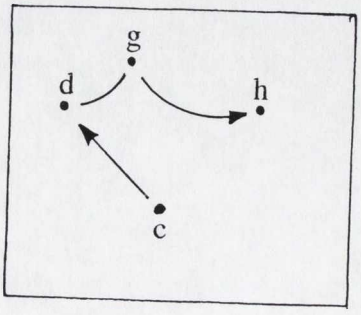


Figure 5.8

Figures 5.6 - 5.8 Articulation of Verb Forms
From Padden (1990: 125, [24-26])

Sentence (5.18) contrasts with (5.19). In (5.18) the distances between the onset and offset points of the sign are constant, as represented in Figure 5.7; in (5.19) the distances are variable, as represented in Figure 5.8. The contrast gives rise to entirely different meanings. There is no comparable contrast in relation to GIVE. As Padden points out, "A form of GIVE that is phonetically similar to sentence 26 (i.e. 5.19 above) would have no change in meaning" (p.125). A similar argument obtains for distinctions between verbs such as GIVE and BE-LOCATED in Irish Sign Language.

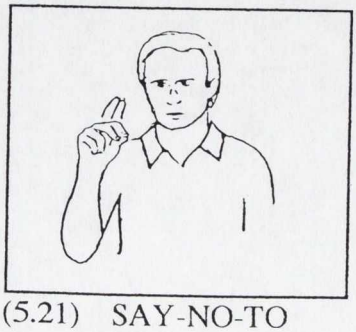
A distinction between these two types of verb does not necessarily imply a distinction between a syntactic and a topographical space. Klima and Bellugi (1979) and Poizner, Klima and Bellugi (1987) characterised the spatial reference associated with person agreement verbs in American Sign Language as syntactic space and they contrasted this use of space with topographical space which they associated with the expression of locative relations. Liddell (1990: 196), however, argues that signing space "is not divided into a syntactic space and a topographical space. Instead, what seems to be a syntactic space may really be topographical, and agreement verbs make significant use of that topographical space by being directed towards their referents (or substitutes)."

By their nature, sign languages express meaning through the use of space and the expression of locative relations in sign languges may appear 'more topographical' than the expression of other kinds of relations simply because they reflect, iconically, aspects of the real world relations to which they refer. However, an expression of locative relations will also involve some rule governed syntactic arrangement of elements so that it hard to see how topographical space might be separated from syntactic space. As we have already observed (see 2.7.4), similar surface forms can express agreement with the category of person or of location.

Another morphophonological difference between the two types of agreement verbs relates to how they are appropriately articulated. In Irish Sign Language person agreement verbs are typically articulated at a particular height in relation to the agent and experiencer / patient / recipient of the action. Thus, the verb ASK (5.20) is articulated at lower chest level and SAY-NO-TO (5.21) at upper chest level. (See also 5.3.2 below).



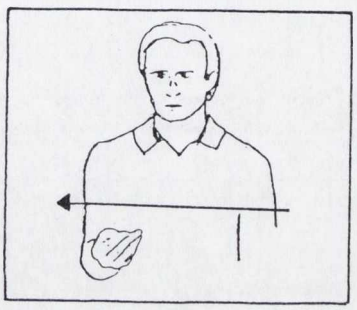
(5.20) ASK



(5.21) SAY-NO-TO

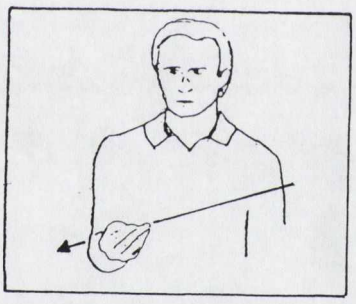
There is no similar lexically specified articulatory locus for locative agreement verbs. The onset and offset loci and the movement of the hand(s) will be determined by the locative features of the controller nominals. Therefore, differences on a vertical plane in relation to onset and offset loci are morphologically significant in locative agreement verbs but are not morphologically significant in person agreement verbs. These differences are illustrated in examples (5.22) to (5.25).

(5.22) MOTHER (fl) FRIEND (fr) fl+GIVE+fr
Mother gave (something) to her friend



'give to someone'

(5.23) MOTHER (fl) BABY (fr) fl+GIVE+fr
Mother gave (something) to the baby

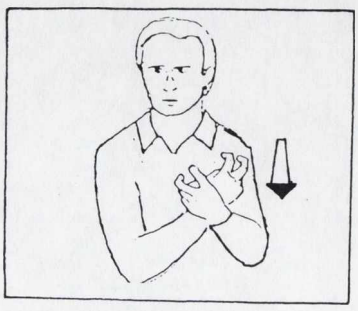


'give to someone'

Examples (5.22) and (5.23) have been elicited.

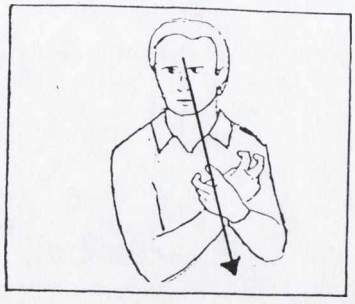
GIVE is a person agreement verb and is articulated at lower chest level in relation to both agent and recipient. The articulatory movement in sentence (5.22) is horizontal and in sentence (5.23) it is an oblique downwards movement. However, this difference is not morphologically significant. Such a difference, however, is morphologically significant in the case of the verb RUN as shown in examples (5.24) and (5.25).

(5.24) BOY c+RUN+f
The boy ran from here to there
(e.g. The boy ran outside)



'run outside'

(5.25) BOY c / hi+RUN+f / lo
The boy ran from up here to down there
(e.g. The boy ran downstairs)



'run downstairs'

There is no lexically specified articulatory locus for the verb RUN. In sentence (5.24) the onset articulatory locus is 'c' but in sentence (5.25) it is 'c / hi'. In sentence (5.24) the articulatory movement is horizontal, from locus 'c' to a locus 'f' and the interpretation here is that a change has occurred in relation to locations along a horizontal dimension. In sentence (5.25) the movement is downwards, from locus 'c / hi' to locus 'f / lo' which denotes that the change in location has taken place along a vertical as well as a horizontal dimension; the difference between the loci on the vertical dimension is morphologically significant.

### *5.2.2 Semantic Differences between Agreement Verbs*

In addition to morphophonological differences there are semantic differences between the two types of agreement verbs. Firstly, agreement verbs differ in terms of their general lexical properties. The agreement verbs listed in Figure 5.9 have an implicit locative meaning (e.g. ENTER, MOVE, BE-LOCATED) or they occur in utterances which typically express locative relations between the verb and its arguments (e.g. FLY-TO, CARRY-BY-HAND, SHINE-ON). As Bos (1990: 244) puts it, "locative meanings always are necessarily associated with verbs like LOPEN ('walk'), whatever form is used." Examples (5.26) - (5.28) below show that verbs of this kind take locative agreement markers, but do not mark for agreement with other associated nominals.

| | | | | |
|---|---|---|---|---|
| RUN | ENTER | FLY-TO | CARRY-BY-HAND | SHINE-ON |
| WALK | MOVE | GO-TO | POINT-TO | BE-LOCATED |

Figure 5.9 Verbs which can take locative agreement markers

(5.26) WHITE^MAN V-CL+fr+MOVE+c
(Literally: The snowman moved from that location to this location)
The snowman came forward

(5.27) BOY fr+CARRY-BY-HAND+c FOOD
(Literally: The boy carried food from that location to this location)
The boy brought in food

(5.28) BLIND MAN ... V-CL+BE-LOCATED+at left hand
Vertical-2D-entity-CL+EXIST ----
The blind man ... stood by the wall

Compared with the verbs listed in Figure 5.9 those listed in Figure 5.10 do not have a similar inherent locative meaning. As examples (5.29) - (5.32) show, the agreement markers on these verbs refer to nominals which receive thematic roles such as agent, experiencer, patient and recipient. They cannot however, assign locative roles to such nominals and if they do occur with locative arguments these arguments are not marked on the verb. Thus, the two types of agreement verbs - locative and person - can be distinguished in terms of their general lexical properties.

| | | | | |
|---|---|---|---|---|
| ASK | PHONE | FAX | PAY | SAY-NO-TO |
| SAY-TO | GIVE | TELL | DISCUSS | ARGUE-WITH |
| ACCUSE | IGNORE | SEE | CRITICISE | GET-ATTENTION-OF |

Figure 5.10 Verbs which take person agreement markers

(5.29) (BOY) (MOTHER^FATHER-fl) c+IGNORE+fl
The boy ignored his parents

(5.30) AT SCHOOL f+ACCUSE+c ALL CLASS
At school the whole class blamed me

(5.31) (BOY) (SNOW^MAN-f) c+LOOK-AT+f
The boy looked at the snowman

(5.32) TELL+plural
(I) told all of them

Semantic differences between the two types of agreement verbs are also evident in terms of tiers of thematic roles. Jackendoff (1990) proposes a two-tier analysis for thematic roles - a thematic tier for dealing with spatial relations and an action tier for dealing with actor / patient type relations. According to this proposal roles such as actor, patient, experiencer and recipient belong to an action tier; roles such as theme,

source, goal and location belong to a thematic tier. Jackendoff gives the following examples, shown here in (5.33) - (5.36):

(5.33) Sue hit Fred

| | | |
|---|---|---|
| Theme | Goal | Thematic tier |
| Actor | Patient | Action tier |

(5.34) Peter threw the ball

| | | |
|---|---|---|
| Source | Theme | Thematic tier |
| Actor | Patient | Action tier |

(5.35) Bill entered the room

| | | |
|---|---|---|
| Theme | Goal | Thematic tier |
| Actor | ----- | Action tier |

(5.36) Bill received a letter

| | | |
|---|---|---|
| Goal | Theme | Thematic tier |
| ------ | ------ | Action tier |

Examples (5.37) - (5.43) from Irish Sign Language indicate that locative agreement verbs and person agreement verbs establish different patterns of association between thematic and action tiers. These association patterns can be used to make distinctions between the two types of verbs.

Tier association for locative agreement verbs:

(5.37) SNOW^MAN ENTER+fr (HOUSE-fr)

| | | |
|---|---|---|
| Theme | Goal | Thematic tier |
| Actor | ------ | Action tier |

The snowman went into the house

(5.38) _____ gaze-fl+distant

SNOW^MAN POINT-TO+fl+distant

| | | |
|---|---|---|
| Theme | Goal | Thematic tier |
| Actor | ------ | Action tier |

The snowman pointed into the distance

(5.39) BOY (OUT^FOR-sr) sr+GO-TO+c (HOUSE-c)

| | | | |
|---|---|---|---|
| Theme | Source | Goal | Thematic tier |
| Actor | ------ | ------ | Action tier |

The boy came into the house

(5.40) _____t

LONDON S-B FLY-TO+fl

| | | |
|---|---|---|
| Goal | Theme | Thematic tier |
| ------ | Actor | Action tier |

S-B flew to London

Tier association for person agreement verbs:

(5.41) (BOY) c+IGNORE+fl (MOTHER^FATHER-fl)

| | | |
|---|---|---|
| Source | Goal | Thematic tier |
| Actor | Patient | Action tier |

The boy ignored his parents

(5.42) (PRON1) f+ACCUSE+c ALL CLASS

| | | |
|---|---|---|
| Goal | Source | Thematic tier |
| Experiencer | Actor | Action tier |

The whole class blamed me

(5.43) "lunch"

(MOTHER^FATHER) c+GIVE+f (BOY-f) FOOD

| | | | |
|---|---|---|---|
| Source | Goal | Theme | Thematic tier |
| Actor | Recipient | | Action tier |

His parents gave the boy his lunch

Locative agreement verbs, examples (5.37) - (5.40), agree with nominals which receive roles of goal or source and goal on the thematic tier. Only the role of actor is assigned on the action tier - a role which does not associate with the roles of source or goal on the thematic tier. Person agreement verbs, examples (5.41) - (5.43), also agree with nominals which receive roles of source and goal on the thematic tier. However, unlike locative agreement verbs, these roles associate with roles of actor and patient, experiencer or recipient on the action tier.

It is possible to differentiate further between the two types of agreement verbs by making a distinction between spatial goals and other types of goals (Jackendoff 1990:

261). The goals in examples (5.37) - (5.40) are spatial goals which incorporate locative meanings that are not apparent in the goals in examples (5.41) - (5.43). In addition, agreement in examples (5.41) - (5.43) is expressed in relation to the category of person and is thus more directly associated with the roles of actor, experiencer, patient and recipient. To put the argument another way: in marking for agreement the relevant tier in relation to locative agreement is the thematic tier; in relation to person agreement it is the action tier.

Differences between locative and person agreement verbs are also evident in terms of grammatical relations. These differences can be illustrated by examining how grammatical relations are mapped on to thematic roles in utterances involving the two types of agreement verbs.

### *5.2.3 Differences in Terms of Grammatical Relations*

In an early study of American Sign Language Friedman (1975, 1976) proposed an analysis of verb agreement in terms of thematic roles (see 4.1.1). Padden (1988, 1990) on the other hand, claimed that an analysis in terms of grammatical relations offered a more general statement of rules than an analysis in term of thematic roles (see 4.1.4). In a more recent study however, Janis (1995) suggested an analysis which incorporates both grammatical relations and thematic roles as controller features in verb agreement (see 4.1.6).

Grammatical relations of subject, direct and indirect object can be identified as features of the arguments which are marked for agreement in person agreement verbs. The thematic roles mapped onto these relations are typically the roles of agent, patient and recipient respectively. Examples (5.44) - (5.46) show typical association patterns between thematic roles and grammatical relations for verbs of this kind.

(5.44) FIRST PRON1 c+GET-ATTENTION-OF+fl PRIEST(-fl)
subject direct object
agent patient
First I button-holed the priest

In (5.44) both subject and direct object arguments are specified; in (5.45) the subject argument is specified and although the object argument 'PARTIALLY-DEAF' is omitted from the clause it has already been associated with the locus 'fl'.

(5.45) PRON1 c+IGNORE + fl (PARTIALLY-DEAF-fl)
subject direct object
agent patient
I paid no heed to the partially deaf students.

In (5.46) the verb ACCUSE assigns an experiencer role to (PRON1) and the locus 'c' marks the sender as the object referent.

(5.46) (PRON1) f+ACCUSE+c ALL CLASS
direct object subject
experiencer agent
The whole class blamed me.

In (5.47) and (5.48) the verbs GIVE and GIVE-PRESENT assign the role of recipient to their indirect object referents BOY and PRON-f. The indirect object / recipient relation is marked on the verb in each case by the locus marker 'f'.

(5.47)

| | | | "lunch" |
|---|---|---|---|
| (MOTHER^FATHER) | c+GIVE+f | (BOY-f) | FOOD |
| subject | | indir. obj. | direct object |
| agent | | recipient | theme |

His parents gave the boy his lunch.

(5.48) PRON1 WILL c+GIVE-PRESENT+f (PRON-f) SOON
subject (direct object) indir. obj.
agent (theme) recipient
I will give you a present soon.

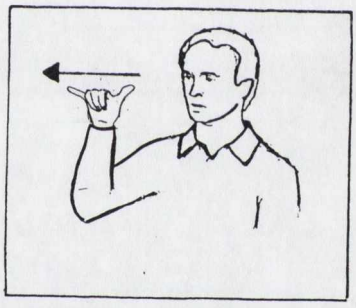
We might expect to find that some person agreement verbs would mark for an experiencer subject. However, in the data collected for this study, none of the agreement verbs took a marker which referred to experiencer subjects and I have not been able to identify any other obvious candidates. The verb 'see' can assign an experiencer role to subject / agent referents but in Irish Sign Language SEE (5.49) is an agreement verb which has only one marker slot - for the direct object / patient relation. There are, however, agreement verbs such as ACCUSE (5.46) above, and MOCK (5.50) below, which can assign experiencer role to object referents.

(5.49) SEE+f (PRON-f) AGAIN
direct object
patient
I will see you again

(5.50) _____t
TEACHER(-fr) ALL BOY c+MOCK+fr
direct object subject
experiencer agent
All the boys made fun of the teacher (Elicited example)

Oblique grammatical relations typically correlate with thematic roles which express locative / spatial information. Examples (5.51) - (5.54) show the association between thematic roles and grammatical relations of those arguments which are marked on the locative agreement verbs.

(5.51) _____gaze-fr
LONDON FLY-TO+fr
Oblique
Goal
(I) flew to London
(Elicited example)



FLY-TO+fr

(5.52) PRON1 V-CL+c+MOVE+fr (HOUSE-fr)
Subject Oblique
Agent Goal
I went to the house

(5.53) BOY (KITCHEN-c) (FREEZER-fr) fr+CARRY-BY-HAND+c FOOD
Subject Oblique ..... Direct Obj.
Agent Goal Source Theme

(Literally: The boy brought food from that location,'fr', to this location, 'c'.)
The boy brought in food

(5.54) HOUSE-fr SCHOOL-fl GIRL Index-CL+fr+MOVE+fl
Oblique ..... Subject
Source Goal Agent
The girl went from the house to the school (Elicited example)

## 5.3 Person Agreement Verbs in Irish Sign Language

### *5.3.1 Introduction*

The data in this study indicates that person agreement verbs in Irish Sign Language agree with arguments which receive a number of different thematic roles - agent, experiencer, patient and recipient. The data also indicates that in relation to these verbs the grammatical relation of subject is mapped on to the role of agent and the relations of direct and indirect object on to the roles of patient / experiencer and recipient respectively.

As we shall see, there are two principal types of person agreement verbs in Irish Sign Language. Double agreement verbs mark for agreement with subject and direct / indirect object relations; single agreement verbs mark for direct / indirect object relations only. The evidence in this study suggests that in person agreement verbs marking for direct / indirect object arguments is obligatory. However, I have not been able to establish explicit evidence of subject marker omission in double agreement verbs (see 4.2.1).

The precedence given to agreement marking for direct / indirect object relations has been observed in other sign languages (Engberg-Pedersen 1993: 194; Padden 1988: 136-9; Pizzuto 1986: 25-6) and in the general of context of agreement marking is unusual (Keenan 1976: 316). Engberg-Pedersen (op. cit. 199) suggests that there is a phonetic basis for this phenomenon in that verb forms tend to involve movement outwards from the signer's body.

Another consequence of this phonetic property of verb formation is the tendency of signers to reproduce the canonical encounter in utterances involving person agreement verbs with two non-first person arguments. In Irish Sign Language signers have two options when an agreement verb is used to express a relationship between two non-first person arguments, such as that indicated in example (5.55). The exercise of either option has important consequences for the type of markers which appear on the verb.

(5.55) The boy looked at the snowman

The signer could assign the arguments 'the boy' and 'the snowman' to two different non-sender loci in signing space, for example BOY to a locus 'fr' and SNOW^MAN to a locus 'fl'. Using this option, (A), an utterance like (5.55) would appear in Irish Sign Language as in (5.56) below.

(5.56) BOY-fr SNOW^MAN-fl fr+LOOK-AT+fl (option A)
The boy looked at the snowman

Alternatively, (option B), the signer could use reference shifting so that the third person referent 'the boy' is shifted to first person and a locus 'fl' assigned to 'the snowman'. The utterance (5.55) would then be expressed as in (5.57).

(5.57) SNOW^MAN-fl (BOY) c+LOOK-AT+fl (option B)
The boy looked at the snowman

In the data collected for this study, signers rarely used option A. In almost every instance of marking for agreement which involved two non-first person arguments, signers reference shifted one of the third person arguments to first person. In marking for agreement therefore, the sender locus 'c' can represent the signer or, after a reference shift, a person who is not the signer.[1]

The tendency of signers to use referential shifting may also be linked to the priority given to the marking of object relations. The absence of obligatory marking for first person subject relations would seem to facilitate referential shifting from third to first person while a tracking mechanism is provided by the obligatory marking of objects. The priority given to objects may also be linked to a hierarchy of markedness associated with personal pronouns in which precedence is given to non-first person over first person referents. If we are to accept the view proposed in Klima and Bellugi (1979) that agreement markers originated as pronoun clitics (but see also 3.2.2), then the priority given to marking of non-first person referents may reflect this origin and its hierarchy of markedness.

### *5.3.2 Morphophonological Properties of Person Agreement Verbs*

In phonological terms, prototypical person agreement verbs possess a characteristic set of structural features. Each verb has features which are stable and features which are variable. The characteristic phonological properties of person agreement verbs are:

a hand configuration;
a locus for height of articulation;
an onset locus;

a type of movement, if movement is lexically specified;
a movement path, or an orientation if movement is not lexically specified;
an offset locus.

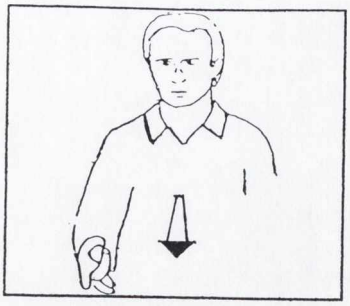
The stable features consist of firstly, a core hand configuration and secondly, a characteristic height at which articulation occurs. These stable features constitute the verb root and are lexically specified for each verb. The verb root is 'unpronounceable' and in order to convert the root into a base or 'pronounceable' form variable features are affixed to the root (Engberg-Pedersen 1993: 194-5). An onset locus, a movement path or orientation, and an offset locus must be specified for double agreement verbs and a movement path and offset locus for single agreement verbs. Thus, the citation form of agreement verbs assumes the following structure: c+VERB+f in the case of double agreement verbs and VERB+f in the case of single agreement verbs.[2]

Each verb has a characteristic type of movement or orientation and it is important to distinguish this feature from the feature, movement path. The type of movement can be linear or circular, horizontal or vertical, single or repeated, relatively short or relatively long, or some combination of these features. The movement path refers to the manner in which the relative positions of the loci affect the direction in which the hand moves during articulation. Change in the type of movement is normally related to aspect (Klima and Bellugi 1979); change in movement path is related to agreement.

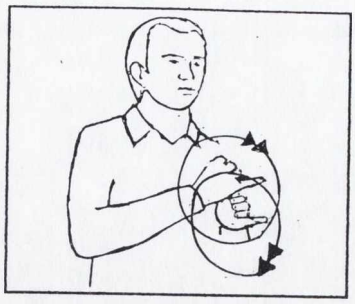
In Irish Sign Language the agreement verbs ASK, CRITICISE, SAY-TO, GET-THE-ATTENTION-OF, ACCUSE and LOOK-AT illustrate some of these phonological properties. The forms shown in examples (5.58) - (5.69) have been elicited.

ASK (5.58) is a double agreement verb and is articulated at the level of the signer's sternum. In hand configuration the thumb and middle finger are in contact, the other fingers are extended, spread and oriented contralaterally (i.e. to the left for the right hand); the palm is oriented towards the signer. In citation form it is a one-handed sign and has a single, horizontal, linear movement.

CRITICISE (5.59) is a double agreement verb and is articulated at chest level. The hand configuration is a fist with the little finger extended and oriented upwards; palm orientation is contralateral. In citation form it is a two-handed sign and has alternate, bidirectional, circular movement along a vertical plane.



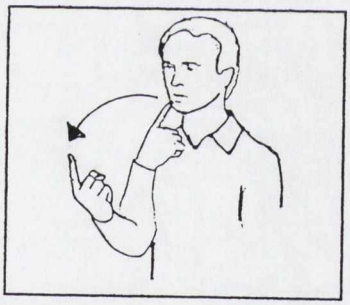
(5.58) c+ASK+f



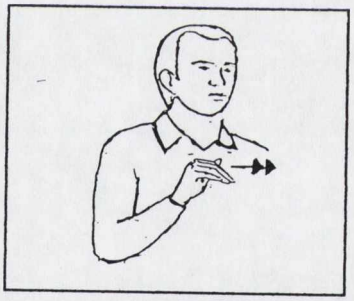
(5.59) c+CRITICISE+f

SAY-TO (5.60) is a single agreement verb and is articulated at mouth level. The hand configuration is a fist with the index finger extended and oriented upwards; the palm is oriented towards the signer. In citation form it is a one-handed sign and has a single, horizontal, linear movement. The features of the verb SEE are similar to those of SAY-TO except that SEE is articulated at eye level.

The double agreement verb GET-THE-ATTENTION-OF (5.61) is articulated at shoulder level. In hand configuration the fingers are together and angled. The citation form is a one-handed sign with two short, linear, horizontal movements with the palm oriented outwards

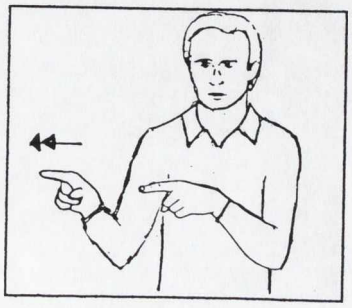


(5.60) SAY-TO+f

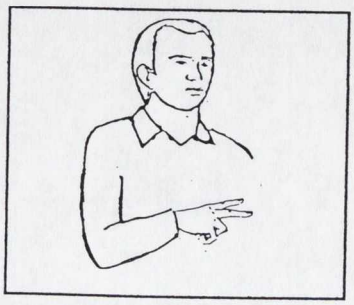


(5.61) c+GET-THE-ATTENTION-OF+f

The double agreement verb ACCUSE (5.62) is articulated at chest level. The hand configuration is a fist in which the index finger is extended and the palm oriented downwards. In citation form it is a two-handed sign with a short, repeated, horizontal, linear movement.



(5.62) c+ACCUSE+f



(5.63) c+LOOK-AT+fl

In a small number of exceptions to the structures described above, the feature *orientation* replaces the feature, *movement path* . The verb LOOK-AT (5.63) illustrates this. The double agreement verb LOOK-AT is articulated at chest level and has a V hand configuration. The V hand is oriented horizontally and there is no movement path involved.

As we can see in (5.64) and (5.65) the locus towards which LOOK-AT is oriented signals the patient / object referent; the locus from which LOOK-AT is oriented signals the agent / subject referent. The onset and offset points can be perceived as projections into signing space, forward through the fingertips and backwards through the base of the fingers, denoting the two arguments of the verb.

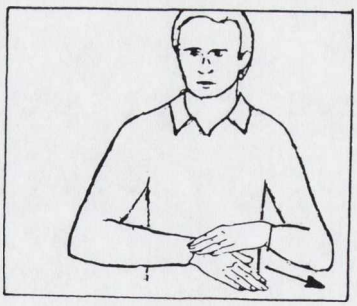
(5.64) c+LOOK-AT+fr
I looked at (someone)

(5.65) fr+LOOK-AT+c
(Someone) looked at me

In some agreement verbs, changes in the argument relations involve changes in both orientation and movement path in the formation of the verb. An example is the verb FAX shown in examples (5.66) and (5.67). In (5.66) the movement path is from the locus 'c' to the locus 'fl'; the orientation of the palm is towards the recipient / indirect object. In (5.67) the movement path is from locus 'fl' to locus 'c' and the orientation of the palm is also towards locus 'c'.

(5.66) c+FAX+fl
I faxed (someone)

(5.67) fl+FAX+c
(Someone) faxed me
(Elicited examples)



c+FAX+fl

The structure of FAX shown in (5.66) and (5.67) clearly reflects the two agreement morphology principles identified by Meir (1994) in Israeli Sign Language and which, it is argued, establish a syntactic / semantic distinction in relation to the arguments of agreement verbs (see 4.2.2). In Meir's analysis the direction of movement is from source to goal and marks the semantic relations; the facing of the hand is towards the object of the verb and marks the syntactic relations. The model proposed by Meir however, does not appear to be valid for all agreement verbs in Irish Sign Language. In

the agreement verb PHONE, the facing feature is not always oriented towards the object of the verb, as shown in examples (5.68).

(5.68) c+PHONE+fr
(I) phoned (someone)

(5.69) fr+PHONE+c
(Someone) phoned me

### *5.3.3 Morphological Structure in Person Agreement Verbs*

Within the broad class of person agreement verbs in Irish Sign Language there are several sub-sets which can be distinguished by the manner in which they mark for agreement. Some person agreement verbs can take two agreement markers; others can take only one; some are marked by an orientation rather than a movement between loci; others require a reciprocal relationship between their arguments. The different types are described in sections 5.3.3.1 - 5.3.3.5.

#### *5.3.3.1 Double agreement verbs*

One sub-set of person agreement verbs may be termed double agreement verbs because the verb form has cells for two agreement markers. The verbs GET-ATTENTION-OF, IGNORE, ACCUSE and GIVE are double agreement verbs. The onset point of the verbs mark the subject / agent arguments and the offset points mark the direct or indirect object / patient, experiencer or recipient arguments, as in examples (5.70) - (5.74).

(5.70) FIRST PRON1 c+GET-ATTENTION-OF+fl PRIEST(-fl)
First I approached the priest

(5.71) TV-fl BOY c+IGNORE+fl TV-fl
The boy ignored the television

(5.72) "lunch"
(BOY-f) (MOTHER^FATHER) c+GIVE+f FOOD
His parents gave him (the boy) lunch

(5.73) f+ACCUSE+c ALL CLASS
The whole class blamed me

(5.74) PRON1 c+IGNORE+fl (PARTIALLY-DEAF-fl)
I paid no heed to the partially deaf

In (5.70) the controller nominals are both specified. In (5.71) the signer articulates the nominal TV at the locus 'fl'. Reference to the nominal BOY is shifted to the first person. The reference shift is accomplished through what Engberg-Pedersen (1993: 103ff.) refers to as "shifted attribution of expressive elements", that is, "the use of the signer's face and / or body posture to express the emotions or attitude of somebody other than the sender in the context of the utterance" (p. 103). In example (5.71), the signer's face and body posture signals the boy's attitude in this situation.

In (5.72) the relationship between the agreement markers and controller nominals is established through the pragmatic context of the utterance. The signer has described how the boy has spent the morning playing in the snow and how his parents then call him in for his lunch. In (5.72) no particular locus has been assigned to the nominal BOY. Neither is there any overt evidence of a role shift from the third person nominal MOTHER^ FATHER to first person; in other words we must refer to the pragmatic context to establish that the nominal MOTHER^FATHER controls the marker 'c' and the nominal BOY the marker 'f'.

In (5.73) the first person pronoun PRON1 is not specified. The other controller nominal, ALL CLASS is signed in the space in front of the signer. PRON1 is identified as the argument denoted by the marker 'c' from the pragmatic context and through the facial expression and body posture of the signer. In (5.74) the signer has already established the nominal PARTIALLY-DEAF at the locus 'fl'. PRON1, the first person pronoun, is specified as the agent of the action.

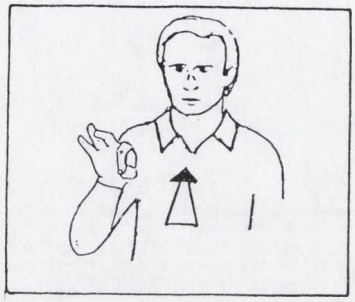
Sentences (5.70) - (5.74) indicate the strong preference of signers in Irish Sign Language to use a referential shifting strategy to express agreement relationships involving two non-first person arguments. (See also section 5.3.1 above.)

#### *5.3.3.2 Backwards agreement verbs*

A second sub-set of person agreement verbs includes what have been termed atypical or backwards verbs (Padden 1988; Engberg-Pedersen 1993; Meir 1994). These are also double agreement verbs which can take markers referring to subject / agent and direct object / patient arguments. However, the arguments coded in the onset and offset points are reversed when compared with how arguments are coded in regular agreement verbs. The point is illustrated in examples (5.75) and (5.76) using the backwards agreement verb CHOOSE. Although there is a form difference between regular and

backwards verbs, to maintain consistent presentation both kinds are glossed in the same way. The locus before verb gloss identifies the subject / agent argument and the locus after the verb gloss identifies the object / patient or recipient argument. The verb INVITE is another example of a backwards agreement verb in Irish Sign Language.

(5.75) c+CHOOSE+f
I chose (someone)



(5.76) f+CHOOSE+c
(Someone) chose me.
(These examples have been elicited.) c+CHOOSE+f

In example (5.75) the onset point of the sign is a locus 'f', directly in front of the signer. The movement is towards the 'c' locus which forms the offset point of the sign. In (5.74) the onset point is the 'c' locus, movement is away from the signer, and the offset point is the locus 'f'.

### *5.3.3.3 Reciprocal agreement verbs*

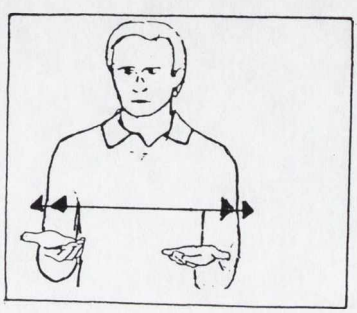
A third sub-set of double agreement verbs mark agreement in a different way. The verbs in this group have been called reciprocal verbs. To be eligible for reciprocal marking a verb must have a meaning compatible with the semantic notion of 'to each other' or 'with each other'.

In phonetic terms, the reciprocal form is accomplished by the two hands acting in opposition, oriented and / or moving towards each other. Each hand denotes, as it were, one side of the reciprocal relationship. Agreement markers which refer to both subject / agent and direct object / patient are indicated on each hand. In example (5.77) the sign is executed with a repeated alternating movement of the two hands between locus 'fl' and locus 'fr'.

(5.77) fr+CONSULT+fl
fl+CONSULT+fr

They consulted each other /
(She) consulted (him) and
(he) consulted (her)

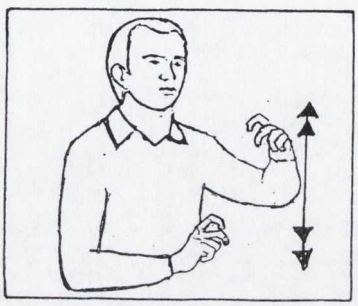
(5.77)



If the lexical specification is 'orientation' rather than 'movement path' the left and right hands can occupy the locus 'fl' and the locus 'fr' respectively. In example (5.78), although there is lexically specified vertical movement, the hands remain in their respective loci.

(5.78) fr+ARGUE+fl
fl+ARGUE+fr

They argued with each other /
(He) argued with (her) and
(she) argued with (him) (5.78)



(Examples 5.77 and 5.78 have been elicited.)

As in other instances where signers express an agreement relationship involving two non-first person arguments, signers may also use a reference shifting strategy with reciprocal agreement verbs. Two examples, (5.79) and (5.80), occur in the data. The articulation of TALK in (5.79) does not involve any movement path. The hands are placed at locus 'c' and locus 'fl' respectively and are oriented towards one another. In contrast, the articulation of CONSULT in (5.80) involves a path movement between the loci 'c' and 'f'.

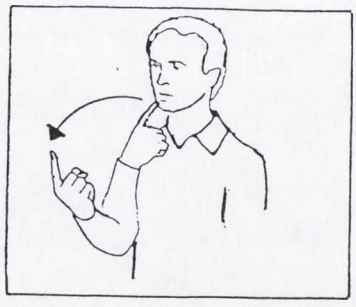
(5.79) (BOY) (SNOW^MAN) c+TALK+fl
fl+TALK+c
The boy and the snowman chatted with each other

(5.80) AND SHAKE-HANDS / FALSE / c+CONSULT+f
f+CONSULT+c
and (they) shook hands ... imagine! ... and greeted each other

#### *5.3.3.4 Single agreement verbs*

Within the category of person agreement verbs a fourth sub-set consists of verbs which may be called single agreement verbs. Verbs in this group have only one cell to be filled, that is, the cell which marks the direct or indirect object / patient or recipient argument. The onset point of the verb does not mark the subject / agent argument. In examples (5.81) - (5.83) the onset point for the verb SAY-TO is the same in each utterance but the offset points mark different indirect object / recipient arguments.

(5.81) SAY-TO+fr
(I) told (someone)



SAY-TO+f

(5.82) PRON-fr SAY-TO+fl
Someone told (someone else)

(83) PRON-fr SAY-TO+c
Someone told me

The verb SEE is also a single agreement verb and like SAY-TO it has a lexically specified place of articulation. In fact SEE does not seem to require an agreement cell to be filled in order to become 'pronounceable'. Evidence for the occurrence of SEE as a plain verb can be seen in examples (5.84). In (5.84) SEE is not marked at all; in (5.85) SEE is marked for the direct object / patient argument.

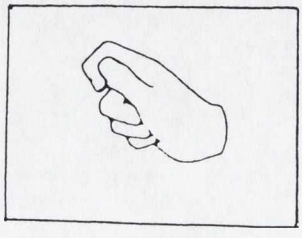
q
(5.84) PRON-fr LIKE SEE PRON-sl / upwards
Would you like to see upstairs?

(5.85) BOY SEE+f FATHER^MOTHER ...
The boy saw his parents

### *5.3.3.5 Person agreement verbs with variable handshapes*

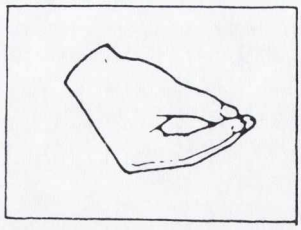
One particular set of person agreement verbs can incorporate variable hand configurations which incorporate information about direct object / patient referents. While the hand configuration feature distinguishes these verbs from other person agreement verbs, they are otherwise typical person agreement verbs. This set of verbs is closely related to the verb GIVE. It is possible to think of GIVE in example (5.85a) as having an unmarked or canonical configuration and the variants (5.86) - (5.90) as marked variants of this form. The variants may be best translated as 'I handed ...'

(5.85a) c+GIVE+f
I gave (someone) ...



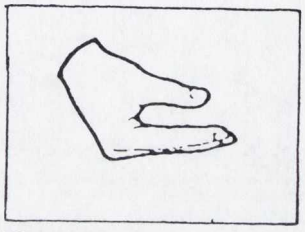
'give something'

(5.86) Thin-flat-entity-CL+c+GIVE+f
I handed (someone) (a sheet of paper)



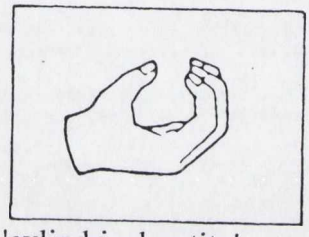
'thin-flat-entity'

(5.87) Flat-2D-entity-CL+c+GIVE+f
I handed (someone) (a video cassette)



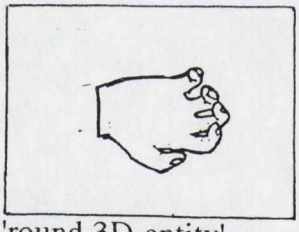
'flat-2D-entity'

(5.88) Cylindrical-entity-CL+c+GIVE+f
I handed (someone) (a tumbler)



'cylindrical-entity'

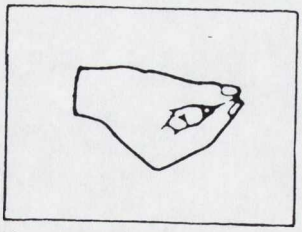
(5.89) Round-3D-entity-CL+c+GIVE+f
I handed (someone) (a tennis ball)



'round-3D-entity'

(5.90) Tiny-0D-entity-CL+c+GIVE+f
I handed (someone) (a pill)

(Examples 5.86 - 5.90 have been elicited.)



'tiny-0D-entity

In each of these examples the onset and offset loci of GIVE are used to mark agreement with subject / agent and indirect object / recipient arguments. As in other person agreement verbs, the argument relations are indicated by movement between onset and offset loci. The verb GIVE also has a lexically specified height of articulation - another characteristic of person agreement verbs.

### *5.3.4 Animacy as a Feature of Verb Agreement*

The examples of person agreement verbs which occur in the data in this study suggest that animacy is an important feature of the arguments which control agreement in these verbs. Janis (1995) argues that in American Sign Language animacy interacts in particular ways with thematic roles of the arguments which control agreement in the verb.

In examples (5.91) and (5.92) from American Sign Language, the referents US, RUSSIA and LIBRARY receive thematic roles of agent, experiencer and recipient respectively and the associated verbs, BLAME and GIVE-GIFT, take agreement markers. In examples (5.93) and (5.94) the referents STUDENTS H-S and MATH both receive the role of patient. However, while TEACH takes agreement markers in (5.93) it does not take any markers in (5.94).

(5.91) U-S (a) $_{a}$BLAME$_{b}$ RUSSIA (b)
The US blamed Russia

(5.92) ME(1) $_{1}$GIVE-GIFT$_{a}$ LIBRARY (a)
I gave (a book) to the library

(5.93) TOM(a) $_{a}$TEACH$_{b}$ (STUDENTS H-S)$_{b}$
Tom teaches high school students

(5.94) TOM TEACH MATH
Tom teaches math

(Janis 1995: 212-3. Subscripts on verbs denote verb agreement markers. Subscripts on nouns indicate the locus with which the markers are associated).

Janis concludes that in American Sign Language inanimate referents control agreement when these referents receive roles of agent, experiencer and recipient, roles that are more typically associated with animate referents. The role of patient however, can be assigned equally to either animate or inanimate referents but only animate referents with the role of patient will control agreement.

Examples (5.95) - (5.96) suggest that a similar pattern occurs in Irish Sign Language. The verbs PAY (5.95) and SEE (5.96) can function as typical person agreement verbs which take agreement markers.

(5.95) (SUPERVISOR-fl) PRON1 PAY+fl TEN POUND
I paid the supervisor ten pounds

(5.96) BOY SEE+f FATHER^MOTHER ...
The boy saw his parents ...

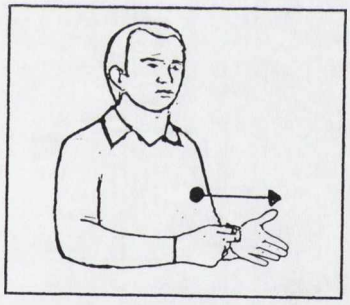
Examples (5.97) and (5.98) however, show that SEE and PAY can also occur without agreement markers.

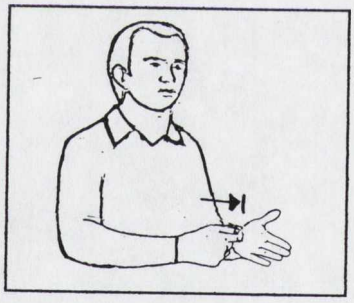
(5.97) (SNOW^MAN) OPEN-DOOR SEE CLOTHES

PRON-sl FATHER CLOTHES

The snowman opened the door and saw clothes, his (the boy's) father's clothes

(5.98) _____t
TEN POUND PRON1 PAY FINISH
I've already paid ten pounds


PAY+fl


PAY

The verbs FAX (5.99) and ACCUSE (5.100) assign roles of recipient and experiencer to inanimate referents NRB and HOSPITAL respectively and in both instances the verbs take agreement markers.

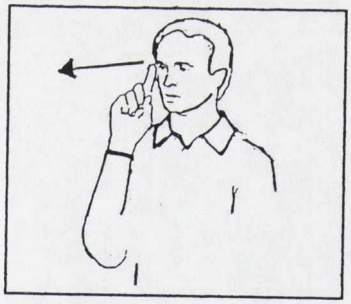
(5.99) PRON1 (n-r-b) (-fr) c+FAX+fr
I faxed the NRB

(5.100) HOSPITAL-fl c-ACCUSE-fl
I blamed the hospital

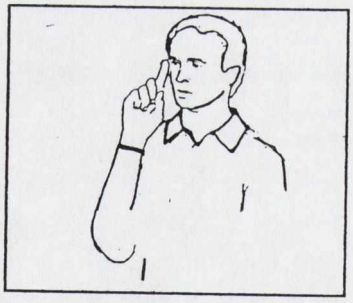
(Examples 5.99 and 5.100 have been elicited.)

It remains to be established whether there are other contexts in Irish Sign Language where animacy interacts with thematic roles in the determination of agreement but at this stage a number of general points may be made. Firstly, it is clear that animacy is an important feature of the arguments which control agreement in person agreement verbs. Secondly, a number of otherwise prototypical person agreement verbs may occur without any agreement markers if the referents with which they are associated are inanimate. Thirdly, verbs associated with inanimate referents do take agreement markers if the referents receive roles more usually assigned to animate referents, such as roles of experiencer or recipient.

Finally it should be noted that the verbs SEE and PAY share two interesting phonological features. Firstly, they are both single agreement verbs since they do not carry a cell for an agent / subject argument marker. Secondly, they both have a well defined lexically specified place of articulation and, unlike other person agreement verbs such as GIVE and ASK, neither SEE nor PAY necessarily require an agreement cell to be filled in order to become 'pronounceable'. It appears that if verbs are to occur without agreement markers they must possess a phonological form which would permit articulation without the need to fill an agreement cell. The verb SEE is shown with an agreement marker in example (5.101) and without a marker in (5.102).



(5.101) SEE+f (agreement verb)



(5.102) SEE (plain verb)

### *5.3.5 Marking for number in person agreement verbs*

In Irish Sign Language number agreement falls into two categories, singular and plural. In expressing the singular, which may be considered the unmarked form, person agreement verbs have a movement path or orientation towards a single locus. Plural marking "involves displacement, that is a movement away from a single locus" (Padden 1990: 121). Plural agreement can be expressed in different forms, including dual and multiple forms.

In American Sign Language Klima and Bellugi (1979: 280-91) distinguish between modification of the verb for grammatical number and modification for distributional

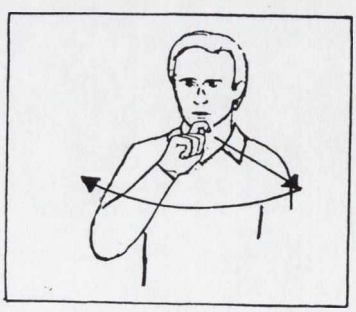
aspect. Grammatical number has to do with a general contrast between singular and plural; distributional aspect signals "distinctions in the number of actions referred to as well as distinctions in the nature and extent of the distribution of those actions" (ibid. 280) over the arguments of the verb.

It is difficult to clearly separate the category of grammatical number from that of distributional aspect and in fact Klima and Bellugi treat both as "expressions of numerosity" (p. 280). Engberg-Pedersen (1993: 166) states that in Danish Sign Language verbs which are modified for the non-singular have a distributive meaning as well as a meaning denoting plural number. Similar problems of definition exist in Irish Sign Language where plural marking is not all of the same kind. However, it is possible to make some general distinctions between grammatical number and distributional aspect.

As I have already noted, inflection for grammatical number does not specify, for example, whether a single action or a number of separate actions are involved; inflection for number can be seen as a general, unspecific plural form. Distributional aspect may establish actions as several and separate, may specify the order of occurrence of actions, or indicate how actions are distributed with respect to their referents.

Modification of agreement verbs in Irish Sign Language for plural number is most common in relation to direct or indirect object / patient or recipient arguments. Plural marking in relation to subject / agent arguments is much less frequent, in part because subject deletion is a feature of the language. The non-specific plural affix consists of a smooth horizontal concave arc which is placed immediately before the offset point of the verb. Klima and Bellugi (1979: 282) refer to this modification as the multiple plural, meaning 'all of them'. TELL+plural (5.103) is an example from Irish Sign Language.

(5.103) TELL+plural
(I) told all of them



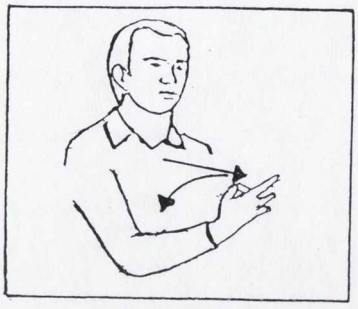
(5.103)

In Irish Sign Language agreement verbs can be modified for dual number. This modification may appear in different forms. In an inflected form, the movement path of the verb has two offset points and each offset point specifies a referent. The two offset

points are located quite close together so that the movement path between them consists of a small, convex arc movement as shown in example (5.104).

(5.104) c+ASK+dual
I asked both of them ...
(Elicited example)

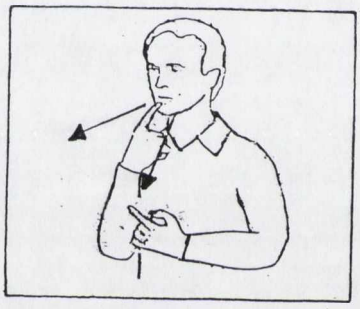
(5.104)



A second form (5.105) involves using right and left hands as simultaneous but separate articulators. In this case the right hand specifies one referent, the left hand the other, and is basically a reduplication of the verb form.

(5.105) c+SAY-TO+fr
c+SAY-TO+fl
I told both of them ...
(Elicited example)

(5.105)



Examples (5.106) and (5.107) from the study data refer to the same event. In these examples we see how two signers use different forms to express dual number. In (5.106) the two hands are used as separate articulators and in (5.107) the two loci are linked by a small arc-shaped movement.

(5.106) (SNOW^MAN-f) Handle-round-entity-CL+BE-LOCATED+f / hi
Handle-round-entity-CL+BE-LOCATED+f / hi

(RIGHT) EYE Handle-round-entity-CL+BE-LOCATED+c (r. eye)
(LEFT) EYE Handle-round-entity-CL+BE-LOCATED+c (l. eye)
Body-CL+EXIST+right eye+left eye ----------

Handle-round-entity-CL+BE-LOCATED+f / hi
Handle-round-entity-CL+BE-LOCATED+f / hi

(He) gave the snowman two eyes

(5.107) (SNOW^MAN-f) Handle-small-round-entity-CL+BE-LOCATED+f / hi

Handle-small-round-entity-CL+BE-LOCATED+c(r. eye)+MOVE-arc+c(l. eye)
Body-CL+EXIST+right eye+left eye ----------

(He) gave the snowman two eyes

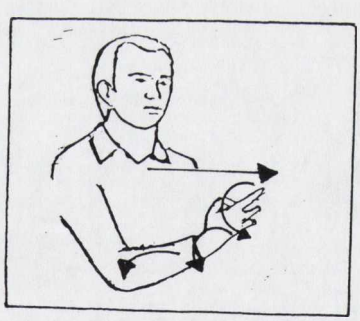
In addition to marking for dual number, the verbs in examples (5.106) and (5.107) have an obvious distributional meaning. In the next section we will look at further examples of how verbs in Irish Sign Language can be modified to express distribution.

### *5.3.6 Marking for distributional aspect*

Some modifications of agreement verbs are best characterised as distributional since they are more specific with regard to the nature of the actions. Klima and Bellugi (1979) describe several forms in American Sign language which fall into this category. For example, they distinguish between the exhaustive ('each one'), the allocative ('certain, but not all') and the apportionate (each one of a particular group'). In the following example from Irish Sign Language (5.108) of the exhaustive plural, the actions are distributed over each individual.

(5.108) c+ASK+exhaustive
I asked each of them
(Elicited example)

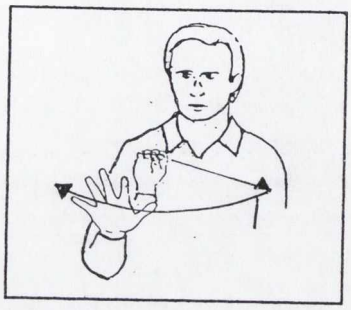
(5.108)



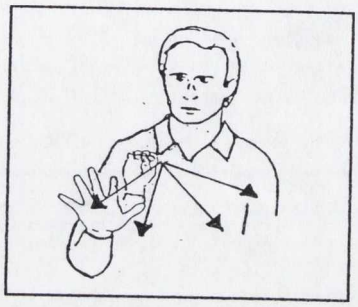
While the multiple plural is expressed by a smooth horizontal concave arc, the exhaustive is expressed by a series of short convex arcs. Wilbur (1987: 123) argues that in American Sign Language the exhaustive is basically a reduplicated form, consisting of a verb stem, with an underlying plural inflection and reduplication at distinctive points along the plural arc. Wilbur points to another important formational difference between the two plurals. In the multiple plural, any internal or localised movement in the verb is not repeated during, or superimposed on, the plural arc. The exhaustive plural, however, requires that internal movement be repeated at individual points on the plural arc.

This distinction can also be seen in Irish Sign Language in two examples of the verb POST-TO, (5.109) and (5.110). In citation form, POST-TO is characterised by an

opening movement of the thumb and fingers of the dominant hand. In the execution of the multiple plural form, this internal movement occurs once and is assimilated into the plural arc movement. In the execution of the exhaustive plural the internal movement must be repeated at individual points along the plural arc. Therefore, in marking for grammatical number, assimilation of the internal movement occurs, but in marking for distributional aspect assimilation does not occur.



(5.109) c+POST-TO+multiple
I posted (it) to all of them



(5.110) c+ POST-TO+exhaustive
I posted (it) to each of them

However, in Irish Sign Language it appears that assimilation does not occur in every verb with lexically specified movement. The movement associated with the verb ACCUSE (5.111) for example, cannot be assimilated into a multiple plural form.

(5.111) * c + ACCUSE+multiple (movement assimilated)

Verbs which mark for locative agreement can be modified to express distributional aspect. In the case of these verbs too, distributional meaning surfaces as a series of short arc-shaped movements. Example (5.112) shows how a locative agreement verb can mark for locational distribution. Since marking for distribution is a significant feature of classifier predicates, at this point I will note its presence in this example and discuss it in more detail in the next chapter.

(5.112) (BOY) Handle-small-entity-CL+BE-LOCATED+c / lo + c + c / hi
Body-CL+(stomach+sternum+upper chest) ----------

The boy put (buttons) there, there and there on the snowman's body

As we have noted, Klima and Bellugi describe other kinds of marking for distributional aspect in American Sign Language that provides distinctive information about the arguments of the verb. The allocative for example, refers to "certain, but not all" (p. 285) of the referents. In the production of this form repetitions are made at randomly

varying loci in signing space. Frequently, two hands are used to highlight the random nature of the actions. This form is also found in Irish Sign Language, as shown in the elicited examples (5.113) and (5.114).

(5.113) c+GIVE+random loci
I gave (books) to some of them

(5.114) PRON-fr SAY-TO+random loci
He told some of them

## 5.4 Locative Agreement Verbs

### *5.4.1 Introduction*

Verbs which mark for locative agreement have characteristic structural features as well as characteristic relationships with their arguments. They exhibit a very flexible use of signing space and, unlike person agreement verbs, they do not have a lexically specified height of articulation. Locative agreement verbs also have characteristic semantic properties in that they have an implicit locative meaning or they typically occur in contexts which express spatial relations between the verb and its arguments.

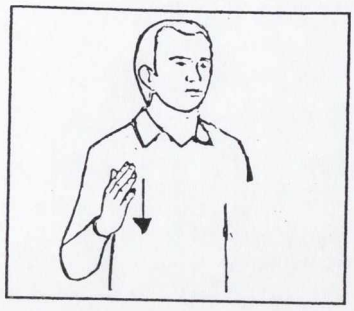
Locative agreement is expressed through the presence of locus markers which are attached to the verb and which refer to certain of the verb's arguments. Locative agreement verbs are typically marked for arguments which receive thematic roles of source, goal or locative and which typically express oblique grammatical relations.

### *5.4.2 Morphophonological Properties*

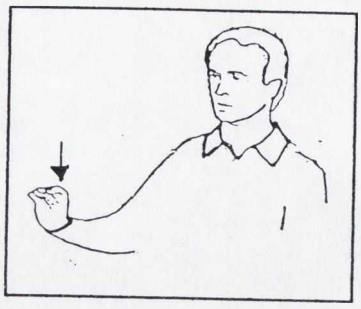
A locus associated with a locative agreement verb has both a phonological and a morphological function. These features can be illustrated by comparing the plain verb FINISH in (5.115) with the verb BE-LOCATED in (5.116) which takes a locative agreement marker. The verb FINISH is articulated with a short downward movement in signing space in front of the signer. This location indicates the place parameter in the articulation of the sign FINISH. The verb BE-LOCATED can also be articulated with a short downward movement in the space in front of the signer. In this case the locus 'f' denotes the place of articulation associated with the production of the sign; it also marks agreement between the verb BE-LOCATED and an implicit nominal SHELF.

(5.115) _____q
LECTURE FINISH
Is the lecture over?

(5.116) (SHELF-f) Handle-small-entity+BE-LOCATED+f
(I) placed (it) (on the shelf) (Elicited examples)



FINISH



BE-LOCATED+f

The core phonological feature of verbs which take locative agreement markers is a hand configuration. The hand configuration can be said to constitute the verb root. In this form the verb is 'unpronounceable' so the root must link with a movement or location morpheme in order to convert into a 'pronounceable' form. A location morpheme is expressed through a locus, as shown in example (5.117); a movement morpheme is expressed through a movement path towards a locus as in example (5.118), from a locus, or between two loci as in (5.119).

(5.117) V-CL+BE-LOCATED+at left hand
Vertical-2D-Entity-CL+EXIST ----
The man stood by the wall

(5.118) FLY-TO+fr
... fly to there ...

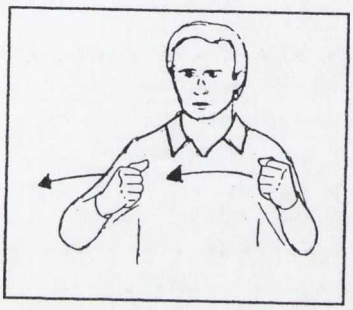
(5.119) (BOY) V-CL+c+MOVE+f OUT^FOR
(The boy) went outside

Verbs which mark for locative agreement are of two kinds. One group consists of verbs in which hand configuration functions as an articulatory parameter without any independent meaning. The second group consists of verbs which are sometimes referred to as classifier verbs of motion and location. Hand configuration in these verbs has an articulatory function; it also incorporates information about the entity to which it refers. Classifier verbs are discussed in detail in the next chapter; here we are concerned with the fact that they can take locative agreement markers. The two types of locative agreement verbs are illustrated in examples (5.120) and (5.121). The V-CL hand configuration denotes a 'saliently two-legged and animate' entity, while the hand

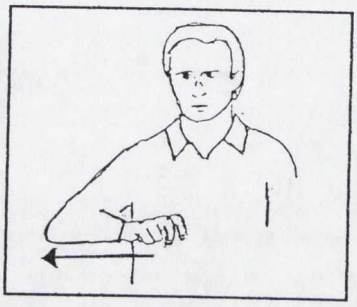
configuration in DRIVE-TO has no such independent meaning. In both sentences the locus 'fr' refers to an implicit nominal HOUSE

(5.120) (HOUSE-fr) PRON1 DRIVE-TO+fr
I drove towards (the house)

(5.121) (HOUSE-fr) PRON1 V-CL+c+MOVE+fr
I went towards (the house) (Elicited examples)



DRIVE-TO



V-CL+MOVE

There is considerable flexibility in the use of space in expressing location or movement relations. Unlike person agreement verbs, a typical feature of locative agreement verbs is that they are not articulated at any lexically specified height. In expressing agreement with arguments, loci can be used to denote relations within a three dimensional framework of up / down, right / left and towards / from. The verb THROW, for example, can be marked to denote 'throw down', 'throw to the side' 'throw over the shoulder' and so on. Such flexibility has considerable implications for morphological structure in locative agreement verbs.

### *5.4.3 Morphological Structure in Locative Agreement Verbs*

In British Sign Language Brennan (1992: 110) refers to verbs such as CLEAN and PAINT as locative verbs and to verbs such as SHAVE and OPERATE as locatable verbs. In PAINT, the agreement feature can be changed to denote 'paint the car', 'paint the ceiling', 'paint the wall', 'paint my face' and so on; in SHAVE and OPERATE, the agreement feature indicate locations on the body such as 'head', 'face', 'stomach', 'chest' and so on.

A distinction of a similar kind is made here although the term locative verb is used to refer to both types. I propose to divide locative agreement verbs into two main groups according to how they use signing space. In one group agreement markers are

expressed through non-contact loci in signing space; in the second group specific locations on the body function as agreement markers.

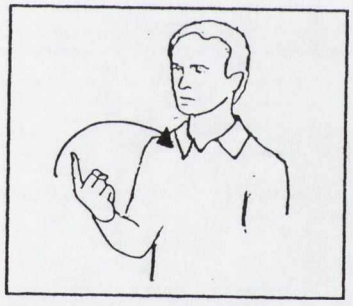
### *5.4.3.1 Locations in signing space*

Verbs which refer to motion events typically express meaning through movement of the hand(s) between loci in signing space. Examples of such verbs in Irish Sign Language are RUN (5.122), BECKON (5.123), CARRY-BY-HAND (5.124), ENTER (5.125) and SHINE (5.126). In these verbs the locus or loci at which the verb is articulated marks an agreement relationship between the verb and its locative arguments.

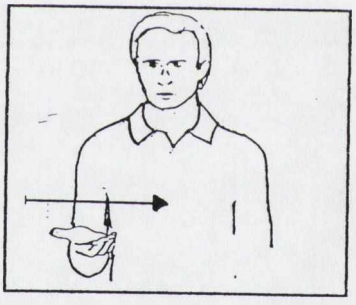
(5.122) BOY c+RUN+f OUT^FOR
The boy ran outside

(5.123) MOTHER fr+BECKON+c HOME
Mother called (him) home

(5.124) BOY fr+CARRY-BY-HAND+c FOOD
The boy brought in food



(5.123) fr+BECKON+c



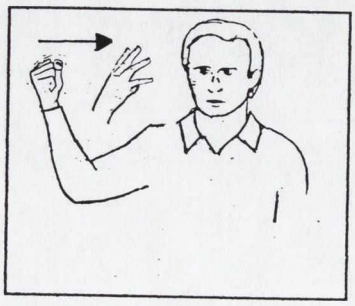
(5.124) fr+CARRY-BY-HAND+c

(5.125) HOUSE (-sl) ENTER+sl
(They) entered the house

(5.126) SUN (-sr) (BOY-c) sr+SHINE+c
The sun shone in on (the boy)



(5.125) ENTER+sl



(5.126) sr+SHINE-ON+c

A locus can denote a location in space. Verbs such as BE-LOCATED (5.127), POINT-TO (5.128) function in this way. The articulation of these verbs is characterised by a 'stamping' action and a brief hold at the relevant locus.

(5.127) HOUSE COUNTRY FAR 3D-entity-CL+BE-LOCATED+fr
The house was situated in the middle of the countryside

(5.128) gaze-fl+distant
SNOW^MAN POINT-TO+fl+distant
The snowman pointed into the distance

As we have noted above, locative verbs use signing space with considerable flexibility. Examples (5.129) - (5.131) show how the same verb root, V-CL, can denote different spatial relations within a three-dimensional framework. In these examples the loci refer to locative arguments which are already established in the discourse.

(5.129) (BOY) V-CL+c / hi+MOVE+f / lo
(The boy) went downstairs

(5.130) SNOW^MAN V-CL+fr+MOVE+c
The snowman came towards (him)

(5.131) BOY V-CL+sr+MOVE+sl
The boy ran past

### *5.4.3.2 Locations on the body*

Specific locations on the body can function as agreement markers and can combine with locative verbs. SLAP (5.132), CATCH-BY-HAND (5.133) and HANDCUFF (5.134) are examples of verbs of this kind. In the interests of clarity and economy a gloss such as '+face' in (5.132) is intended to capture two separate features. Firstly, the location 'face' on the signer's body towards which the dominant hand moves, constitutes the referent 'face'; secondly, the placement of the hand close to or in contact with this locus constitutes the agreement marker.

(5.132) BOY SLAP+face PRON1
The boy slapped me on the face / The boy slapped my face

(5.133) BLIND CATCH MAN DEAF CATCH-BY-HAND+left arm
The blind man caught the deaf man by the arm

(5.134) POLICE CATCH Body-CL+move-arms-behind-back AND

HANDCUFF+left wrist HANDCUFF+right wrist

Body-CL+move-arms-behind-back

The police caught him, put his hands behind his back and handcuffed him

Some locative agreement verbs mark for agreement with locations in space which denote locations on the body of another referent. In TAKE-BY-THE-HAND (5.135) and SHAKE-HANDS (5.136) the signer draws on the iconic properties of the shape, location and movement of the hand.

(5.135) BOY TAKE-BY-THE-HAND+sr (SNOW^MAN-sr)
The boy took the snowman by the hand

(5.136) (SNOW^MAN-f) SHAKE-HANDS+f
(He) shook hands with (the snowman)

We have seen how both grammatical relations and thematic roles interact in controlling agreement on the verb (4.2.2).We have also seen how person agreement and locative agreement verbs differ in terms of the thematic roles which they assign to their arguments (5.2.2) and in terms of the grammatical relations that are mapped onto these roles (5.2.3). In the next section we examine more closely the patterns of association that occur between semantic roles and grammatical relations with regard to locative agreement verbs.

### *5.4.4 Locative Verbs, Thematic Roles and Grammatical Relations*

Thematic roles of source, goal or locative are typically assigned to the arguments which are marked on locative agreement verbs and oblique grammatical relations are typically mapped onto these roles. Examples (5.137) and (5.138) show a typical association pattern between semantic roles and grammatical relations for locative agreement verbs.

(5.137)

| SCHOOL(-fr) | BOY | V-CL+c+MOVE+fr+move fingers | |
|---|---|---|---|
| goal | theme | | Thematic tier |
| | actor | | Action tier |
| oblique | subject | | Grammatical relations |

The boy walked to school

In relation to example (5.138) the signer has described how a boy made a snowman's body and has established this entity at a locus 'f'.

(5.138) (BOY) Handle-round-entity-CL+BE-LOCATED+c
---------- Body-CL+EXIST+head

Handle-round-entity-CL+BE-LOCATED+f / hi

| | Theme | Goal | Thematic tier |
|---|---|---|---|
| Actor | Patient | | Action tier |
| Subject | Object | Oblique | Gramm. relations |

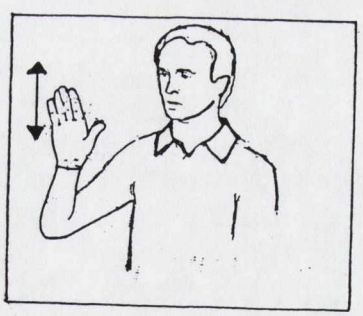
The boy put the snowball on top of the body as a head

However, not all locative agreement verbs in Irish Sign Language assign oblique grammatical relations to their controller referents. Verbs such as PAINT (5.139 - 5.140) and CATCH-BY-HAND (5.141 - 5.142) can be modified to agree with the particular location where the action occurs and 'pronounceable' forms of these verbs always express locative information.

(5.139) (WALL-f) PAINT+f
(I) painted the wall

(5.140) (FLOOR-f / lo) PAINT+f / lo
(I) painted the floor

PAINT+f



(5.141) WRIST J-o-h-n CATCH-BY-HAND+left wrist
John caught my wrist / John caught me by the wrist

(5.142) SLEEVE PRON-f J-o-h-n CATCH-BY-HAND+sleeve
John caught your sleeve / John caught you by the sleeve

(Examples 5.139 - 5.142 have been elicited.)

The mapping pattern between grammatical relations and thematic roles associated with these verbs differs from that usually found in locative agreement verbs. In examples

(5.143) - (5.145) the referents WALL, 'left wrist' and 'teeth' can be analysed as receiving the thematic role of goal / patient and the grammatical relation of direct object. Accordingly, the verbs PAINT, CATCH-BY-HAND and BRUSH express a mapping pattern more like that found in person agreement verbs.

(5.143) (WALL-f) PAINT+f

| | |
|---|---|
| goal | Thematic tier |
| patient | Action tier |
| direct object | Grammatical relations |

(I) painted the wall

(5.144) WRIST J-o-h-n CATCH-BY-HAND+left wrist

| | | |
|---|---|---|
| goal | | Thematic tier |
| patient | actor | Action tier |
| dir. obj. | subject | Grammatical relations |

John caught my wrist / John caught me by the wrist

(5.145) (BOY) BRUSH+teeth

| | | |
|---|---|---|
| | goal | Thematic tier |
| actor | patient | Action tier |
| subject | direct object | Grammatical relations |

The boy brushed his teeth

It is clear that verbs such as PAINT, BRUSH and CATCH-BY-HAND express locative information through their agreement markers although they do not have a mapping pattern typical of other locative agreement verbs. While the association between direct object and patient / goal is like that found in person agreement verbs there is one important difference. Person agreement verbs take markers which typically refer to direct objects that are animate, or can be conceived of as animate; locative agreement verbs take markers which typically refer to inanimate direct objects.

Both CATCH-BY-HAND and BRUSH are locative verbs which can mark for agreement on the body. However, not all locative verbs which mark for agreement on the body have a similar argument structure. The verb PUT-ON (5.146) can mark for locative agreement on the body. Although the surface forms of PUT-ON and BRUSH appear to be represented in the same way, their argument structures are in fact very

different. In PUT-ON (5.146) the handshape refers to the semantic role of theme and the marker 'head' refers to the role of locative. In contrast, the handshape of BRUSH (5.147) refers to the semantic role of instrument while the marker 'teeth' refers to the role of patient. For the purpose of illustration I identify the various elements in the glosses of these two examples.

(5.146) (BOY) PUT-(glove)-ON + hand
agent theme location

The boy put on a glove / The boy put a glove on his hand

(5.147) (BOY) (use-)BRUSH + teeth
agent instrument patient

The boy brushed his teeth

Whether there are categories of BRUSH type and PUT-ON type verbs in Irish Sign Language remains to be seen. One of the great difficulties in such an analysis, is that of distinguishing between frozen forms (see 5.2) and classifier predicates which use similar hand configurations or determining whether some verbs have a canonical form and a set of associated variants. To illustrate these particular problems I will refer to the hand configuration element in the verb (or verbs) we have glossed as PUT-ON.

In each of the examples (5.148) - (5.151) the handshape element remains constant (Figure 5.11); in examples (5.152) - (5.155) the handshape varies (Figures 5.12 and 5.13). These differences, however, do not seem to affect the meaning of the sentences.

(5.148) PUT-ON+head
(He) put on a hat / He put a hat on his head

(5.149) PUT-ON+left hand
(He) put on a glove

(5.150) PUT-ON+shoulders
(He) put on a coat

(5.151) PUT-ON+right leg
(He) put on footwear

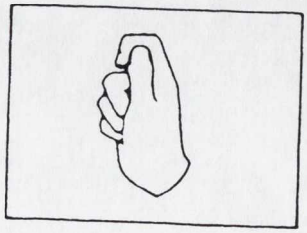


Figure 5.11
Hand configuration used with PUT-ON in (5.148) - (5.151)

(5.152) Handle-thin-flat-entity-CL+MOVE-imit: put on+c
Handle-thin-flat-entity-CL+MOVE-imit: put on+c
Body-CL+EXIST+head ----------
(He) put on a hat / (He) put a hat on (his) head

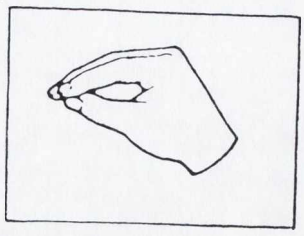


Figure 5.12
'handle-thin-flat-entity

(5.153) Handle-entity-CL+MOVE-imit: put on+c
Body-CL+left hand ----------
(He) put on a glove

(5.154) Handle-entity-CL+MOVE-imit: put on+c -------
Handle-entity-CL+MOVE-imit: put on+c -------
Body-CL+EXIST+right shoulder+left shoulder
(He) put on a coat

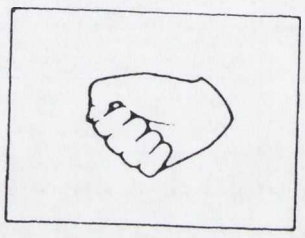


Figure 5.13
'handle-entity'

(5.155) Handle-entity-CL+MOVE-imit: put on+c
Body-CL+EXIST+right leg ----------
(He) put on footwear

As we have already observed in relation to the verb GIVE (see 5.3.3.5), the verb PUT-ON seems to have an unmarked or canonical form, shown in (5.148) - (5.151) and a set of marked variants, shown in (5.152) - (5.155). The choice for the signer may be a question of focus. If the signer wishes only to say that *something* goes on the head or the foot then the handshape is not of particular significance and an unmarked form is appropriate. If however, the signer wants to emphasise that the hat has a flat brim, that the glove is delicate or that the stockings are thick, then the hand configuration becomes important and a marked variant is required.

## 5.5 Other Forms of Agreement in Irish Sign Language

In Danish Sign Language, Engberg-Pedersen (1993) has identified a form of agreement which she calls pragmatic agreement and Padden (1990) discusses what seems to be a similar type of agreement in American Sign Language. Pragmatic agreement differs in several respects from the kinds of semantic / syntactic agreement which we have discussed above (see sections 5.1 - 5.4).

Firstly, pragmatic agreement markers can occur with either plain verbs or agreement verbs. Secondly, pragmatic agreement is not an obligatory part of the verb phrase; it is a matter of choice for the signer. Thirdly, pragmatic agreement markers can appear on verbs and on signs from other categories, such as nouns and adjectives. Fourthly, there is a difference in phonological form between pragmatic and semantic / syntactic

agreement: in semantic / syntactic agreement the orientation of the hand(s) and the direction in which the hand(s) move are the significant phonological features; in pragmatic agreement what is important is where the sign is articulated in signing space rather than how the hands are oriented or how they move. Finally there is a difference in function. Pragmatic agreement does not have a semantic / syntactic function; it serves to emphasise pragmatic contrasts between features such as states, activities or locations during a discourse.

Markers similar to those identified as pragmatic agreement markers by Engberg-Pedersen, appear in Irish Sign Language. Their distribution, phonological properties and function seem to be quite similar to those found in Danish Sign Language. Examples of pragmatic agreement are seen in sentences (5.156) - (5.161).

(5.156) (BOY) FIND-sl ORANGE-sl
(The boy) found an orange

(5.157) (BOY) COLLECT-sl c-o-a-l -sl
(The boy) gathered coal(s)

(5.158) BOY EAT-fl ALL-fl FINISH-fl sl+GO-TO+sr
When the boy had eaten everything he went back outside

(5.159) Handle-general-entity-CL+(MOVE-imit: roll)-fr
Handle-general-entity-CL+(MOVE-imit: roll)-fr
(He) made a snowball

(5.160) COLLECT-sr
(He) collected (snow)

(5.161) Trace-large-vertical-3D-entity-CL+(lo+EXTENT+hi)-fr
Trace-large-vertical-3D-entity-CL+(lo+EXTENT+hi)-fr
(He) made a large body

In sentences (5.156) - (5.161) the signer is making a contrast between activities that occur at two different locations. In sentences (5.156) - (5.158) the signer's hands are placed at loci 'sl' and 'fl' . The activities referred to take place within the boy's house. In sentences (5.159) - (5.161) the signer's hands are placed at contrasting loci, 'fr' and 'sr'. The activities referred to here take place outside the house. Pragmatic agreement

establishes a contrast not only between two locations but also between the different activities which occur at these locations.

## 5.6 Conclusion

In this chapter we have described two different types of agreement verbs, person agreement verbs and locative agreement verbs. We argued that they can be distinguished on the basis of their morphophonological and semantic properties and that although the surface forms of the two types of verbs are often phonologically similar, they have different sets of relationships with their controller nominals.

We established that the loci associated with locative agreement verbs refer to locations in space while the loci associated with person agreement verbs refer to subject or object arguments. In addition, we have shown that person agreement verbs are typically articulated at a lexically specified height in relation to the signer whereas there is no lexically specified articulatory locus for locative agreement verbs.

We observed that person agreement verbs typically mark for thematic roles of agent, experiencer, recipient and animate patient and that locative agreement verbs mark for roles which refer to spatial relations, that is, roles of source, goal and locative. In terms of Jackendoff's (1990) two-tier thematic analysis, we proposed that person agreement verbs associate with the action tier and that locative agreement verbs associate with the thematic tier.

In our discussion we also pointed out that the two types of verbs differ in terms of characteristic mapping patterns between thematic roles and grammatical relations. Thematic roles marked on person agreement verbs map on to grammatical relations of subject, direct object and indirect object; roles marked on locative agreement verbs typically map on to oblique grammatical relations.

The prototypical properties of person agreement and locative agreement verbs are summarised in Figures 5.14 and 5.15 respectively.

Person agreement verbs ...

- are articulated at a lexically specified height;
- refer to subject and object arguments;
- associate with the action tier;
- mark for thematic roles of agent, experiencer, recipient, and animate patient;
- map these roles on to grammatical relations of subject, direct object, and indirect object.

Figure 5.14 Prototypical Properties of Person Agreement Verbs

Locative agreement verbs ...

- have no lexical specification for height of articulation;
- refer to locations in space;
- associate with the thematic tier;
- mark for thematic roles of source, goal, and locative;
- map these roles on to oblique grammatical relations.

---

Figure 5.15 Prototypical Properties of Locative Agreement Verbs

So far we have summarised distinctions between the two types of agreement verbs in terms of typical features. However, not every verb has all the characteristics associated with its type. The person agreement verb GIVE and the locative agreement verb PUT-ON for example, have a variable hand configuration, a feature which is not typical of other verbs in these categories. In addition, some locative agreement verbs mark for patient rather than locative thematic roles and are associated with direct rather than oblique grammatical relations.

We also noted that a form of agreement which has been termed pragmatic agreement (Engberg-Pedersen 1993) occurs in Irish Sign Language. We accepted the view that pragmatic agreement differs from the semantic / syntactic agreement - the main focus of attention in this chapter - and that the main purpose of pragmatic agreement is to emphasise contrasts between states, activities or locations during discourse.

A number of issues requiring further investigation emerged from our discussion on agreement verbs in this chapter. Firstly, more detailed information is needed regarding the formational properties of person agreement verbs in Irish Sign Language. In this study for example, it has not been possible to identify clear examples of agreement marker omission and further research is needed to establish explicit criteria for doing so.

Secondly, more detailed investigation of different patterns of usage with regard to agreement marking is required. Some verbs, for example, appear as plain verbs in the signing of older members of the deaf community but as agreement verbs in the signing of younger members; other verbs may belong to more than one category for individual signers. A third issue requiring investigation is whether there is any relationship between referential shifting in Irish Sign Language and the priority given to agreement marking for object relations.

Finally, our data revealed that some agreement verbs appear to have an unmarked or canonical form as well as a set of marked variants. Further research is needed to determine the distribution pattern of these verb forms and the contexts in which they occur.

**Notes**

1. A useful framework for understanding shifted locus of this kind is the notion of the canonical encounter (Engberg-Pedersen 1995: 149). Signers may use the sender locus 'c' to report on their own or a third person's interaction with another third person referent indicated, for example, by a locus 'fl'. By altering gaze direction and / or by head and body orientation signers can indicate the locus of the original receiver ('fl') and through locus shifting of this kind they reproduce the canonical encounter.

2. Engberg-Pedersen (1993: 194-5) refers to this structure as a base form and suggests that where the argument is unspecified one cell is filled with a neutral marker, 'neu'. Thus in the base form of double agreement verbs, c+VERB+neu (VERB+neu for single agreement verbs) 'c' represents the sender locus and 'neu' refers to a forward direction and represents a marker where the P / IO argument is unspecified. In this study I prefer to use the marker 'f' which conventionally refers to a forward direction.

# 6 CLASSIFIER PREDICATES IN IRISH SIGN LANGUAGE

## 6.1 Introduction

In the last chapter we described the morphology of agreement verbs in Irish Sign Language and established that there are two different kinds of agreement verbs - person agreement verbs and locative agreement verbs. We move now a description of a category of verbs which we will refer to as classifier predicates. Although locative agreement verbs and most classifier predicates are similar in that they both can mark for locative agreement, there are significant morphophonological differences between them. In this chapter we will describe the prototypical features of classifier predicates and will show how they differ from verbs in other categories in Irish Sign Language.

The term 'classifier predicate' is not entirely satisfactory (see 4.3 above). There are however, a number of good reasons for retaining it as a descriptive term. Firstly, the term 'classifier predicate' has become part of a more general discourse about the structure of sign languages and has been widely used to refer to a recognisable category of verbs in different sign languages. Secondly, although there is no general agreement on a definition of a classifier, the term captures a conventional view that handshapes have a classificatory function in these verbs. An alternative view suggests that handshapes indicate a selectional rather than a classifying function and accordingly, hand configuration selects certain characteristics of entities (such as size and shape) and imposes selectional restrictions on others (see 6.8). However, the problem of finding a suitable term for verbs of this kind remains: 'classificatory verbs' seems equally problematic and 'polymorphemic verbs' seems too general to convey the distinctive characteristics of these verbs.

## 6.2 Morphophonological Properties of Classifier Predicates

In morphophonological terms, classifier predicates have a characteristic set of structural properties. There is broad agreement among researchers that typical classifier predicates consist of two basic components - a hand configuration which expresses information about the shape and / or dimensions of an entity, and a movement component which provides information about the state, extent, location or motion of that entity (see 4.3 above). Both components are variable and can combine in a great variety of ways.

However, there has been considerable disagreement among researchers regarding which component incorporates the verb root. McDonald (1983) in relation to American Sign Language and Engberg-Pedersen (1993) in relation to Danish Sign Language, take the view that the hand configuration component incorporates both classificatory and predicative meanings and therefore constitutes the verb stem. Engberg-Pedersen points

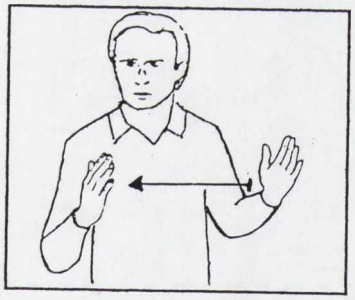
out that the movement component alone cannot express unambiguous predicative meaning across handshapes; the same type of movement can signify different meanings according to the particular handshape with which it is associated.

A linear movement, for example, can denote an entity's own motion, the motion caused by an agent, the distribution of an entity or the extent of an entity. In each of the following elicited examples (6.1) - (6.4) the dominant hand moves in a straight line in a sidewards-right direction. The surface form of each movement is similar in terms of its onset point, its path and its offset point. However, each movement has a different meaning derived from the hand configuration with which the movement is combined. Thus, the hand configuration has a controlling influence on the meaning of the verb. In these examples the movement component is glossed as '-line' while the gloss CL is intended to capture the classificatory element in the hand configuration.

(6.1) V-CL+'motion'-line+sr
(The small animal) moved away

(6.2) Two-dimensional-entity-CL+'distribution'-line+sr
Two-dimensional-entity-CL+hold ----------
(The books) were on the shelf

(6.2)





(6.3)

(6.3) Flat-surface-entity-CL+'extent'-line+sr
Flat-surface-entity-CL+hold ----------
There was (a board) of this length ...

(6.4) Handle-small-round-entity-CL+'motion'-line+sr
(Someone) moved the bead along

In this study we concur with the view that the hand configuration element incorporates both classificatory and predicative meanings and that it constitutes the verb stem. However, the predicative meaning incorporated in the stem is only fully realised when the hand configuration combines with a movement component.

In terms of categorising hand configurations and movements a number of different approaches have been proposed (Supalla 1978, 1986; Brennan 1990, 1992; Schick 1990; Liddell and Johnson, quoted in Valli and Lucas 1992; Engberg-Pedersen 1993). The general hand configuration and movement component categories identified in these studies are summarised in Figure 6.1.

| **Hand configuration components** | **Movement components** | |
|---|---|---|
| Size and shape | Existence | |
| Semantic | Location | |
| Instrument | Motion | |
| Body | | |
| Body-part | | Supalla (1978, 1986) |
| Semantic | Existence | |
| Size and shape | Be-Located | |
| Tracing size and shape | Path | |
| Instrumental | Imitation | |
| Handling | Extent | |
| Touch | | Brennan (1990, 1992) |
| Class (i.e. Semantic) | Mov (motion, extent) | |
| Size and shape | Imitation (e.g. motion) | |
| Handle | Dot (location) | Schick (1990) |
| Whole entity | Stative-descriptive | |
| Surface | Process | |
| Instrumental | Contact (location) | |
| Depth and width | | |
| Extent | | |
| Perimeter shape | | |
| On-surface | | Liddell and Johnson (quoted in Valli and Lucas, 1992) |
| Whole entity | Location | |
| Handle | Motion | |
| Limb | Manner | |
| Extension | Distribution | |
| | Extension | Engberg-Pedersen (1993) |

Figure 6.1 Categories of Hand Configurations and Movements

As we can see from the movement components outlined in Figure 6.1 there is considerable agreement that classifier predicates can refer to the state, extent, location or motion of entities. There is less agreement about the hand configuration component, particularly with regard to how fine a distinction should be established between categories. At least some of the variation in the models may be due to the fact that different languages are involved.

The categories of hand configurations and movements which will be proposed in this study relate in some respects to all of the models shown in Figure 6.1 but are not based exclusively on any specific one. To facilitate discussion however, particular reference will be made to the model suggested by Brennan (1992) since this approach offers a frame of reference that is general enough to capture broad outlines and flexible enough to capture considerable detail (see 4.3.3 above).

### 6.2.1 Categories of Movement

Movements are differentiated on the basis of the type of movement made by the hand(s), on the relationship between the movement and the relevant hand configuration, and on the nature of the interaction between the articulators in cases where more than one articulator is used (see 3.3.6.1 above). Zero movement, where the hand is placed at a particular locus or maintained in a particular position, is also included as a value in the movement component.

Examples (6.5) - (6.10) below illustrate the major distinctions between movements which, for the purpose of analysis, are placed in brackets. In the glosses, the terms EXIST, BE-LOCATED, MOVE and EXTENT are intended to capture underlying morphemic distinctions between different kinds of movements. The terms BE-LOCATED and MOVE will be used to denote both transitive and intransitive forms of the verbs.

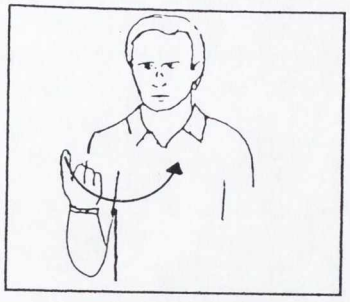
(6.5) Index-CL+(fr+MOVE-arc+c)
(Someone) came in / here ...

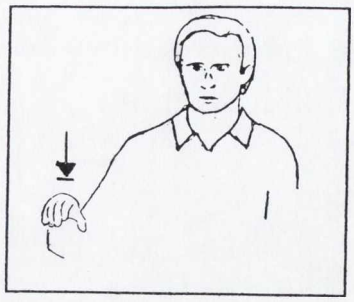
(6.6) V-CL+(c / hi+MOVE+f / lo)
(Someone) went downstairs ...

(6.7) 3D-entity-CL+(BE-LOCATED+fr)
(The house) was situated there ...

(6.8) Cylindrical-entity-CL+(EXIST+fr) g-l-a-s-s
There was a tumbler ...

(6.5)





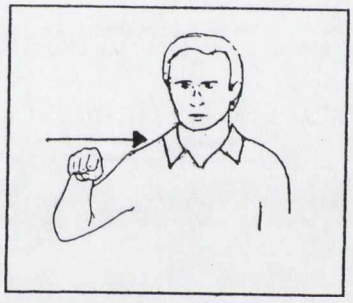
(6.7)

(6.9) (SNOW) Trace-flat-surface-entity-CL+(fl+EXTENT-large arc+fr)
The snow lay all about ...

(6.10) Handle-entity-CL+(sr+MOVE+c)
(Someone) carried (it) in ...

(6.9)





(6.10)

In example (6.5) the Index-CL stem refers to an animate entity, typically to the category of person, and the movement element MOVE provides information about the motion of that entity. The movement begins at a locus 'fr', follows an arc path and ends at the locus 'c'. The movement of the hand denotes the motion of a person from a location 'there' to a location 'here'. The V-CL stem in (6.6) also refers to the category of person. In this example the movement begins close to the signer's head, a relatively high locus, and follows a path to a relatively low locus, forward of the signer. This movement denotes the motion of a person from 'up here' to 'down there'. In the context of the utterance it means 'downstairs'. Examples (6.5) and (6.6) show that different types of MOVE movements are found in Irish Sign Language.

The offset point in example (6.7) has a 'stamping' movement followed by a hold feature which signifies BE-LOCATED. The movement glossed as EXIST in example (6.8) does not have the same abrupt offset point, indicating that the focus in (6.8) is on the presence of the tumbler rather than its particular location. The handshapes in both of these examples represent the shapes of the entities to which they refer - 'house' and 'tumbler' - although the dimensions in question are derived from different perspectives.

In example (6.9) the 5-hand, representing a flat-surface entity, traces a large arc through signing space from a locus 'sl' to a locus 'fr'. This movement, EXTENT, in association with this particular hand configuration denotes the extent or dimensions rather than the motion of the entity. The movement in (6.10), is glossed as MOVE, because combined with a Handle-entity stem, it signifies that an agent moves an entity through space.

Perhaps the most controversial movement category in Figure 6.1 is that of imitation (IMIT), illustrated in example (6.11). This category was first proposed by Schick (1990) and represents "a stylised imitation of real-world action" (p. 17). The IMIT category places complex motivated movements within "the linguistic structure of ASL rather than simply considering these forms (as) extrasystemic gesturing" (p. 19). Brennan (1992: 76-7) has also included IMIT as a movement category in her analysis of verbs of motion and location in British Sign Language.

(6.11) (BOY) Handle-narrow-cylindrical-entity-CL+IMIT: brush+c
Body-CL+EXIST+mouth----------
The boy brushed his teeth

It is difficult however, to see how IMIT can constitute a distinctive category in the sense that MOVE, BE-LOCATED, EXIST or EXTENT are distinctive. Rather, it appears that IMIT captures complex real world versions of MOVE, BE-LOCATED, EXIST or EXTENT. In other words, as examples (6.12) - (6.15) show, IMIT can refer to very specific locations or to elaborate ways in which entities move or are moved. However, the alternative glosses given in brackets in examples (6.12) - (6.15) show how the predicates might be glossed without establishing IMIT as a distinctive category of movement.

(6.12) TEETH FALSE General-entity-CL+IMIT: insert in left hand
Cylindrical-entity-CL+EXIST ----------

(TEETH FALSE General-entity-CL+BE-LOCATED+in left hand
Cylindrical-entity-CL+EXIST ----------)

There was a set of false teeth in the glass

(6.13) Tall-thin-vertical-entity-CL+f+IMIT: recoil+contact-c
Body-CL+EXIST+face ----------

(Tall-thin-vertical-entity-CL+f+MOVE+c-contact
Body-CL+EXIST+face ----------)

The punchball rebounded and struck him in the face

(6.14) Vehicle-CL+IMIT: turn over

(Vehicle-CL+MOVE-arc)

The car overturned (Elicited example)

Although IMIT is not specified as a distinctive category of movement in the analysis proposed here we will include imitation (imit:) in glosses where it can denote real world motions, locations or dimensions that are difficult to represent in other ways. In the articulation of the predicate in (6.15) for example, the signer's two hands move in a manner that represents an entity in a rolling motion.

(6.15) (BOY) BEGIN WHITE Handle-general-entity-CL+MOVE-imit: roll
Handle-general-entity-CL+MOVE-imit: roll
(The boy) began to roll a snowball

The formation of classifier predicates sometimes involves more than one articulator. In such cases one articulator often assumes a primary role and the other a secondary role. The gloss EXIST is used to refer to the phonetic feature 'hold' which is frequently associated with an articulator in a secondary role. Example (6.16) shows the signer's body as secondary articulator and example (6.17) shows how the second hand can function as a secondary articulator.

(6.16) (SNOW^MAN-f) Handle-round-entity-CL+BE-LOCATED+f / hi

Handle-round-entity-CL+BE-LOCATED+c
Body-CL+EXIST+nose ----------

(The boy) put a nose on the snowman

(6.17) Trace-narrow-cylindrical-entity-CL+lo+EXTENT+hi
Narrow-cylindrical-entity-CL+EXTENT+lo ----------

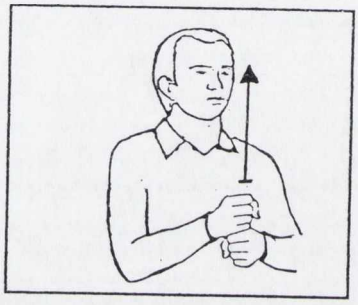
Tall-thin-vertical-entity-CL+MOVE-to and fro
Ground-entity-CL+EXIST ----------

PUNCH+reduplicate

There was a punch-ball which swung to and fro on a stand ...



(6.16) Handie-round-entity-CL



(6.17) Trace-long-thin-entity-CL

### 6.2.2 Categories of Stems

The six handshape categories described by Brennan (1992: 46 - 67, 76) - semantic, size and shape, tracing size and shape, instrumental, handling and touch - are determined by the nature of the relationship between the handshape and the referent . For the purpose of discussion, and as the data collected for this study suggests, these groups can be incorporated in three broader categories - whole entity, handling and extension stems. Hand configurations which refer to semantic, size and shape and instrumental categories and will be discussed under the general heading of Whole entity-CL stems; handling and touch categories will be discussed under the general heading of Handle entity-CL stems and the tracing size and shape category will be discussed under the heading of Extension-CL stems.

In Whole entity-CL stems the hand configuration typically represents a whole entity. Many of these stems occur in constructions where such an entity combines the semantic role of actor with that of theme. Within this general category there are different ways in which whole entities may be represented. A Semantic-CL stem refers to an entity in terms of its semantic features (+animate, for example); a Size and shape-CL stem refers to an entity in terms of its dimensions (e.g. three dimensional object) and / or its shape (e.g. circular). These stems combine with the same types of movement - MOVE, BE-LOCATED and EXIST.

In Handle entity-CL stems the handshape denotes, not the object as a whole, but the configuration of the hand as it moves, uses or touches the object or part of the object. Handle entity-CL stems imply an animate agent, that is, the signer or another agent indicated by a reference shift. These stems typically occur in transitive constructions in which the direct object argument is represented in the hand configuration. Handle entity-CL stems combine with MOVE, BE-LOCATED and EXIST movements.

A number of stems take the same surface forms across the Whole entity-CL and the Handle entity-CL distinction. For example, a Whole entity-CL stem, 'Three dimensional entity-CL', is used in a sentence meaning 'There was a bun on the table' while a Handle entity-CL stem, 'Handle three dimensional entity-CL' is used in a sentence meaning 'I put a bun on the table'. Both of these stems have the same hand configuration and the same type of movement. A similar situation arises in relation to stems such as 'Cylindrical entity-CL' and 'Handle cylindrical entity-CL'.

Extension stems combine only with EXTENT movements. These latter stems are referred to as Tracing size and shape classifiers in Brennan's (1992: 47) model. Since the hand configurations in these stems trace rather than represent the entities to which they refer they are regarded here as a distinctive category.

In Irish Sign Language there is evidence for a further stem category not included in Brennan's framework. In some classifier predicates the signer's body functions in a way that is similar to the way in which handshapes function in certain two-handed configurations. Brennan (1990: 54) does not include the body as a classifier in British Sign Language. Supalla (1990), on the other hand, argues for a considerable range of functions for body classifiers in American Sign Language.

The function of Body-CL stems in Irish Sign Language appears to fall somewhat between these two positions. Evidence in this study suggests that Body-CL stems have a significant role in backgrounded constructions. Body-CL stems might be categorised as Whole entity-CL stems but because the contexts in which they occur differs considerably from the contexts in which other Whole entity-CL stems occur we will discuss them in a separate section (6.4 below).

The range of stems and movements which will be discussed in the following sections are summarised in Figures 6.2 and 6.3.

**Stem Categories**

| | |
|---|---|
| Whole entity-CL Stems | Handle entity-CL Stems |
| Semantic-CL Stems | Touch-CL Stems |
| Size and Shape-CL Stems | |
| | Body-CL Stems |
| Extension-CL Stems | |

Figure 6.2 Stem Categories in Classifier Predicates in Irish Sign Language

**Movement Categories**

| | |
|---|---|
| EXIST | MOVE |
| BE-LOCATED | EXTENT |

Figure 6.3 Movement Categories in Classifier Predicates in Irish Sign Language

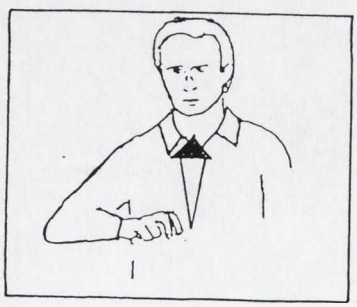
## 6.3 Whole entity-CL Stems

### 6.3.1 Semantic-CL Stems

The hand configurations associated with Semantic-CL stems represent whole entities. The characteristic Semantic-CL stems classify person, multiple-entity (notably people) and vehicle referents. Semantic-CL stems are so called "because they group objects in terms of specific semantic features" (Brennan 1992: 49). In Semantic-CL stems the handshape represents a noun referent which typically is animate and which combines the roles of actor and theme in a sentence. The V-CL stem in (6.18) for example, denotes a referent that functions in this manner.

(6.18) (BOY) V-CL+c+MOVE+f / hi
The boy went upstairs

V-CL



In analysing classifier predicates in Irish Sign Language we can examine how the classifying verb stem interacts with different movement categories. First I will examine

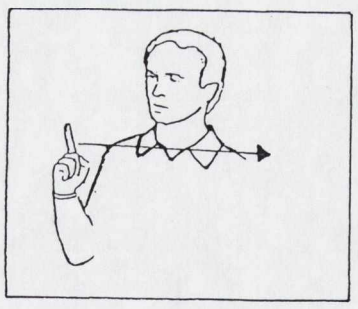
how four important Semantic-CL stems - Index-CL, V-CL, Multiple-entity-CL and Vehicle-CL - combine with various types of movement.

#### *6.3.1.1 The Index-CL Stem.*

The Index-CL stem typically refers to an animate entity which is saliently one-dimensional along a vertical axis and which denotes the referent 'human person'. The Index-CL stem should be distinguished from other verb stems which employ a similar hand configuration. Certain Touch-CL stems, for example, use an index handshape; some Size and Shape-CL and Extension-CL stems also use a similar handshape. However, none of these stems typically combine with morphemes which refer to an entity's own motion. In the Index-CL hand configuration the orientation of the extended finger is vertical and this orientation is typically maintained during the articulation of the verb. In other stems, the orientation is not usually vertical, or if it is vertical at the point of onset, the orientation typically changes before the sign is completed (see example 6.101 below).

In Danish Sign Language the Index-CL stem is used to signify a person coming towards, going away from or passing by the holder of the point of view (Engberg-Pedersen 1993: 248). These also appear to be its primary functions in Irish Sign Language. It is used in verbs of motion where a goal or particular route is indicated. In example (6.19) the Index-CL stem combines with a MOVE movement to indicate the motion of a person from one location to another on a conceptually horizontal plane.

(6.19) (BOY) Index-CL+(sr+MOVE+sl)
(The boy) went by (i.e. from there $_1$ to there $_2$)



Index-CL

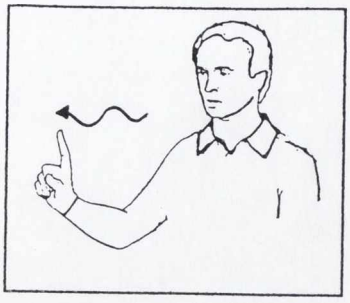
The Index-CL stem can combine with different types of MOVE movement. In example (6.20) a MOVE-random movement denotes erratic or wandering motion.

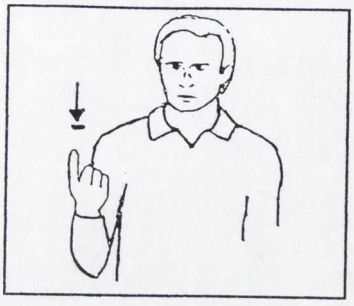
(6.20) (BOY) Index-CL+(MOVE-random+from-c)
(The boy) wandered off

Index-CL can combine with a movement which indicates location. The movement in example (6.21) is characterised by bringing the hand to an appropriate locus and then moving it downwards briefly to end in an abrupt stop.

(6.21) Index-CL+(BE-LOCATED+fr)
(Someone) was there

(6.20)





(6.21)

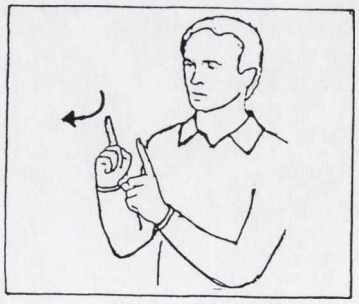
An Index-CL stem represented on one hand can combine with other stems represented on the second hand. In (6.22) the two hands move towards each other and make contact; in (6.23) the dominant hand moves while the non-dominant hand, representing the Index-CL stem, is held at a locus in signing space; in (6.24) MOVE and EXIST movements combine with different articulators to signify that one entity 'departs' or 'moves away'.

(6.22) Index-CL+(c+MOVE-towards-fl+contact-left-hand)
Index-CL+(fl+MOVE-towards-c+contact-right-hand)
(Someone) met (someone else)

(6.23) Two-CL+(c+MOVE-towards-fl+contact-left-hand)
Index-CL+(EXIST+fl+contact-right-hand) -------
Two people went to meet one person

(6.24) V-CL+BE-LOCATED+on left hand s-t Index-CL+c+MOVE+to left hand
Flat-surface-entity-CL+EXIST Index-CL+EXIST+f ----------

Wave 'No' Index-CL+fr+MOVE-arc+fl
---
If he was standing on the street ... no, I would not go up to him ... I would avoid him



(6.24) Index-CL+fr+MOVE-arc

The Index-CL stem can be used with movements which distinguish between 'coming' and 'going' from the point of view of the sender locus. A movement towards the sender locus signifies the motion of an entity from 'there' to 'here'; a movement away from the sender locus signifies motion from 'here' to 'there'. This distinction is

illustrated in examples (6.25) and (6.26). The orientation of the hand must be co-ordinated with the direction of movement. In (6.25) the palm side of the hand faces the sender locus; in (6.26) it is turned away from the sender locus.

(6.25) (FR D-) Index-CL+(fr+MOVE-arc+c)
Fr D- came in

(6.26) (FR D-) Index-CL+(c+MOVE-arc+fr)
Fr D- left

It appears that co-ordination of the orientation feature with the direction of movement is an obligatory feature of this verb and thus (6.27) is unacceptable.

(6.27) *(FR D-) Index-CL+fr+MOVE-arc+c+orientation-f
Fr D- came in / backed in / came in backwards

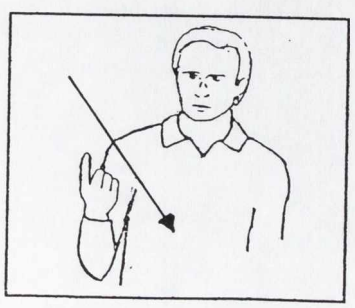
There are restrictions on the use of certain types of movements with the Index-CL stem. The Index-CL stem is restricted in denoting motion from one level to another along a conceptually vertical axis, for example to move 'upstairs' or 'downstairs'. The utterance in (6.28) is unacceptable.

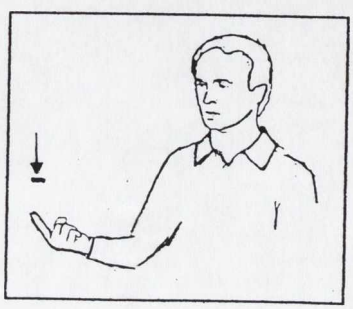
(6.28) * Index-CL+(c / hi+MOVE+f / lo)
(Someone) went downstairs

The Index-CL stem cannot be used to signify persons in certain stative postures. It cannot, for example, indicate that someone was standing, kneeling, sitting or, as in example (6.29), lying down.

(6.29) * Index-CL+(BE-LOCATED+fr+horizontal orientation)
(Someone) was lying there

(6.28)



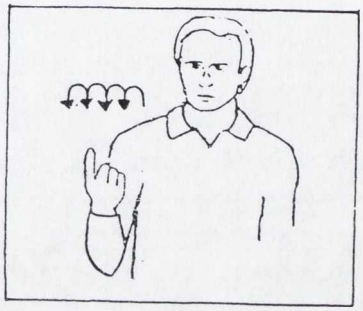


(6.29)

The Index-CL stem cannot indicate the manner of *locomotion* , nor can it combine with movement morphemes which provide information about the manner of *locomotion*, that is, whether the person hopped to a location (6.30), as opposed to 'walked' or 'limped', for example. However, the manner of *motion* , in terms of whether the motion was slow or rapid, can be indicated, as shown in (6.31).

(6.30) *Index-CL+c+MOVE+f+'hop'
(Someone) hopped from here to there

(6.30)

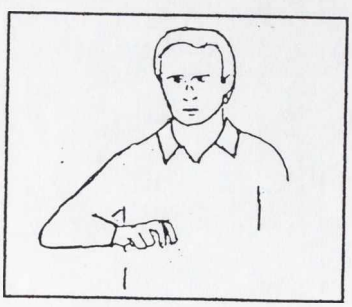


(6.31) Index-CL+(sr+MOVE+sl+rapid)
(Someone) went by quickly / rushed by)

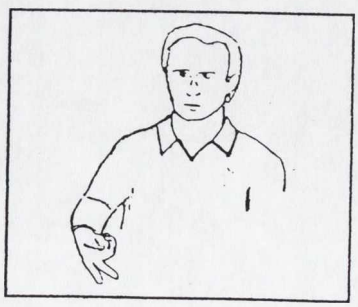
The Index-CL stem differs morphophonologically from other CL stems which use a similar handshape. In the Index-CL stem the required orientation of the index finger is vertical; in other stems in which the index finger is extended the typical orientation is downwards or horizontal. These latter stems do not denote animate entities but typically refer to the size and the shape of entities or how entities can be touched.

### *6.3.1.2 The V-CL Stem*

In the V-CL handshape the index and middle fingers are extended and spread from a closed fist and are oriented downwards. The V-CL stem combines with a very large number of movements, many of which overlap with those associated with the Index-CL stem. The V-CL stem is used to refer to the motion, location or state of an animate, saliently two-legged entity, the prototypical example being the human person. The V-CL stem should be distinguished from other stems, such as certain Size and shape-CL stems for example, which employ a similar hand configuration but which cannot refer an entity's own motion.



V-CL stem (typical orientation)



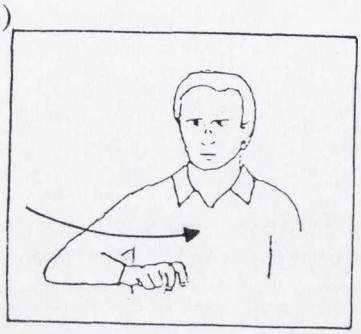
V-CL stem (horizontal orientation)

The V-CL stem can be used to denote many different kinds of motion event. It is used for example to refer to the motion of a person to a location on a horizontal plane (6.32), from one location to another on a vertical plane (6.33), or to a particular kind of motion event within a general or unspecified area (6.34), (6.35) and (6.36).

(6.32) (BOY) (WINDOW-fl) V-CL+(c+MOVE+fl)
(The boy) went over to the window

(6.33) (BOY) V-CL+(c / hi+MOVE+f / lo)
(The boy) went downstairs

(6.34) (BOY) V-CL+(sr+MOVE-horizontal-arc+fl)
(The boy) ran around



(6.34)

(6.35) (SNOW^MAN) V-CL+(BE-LOCATED-on left hand+MOVE-vertical arc+
Flat-surface-entity-CL+(EXIST+f) ----------

orientation-change+impact-contact+BE-LOCATED-on left hand)
---------- / Flat-surface-entity-CL+(EXIST+c) ----------

(The snowman) fell off (the skateboard) and hit (the floor) with a thud

(6.36) V-CL+MOVE-imit: tangle ... V-CL+f / hi+MOVE+f / lo+over left hand
V-CL+MOVE-imit: tangle ... V-CL+f / hi+MOVE+f / lo+under right hand

The two of them got entangled ... One fell on top of the other

Different kinds of motion events can be denoted by combining alterations in the V-CL hand configuration with particular types of movement in signing space. The hand configuration can be altered by changing its orientation and by varying the disposition of the V-fingers. One way of understanding variations in the V-CL stem is to analyse hand configurations in terms of marked and unmarked forms. If the unmarked form consists of index and middle fingers extended but not tensed (i.e. curved), the fingertips oriented downwards, and the backs of the fingers oriented outwards, then marked forms will involve changes in the tension of the fingers (straight rather than curved, for example), in the orientation of the fingertips (to the side rather than downwards), and in the orientation of the backs of the fingers (towards the signer rather than outwards).

More data is required to establish clear distinctions among these variations and an important avenue for future research will be to determine whether variations in the V-hand configuration are in fact marked forms or whether they constitute distinct and separate stems. However, it is possible to provide here an introductory analysis in terms of variations in orientation, in the disposition and movement of the fingers, and in the way in which signing space is used.

Orientation of the hand is a morphologically significant feature of the V-CL stem. The contrasts in orientation are vertical / horizontal, finger tips / base of the fingers and back of the hand / palm of the hand. If the characteristic motion of humans is on foot from one location to another then the prototypical form of the V-CL stem refers to motion of this kind. In this form the hand is oriented vertically, the V-fingers point downwards and the backs of the fingers represent the front of the entity referred to.

Alterations in the orientation of the hand signify different kinds of motion event. The contrast between vertical and horizontal orientation is shown in examples (6.37) - (6.40). In examples (6.37) and (6.38) the orientation of the hand is vertical; in examples (6.39) and (6.40) the orientation is horizontal.

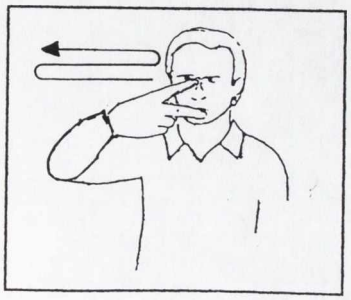
(6.37) (BOY) (WINDOW-fl) V-CL+(c+MOVE+fl)
(The boy) went over to the window

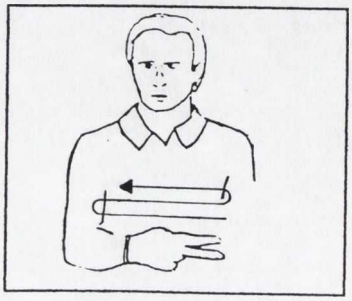
(6.38) (BOY) V-CL+(c+MOVE+f / hi)
(The boy) went upstairs

(6.39) (BOY) V-CL+(sl / hi+MOVE+sr / hi+horizontal orientation+MOVE+sl / hi +reduplicate)
(The boy) floated through the air

(6.40) BOY V-CL+(sl+MOVE+sr+horizontal orientation+MOVE+sl+reduplicate)
The boy swam several lengths (Elicited example)

(6.39)





(6.40)

The second orientation feature consists of the contrast between the palm side of the fingers and the back of the fingers, a contrast which is used to distinguish between 'going' and 'coming' and which is illustrated in examples (6.41) - (6.44). Prototypically, the backs of the V-fingers represent the front of the referent. In (6.41) the referent is described as moving away from the sender locus but in (6.42) as coming towards the sender locus. The orientation of the V-fingers away from the sender locus in (6.41) but towards the sender locus in (6.42) is obligatory.

(6.41) (SNOW^MAN) V-CL+(c+MOVE+f)
(The snowman) moved forward

(6.42) (SNOW^MAN) (BOY-c) V-CL+(fr+MOVE+c)
(The snowman) came towards him (the boy)

These contrasts do not come into play in (6.43) and (6.44). Although the movement of the hand is towards the sender locus in both of these examples, the backs of the V-fingers are oriented away from the sender locus. This does not mean that the referent necessarily 'backed' to the bed or away from the meeting, though this in fact may have happened. In (6.41) and (6.42) the direction in which the referent faced as he moved is significant; in (6.43) and (6.44) the direction in which the referent faced is not significant.

(6.43) (BOY) V-CL+(f+MOVE+c+orientation-f)
General-entity-CL+(EXIST+c) --
(The boy) returned to bed

(6.44) _____t
MEET(-fl) DET-fl PRON1 V-CL+(fl+MOVE+c+orientation-fl)
I withdrew from the meeting (Elicited example)

Thus, if the context refers to 'withdrawal' from a location or situation, or 'return' to a location or situation previously occupied, the distinction between 'front' and 'back' is not activated. There is another circumstance in which the 'front' and 'back' contrast is not activated. When the action referred to is an unspecific motion from one location to another, the backs of the fingers need not be oriented in the direction of the movement. In example (6.45) the V hand is oriented forward although the movement is towards a locus 'sr'. In this instance the signer is not describing a crabwise motion, but that the boy 'went to the house'.

(6.45) (HOUSE-sr) V-CL+(c+MOVE+sr)
(The boy) went to the house

A third contrast in orientation occurs when distinctions are made between the tips and the base of the fingers. This contrast is relevant in distinguishing between 'head first' and 'feet first' features associated with ascending and descending motions. The contrast is illustrated in examples (6.46) and (6.47) where prototypically, the tips of the fingers denote the feet of the referent.

(6.46) (SNOW^MAN) V-CL+(hi+MOVE+lo+BE-LOCATED-lo)
(BOY) V-CL+(hi+MOVE+lo+BE-LOCATED-lo)

(The snowman and the boy) descended together and landed on the ground

(6.47) BOY V-CL+(BE-LOCATED-on left hand+MOVE-arc+orientation-change+lo)
Flat-surface-entity-CL+(EXIST+hi) ----------

The boy dived off the board

(Elicited example)

The direction of particular MOVE movements is significant in relation to the way in which it combines with orientation in the V-CL stem. As we have seen, a horizontal path refers to motion along a horizontal, or conceptually horizontal plane, and a vertical path refers to motion along a vertical dimension. The contrast between these movements is illustrated in examples (6.48) and (6.49).

(6.48) (SNOW^MAN) (BOY-c) V-CL+(fr+MOVE+c+orientation-c)
(The snowman) came towards him (the boy)

(6.49) (BOY) V-CL+(c / hi+MOVE+f / lo)
(The boy) went downstairs

Similarly, a path which denotes upward motion contrasts with a path which denotes downward motion, as indicated in examples (6.50) and (6.51).

(6.50) (SNOW^MAN) V-CL+(f+MOVE+hi / f+alongside left hand)
(BOY) V-CL+(f+MOVE+hi / f+alongside right hand)

(The snowman and the boy) ascended into the air together

(6.51) (SNOW^MAN) V-CL+(hi+MOVE+lo+BE-LOCATED-lo)
(BOY) V-CL+(hi+MOVE+lo+BE-LOCATED-lo)

(The snowman and the boy) descended together and landed on the ground

The movement and disposition of the fingers in the V-CL hand configuration also combines with orientation features to refer to particular types of motion. Two aspects of representation of the fingers are relevant. Firstly, the V-fingers may or may not move back and forth during the articulation of the movement path; secondly they may be bent or straight.

Prototypically, the use of the V-CL stem to refer to the motion of a person from one location to another, implies that the motion is on foot, but without any particular emphasis on the manner of *locomotion* . In this case the fingers do not move back and forth. When the focus is on walking as such, for example, the fingers move back and forth as the movement path is articulated. The difference is shown in examples (6.52) and (6.53). In (6.52) the reference is to motion on foot without any particular emphasis on the 'on foot' element. In (6.53) the 'walking' aspect of the motion is emphasised.

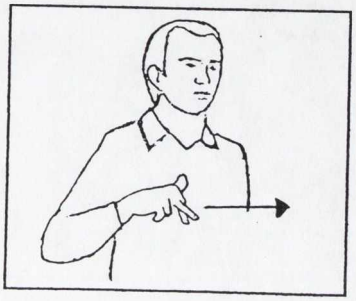
(6.52) (BOY) V-CL+(c+MOVE+f) OUT^FOR
(The boy) went outside

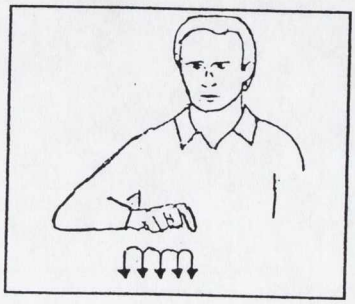
(6.53) SHOP(-sl) MAN V-CL+(c+MOVE+sl+fingers move)
The man *walked* to the shop (Elicited example)

Thus, the manner of *locomotion* can be specified to some extent in the V-CL stem: a movement of the fingers back and forth indicates 'walking'. However, other types of *locomotion* such as 'limping' or 'hopping', in relation to which there are no physical constraints, are not allowed in this stem. Thus, utterance (6.54) is not acceptable in Irish Sign Language.

(6.54) *BOY V-CL+(c+MOVE+f+'hop') OUT^FOR
The boy hopped outside (on one leg)

(6.53)





(6.54)

The movement of the fingers in the V-CL stem is typically motivated. The characteristic presence or absence of motion in the legs (in swimming as opposed to floating, for example) is represented by its presence or absence in the movement of the fingers. The movement of the V-fingers is used to distinguish between verbs which refer to walking or swimming and verbs which refer to ascending, diving or floating. The distinction can be seen in examples (6.55) and (6.56).

(6.55) (SNOW^MAN) V-CL+(c+MOVE+f / hi+fingers move)
(The snowman) walked upstairs

(6.56) (SNOW^MAN) V-CL+(c+MOVE+f / hi+alongside left hand)
(BOY) V-CL+(c+MOVE+f / hi+alongside right hand)

(The snowman and the boy) ascended into the air together

The disposition of the fingers (whether they are bent or straight) is also typically motivated in that it is related to the characteristic disposition of the legs in particular types of motion. In verbs which refer to motion such as swimming, floating, diving, ascending, and descending, the fingers are kept straight. In verbs which refer to running, sitting, kneeling and to motion as an unspecific activity, the fingers are bent. In example (6.57) the fingers are bent and the movement is articulated with the 'stamping' offset point characteristic of a BE-LOCATED movement.

(6.57) (BOY) (SNOW^MAN) V-CL+(BE-LOCATED+fr+opposite left hand)
V-CL+(BE-LOCATED+fl+opposite right hand)

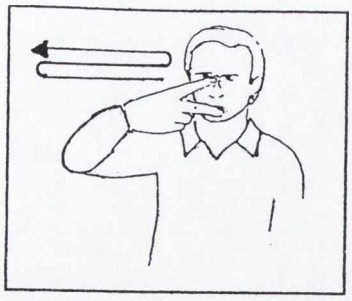
(The boy and the snowman) sat down opposite each other

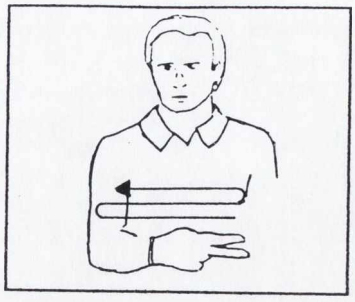
The manner in which the V-CL stem functions in signing space is also typically motivated. The relative height at which the sign is articulated is significant in distinguishing between a motion event such as 'floating in the air', example (6.58), and 'floating on the water', example (6.59).

(6.58) (BOY) V-CL+(sl / hi+MOVE+sr /hi+horizontal orientation+MOVE+sl / hi +reduplicate)
(The boy) floated (through the air)

(6.59) BOY V-CL+(sl+MOVE+sr+horizontal-orientation+MOVE+sl+reduplicate)
The boy floated (on the water) (Elicited example)

(6.58)





(6.59)

Finally, different motion events can be denoted by combining the V-CL stem with stems represented on the non-dominant hand. Examples (6.60) - (6.62) show how the V-CL stem can combine with stems indicated on the non-dominant hand to refer to certain types of motion events.

(6.60) V-CL+BE-LOCATED+by left hand
Vertical-2D-entity+EXIST ----------
(Someone) stood by the wall

(6.61) V-CL+BE-LOCATED+on left hand
Flat-surface-entity-CL+EXIST
(The snowman) lay down (in the freezer) (6.61)

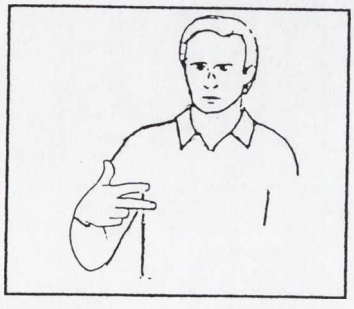


(62) Trace-long-narrow-entity-CL+f+EXTENT+sr V-CL+MOVE-imit: skate
Trace-long-narrow-entity-CL+f+EXTENT+sl V-CL+MOVE-imit: skate

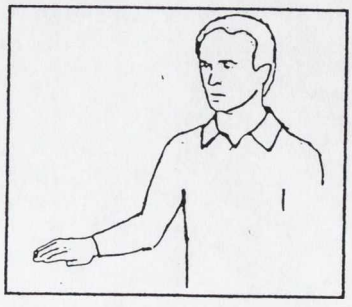
There was a board for skating on / a skateboard

### *6.3.1.3 The Vehicle-CL Stem*

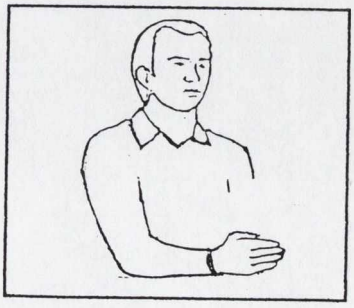
Vehicle-CL stems have been identified in other sign languages but as we see in examples (6.63) - (6.65) the hand configuration differs from language to language.



(6.63) American Sign Language



(6.64) Swedish Sign Language



(6.65) Irish Sign Language

Since only a small number of Vehicle CL stems occurred in the core data in this study supplementary examples (6.69) - (6.75) were elicited from the informants for the purpose of analysis. These elicited examples enable comparisons to be made with Wallin's (1990) findings in relation to Vehicle-CL stems in Swedish Sign Language.

In Irish Sign Language the Vehicle-CL stem can refer to a variety of vehicles including cars, lorries, motor cycles and bicycles. It is not yet clear whether the Vehicle-CL stem as described here can refer to all types of vehicle. Further research is required to establish whether certain kinds of vehicles are excluded from this stem category or indeed whether there are other distinct vehicle stems. The stem described here can be seen as the prototypical Vehicle-CL stem and the movement components with which it combines are quite similar to those that combine with the V-CL stem. Examples (6.66) - (6.70) show that the Vehicle-CL stem combines with MOVE and BE-LOCATED.

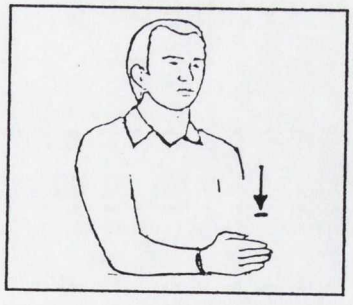
(6.66) SECOND b-u-s Vehicle-CL+sr+MOVE+f gesture: shrug FULL
A second bus came by but it was full

(6.67) THIRD b-u-s Vehicle-CL+sr+MOVE+f / HALF FULL GOOD

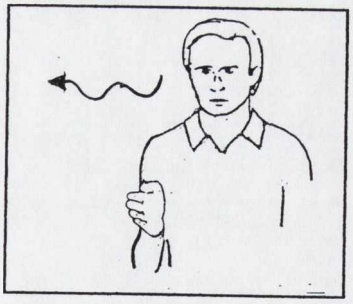
Vehicle-CL+sr+MOVE+BE-LOCATED+f

A third bus came by. Fortunately, it was only half full. It came by and stopped

(6.67)



Vehicle-CL+BE-LOCATED+f



Vehicle-CL+MOVE-imit: random (6.68)

(6.68) Vehicle-CL+MOVE-imit: random
(The car) went all over the place

Examples (6.69) and (6.70) show that the Vehicle-CL stem can combine with movements which refer to motion along a conceptually vertical path.

(6.69) Vehicle-CL+fr / hi+MOVE+fr / lo
(The motor cycle) went downhill

(6.70) Vehicle-CL+fr+MOVE+fr / hi
(The motor cycle) went up the hill

As is the case in Swedish Sign Language (Wallin, 1990), the tips of the fingers in the Vehicle hand configuration prototypically refer to the front of the vehicle, the mid-part of the hand to the mid-part of the vehicle and the heel of the hand to the back of the vehicle. Example (6.71) describes how one vehicle crashed into the side of another.

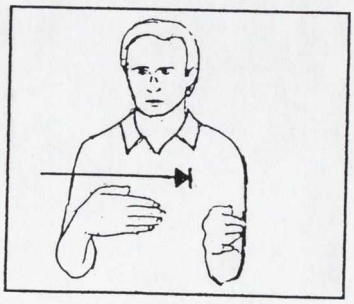
(6.71) Vehicle-CL+sr+MOVE+contact mid part of left hand
Vehicle-CL+sl+EXIST ----------
A vehicle crashed into the side of another vehicle

In Irish Sign Language it appears that this orientation feature is activated when the Vehicle-CL stem combines with MOVE but is not necessarily activated when the stem combines with other types of movement. Two different motion events are denoted in examples (6.72) and (6.73) and in both instances the orientation of the hands is significant.

(6.72) Vehicle-CL+c+MOVE-arc+f (+orientation-f)
Vehicle-CL+EXIST --------- (+orientation-f)
One vehicle overtook another

(6.73) Vehicle-CL+f+MOVE+c+orientation-c
Vehicle-CL+c+MOVE+f+orientation-f
Two vehicles pass, going in opposite directions

(6.71)





(6.73)

However, in examples (6.74) and (6.75) which describe how vehicles are parked the orientation feature which denotes a relationship between particular parts of the hand and

particular parts of the referent is not always activated. Although the orientation of the hand remains the same throughout the articulation of each example, this does not imply that all the vehicles in (6.74) were facing in the same direction or in (6.75) that they were all parked facing each other.

(6.74) Vehicle-CL+BE-LOCATED+$sr_1$+BE-LOCATED+$sr_2$+BE-LOCATED+$sr_3$+

BE-LOCATED+$sr_4$

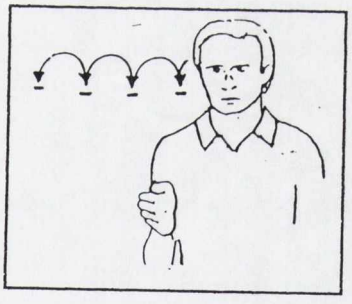
The vehicles were parked in a row

(6.75) Vehicle-CL+BE-LOCATED+$sr_1$+BE-LOCATED+$sr_2$+BE-LOCATED+$sr_3$+
Vehicle-CL+BE-LOCATED+$sr_1$+BE-LOCATED+$sr_2$+BE-LOCATED+$sr_3$+

BE-LOCATED+$sr_4$+orientation-f
BE-LOCATED+$sr_4$+orientation-c

The vehicles were parked in two rows opposite each other

(6.74)





(6.75)

### *6.3.1.4 The Multiple entity-CL Stem*

Multiple entity-CL stems are represented by the 5-hand(s), that is, the fingers and thumb of the hand(s) are open and spread. Multiple entity-CL stems refer to entities as members of large groups, such as a crowd of spectators, a herd of cattle or a shoal of fish. Multiple entity-CL stems should be distinguished from Size and shape-CL and Handle entity-CL stems which are also articulated with the 5-hand.

Examples (6.76) - (6.83) show that Multiple entity-CL stems can combine with different movement components to denote the motion, location or state of multiple entities. There is a form difference between the movement denoting BE-LOCATED and that denoting MOVE. When combined with a Multiple entity-CL stem, a movement is interpreted as MOVE when it is aligned with the orientation of the fingers and as BE-

LOCATED when it is opposed to the orientation of the fingers. This relationship between movement and orientation is seen in examples (6.76) and (6.77).

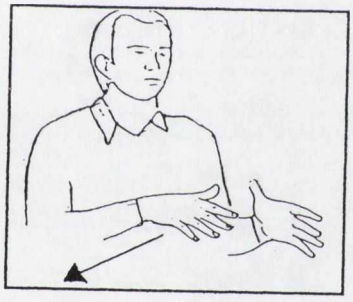
(6.76) WE Multiple entity-CL+c+MOVE+fl
Multiple entity-CL+c+MOVE+fl
We all went out

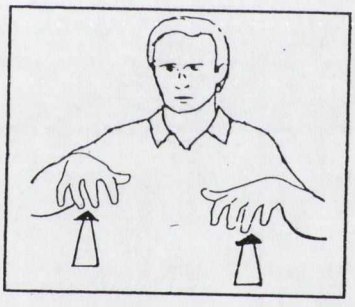
(6.77) PARTIALLY-DEAF
Multiple entity-CL+BE-LOCATED+sl

DEAF Multiple entity-CL+BE-LOCATED+sr
Multiple entity-CL+BE-LOCATED+sl

The partially deaf boys were on one side and the deaf boys were alongside them on the other

(6.76)





(6.77)

When it combines with Multiple entity-CL stems, a BE-LOCATED movement is expressed by a short movement path ending in a hold rather than by the more typical stamping action. Thus, the form of the verb seems to incorporate a distributive as well as a locative meaning. In some cases, such as (6.77), it is the locative meaning that emerges; in others, (6.78) for example, the distributive meaning predominates.

(6.78) Multiple entity-CL+EXTENT+f+orientation upwards
Multiple entity-CL+EXTENT+c+orientation upwards
There was a long queue

The Multiple entity stem can be used to refer to multiple entities of the kind associated with 'traffic', example (6.79), or 'steam', example (6.80). In (6.79) the arrangement of the two hands is motivated: one hand is placed behind the other to represent the notion of heavy traffic. In (6.80) the manual sign is accompanied by a non-manual feature 'puff cheeks' indicating 'a large amount', 'a lot'.

(6.79) KNOW b-u-s FULL Multiple entity-CL+c+MOVE+f BAD
Multiple entity-CL+c+MOVE+f

(The man) knew that the bus(es) would be full and the traffic terrible

(6.80) _____ puff cheeks
Multiple entity-CL+lo+MOVE+hi
Multiple entity-CL+lo+MOVE+hi

(Steam) billowed up

A variation of the Multiple entity-CL stem occurred in the data which involved wiggling of the fingers. This stem appears to refer to the notion of multiple *small* entities and is illustrated in examples (6.81) and (6.82).

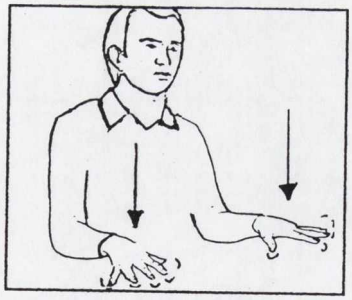
(6.81) BEGIN WHITE Multiple small entities-CL+hi / fr+MOVE+lo / f
Multiple small entities-CL+hi / fr+MOVE+lo / f
It began to snow

(6.82) (BOY) c+LOOK+fl+arc+f BEAUTIFUL

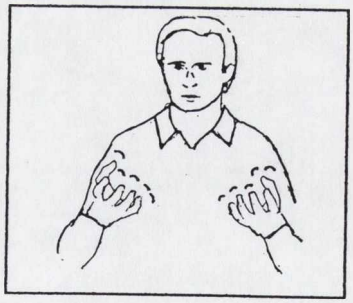
Multiple small entities-CL+orientation-c+EXIST-imit: twinkle
Multiple small entities-CL+orientation-c+EXIST-imit: twinkle

The boy looked about. It was beautiful. All the small lights were twinkling.

(6.81)



Multiple small entities-CL



Multiple small entities-CL (6.82)

Additional data and research is needed to establish whether hand-internal movement (wiggling, for example) constitutes a variant of the Multiple entity stem or whether it denotes a distinct and separate stem. It is also necessary to establish the distribution of Multiple entity stems and Multiple small entity stems in relation to one another and in relation to the types of movements with which they combine.

### 6.3.2 Size and Shape-CL Stems

A Size and shape-CL stem denotes something of the dimensions and / or shape of an entity. A great variety of hand configurations are used in Irish Sign Language to refer to objects in this way. However, the relationship between a hand configuration and a particular object is not fixed. The same hand configurations can denote different kinds of referents; the same entity can be represented by a variety of hand configurations. The particular choice made by the signer will depend of course on some of the features of the referent but the specific features that are represented in the handshape will also be determined by the context and focus of the utterance. Brennan (1992: 46), for example, has identified structures in British Sign Language where the flat hand can refer to the manner in which objects are handled, or to the size and shape of the object; round objects can be represented by an O hand, an F hand or an A hand.

Examples (6.83) - (6.86) show that Size and shape-CL stems can combine with EXIST, BE-LOCATED and MOVE movements.

(6.83) Cylindrical-entity-CL+EXIST+fr g-l-a-s-s
There was a tumbler ...

(6.84) 3D-entity-CL+BE-LOCATED+fr
(The house) was situated there ...

(6.85) MORNING SOON BEGIN SUN

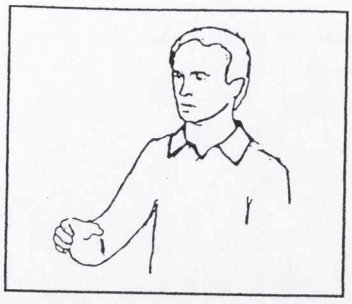
Solid-round-entity-CL+MOVE-imit: sunrise
Flat-surface-entity-CL+EXIST ----------

It will be morning soon and the sun will begin to rise

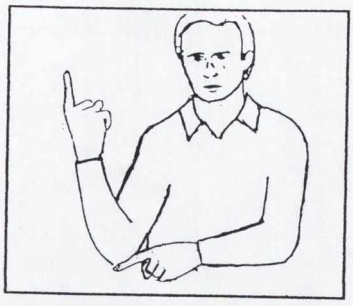
(6.86) SNOW^MAN PUNCH Tall-thin-vertical-entity-CL+c+MOVE+f

Tall-thin-vertical-entity-CL+f+MOVE+c-contact
Body-CL+EXIST+face ----------

The snowman threw a punch at the punchball which rebounding, struck him in the face



(6.83) Cylindrical-entity-CL



(6.86) Thin-vertical-entity-CL

Combinations of different Size and shape-CL stems can be used to express complex relationships between entities, as illustrated in example (6.87). In this example the signer uses two different Size and shape stems to refer to the same entity. General-entity-CL and Teeth-CL are both Size and shape stems and are both used to denote 'teeth'.

(6.87) Cylindrical-entity-CL+EXIST+fr g-l-a-s-s General-entity-CL+
Cylindrical-entity-CL+

BE-LOCATED+ in left hand Teeth-CL+EXIST TEETH FALSE
EXIST ----------

General-entity-CL+BE-LOCATED+in left hand
Cylindrical-entity-CL+EXIST ----------

There was a tumbler and in it there was a set of false teeth

## 6.4 Extension-CL Stems

Extension-CL stems, sometimes referred to as Tracing size and shape classifiers (Brennan 1992: 47), differ from other stems in three respects. Firstly, the hand configuration does not denote a whole entity, nor does it denote how an entity is handled; in Extension-CL stems the hand configuration traces the outline or extent of an entity. Secondly, Extension-CL stems combine with EXTENT but not with MOVE or BE-LOCATED movements. Thirdly, predicates that incorporate EXTENT are not always marked for agreement, unlike predicates that incorporate BE-LOCATED or MOVE. If Extension-CL predicates do express agreement they do so by being articulated at a particular locus in signing space rather than through the movement element per se. For example, in (6.92) below, the predicate takes a locative marker 'f / hi' which agrees with the nominal SNOW^MAN. By contrast, the predicates in (6.88) - (6.91) do not take any locative agreement markers.

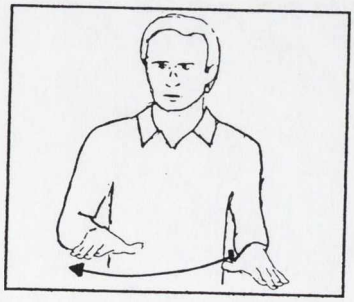
Extension stems are typically two-handed configurations which can combine with the EXTENT movement in two different ways. In one form the outline or extent of the entity is described by a symmetrical articulation of the two hands. In the second form one hand is held at the onset point of the sign while the other describes the outline or extent of the entity. In both forms, handshape and movement appear to be subject to certain constraints. The symmetry constraint (see 2.3) applies in forms involving two active hands where both hands have the same handshape, begin movement in the same relative location, and perform similar motor acts. In forms involving one active hand, all the examples in the data indicate that both hands are required to have the same handshape.

In addition to articulating the outline or extent of an entity, certain other features may be encoded in the hand configurations used in Extension-CL stems. For example, handshapes in which all the fingers are active are used to refer to entities with three salient dimensions, such as tall, thick, pillars or large box-like objects, while handshapes with an active index finger are used to refer to entities with one or two salient dimensions such as a circular table-top or the shape of a window.

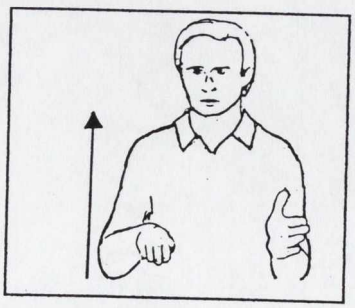
The term 'trace' is used to refer to the tracing action of the hand(s) in examples (6.88) - (6.92) below but is omitted where the hand maintains a 'hold' position.

(6.88) (SNOW) Trace-flat-surface entity-CL+sl+EXTENT-large arc+fr
Flat-surface-entity-CL+sl+EXTENT ----------
(The snow) lay all about

(6.89) Trace-general-entity-CL+lo+EXTENT+hi
General-entity-CL+EXTENT ----------
(The snowman) was so big



(6.88) Trace-flat-surface-entity-CL / Flat-surface-entity-CL -----



(6.89) Trace-general-entity-CL / General-entity-CL -----

In examples (6.88) and (6.89) the dominant hand traces the extent of the referent while the subordinate hand with the same hand configuration is held at the locus where the dominant hand begins its movement. In Extension stems, as we have noted, it is also possible for both hands to move symmetrically in articulating the outline or extent of the entity. This form is illustrated in example (6.90) where the signer refers to a chest freezer.

(6.90) ICE f-r-e-e-z-e-r Trace-long-general-entity-CL+EXTEND+fr
Trace-long-general-entity-CL+EXTEND+sl
(There was) a chest freezer

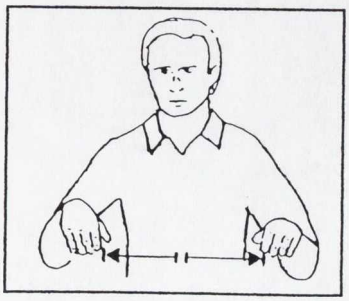
In executing the EXTENT movement the signer may move the hand(s) in a way that provides additional information. Modification of the movement component in this way incorporates a manner morpheme into the verb. In (6.91) for example, the staggered movement of the hands denotes that the action was gradual.

(6.91) Trace-large-3D-entity-CL+f / lo+EXTENT-staggered+f / hi
Trace-large-3D-entity-CL+f / lo+EXTENT-staggered+f / hi
(The pile of snow) gradually grew bigger and bigger

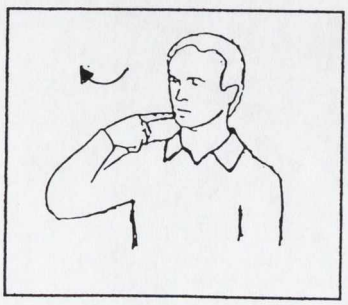
Occasionally in Extension-CL stems the movement component is best captured by an imitation gloss because the movement distils characteristics of a real world shape. In example (6.92) the signer first traces a small arc, a 'smile', at a locus f / hi in signing space, the location of the snowman's face. The signer then traces another small arc located at his own mouth. In this example note also that the signer's body functions as a secondary articulator.

(6.92) (SNOW^MAN-f) Trace-size-and-shape-CL+EXTENT-imit: smile+f / hi

Trace-size-and-shape-CL+EXTENT-imit: smile+c
Body-CL+EXIST +mouth----------
(The boy) drew a smile on the snowman's face



(6.90) Trace-long-general-entity-CL
Trace-long-general-entity-CL



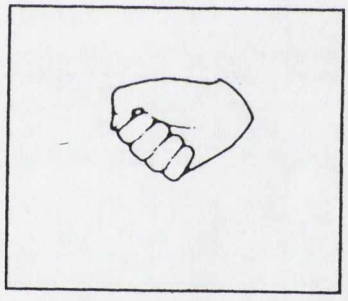
(6.92) Trace-smile-CL

## 6.5 Handle entity-CL Stems

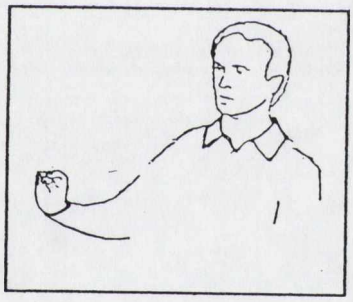
Handle entity-CL stems typically refer to objects in terms of how they are held, moved, used as instruments or touched. Handle entity-CL stems imply an animate agent, that is, the signer or another agent indicated by a separate lexical item or by a reference shift. These stems participate in transitive constructions in which the direct object argument is represented in the hand configuration.

In example (6.93) the handshape indicates how an entity such as trouser braces may be handled and the movement indicates in a condensed and idealised way how an individual puts on braces. The verb is articulated with both hands at the signer's shoulders. In this and subsequent examples the gloss 'Handle-entity-CL' refers to entities with handles or entities which are handled with a fist configuration.

(6.93) (BOY) Handle-entity-CL+MOVE-imit: put-on-braces+c
Body-CL+EXIST+shoulders ----------
(The boy) pulled the braces over his shoulders



(6.93) Handle-entity-CL



(6.95) Handle-small-round-entity-CL

Handle entity-CL stems can combine with MOVE morphemes to denote that an entity is carried or moved from one place to another. In example (6.94) two different Handle entity-CL stems combine to represent one entity.

(6.94) Handle-entity-CL+sr+MOVE+f ------ RADIO
Handle-flat-surface-CL+sr+MOVE+f
(He) carried in a radio

Handle entity-CL stems can combine with BE-LOCATED morphemes to indicate that objects are placed in particular locations. Example (6.95) is a complex utterance which involves Handle entity-CL stems, BE-LOCATED movements and a Body-CL stem which functions as a backgrounded element in the construction. The gloss includes the activities of three articulators - the signer's two hands and body.

(6.95) (SNOW^MAN-f) Handle-small-round-entity-CL+BE-LOCATED+fr / hi
Handle-small-round-entity-CL+BE-LOCATED+fl / hi

Handle-small-round-entity-CL+BE-LOCATED+c / right
Handle-small-round-entity-CL+BE-LOCATED+c / left
Body-CL+EXIST+right eye+left eye ----------

Handle-small-round-entity-CL+BE-LOCATED+fr / hi
Handle-small-round-entity-CL+BE-LOCATED+fl / hi

(The boy) gave the snowman two eyes

A construction of a somewhat similar kind is shown in example (6.96). This example incorporates both BE-LOCATED and MOVE morphemes to indicate that the referents were located and distributed according to a particular pattern. The signer uses one hand and a Body-CL stem in a backgrounded construction.

(6.96) AND COLLECT c-o-a-l Handle-small-round-entity-CL+BE-LOCATED+
Body-CL+EXIST+sternum ----------

c / lo +MOVE+BE-LOCATED+c+MOVE+BE-LOCATED+c / hi Handle-
------ +mid chest --------- +upper chest ----------

small-round-entity-CL+BE-LOCATED+f / lo+MOVE+BE-LOCATED+f

+MOVE+BE-LOCATED+f / hi

... and he gathered coals and put 'buttons' up along the snowman's middle

As we saw in example (6.93), Handle entity-CL stems can combine with MOVE-imit: movements. Many verbs associated with putting on clothes are of this kind and are shown in examples (6.97) - (6.99). However, example (6.100), in which a Size and shape-CL stem is used, shows that a Handle entity-CL stem is not always used in verbs which refer to putting on clothes.

(6.97) (SNOW^MAN) Handle-cylindrical-entity-CL+MOVE-imit: tighten tie+c
Handle-entity+EXIST ----------
Body-CL+EXIST+neck ----------
(The snowman) put on a tie

(6.98) Handle-entity-CL+MOVE-imit: tighten belt+c
Body-CL+EXIST+waist ----------
(Someone) put on a belt

(6.99) (BOY) Handle-entity-CL+MOVE-imit: put on glove+c
Body-CL+EXIST+left hand ----------
(The boy) put on a glove

(6.100) Forked-entity-CL+MOVE-imit: put on trousers+c
Forked-entity-CL+MOVE-imit: put on trousers+c
Body-CL+EXIST+right leg+left leg ----------

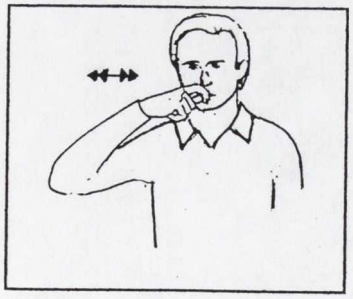
(The snowman) pulled on the trousers

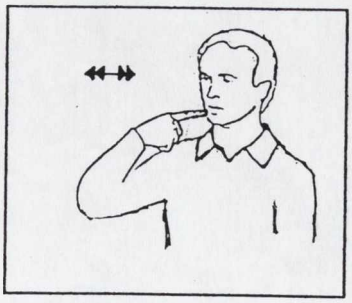
Some verbs which incorporate Handle entity-CL stems are interchangeable with verbs which incorporate Size and shape-CL stems. A toothbrush or a comb may be represented by hand configurations which refer to their general size and shape or they may be represented by configurations which refer to how they are handled. Examples (6.101) - (6.104) illustrate these two different stems.

(6.101) (BOY) Handle-entity-CL+MOVE-imit: brush teeth+c
Body-CL+EXIST+teeth ----------
(The boy) brushed his teeth

(6.102) (BOY) Long-thin-entity-CL+MOVE-imit:brush teeth +c
Body-CL+EXIST+teeth ----------
(The boy) brushed his teeth

(6.101)





(6.102)

(6.103) (BOY) Handle-entity-CL+MOVE-imit: comb hair +c
Body-CL+EXIST+hair ----------
(The boy) combed his hair

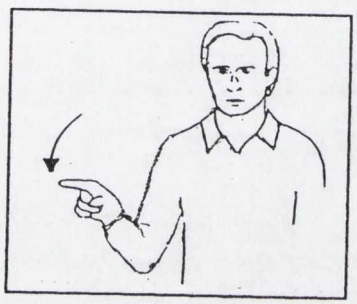
(6.104) (BOY) Toothed-entity-CL+MOVE-imit: comb hair+c
Body-CL+EXIST+hair ----------
(The boy) combed his hair

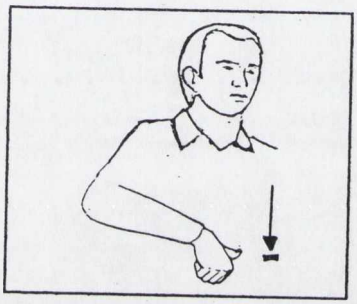
The general category of Handle entity-CL stems includes a sub-category which refers to how objects are touched, as we see in examples (6.105) and (6.106).

(6.105) (SNOW^MAN) Handle-small-entity-CL+MOVE-imit: switch on light+fr
(The snowman) pressed the light-switch

(6.106) (FR D-) Handle-small-entity-CL+MOVE-imit: press button-switch OFF
(Fr D-) switched off (the radio cassette)

(6.105)





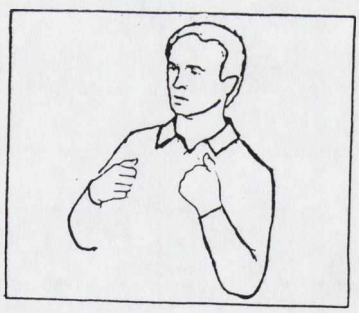
(6.106)

Handle entity-CL stems can combine with EXIST morphemes to signify that an entity is being held, but not moved, in a particular way.

(6.107) BOY SLEEP Handle-entity-CL+EXIST+c
Handle-entity-CL+EXIST+c
Body-CL+EXIST+under chin

The boy was under the bedclothes asleep

(6.107)



In Irish Sign Language the distinction between the motion of an entity itself and motion caused by an agent is typically established by hand configuration. Both types of movement are glossed as MOVE. Handle entity-CL stems combined with MOVE imply that an external agent causes the motion; Whole entity-CL stems combined with MOVE imply independent motion of the entity.

The examples given in (6.102) and (6.104) appear to contradict this generalisation since independent movement is not typical of toothbrushes or combs. However, the generalisation remains a useful one and the precise conditions under which the stems in these examples are used require further investigation. For example, one can imagine a

situation in which one's teeth are brushed and one's hair is combed by mechanical devices. Among the questions that need further study are: Can a Handle entity-CL be appropriately used to describe such actions? Does a Handle entity-CL stem refer only to the use of an instrument by an animate agent? Does a Size and shape-CL stem refer only to the particular action of the instrument?

### 6.6 Body-CL Stems

Researchers have differed with regard to how the actions or disposition of the signer's body can be incorporated in a description of classifier predicates in sign languages. Supalla (1986) identified body and body-part classifiers in American Sign Language and pointed out that body classifiers were different from other kinds of classifiers in terms of "the resources used" and in "the nature of the representation" (p. 193). The body classifier involves the body of the signer and is used as an independent articulator to refer to a single animate entity, typically an individual person. This type of classifier is used to refer to the actual body of the animate entity rather than to the semantic category or the shape of the entity itself.

There are several restrictions on the use of the body classifier system. Firstly, a body classifier can be used only when the referent is animate. Secondly, when a body classifier is part of the verb complex it can represent only one object referent at a time. Thirdly, while Body-CL stems can combine with morphemes denoting manner of locomotion, they cannot combine with morphemes denoting path of motion. Fourthly, Body-CL predicates do not take locative agreement markers.

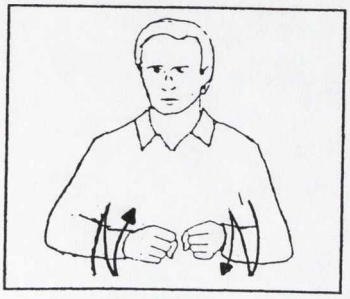
In a later work, Supalla (1990) refers to locomotion verbs which involve body classifiers and gives the following examples (6.108) - (6.110) :

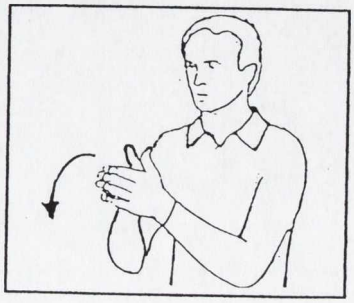
(6.108) A human moves in steps - Feet classifier

(6.109) A human walks briskly - Arms classifier

(6.110) A human dives - Arms classifier

(6.109)





(6.110)

In Supalla's analysis body-part classifiers have two components. Firstly, the hand articulator represents or indicates the body-part. Secondly, a location on the body denotes the particular body-part that is referred to. A reference to 'tiger's teeth' can be expressed through a body-part classifier. In this case, the hand configuration component represents the size and shape of the referent 'teeth', while the body location component marks the relevant area of the body to which the hand component refers.

Brennan (1990: 54) argues that in British Sign Language body-part classifiers can be accommodated under the size and shape classifier category. Therefore the classifier in the 'tiger's teeth' example may be understood as a size and shape classifier with a locative marker rather than as a body-part classifier. Brennan does not include body classifiers in her account of classifiers in British Sign Language and argues that there is little evidence to support the view that reference of this kind should be accounted for within the classifier system.

The approach adopted in this study differs from both of these positions. Evidence in the data suggests firstly, that body classifiers do have a function in Irish Sign Language; secondly, that some verbs characterised by Supalla as body classifiers in American Sign Language have equivalents in Irish Sign Language that are are best understood as plain verbs; and thirdly, that those forms referred to as body-part classifiers are best described as verbs in which Body-CL stems combine in backgrounded constructions with other CL stems.

Classifier predicates which involve a dominant and a subordinate articulator occur frequently in Irish Sign Language. Two examples in which hands operate as articulators are illustrated in (6.111) and (6.112). In these examples, the subordinate hand functions as a backgrounded element in relation to the action of the dominant hand.

(6.111) PROBLEM Solid-round-entity-CL+MOVE-imit: sunrise
Flat-surface-entity-CL+EXIST ----------

SOON MORNING

There's a snag. The sun is beginning to rise and soon it will be morning

(6.112) V-CL+MOVE-imit: dive+from left hand
Flat-surface-entity-CL+EXIST ----------
(Someone) dived off (the board) (Elicited example)

In a similar manner the signer's body can function as a subordinate articulator in relation to the action of the dominant articulator(s). Examples (6.113) and (6.114) illustrate this function.

(6.113) Index-CL+fr+MOVE+contact-c
Body-CL+EXIST+chest -------
(Someone) bumped into me



(113)

(6.114) (SNOW^MAN-f) ORANGE fr+TAKE+c Handle-round-entity-CL +BE-LOCATED+f / hi Handle-round-entity-CL+BE-LOCATED+c / hi
Body-CL+EXIST+nose ----------

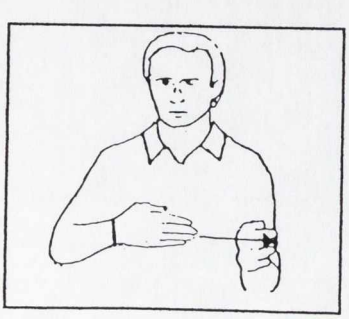
(The boy) got an orange and used it to make the snowman's nose

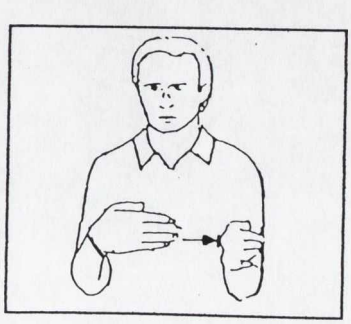
The analysis proposed by Supalla (1986) implies that the 'nose' element in (6.114) combined with the Handle-round-entity-CL stem constitutes a body-part classifier. The analysis illustrated in example (6.114) proposes that a Handle entity-CL stem combines with a Body-CL stem which takes a location marker, 'nose'. Supporting evidence for an analysis of this kind comes from forms, shown in the elicited examples (6.115) and (6.116), which involve two hand articulators.

(6.115) Vehicle-CL+MOVE+sl+contact left hand
Vehicle-CL+EXIST + fingertips ---------
One vehicle crashed into the front wing of another

(6.116) Vehicle-CL+MOVE+sl+contact left hand
Vehicle-CL+EXIST+base of palm ------
One vehicle crashed into the back of another

(6.115)





(6.116)

The fingertips or the base of the palm of the subordinate articulator in these examples are not abstracted from the hand configuration as a whole; rather the hand configuration represents a Vehicle-CL stem which incorporates a locative marker. The marked hand-parts in the subordinate hand are not referred to as hand-part classifiers; they are locative markers relevant to the activity of the two hands. It seems reasonable to describe marked locations on the body in a similar way. Body-CL stems therefore can function, within certain limits, in the same way as other stems. Most frequently, they combine with other stems in backgrounded constructions in which they can be marked for specific locations in the same way that manually articulated stems can be marked for specific locations.

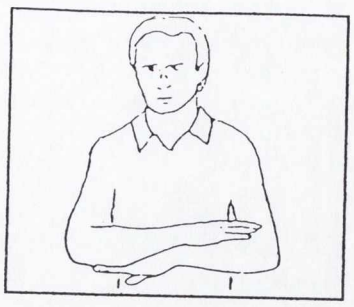
Supalla (1990) includes verbs which are glossed as 'swim', 'dive' and 'walk briskly' in the category of 'human arms' classifiers. In Irish Sign Language verbs such as SWIM, DIVE, RUN and WAIT, which use movements or disposition of the arms to represent the action, are best understood as frozen or lexicalised forms. Thus, they are considered to be plain verbs. If they are to be analysed as classifier predicates then acknowledged plain verbs such as EAT and DRINK would also have to be re-interpreted as classifier predicates.

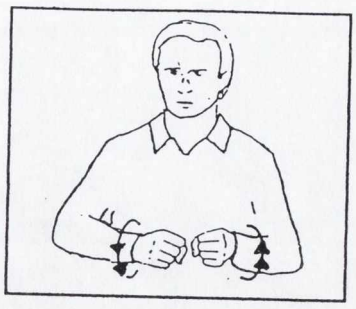
As we have seen, classifier predicates tend to be specific in terms of the types of motion to which they refer, whereas the verbs in examples (6.117) - (6.119) refer to what can be considered as unmarked forms of the activity in question. In (6.117) for example, the articulation of SWIM represents a breast-stroke movement, unlike the typical swimming motion of babies. Furthermore one of the restrictions on Body-CL stems is that only one body referent can be represented on the verb at any one time. This restriction does not apply to the verbs in examples (6.117) - (6.119) since in each case plural referents are involved.

(6.117) TWO BABY ABLE SWIM
The two babies can swim

(6.118) THIRTY FORTY BOY WAIT
About thirty or forty boys waited

(6.119) TWO POLICE RUN
The two policemen ran (Examples 6.117 and 6.119 were elicited)

WAIT 

 RUN

It is difficult to establish an explicit distinction between lexicalised verb forms and Body-CL stems which occur in non-backgrounded constructions (i.e. where the Body-CL stem is not combined with a stem represented on another articulator). One criterion for establishing such a distinction may involve the degree to which the phonological structure has become regularised. Future research may determine that the form of the predicate in (120) for example, allows for a degree of variation among individual signers that is not found in verbs such as SWIM, RUN or WAIT.

(6.120) (DEAF MAN) Body-CL+imit: ward off blows
The deaf man raised his arms to ward off the blows

In summary then, Body-CL stems in Irish Sign Language are very similar to other stems in terms of how they function although their functional range is much more limited. As with other classifier predicate forms, some have become lexicalised so that the separate elements which constitute the sign no longer have separate significance in relation to features of the nominals to which they refer (see also 5.2.2 above).

## 6.7 Serial Verb Constructions

Several of the examples used in this chapter have involved serial verb constructions, a phenomenon that is particularly associated with classifier predicates. Supalla (1990, 130) describes serial verb constructions as "structures in which ASL morphology is obligatorily sequential and is in fact arrayed over a series of somewhat independent verbs". These structures are governed by restrictions that are sometimes physical and sometimes arbitrarily grammatical. Physical restrictions arise because the number of available articulators is limited. This can be illustrated in verbs denoting motion events which involve entities in a Figure and Ground relationship (Talmy 1985), as we can see in examples (6.121) and (6.122).

(6.121) V-CL+BE-LOCATED+by left hand
Vertical-2D-entity+EXIST ----------
(Someone) stood by the wall

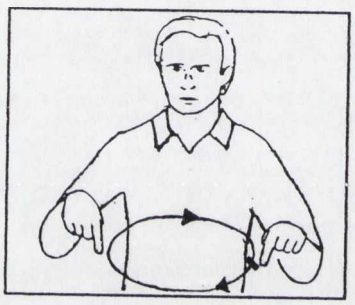
*(6.122) V-CL+BE-LOCATED+f ----------
Trace-circular-entity-CL+EXTENT
(A bird) stood on the large plate (Adapted from Supalla, 1990, 131).

In (6.121) the Figure element is indicated by a V-CL stem and the Ground element by a Vertical-2D-entity stem. The Figure - Ground relationship is expressed by simultaneous articulation of the two hands. However, in expressions which require two hands to indicate either the Figure or the Ground element, it is not physically possible to articulate both elements simultaneously. In example (6.122) since two-handed articulation is required to indicate the Trace circular entity-CL stem, simultaneous articulation of the two parts of the construction is not possible.

(6.121)



V-CL+BE-LOCATED



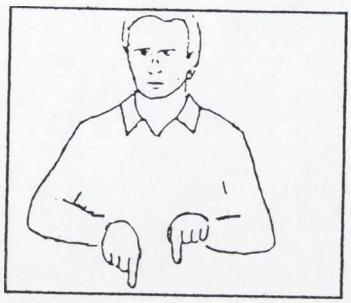
Trace-circular-entity-CL (6.122)

In American Sign Language grammatical restrictions on simultaneity occur when the manner of locomotion and the manner of motion along a path are both features of the same motion event. When these features occur in the same motion event a serial verb construction is required even though it may be physically possible to articulate both features simultaneously. Examples (6.123) and (6.124), adapted from Supalla (1990: 132-4), show two physically possible but grammatically unacceptable constructions in American Sign Language. In (6.123) the V-CL stem is modified so that one finger is bent; in (6.124) both hands trace a circular path in signing space while at the same time one of the hands imitates a 'limping' action. Example (6.125), also adapted from Supalla shows an acceptable expression of the same motion event. First the Legs-CL stem combines with a 'limping' movement to denote a manner of locomotion. An Extension-CL stem then combines with a circular EXTENT movement denoting a movement path.

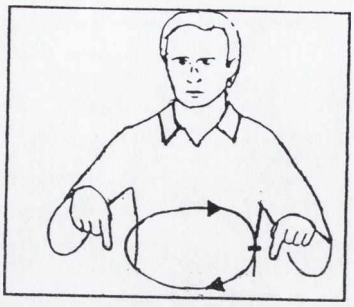
*(6.123) V-CL-modified+MOVE-circle
(Someone) hopped about in a circle

*(6.124) Legs-CL-modified+MOVE-circle
(Someone) limped about in a circle

(6.125) Legs-CL+EXIST-imit: limp Trace-circular-entity-CL+EXTENT
(Someone) limped about in a circle



(6.125) Legs-CL



Trace-circular-entity-CL

At this point in time it is not clear what grammatical restrictions exist in Irish Sign Language with regard to constructions of this kind. Obviously, there are physical restrictions in relation to what can be simultaneously articulated. In example (6.126) the signer uses a serial verb construction to refer to a skateboard because of the associated physical restrictions on articulation. In this example it is not physically possible to simultaneously articulate the Extension-CL stem and the V-CL stem.

(6.126) Trace-long-narrow-entity-CL+EXTENT+sr V-CL+MOVE-imit: skate
Trace-long-narrow-entity-CL+EXTENT+sl V-CL+MOVE-imit: skate
There was a board for skating on / a skateboard

Another example of serial verb construction occurs when the signer refers to a punchball on a stand (6.127). This example also shows evidence of grammatical restriction. In Irish Sign Language, although it may be physically possible, it does not seem to be grammatically acceptable to combine Extension-CL stems with MOVE movements which denote an entity's own motion.

(6.127) Trace-tall-narrow-entity-CL+lo+EXTENT-vertical+hi
Narrow-entity-CL+lo+EXIST ----------

Narrow-vertical-entity-CL+MOVE-to and fro PUNCH+reduplicate
Ground-CL+EXIST ----------

There was a punchball which swung to and fro on a stand

In utterances which involve two animate referents, serial verb constructions can be used to specify the relationship between them. Examples (6.128) - (6.130) below contain

serial verb constructions. Each of these examples involves two animate referents, BOY and SNOWMAN. In each case the signer has role-shifted to the referent BOY and, since the signer cannot simultaneously articulate signs at loci 'c' and 'f', a serial verb construction is required to make explicit the relationship between the two referents. This is another example of how serial verb construction constitutes a response to restrictions on simultaneity in Irish Sign Language.

An alternative analysis is that in serial verbs a signer *can* represent two different roles. In (6.128) for example, during the 'Body-CL+EXIST+right eye+left eye' sequence the arm's are the boy's and the body is the snowman's. Such an analysis indicates that if the location is a body part, then the reading on a non-serial verb is co-referential. Again, this is an issue that requires further research.

(6.128) (SNOWMAN-f) Handle-small-entity-CL+BE-LOCATED+fr/hi
Handle-small-entity-CL+BE-LOCATED+fl/hi

Handle-small-entity-CL+BE-LOCATED+c/right
Handle-small-entity-CL+BE-LOCATED+c/left
Body-CL+EXIST+right eye+left eye ----------

Handle-small-entity-CL+BE-LOCATED+fr/hi
Handle-small-entity-CL+BE-LOCATED+fl/hi

(The boy) gave the snowman two eyes

(6.129) AND COLLECT c-o-a-l Handle-small-entity-CL+BE-LOCATED+c/lo
Body-CL+EXIST+sternum ----------

+MOVE+BE-LOCATED+c+MOVE+BE-LOCATED+c/hi Handle-small-
--------- +mid chest ----------+upper chest ----------

entity-CL+BE-LOCATED+f/lo+MOVE+BELOCATED+f+MOVE+BE-

LOCATED+f/hi

... and he gathered coals and put 'buttons' up along the snowman's middle

(6.130) (SNOW^MAN-f) Handle-thin-flat-entity-CL+BE-LOCATED+f / hi

Handle-thin-flat-entity-CL+MOVE-imit: put on hat +c
Body-CL+EXIST+head ----------

(The boy) put a hat on the snowman's head

Serial verb constructions may be considerably more complex than those illustrated in examples (6.121) - (6.130) above. Some constructions, such as that shown in example (6.131), occur in sequences in which hand configuration, movement and the articulation of non-manual features are finely co-ordinated. Engberg-Pedersen (1993: 227-9) gives an example of similar constructions in Danish Sign Language. For the purpose of analysis the movement components in example (6.131) are placed in brackets and each predicate segment is identified by the letters A through J.

(6.131)

A. Head/Shoulders: head tilt to right ----------
Gaze: forward/down ----------
Mouth:
Right hand: Index-CL+(sl+MOVE-arc+sr) AND PLAY+reduplicate
Left hand: Index-CL+(sl+MOVE-arc+sr)

B. H/S: slightly forward ----------
G: forward/down/right ----
M:
Handle-general-entity-CL+(MOVE-imit: roll)
Handle-general-entity-CL+(MOVE-imit: roll)

C. H/S: ----------
G: forward/down ----------
M: effort (ee) ----------
Handle-large-curved-3D-entity-CL+(c+MOVE+f)
Handle-large-curved-3D-entity-CL+(c+MOVE+f)

D. H/S: ----------
G: forward/down/right ----
M:
Handle-general-entity-CL+(MOVE-imit: roll)
Handle-general-entity-CL+(MOVE-imit: roll)

E. H/S: ----------

G: forward/down/right ----------

M: tongue protrudes between lips ----------

Trace-large-curved-3D-entity-CL+(lo+EXTENT+neu)

Trace-large-curved-3D-entity-CL+(lo+EXTENT+neu)

F. H/S: ----------

G: forward/down ----------

M: effort (ee) ----------

Handle-large-curved-3D-entity-CL+(c+MOVE+f)

Handle-large-curved-3D-entity-CL+(c+MOVE+f)

G. H/S: move slightly backwards ----------

G: forward/down/right ----------

M:

Trace-large-curved-3D-entity-CL+(EXTENT+sr) AND

Trace-large-curved-3D-entity-CL+(EXTENT+sl)

H. H/S: head tilt to left ----------

G: forward/down/right ----------

M:

Handle-round-3D-entity-CL+(sr+MOVE-arc+BE-LOCATED+lo)

Handle-round-3D-entity-CL+(sr+MOVE-arc+BE-LOCATED+lo)

I. H/S: gradual tilt up and back ----------

G: gradual shift from forward/down to forward ----------

M: puff cheeks ----------

Trace-large-3D-entity-CL+(lo+EXTENT-staggered+hi+orientation

Trace-large-3D-entity-CL+(lo+EXTENT-staggered+hi+orientation

H/S: ----------

G: ----------

M:

change+contact-left-hand)

change+contact-right-hand)

J. H/S: orient to left forward

G: left -- contact

AND STOP

A. (The boy) went back outside to play once more.
B. He rolled a snowball
C. pushed it forward
D. kept on rolling it
E. until there was a large ball;
F. straining, he pushed it forward;
G. it grew bigger;
H. and he added more (snow)
I. until it was high enough
J. and then he stopped

In this sequence the signer describes how a boy made a snowman. The signer first uses two central verb stems, Handle-general-entity-CL and Handle-large-curved-3D-entity-CL. Segments B and D describe the 'swiss roll' effect of rolling a snowball; segments C describes the pushing forward motion that is required. The movement of the hands is symmetrical and the activities of the non-manual features are co-ordinated with the movement of the hands. In the case of segments B and D, gaze is directed forwards, downwards and to the signer's right; in segments A and C, gaze is directed forwards and downwards.

In segment E the verb stem changes to a Trace-large-curved-3D-entity-CL which combines with an EXTENT movement. The predicate in segment E indicates the dimensions of the entity rather than its motion. Segment F repeats the handshape and movement elements of segment C but incorporates an additional manner morpheme - 'with effort' - which is indicated by the non-manual feature 'ee' (see 3.5.3). Segment G uses the same verb stem as segment E but combines it with an EXTENT movement which indicates the width rather than the height of the snowball.

Segments H and I are concerned with describing how the snowball increases in size. Segment H indicates how more snow is added to the pile and I signifies that the snowman has been completed. Again, the hand configurations and movement are finely co-ordinated. Non-manual features are also incorporated in a co-ordinated way. For example in segment I, as the signer's hands move from a 'lo' to a 'hi' locus, the signer's head shifts from 'forward' to 'up and back', and the gaze direction also moves upwards to accompany the movement of the hands.

The narrative thus contains a series of well defined segments which merge naturally into one another. In segments B through I four different verb stems are combined with a variety of movements in a relatively ordered sequence. Eye-gaze contributes to the

cohesion of the narrative and there is no eye contact with the addressee until the end of the sequence. Both the beginning and the end of the sequence are marked by eye contact and by single lexical items. The single lexical item AND, which appears at the end of segment G, introduces a change in the ryhthm and direction of the narrative.

## 6.8 Conclusion

Although the term classifier predicate is not entirely satisfactory we have used it to refer to an important category of verbs in Irish Sign Language. Classifier predicates have two basic structural components, a hand configuration and a movement. We have argued that hand configuration expresses both predicative and classificatory information and that it can be understood to constitute the verb stem. The stem has a controlling influence on the meaning of the movement component and the verb form is only fully realised when both components are combined. The stem and movement categories which we have identified in Irish Sign Language are outlined again in Figures 6.4 and 6.5.

**Stem Categories**

| | |
|---|---|
| Whole entity-CL Stems | Handle entity-CL Stems |
| Semantic-CL Stems | Touch-CL Stems |
| Size and Shape-CL Stems | |
| | Body-CL Stems |
| Extension-CL Stems | |

Figure 6.4 Stem Categories in Classifier Predicates in Irish Sign Language

**Movement Categories**

| | |
|---|---|
| EXIST | MOVE |
| BE-LOCATED | EXTENT |

Figure 6.5 Movement Categories in Classifier Predicates in Irish Sign Language

In our discussion we grouped classifier predicate stems under four main headings in terms of how they represented entities. Whole entity-CL stems refer to entities as wholes. Two sub-categories of Whole entity-CL stems were identified: Semantic-CL stems typically refer to entities that are animate and fulfil the thematic role of agent; Size and shape-CL stems denote something of the dimensions and / or shape of entities.

Handle entity-CL stems refer to objects in terms of how they are held, used or touched. These stems imply an animate agent and the direct object relation is represented in the handshape. Extension-CL stems represent the outline or extent of entities. Body-CL stems involve the body of the signer and refer to the body of an animate entity. Body-CL stems occur primarily in backgrounded constructions and are typically marked for location in relation to specific body parts.

We differentiated movements on the basis of the type of movement made by the hand(s), on the relationship between the hand configuration and the movement features, and on the nature of the interaction between the articulators if more than one articulator is used. Zero movement is also included as a movement feature. We identified four categories of movement which are intended to denote morphological differences: EXIST refers to the presence of an entity without a particular focus on its location while BE-LOCATED denotes the location of an entity; MOVE signifies motion combining with a Whole-entity stem to indicate an entity's own motion and with a Handle-entity stem to indicate motion caused by an agent; EXTENT refers to the dimensions of an entity. The gloss 'imit:' which represents "a stylised imitation of a real world action" (Schick 1990: 17), is not treated as a separate category but as an expression of complex movement in relation to one of the established categories.

The data collected in this study indicates that not all stems combine with all movement categories. We have seen that Whole entity-CL stems and Handle entity-CL stems typically combine with EXIST, BE-LOCATED and MOVE movements, that Extension-CL stems combine only with EXTENT movements and that Body-CL stems are equally restricted appearing to combine only with EXIST movements.

In this chapter several possibilities for further research were identified. Firstly, the view that handshapes in classifier predicates indicate a selectional rather than a classifying function needs to be investigated. Instead of classifying entities, hand configurations may select certain characteristics of entities (such as size and shape) and impose selectional restrictions on others. Secondly, more data is required to establish clear distinctions among variations in hand configuration and to determine whether some variations constitute marked forms of the same stem or whether they constitute distinct and separate stems. The possibility that certain hand configurations - as in the V-CL stem, for example - have a canonical form should be investigated.

A third and related question is whether a stem may exclude any entity from the category of entities with which the stem is typically associated. The Vehicle-CL stem for example, denotes a wide range of referents and further research is required to establish

whether certain kinds of vehicles are excluded from this stem category or indeed whether there are other distinct vehicle stems. Finally, the function of hand internal movement in certain stems requires further study. Additional data and research is needed to establish for example, whether hand-internal movement (such as wiggling of fingers) constitutes a variant of the Multiple entity stem or whether it denotes a distinct and separate stem. Research is also necessary to establish the distribution of Multiple entity stems and Multiple small entity stems in relation to one another and in relation to the types of movements with which they combine.

In conclusion, we note that classifier predicates constitute a most complex and creative area in sign language usage. For this reason, and in the absence of an existing body of research and analysis in Irish Sign Language, the outline contained in this chapter has been primarily introductory and descriptive. However, some of the issues that have surfaced in the discussion have implications for morphological processes not only in Irish Sign Language but in other sign languages too. We explore these implications in the next chapter.

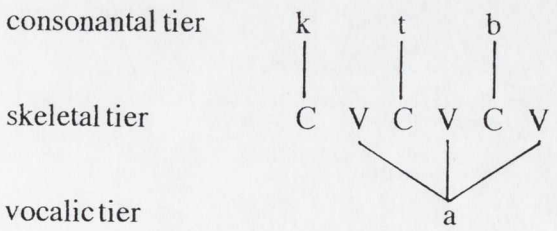
# 7 AN AUTOSEGMENTAL APPROACH TO VERB STRUCTURE IN IRISH SIGN LANGUAGE

## 7.1 Introduction

The purpose of this chapter is to discuss a theoretical approach to the structures and processes described in chapters 4, 5 and 6. The background to the discussion is provided by an outline of two particular morphological theories. The first is McCarthy's theory of non-concatenative morphology proposed in his analysis of Semitic and other languages (McCarthy 1981). The second is Sandler's Hand Tier model of phonology as applied to a morphological analysis of American Sign Language (Sandler 1989, 1990, 1993).

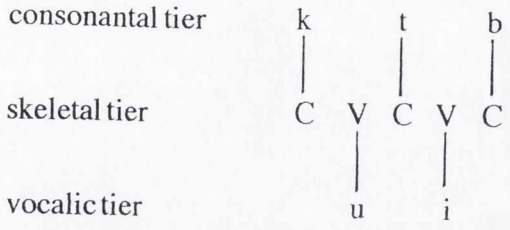
The notion that autosegmental tiers could be used to analyse phonological processes was suggested by Goldsmith (1976) and Clements and Ford (1979). In an extension of these approaches, McCarthy (1981) proposed that autosegmental tiers could be used to explain morphological processes in languages such as standard Arabic. In this autosegmental (Spencer 1991) or prosodic (Katamba 1993) morphology the morphemic structure is understood to exist on tiers, each tier independent of the others, but combining with them in particular ways. We can illustrate this structure with a brief example from McCarthy's analysis of Arabic.

In standard Arabic verb roots are typically represented by three consonants, *k - t - b* for example, which refers to the lexeme 'write'. This consonantal root can combine with a vocalic feature, expressed through vowels, to produce different surface forms associated with 'write'. In order to explain how the different combinations were realised, McCarthy proposed an abstract skeletal tier consisting of a series of consonant / vowel (CV) patterns. The mapping process is illustrated in Figures 7.1 and 7.2.




generating *kataba*, 'he wrote'

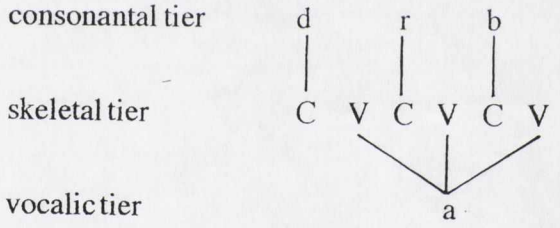
Figure 7.1 CV Representation of *kataba*




generating *kutib*, 'was written'

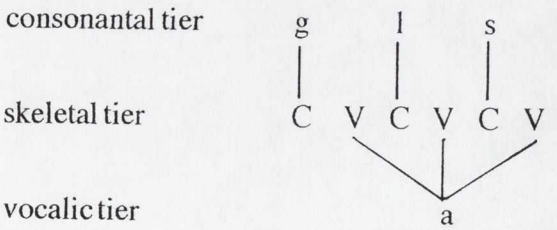
Figure 7.2 CV Representation of *kutib*

The skeletal tier provides a template which functions as a canonical pattern associated with a particular meaning or grammatical function. Thus, the pattern CVCVCV represents the meaning 'past tense'. In generating appropriate surface forms, the consonantal tier combines with the vocalic tier and the particular pattern is mediated through the skeletal tier. The same skeletal tier mediates the pattern for different verbs, as indicated in Figures 7.3 and 7.4. Thus, each tier - the consonantal tier, the vocalic tier and skeletal tier - constitutes a separate morpheme.




generating *daraba*, 'he hit'

Figure 7.3 CV Representation of *daraba*




generating *galasa*, 'he sat'

Figure 7.4 CV Representation of *galasa*

Two different tier-based models have been proposed for describing segmental features in American Sign Language (see 3.4). In the model proposed by Liddell and Johnson (1989) and Liddell (1990, 1993), segments are represented as movements and holds; in Sandler's (1989, 1990, 1993) Hand Tier (HT) model they are represented as movements and locations. As we have seen, movement paths and locations in signing space constitute important features in the structure of agreement verbs and classifier predicates. The fact that both movements and locations are represented on a segmental tier makes Sandler's model particularly attractive for the purpose of comparing verb structures. In this chapter therefore, the HT model will be used to explore the structural features of different categories of verbs.

In the HT model, actual locations and movements are realised through bundles of features which associate with each location (L) and movement (M) segment on a skeletal or timing tier. Hand configuration (HC) which associates with all the elements on the skeletal tier, is represented on a separate tier. An example of this analysis is given in Figure 7.5 for the ASL sign NOT.

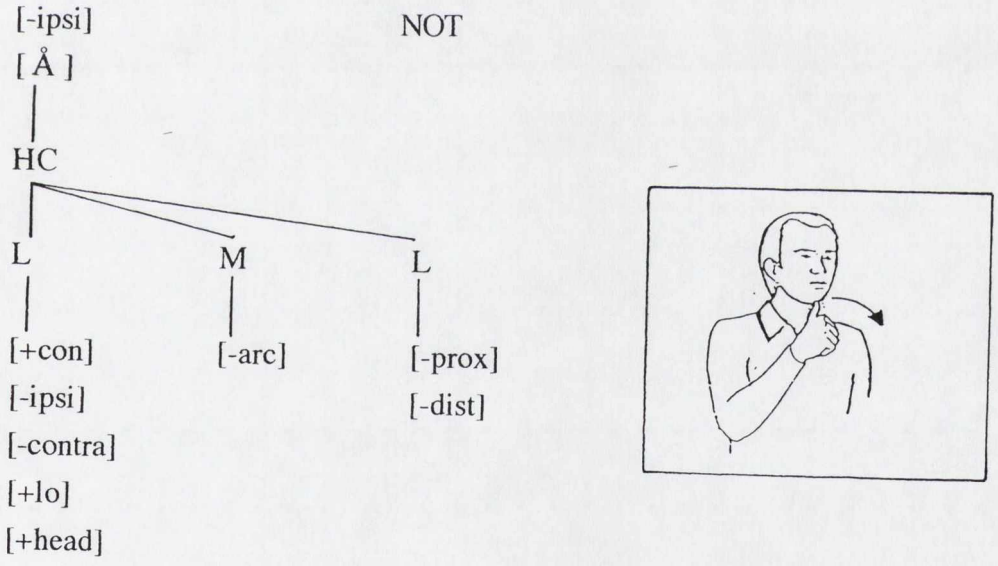



Figure 7.5 HT Representation of NOT (after Sandler 1989: 24)

In this example, the handshape [Å] is a fist with the thumb extended and the palm of the hand oriented towards the non-dominant hand side [-ipsi].[1] Each L and M segment is associated with a bundle of features representing actual locations and movement. In the first location, the extended thumb touches [+contact] the centre [-ipsi] [-contra], of the chin, [+lo] [+head], where [ipsi] refers to the dominant hand side, [contra] to the non-dominant hand side, [head] to the feature place and [lo] to the relative height on this specified place. The hand moves to a location at a medial distance, [-prox] [-dist], from

the chin, where [prox] is within inches and [dist] is an arm's length from the specified place. The M feature is a straight line movement and is assigned a [-arc] value.

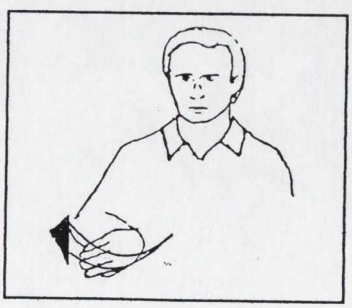
Before moving on to a discussion of segmental tiers in agreement verbs we should note that several important details remain to be resolved in the HT model. Firstly, in relation to M slots, it is doubtful if all movement values can be derived from arc [+arc] or straight line [-arc] shapes as is implied in the current HT model. In Danish Sign Language Engberg-Pedersen (1993: 261) identifies a 'random path' movement where "the hand follows a course that is not recognisable as one of the other path movements and its exact path is irrelevant. The movement however is in one general direction". It can for example, be used to refer to a football player dribbling a ball. There are also other types of movement which can be described as analogues of specific motions. Movements of this kind can denote, for example, flight through the air or the actions of an acrobat. Theories of segmental structure will have to find ways for representing features of this kind.

Secondly, in the case of agreement verbs and especially of classifier predicates, more detailed specifications for degrees of laterality, of height and of orientation will have to be worked out (Sandler 1989: 153). It will be necessary for a comprehensive autosegmental model to enable distinctions to be made, for example, between a locus 'sr' and a locus 'fr', both of which are currently specified by the same feature [+ipsi].

Thirdly, in the HT model Sandler specifies a feature [palm orientation] in association with hand configuration but does not include a feature [finger orientation]. However, in order to accurately specify certain formational details in Irish Sign Language, a feature [finger orientation] is required in addition to the feature [palm orientation]. The problem is illustrated in the elicited examples (7.1) and (7.2) where we compare two configurations involving the feature [+ipsi] with the handshape [B].



(7.1) Vehicle-CL+fr+MOVE+c
The car came towards me from the right



(7.2) Vehicle-CL+c+MOVE+fr
The car went around to the right

In (7.1) the palm of the hand is characterised by the feature [+ipsi] and the fingers by the feature [+in], that is they are oriented towards the signer. In (7.2) the palm is also characterised by the feature [+ipsi] but the fingers are oriented away from the signer and have the value [-in]. It would appear that an additional feature [finger orientation] is required in the Hand Tier model to accurately specify the difference between these two utterances.

However, these qualifications do not detract from the utility of the HT model and in the next section we will examine how an approach of this kind can be applied in a morphological analysis of agreement verbs in Irish Sign Language. Specifically, we will propose that prototypical agreement verbs are characterised by an underlying L M L structure and that differences between agreement verbs can be expressed in formal terms using a HT framework. We will also propose that agreement verbs with specific lexical properties (bidirectional movement, for example) have characteristic L M structures.

## 7.2 Segmental Tiers in Agreement Verbs

Sandler (1989, 1990, 1993) has proposed that morphological processes in American Sign Language can be explained in terms of an autosegmental framework. In agreement verbs, for example, the hand configuration component is represented on one tier, abstract L and M segments are represented on a separate skeletal tier and bundles of features which associate with L and M segments are represented on further tiers. The verb GIVE, in example (7.3), is a prototypical person agreement verb in Irish Sign Language. The underlying representation of GIVE is shown in Figure 7.6.

In Figure 7.6, location class nodes are specified for place, laterality, height and setting, and values such as [trunk], [ipsi], [contra], [lo], [hi], [prox] and [dist] are filled in for these nodes. Class nodes are relatively independent while features within a class are less so. The movement shape inventory is [+ / - arc] where [-arc] is interpreted as a straight movement.

The underlying L M L structure of typical person agreement verbs is evident in the representation of the verb form 'c+GIVE+f' in Figure 7.6. According to the morpheme tier hypothesis, specifications for 'c' and 'f' are represented on separate tiers. However, since an analysis of this kind is beyond the scope of the present study, the focus here will be on underlying structures.

(7.3)

| | | | "lunch" |
|---|---|---|---|
| (BOY-f) | MOTHER^FATHER | c+GIVE+f | FOOD |

His parents gave him (the boy) lunch

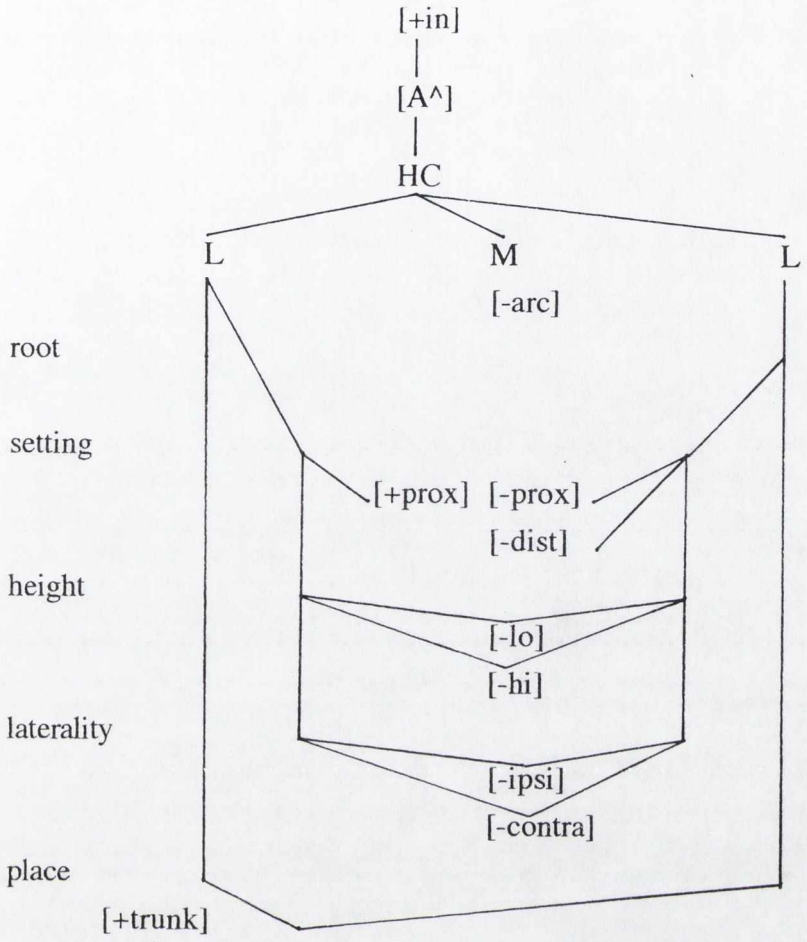



Figure 7.6 Underlying Representation of GIVE (Cf. Sandler, 1989: 134, 154)

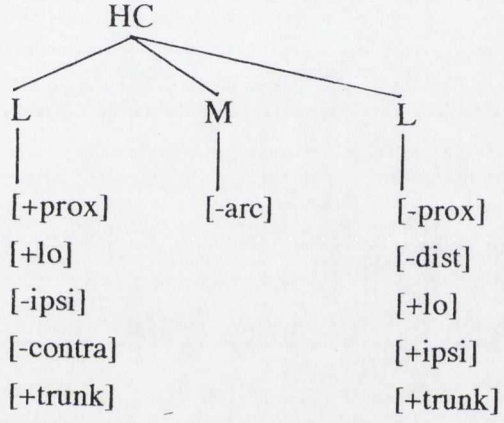
Sandler (1989: 151-5) points out that person agreement loci are underspecified morphemes represented independently in the lexicon and associated under agreement rules with appropriate Ls. First person agreement morphemes are characterised by the features [+prox], [-ipsi] and [-contra]. However, the place and height categories are lexically specified for each person agreement verb (see 6.2.2) and thus the values for these nodes will vary from verb to verb. Specifications for the first person agreement morpheme for the Irish Sign Language verb ASK are:

[+prox]
[+lo]
[-ipsi]
[-contra]
[+trunk]

Settings for a typical non-first person morpheme for the same verb are:

[-prox]
[-dist]
[+lo]
[+ipsi]
[+trunk]

An underlying L M L structure is evident in representations of the verb forms 'c+ASL+fr' and 'fr+ASK+fl', given in Figures 7.7 and 7.8 respectively.




(FATHER-fr) c+ASK+fr
I asked (my) father
(Elicited example)

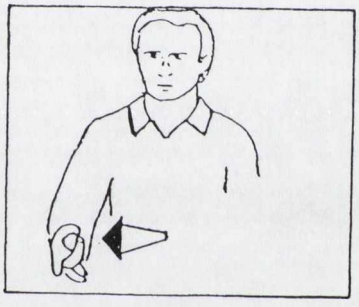
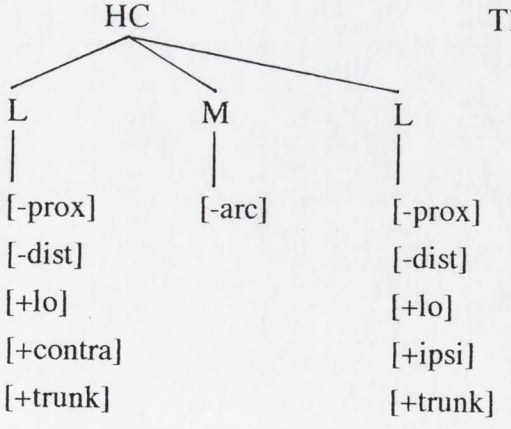


Figure 7.7 Underlying Representation (UR) of 'c+ASK+fr'




(BOY-fl) (SNOW^MAN-fr) fl+ASK+ fr
The boy asked the snowman ...

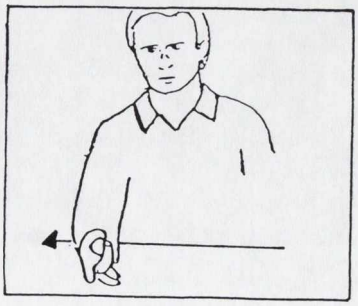


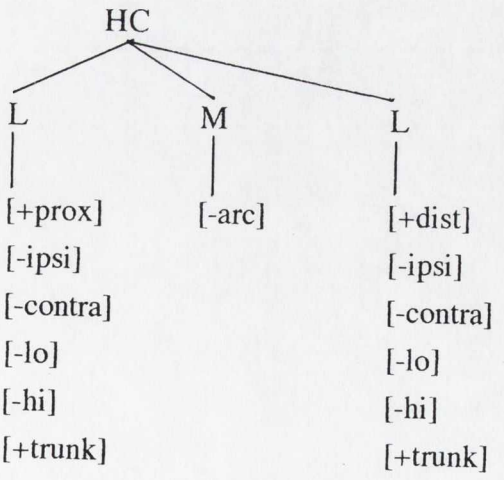
Figure 7.8 Underlying Representation (UR) of 'fl+ASK+fr'

Although locative agreement verbs have the same basic L M L structure as person agreement verbs, the HT framework can be used to illustrate differences between them. These and other differences among agreement verbs in Irish Sign Language, can be expressed in terms of feature specifications and are discussed in the next section.

### 7.2.1 Specification Differences among Agreement Verbs

A basic L M L structure is evident in the two forms of the locative agreement verb RUN represented in Figures 7.9 and 7.10. However, the minimal specification for a locative agreement verb consists only of a hand configuration. Unlike person agreement verbs, no minimal specifications for L slot features can be listed since these are always variable. In person agreement verbs, as we have seen in the previous section, a small number of L slot features remain constant and thus can always be listed in a minimal specification. These features differ from one person agreement verb to another, but the particular features related to each particular verb remain the same.

Values associated with place and height (see Figure 7.6) are predictable for each person agreement verb, but are not predictable for locative agreement verbs. We can illustrate this difference by comparing the locative agreement verb RUN (Figures 7.9 and 7.10) with the person agreement verb INVITE (Figures 7.11 and 7.12). In INVITE the features [+trunk] and [+hi] are lexically determined; in RUN they will vary according to the morphosyntactic structure of the verb phrase. Note that INVITE is a backwards agreement verb in which the object argument marker appears at the first location and the subject marker at the second location.




c + RUN + f
I ran from (here) to (there)

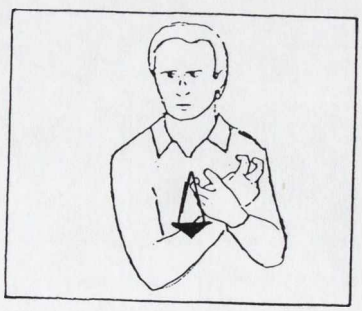
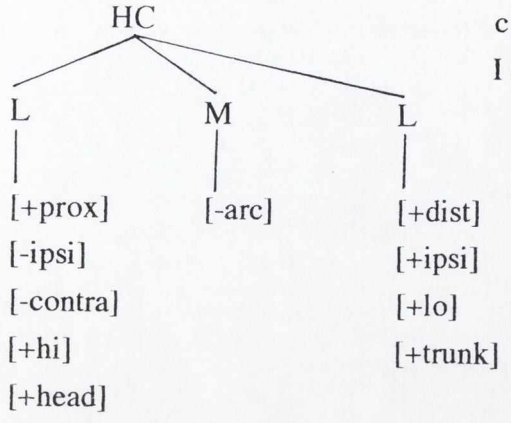


Figure 7.9 UR of 'c+RUN+f'




c / hi + RUN + fr / lo

I ran from (up here) to (down there)

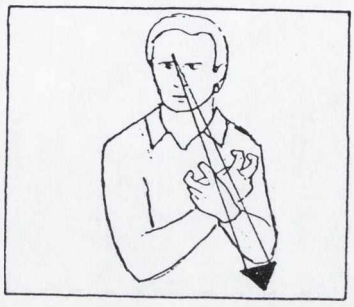
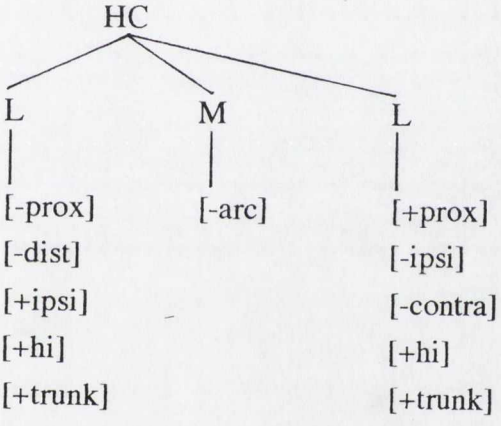


Figure 7.10 UR of 'c+RUN+fr'




c+INVITE+fr

(I) invited (someone)

(Elicited example)

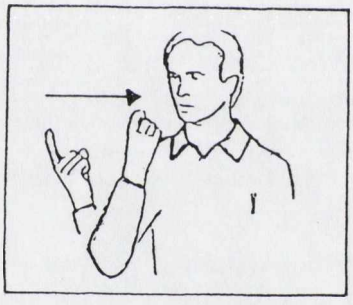
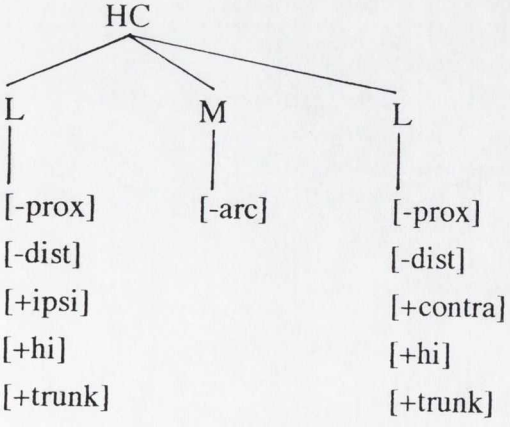


Figure 7.11 UR of 'c+INVITE+fr'

M-a-r-y (-fr) J-e-a-n (-fl) fr + INVITE + fl

Jean invited Mary

(Elicited example)



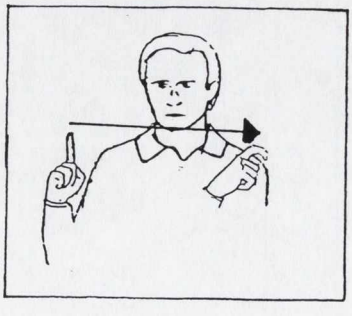



Figure 7.12 UR of 'fr+INVITE+fl'

Using a HT analysis it is also possible to establish a formal difference between double and single agreement verbs. This difference can be expressed through a minimal specification for each type and through the representation of L features on separate tiers. As we have seen, person agreement verbs have a typical L1 M L2 underlying segmental structure. In terms of a minimal specification for double agreement verbs only a limited number of features can be associated with L1 and L2. Features for distance, [prox] and [dist], and for laterality, [ipsi] and [contra], cannot be included in a minimal specification because they vary in relation to the syntactic context in which the verb occurs. The minimal specification for the double agreement verb SAY-NO-TO is shown in Figure 7.13.

In single agreement verbs, however, L1 is always fully specified while L2 is underspecified.The minimal specification for the single agreement verb SEE is shown in Figure 7.14. In addition, specifications for both L1 and L2 in the double verb form 'c+SAY-NO-TO+f' are represented on separate tiers (Figure 7.15) while in the single agreement verb form SEE+f only the specification for L2 is represented on a separate tier (Figure 7.16).

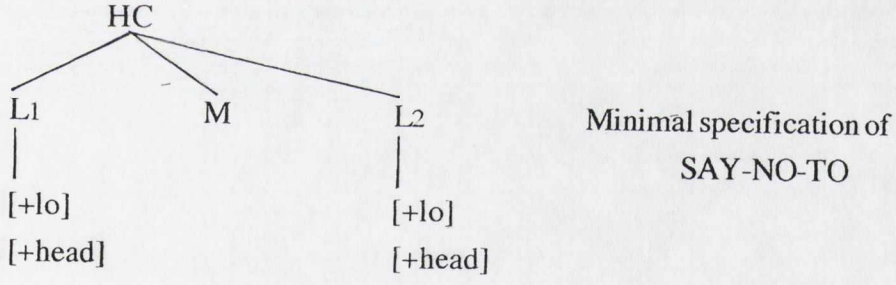



Figure 7.13 Minimal UR of SAY-NO-TO

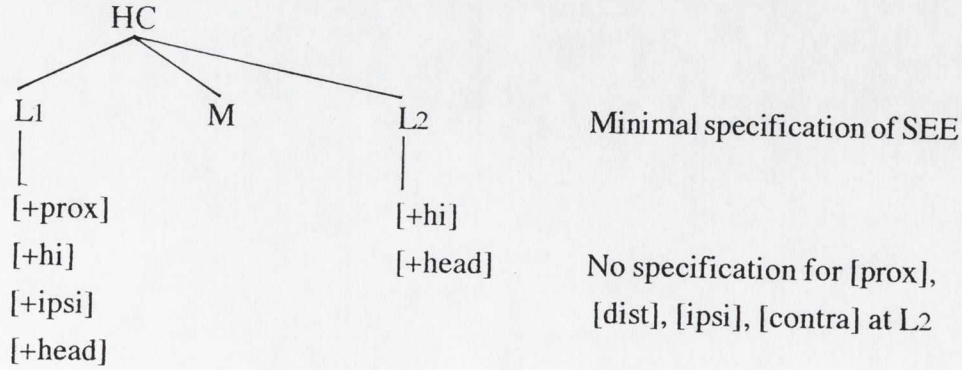



Figure 7.14 Minimal UR of SEE

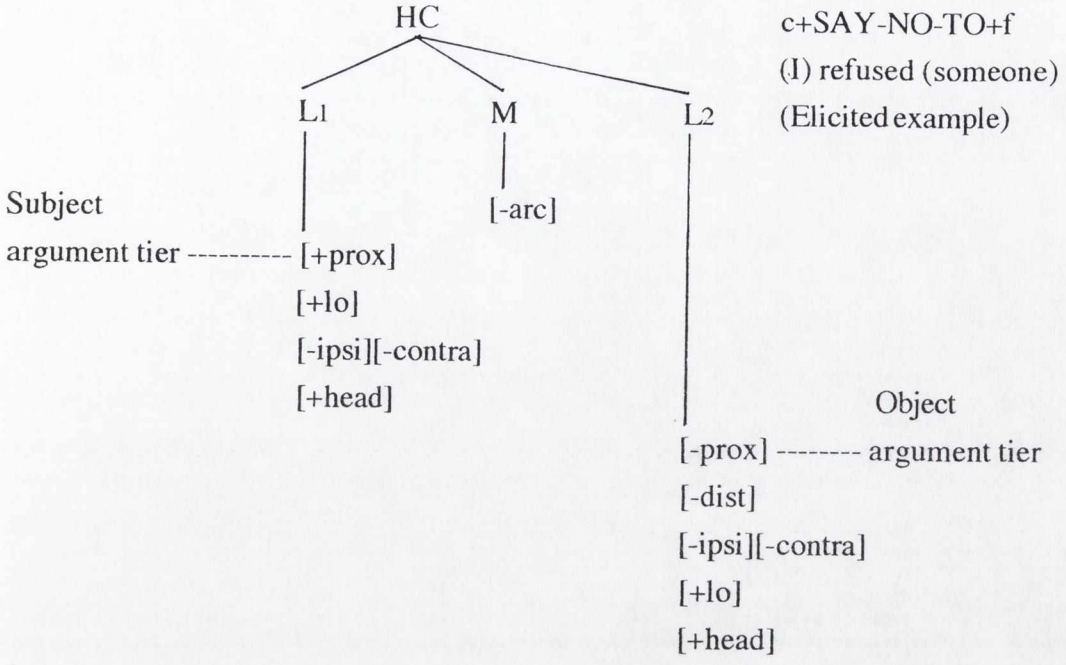



Figure 7.15 Partial Representation of Segmental Tiers in 'c+SAY-NO-TO+f'

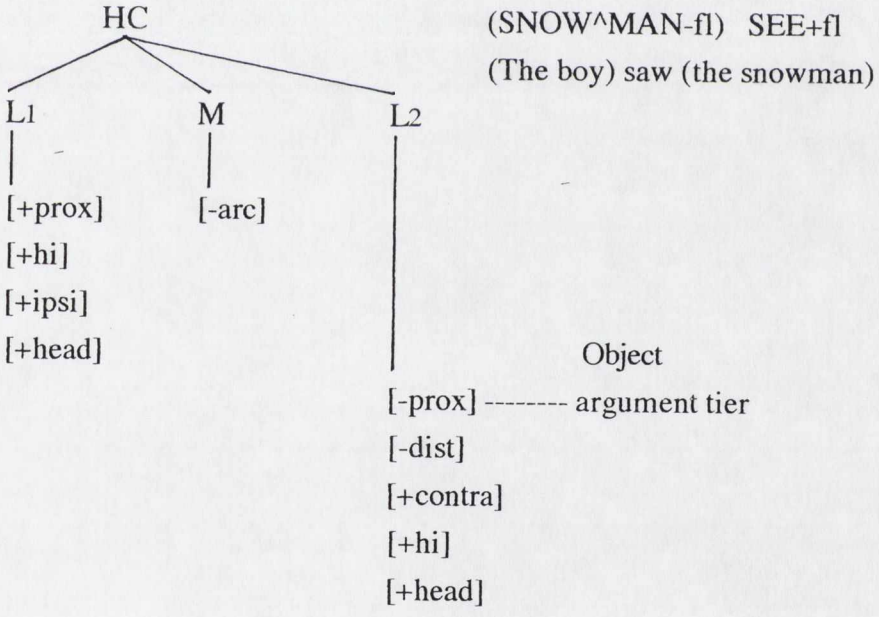
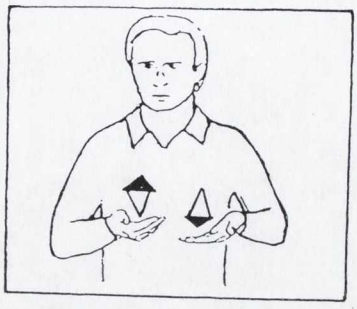



Figure 7.16 Partial Representation of Segmental Tiers in 'SEE+fl'

A different type of underlying L M structure is evident in the group of verbs which we have referred to as reciprocal agreement verbs (see 6.3.3.3). A reciprocal agreement verb such as CONSULT in (7.4) is characterised as a bidirectional alternating sign. In signs of this kind the hands move in a simultaneous and alternating manner. Figure 7.17 shows the underlying relationship between features and locations for bidirectional

alternating signs. The first L is associated with a different set of features (F1 and F2) for each hand; in the second L the association is reversed.

(7.4) c + CONSULT + f
f + CONSULT + c
(We) exchanged views



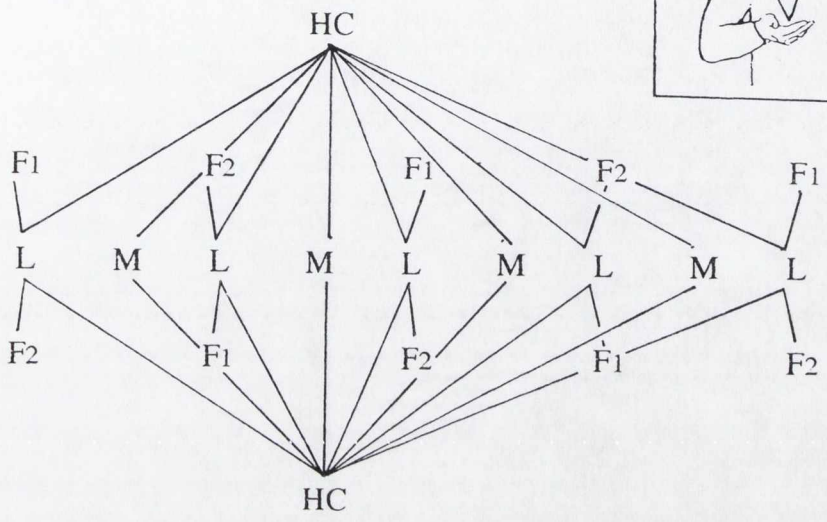


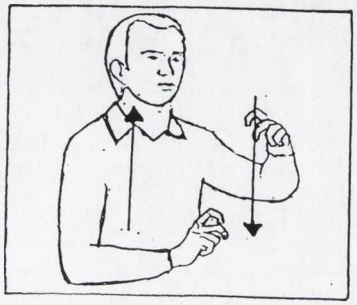

Figure 7.17 Partial UR of a form of CONSULT (Cf. Sandler 1989: 161)

In this partial representation of CONSULT the values associated with F1 and F2 are as follows:-

| F1 | F2 |
|---|---|
| [+prox] | [-prox] [-dist] |
| [+lo] | [+lo] |
| [-ipsi] [-contra] | [-ipsi] [-contra] |
| [+trunk] | [+trunk] |

The reciprocal verb ARGUE is also a bidirectional alternating sign, but in ARGUE the movement is vertical rather than horizontal. Even so, the underlying pattern of ARGUE in (7.5) is the same as that of CONSULT although the feature specifications are different (Figure 7.18).

(7.5) c+ARGUE+fl
fl+ARGUE+c
(We) argued
(Elicited example)



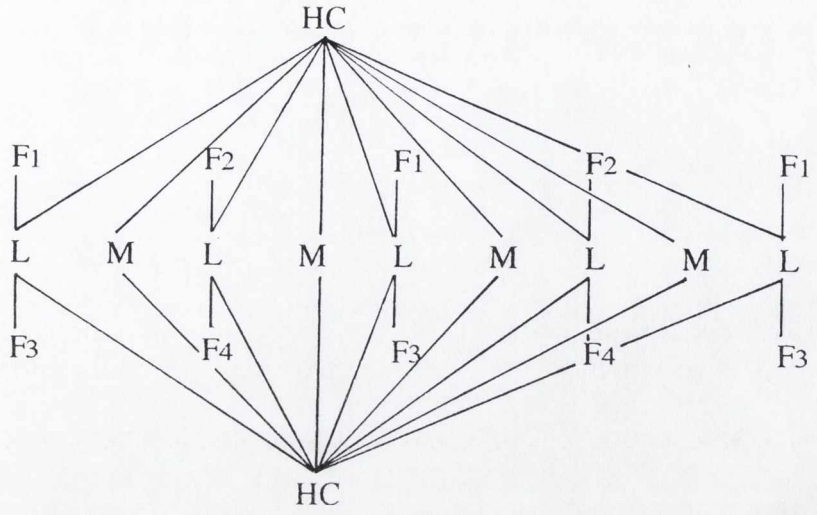



Figure 7.18 Partial UR of a form of ARGUE

In Figure 7.18 the values associated with F1, F2, F3 and F4 are:-

| F1 | F2 | F3 | F4 |
|---|---|---|---|
| [+prox] | [+prox] | [-prox] [-dist] | [-prox] [-dist] |
| [+hi] | [+lo] | [+lo] | [+hi] |
| [-ipsi] [-contra] | [-ipsi] [-contra] | [+ipsi] | [+ipsi] |
| [+trunk] | [+trunk] | [+trunk] | [+trunk] |

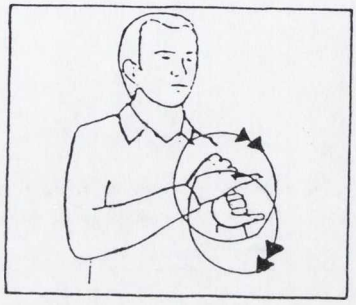
Some person agreement verbs are characterised by a circular movement as a lexical feature rather than by a straight [-arc] movement. Fischer (1973), Klima and Bellugi (1979) and Sandler (1989) have pointed out that where there are circular reduplications the last iteration is an arc rather than a full circle. Thus, a rule for deriving reduplicated forms which simply states 'reduplicate circle' will not yield the correct output. Sandler proposes that lexically or morphologically based circular movement is best analysed as consisting of two complimentary arcs between two specified locations. In Irish Sign Language the articulation of a person agreement verb such as CRITICISE involves a circular movement in which the last iteration consists of an arc rather than a complete circle. The underlying structure for CRITICISE is shown in Figure 7.19.

| L1 | M | L2 | M | L1 | M | L2 |
|---|---|---|---|---|---|---|
| | \| | | \| | | \| | |
| | [+arc] | | [+arc] | | [+arc] | |

Figure 7.19 Partial UR of CRITICISE (Cf. Sandler 1989: 130)

In signs such as CRITICISE (7.6) however, the first arc must also be specified for a feature [+ / - concave]. The second arc can then be specified for the opposite concave value. Sandler proposes an arc rule which states that the arc is concave [+concave] if the first location is higher than or the same height as the second. Otherwise the arc is convex [-concave].

(7.6) c + CRITICISE + f
(I) criticised (someone)
(Elicited example)



A partial representation for CRITICISE in (7.6) is given in Figure 7.20. Since CRITICISE belongs to the same class of bidirectional alternating signs as CONSULT and ARGUE, for presentation purposes the features are specified for one hand only.

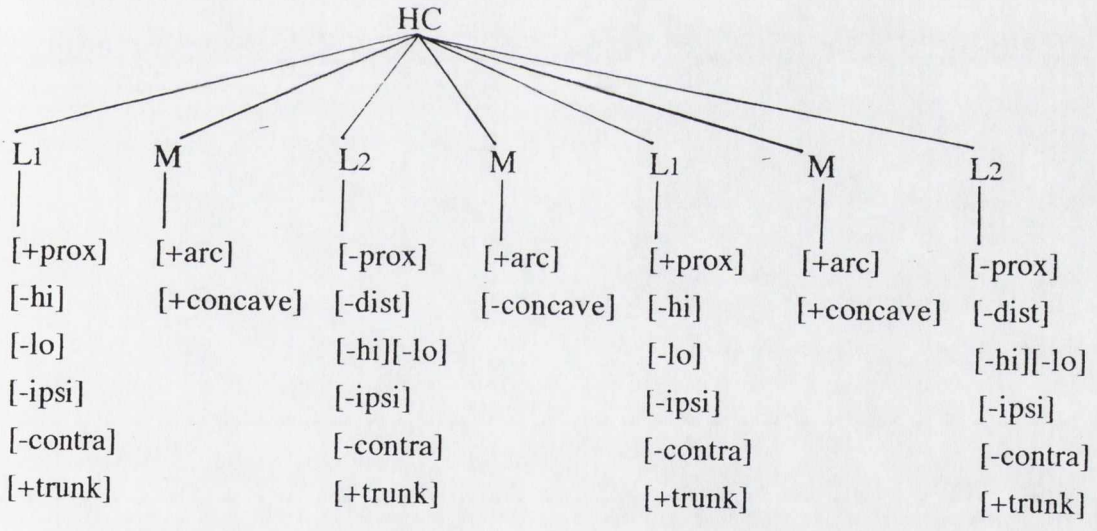



Figure 7.20 Partial Representation of a form of CRITICISE

With regard to the hand configuration tier, some person agreement verbs have a two-handed form which is subject to symmetry constraint (see 3.3.2.1). Symmetry constraint specifies that in signs made by two active hands, both hands must have the same handshape, must be in the same relative location and must perform similar motor acts. The person agreement verb ACCUSE in Irish Sign Language meets these requirements and Figure 7.21 shows how, in the representation of hand configuration, all the features of the two hands are shared.

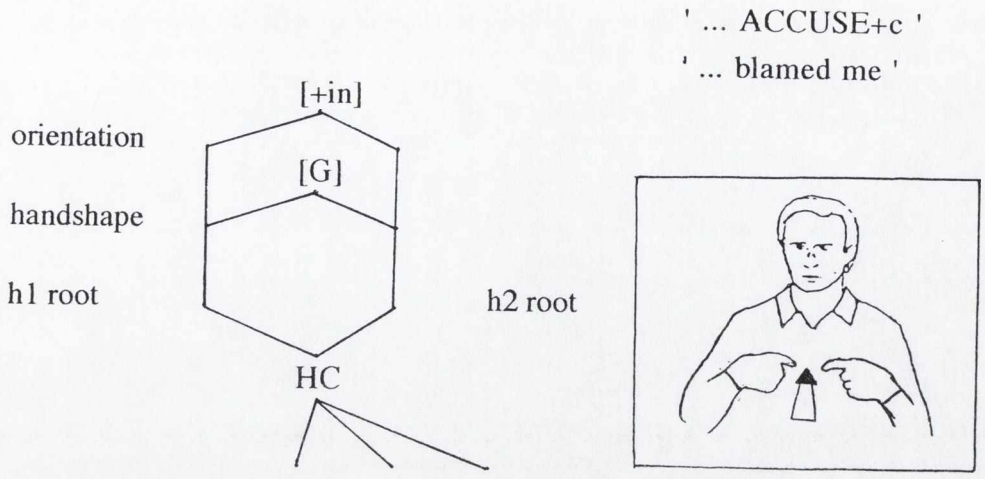



Figure 7.21 HC Features for ' ... ACCUSE+c'

In the Hand Tier model certain kinds of movement are associated with the hand configuration tier rather than with the skeletal L M tier. These movements are referred to as internal movements and indicate features such as wiggling the fingers or changing the orientation of the hand. The articulation of the person agreement verb in the phrase '... IGNORE+fl' includes a 'nodding' action of the hand. This internal movement is represented as a change in the orientation feature, as shown in Figure 7.22.

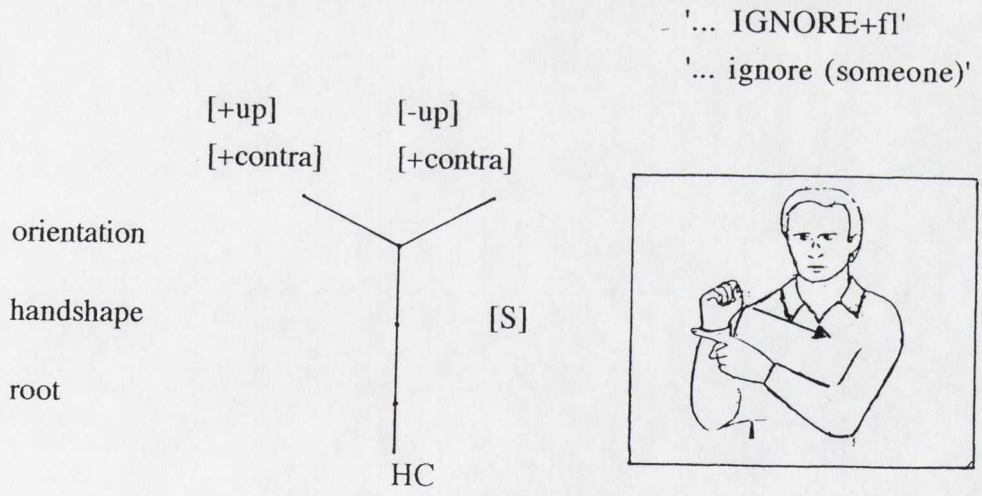



Figure 7.22 HC Features for 'IGNORE+fr'

In agreement verbs hand configuration has a phonological function. In classifier predicates which we discuss in the next section, hand configuration functions as a distinct morpheme. Sandler (1989: 124) argues that under the morpheme tier hypothesis this provides additional support for a model which represents hand configuration on a separate autosegmental tier.

## 7.3 Segmental Analysis of Classifier Predicates

As we have seen, classifier stems combine with movements which we have identified as MOVE, BE-LOCATED, EXIST and EXTENT, to form verbs which denote the motion, location, state or extent of entities. Whole-entity and Handle-entity stems can combine with MOVE, BE-LOCATED and EXIST movements. Extension stems combine only with EXTENT movements and are sometimes referred to as Tracing Size and Shape classifiers. In Irish Sign Language Whole-entity stems typically combine with movements to form intransitive verbs while Handle-entity stems combine with movements to form transitive verbs. (See section 6.5 for further discussion on the relationship between stems and transitivity.)

In the data collected for this study, the L M L pattern constitutes a basic underlying structure for the MOVE component in classifier predicates. This pattern is evident in Figures 7.23 - 7.28 which refer to Whole-entity+MOVE combinations. In these examples, the specifications associated with each L and M slot are represented on separate tiers according to the morpheme tier hypothesis. Note that in Figure 7.23 and in the remaining examples in this chapter only non-redundant specifications - i.e. those which differ from the specifications given at the first location - are listed at the second location.

Index-CL+fr+MOVE-arc+c
(The priest) came in / here

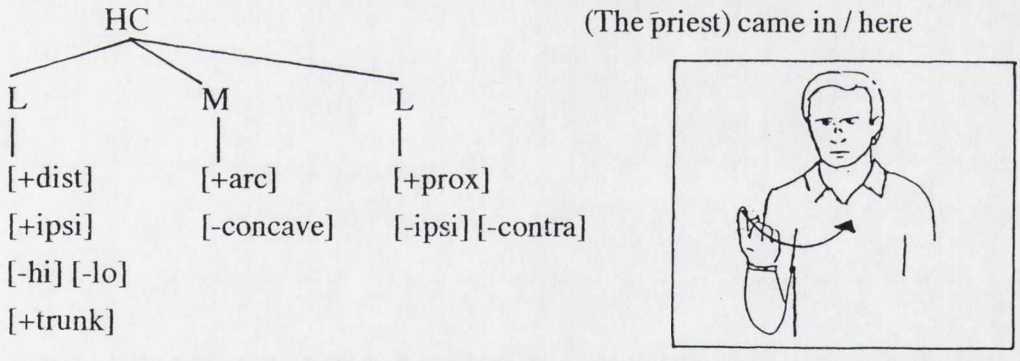



Figure 7.23 UR of a form of Index-CL+MOVE

V-CL+c / hi+MOVE+f / lo
(The boy) went downstairs

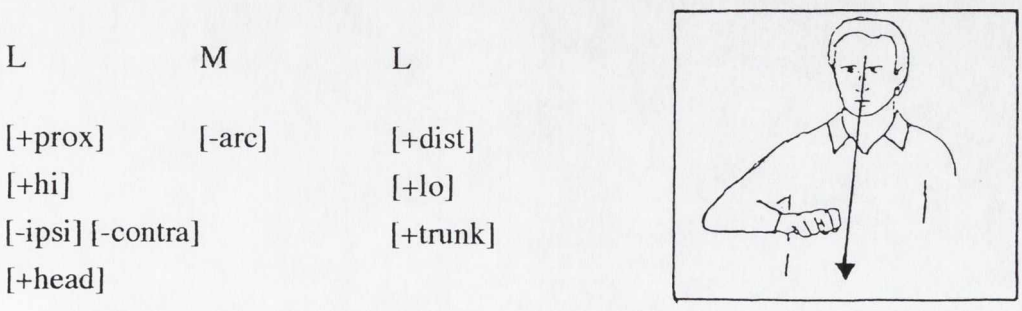
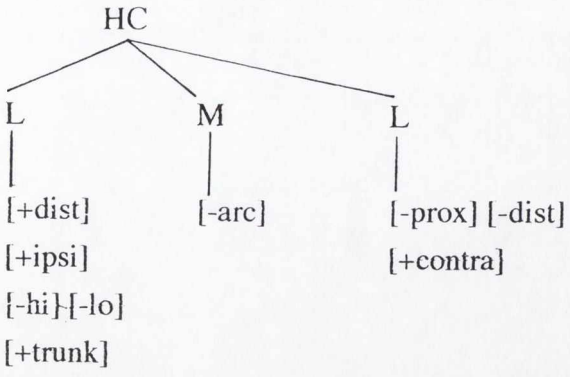



Figure 7.24 UR of a form of V-CL+MOVE




Vehicle-CL+sr+MOVE+fl
(A bus) went by

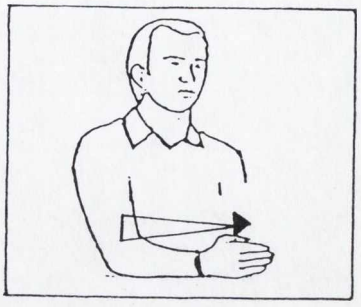
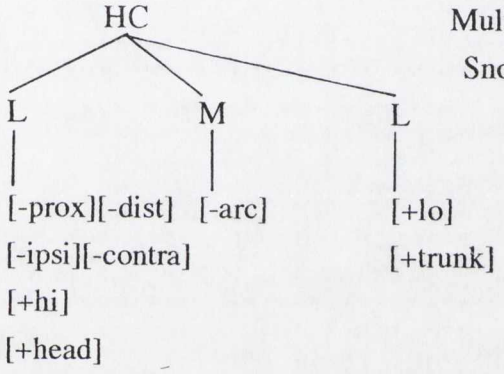


Figure 7.25 UR of a form of Vehicle-CL+MOVE




Multiple-small-entities+hi / f+MOVE+lo / f
Multiple-small-entities+hi / f+MOVE+lo / f
Snow was falling

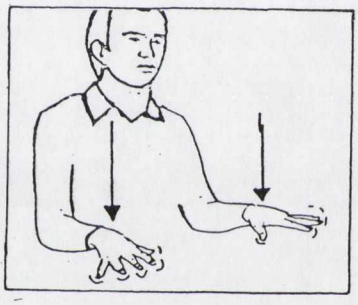
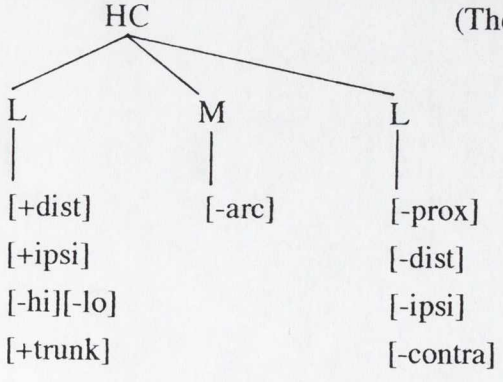


Figure 7.26 UR of a form of Multiple-small-entities+MOVE

Handle-entity stems also associate with a basic L M L pattern, as illustrated in Figures 7.27 and 7.28




Handle-entity-CL+sr+MOVE+f ----------
Handle-flat-surface-entity-CL+sr+MOVE+f
(The priest) carried in (a cassette player)

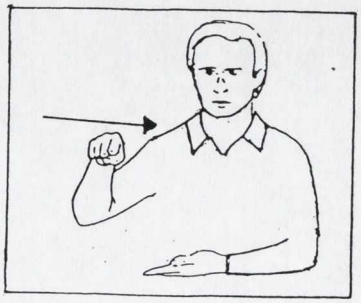
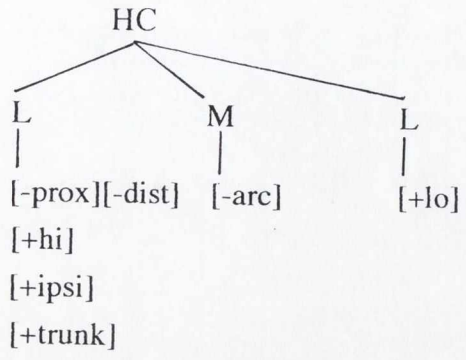


Figure 7.27 UR of a form of Handle-entity-CL+MOVE (Dominant hand)




Handle-small-entity-CL+MOVE-imit:
press button switch with thumb
(The priest) switched off (the cassette)

Figure 7.28 UR of a form of Handle-small-entity+MOVE

More complex MOVE movements can be generated by affixing M L slots to the basic L M L pattern, as shown in Figures 7.29 and 7.30.

Vehicle-CL+c+MOVE+f+MOVE+sl+MOVE+f
(The car) went up the road, turned left and then right
(Elicited example)

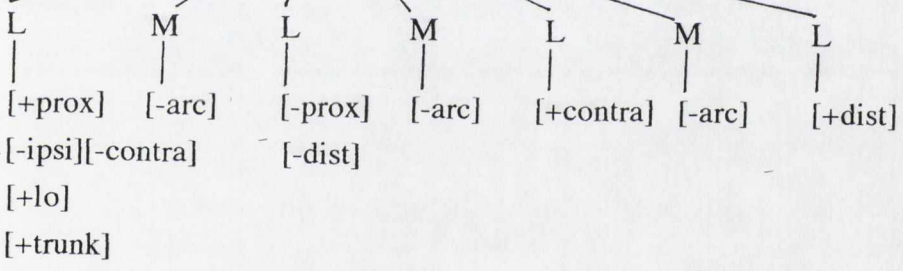



Figure 7.29 UR of a form of Vehicle-CL+MOVE+affixation

Handle-small-entity-CL+c+MOVE+f+MOVE+fr
(I) moved (the piece e.g. in a board game)
forward and then to the side
(Elicited example)

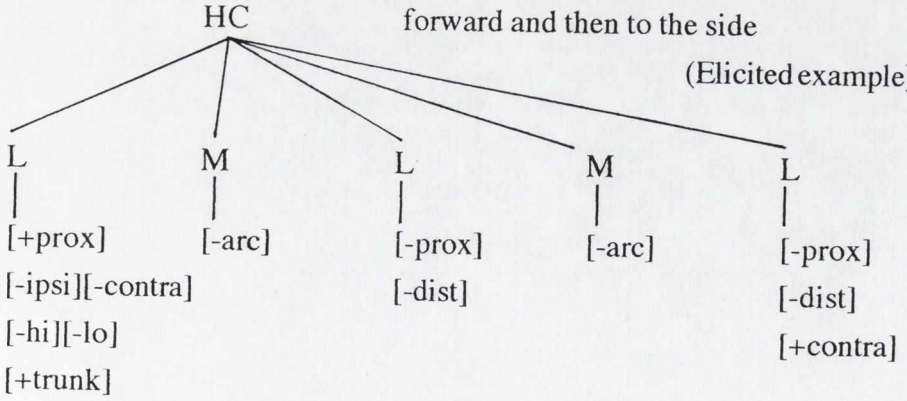



Figure 7.30 UR of a form of Handle-small-entity-CL+MOVE+affixation

Other complex MOVE structures can be expressed through reduplication. However, in order to produce the correct output in classifier predicate verbs of motion it is sometimes necessary to insert a transitional or linking movement before each reduplication. If signs have a basic L1 M L2 M L1 structure, a linking movement is not required since the hand returns to its original onset point before reduplication. If the basic structure is L1 M L2, an M-epenthesis rule is proposed by Sandler (1990). Epenthetic M insertion is illustrated in Figure 7.31 in which the lower case letters denote the features associated to each slot.

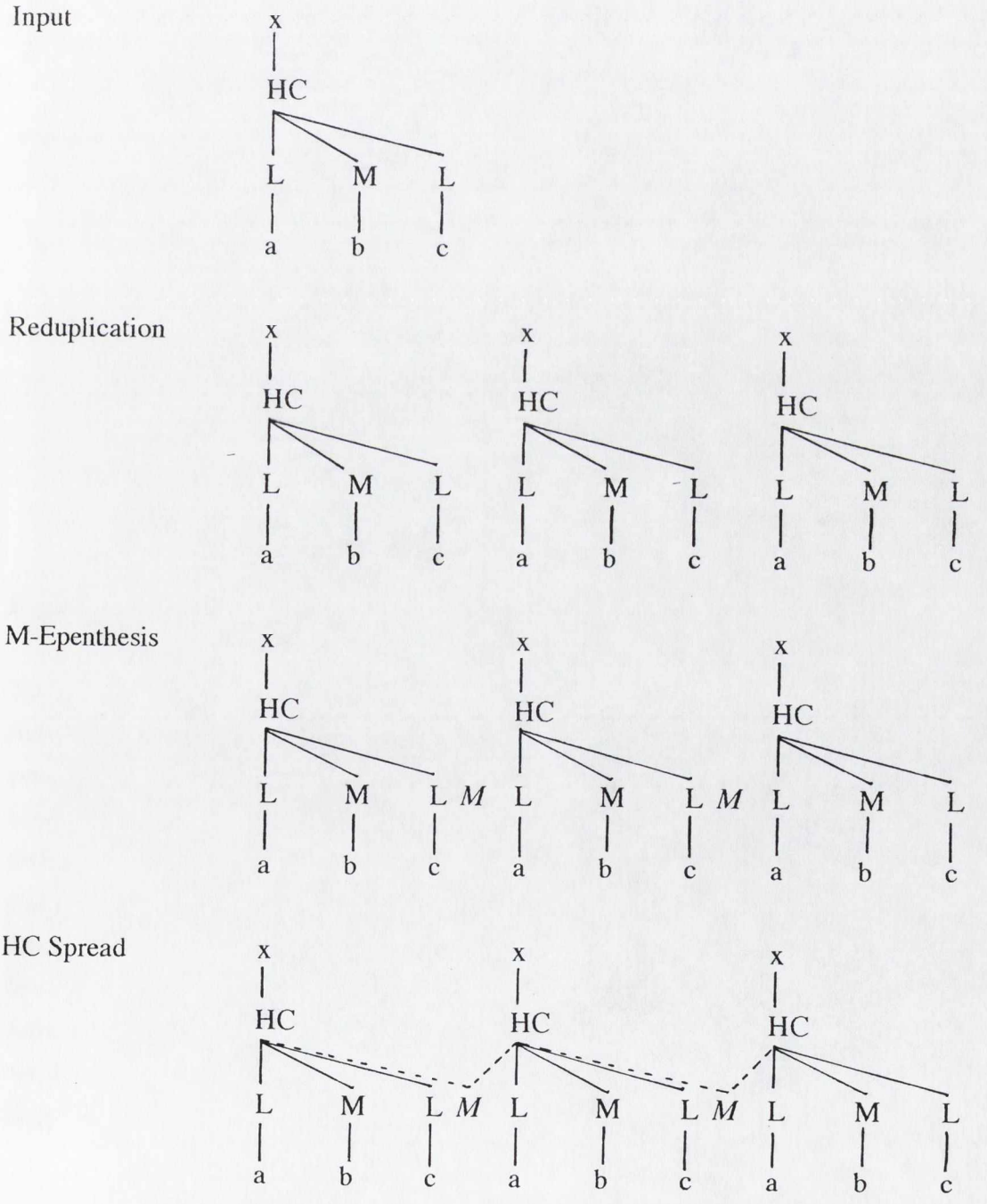
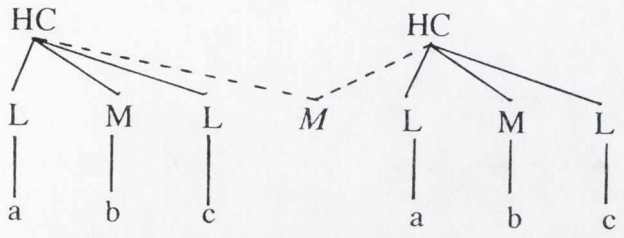



Figure 7.31 M-Epenthesis Insertion in Reduplication (see Sandler 1990: 22)

Examples of reduplication and M-epenthesis insertion are given in Figures 7.32 and 7.33.

Long-thin-vertical-entity-CL+f+MOVE+c+reduplicate
(The punchball) swung to-and-fro



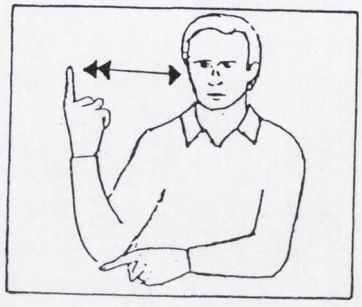



Figure 7.32 Whole-entity-CL Stem+MOVE+reduplication

V-CL+sl+MOVE+sr+reduplicate
(Someone) floated through the air

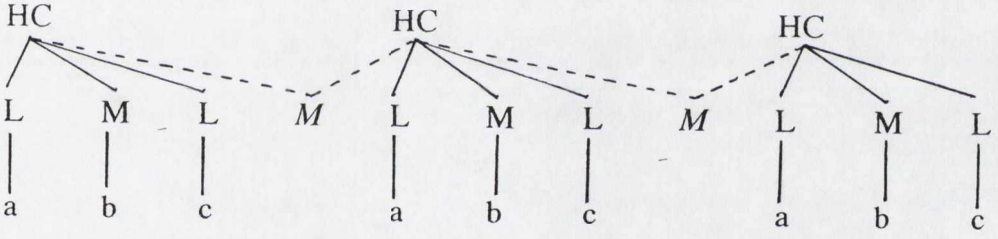
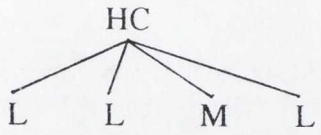



Figure 7.33 V-CL Stem+MOVE+reduplication

So far we have suggested that MOVE is characterised by a basic L M L template and that more complex MOVE elements are generated by affixation and reduplication processes. A different template is associated with movements in which the hand is brought to a particular location and held there for a short time. Holds can be expressed through contact with the non-dominant hand or in signing space without such contact and are often accompanied by a 'stamping' feature. Supalla and Newport (1978: 96) for example, refer to holds that "end with an abrupt stop in which the arms and hands become stiff and are held stationary for a short time". Sandler (1993: 112-3) regards a hold as a lengthening feature which indicates gemination of L slots. In the next section we will discuss gemination processes with specific reference to BE-LOCATED in Irish Sign Language.

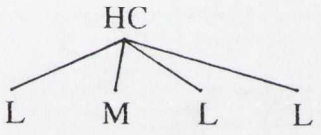
### 7.3.1 Gemination Processes

Sandler (1993) shows that morphological processes can be expressed by gemination in both Israeli Sign Language and American Sign Language. In Israeli Sign Language, for example, lengthening of the onset point of a verb carries the meaning 'do x quickly' (Figure 7.34); in American Sign Language, lengthening of the offset point of a verb of motion denotes a locative affix, distinguishing for example, FLY-THERE-BY-PLANE (Figure 7.35) from FLY-BY-PLANE.




Israeli Sign Language:
'do x quickly'

Figure 7.34 Gemination of onset L




American Sign Language:
locative affixation

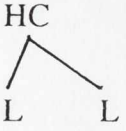
Figure 7.35 Gemination of offset L

Wilbur (1987: 93) and Brennan (1992: 76) note that BE-LOCATED is characterised by a 'stamping' hold. In the utterances represented by Figures 7.36 and 7.37, BE-LOCATED is articulated with a clear 'stamping' action, there is a contact feature between the dominant and non-dominant hands, and in addition the hands are held in this configuration for a brief time. The formational properties in these examples indicate that there is gemination of L features and that typical expressions of BE-LOCATED such as these are best represented by an L L template.




V-CL+BE-LOCATED+by left hand
Vertical-2D-entity+EXIST ----------
(The man) stood by (the wall)

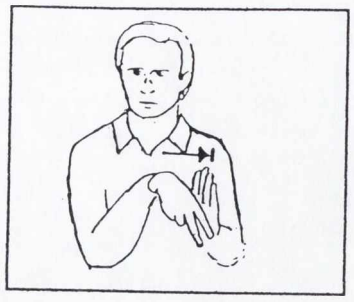
Figure 7.36 Gemination of L features




General-entity-CL+BE-LOCATED+in left hand
Cylindrical-entity-CL+EXIST ----------
(The false teeth) were in (the glass)

Figure 7.37 Gemination of L features

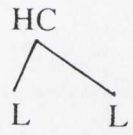
7.36





7.37

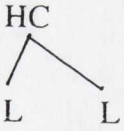
Occasionally the 'stamping' and contact features are made very explicit. This is evident in the following example (Figure 7.38).




V-CL+BE-LOCATED+impact contact on left hand
Flat-surface-entity-CL+EXIST ----------
(The snowman) fell on (the floor) (with a thud)

Figure 7.38 Gemination of L feature

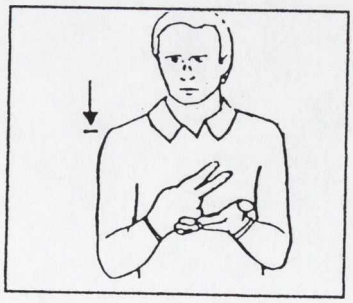
Sometimes there is a 'stamping' feature which does not involve contact between the hands (Figures 7.39, 7.40 and 7.41).

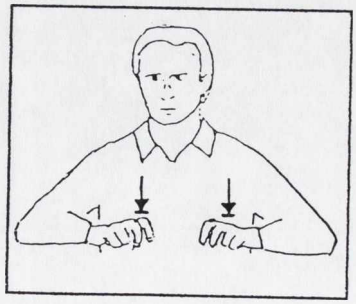



V-CL+BE-LOCATED+opposite left hand
V-CL+BE-LOCATED+opposite right hand
(They) sat down opposite each other

Figure 7.39 Gemination of L feature

7.38





7.39

HC
L L

Handle-round-entity-CL+BE-LOCATED+f / hi
(The boy) put (a nose) (on the snowman)

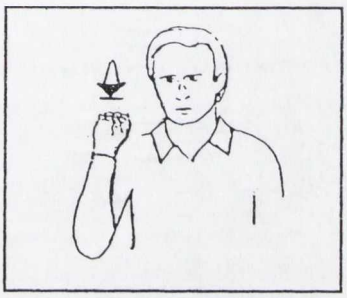
Figure 7.40 Gemination of L feature

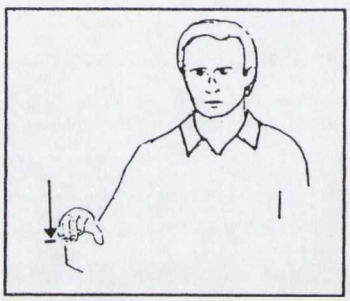
HC
L L

3D-entity-CL+BE-LOCATED+fr
(The house) was situated there ...

Figure 7.41 Gemination of L feature

7.40





7.41

There are circumstances however, where it is not clear whether or not gemination occurs. These examples are most typically associated with EXIST. In some instances, after the articulation of a sign the hand stops momentarily without any significance being attached to the particular location at which the articulation has taken place. Thus, a hold feature can be expressed through zero movement but without any 'stamping' or contact feature. The representation in Figures 7.42, 7.43 and 7.44 suggests that in examples of this kind the hold is expressed through an L feature but without gemination.

HC
|
L

Cylindrical-entity-CL+EXIST+fr g-l-a-s-s
There was a tumbler ...

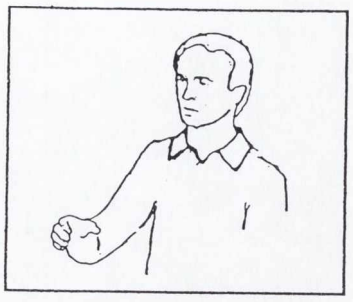
Figure 7.42 Single slot L

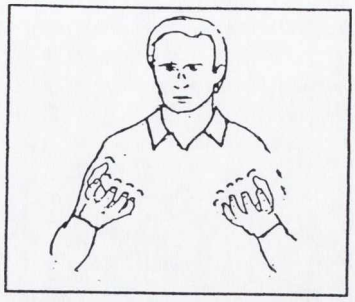
HC
|
L

Multiple-small-entities-CL+EXIST+f-imit: twinkle
All the lights were twinkling ...

Figure 7.43 Single slot L

7.42





7.43

HC
|
L

Whole-entity-Teeth-CL+EXIST+f
There were teeth ...

Figure 7.44 Single slot L

In Irish Sign Language a stamping movement typically characterises BE-LOCATED but it seems clear that not all instances of BE-LOCATED require stamping. Stamping implies a hold but as we have seen, holds can also occur in contexts where there is no abrupt stop, stamping or contact feature. The distribution of holds, contact and stamping in relation to EXIST and BE-LOCATED has yet to be explored in detail. At this point we can suggest that BE-LOCATED is typically represented by an L L template and EXIST by an L template. At the same time the evidence indicates that there can be some overlap between the two and in these circumstances, as Brennan (1992: 76) suggests, the difference is semantic rather than morphological.

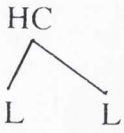
Example (7.7) shows that BE-LOCATED can be expressed without a stamping feature. This particular example involves two participants in which one is the affected party and the other carries out the action.

(7.7)

Index-CL+c+MOVE+towards left hand Wave "No" Index-CL+fr+MOVE-arc+fl
Index-CL+BE-LOCATED+f ----------

... (I) would not go up to (him) there, I would avoid him

In (7.7) the left hand is held in position while the right hand performs a number of different actions. Although the left hand does not articulate a stamping movement, it is maintained in a hold position for some time and a geminate construction does appear to be involved (Figure 7.45).




Index-CL+EXIST+f
(Someone) was present / there

Figure 7.45 Gemination of L feature

In formational terms the distribution of entities is characterised by a combination of MOVE and BE-LOCATED elements. An example of distribution is given in (7.8) and is illustrated in Figure 7.46. Each articulation of BE-LOCATED is distinguished by 'stamping' and hold features and of MOVE by a small arc movement. The underlying pattern is L L M L L M L L which might be explained as a reduplicated L L template with M-epenthetic linking movements.

(7.8) Handle-small-round-entity-CL+BE-LOCATED+f / lo+MOVE+

BE-LOCATED+f+MOVE+BE-LOCATED+f / hi

(The boy) put a button there, there and there

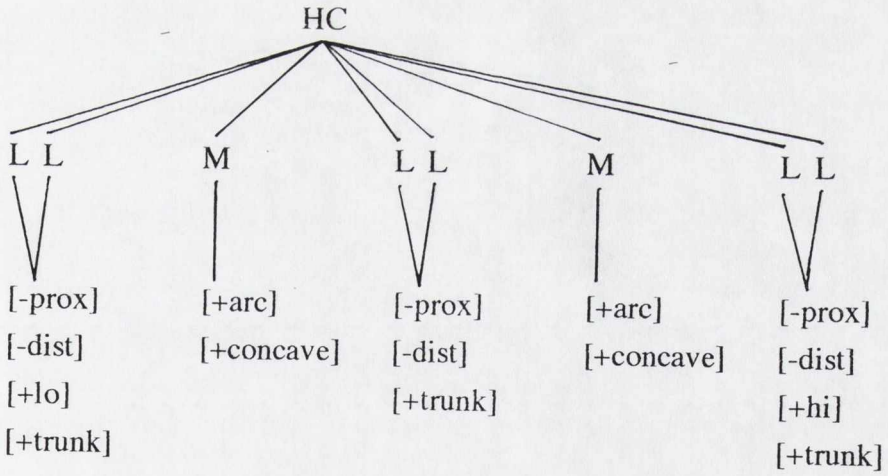



Figure 7.46 UR for Distribution

The movement feature EXTENT can combine only with Extension stems which, as we have shown (6.4), differ from Whole-entity and Handle-entity stems. Extension stems are typically two-handed configurations in which both hands have the same handshape. These stems combine with EXTENT in two different ways. In both forms, articulation begins with the two hands placed alongside each other at the 'same' location. In one form, the outline / extent of the entity is then described by the two hands moving in a symmetrical manner. In the second form, one hand is held at the onset point while the

other describes the outline / extent of the entity. In each case the movement of the hand(s) ends in a hold. Examples (7.9) and (7.10) illustrate these two forms.

(7.9) Trace-flat-surface-entity-CL+f+EXTEND+fr
Flat-surface-entity-CL+f+EXTEND ----------
(The snow) lay all about

(7.10) f-r-e-e-z-e-r Trace-long-general-entity+f+EXTEND+fr
Trace-long-general-entity+f+EXTEND+sl
(There was) a chest freezer

The L M patterns associated with these two forms are illustrated in Figures 7.47 and 7.48 respectively. These two examples suggest that the underlying and most basic template for EXTENT is L L M L L.

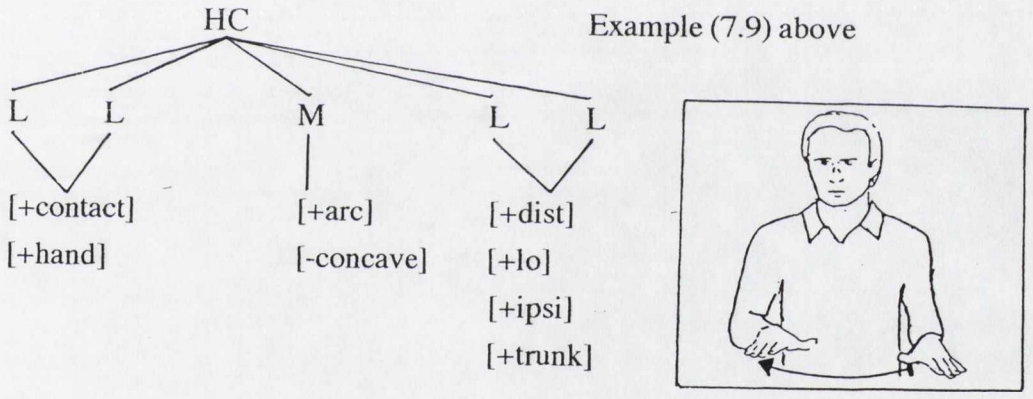



Figure 7.47 UR of a form of EXTENT

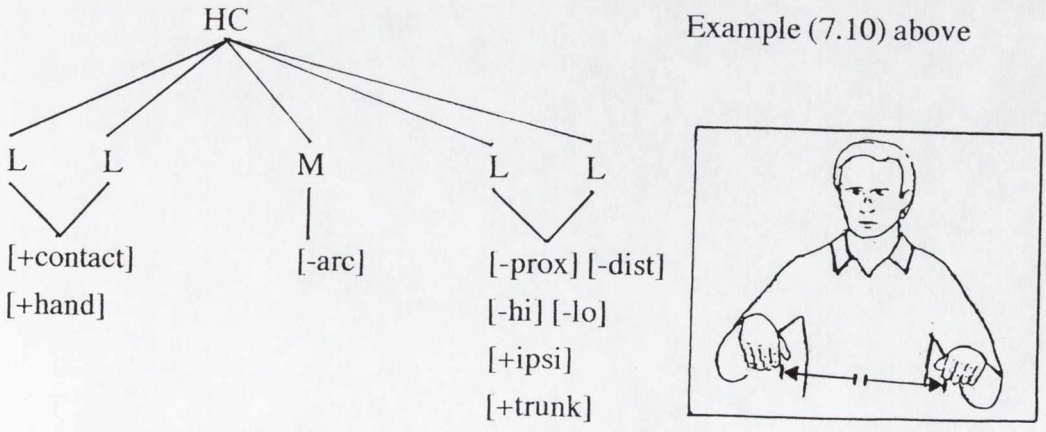



Figure 7.48 UR of a form of EXTENT

### 7.3.2 The Hand Configuration Tier

Sandler (1989) proposes that in American Sign Language hand configuration constitutes an autosegmental tier which is multiply linked to all the slots on the L M tier. In her analysis of classifier predicates (pp. 124-5) hand configuration is shown to function as a distinct morpheme (Figure 7.49).

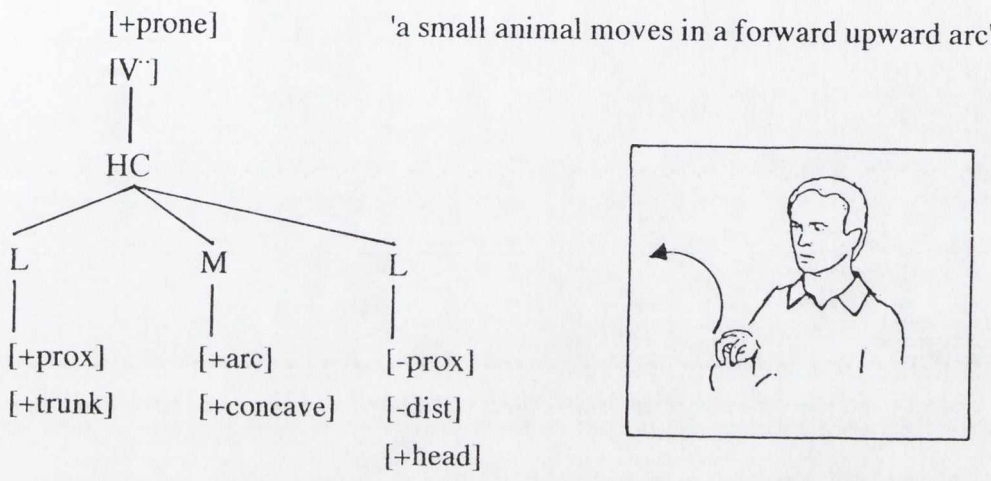



Figure 7.49 UR of a V-CL Predicate (after Sandler 1989: 125)

In Sandler's analysis however, the hand configuration component is understood to denote a nominal referent while the movement component incorporates the verb root. As we have already noted (see 4.3.6) an analysis of the movement component in terms of a verb root creates a problem which is illustrated in Figures 7.50 and 7.51.

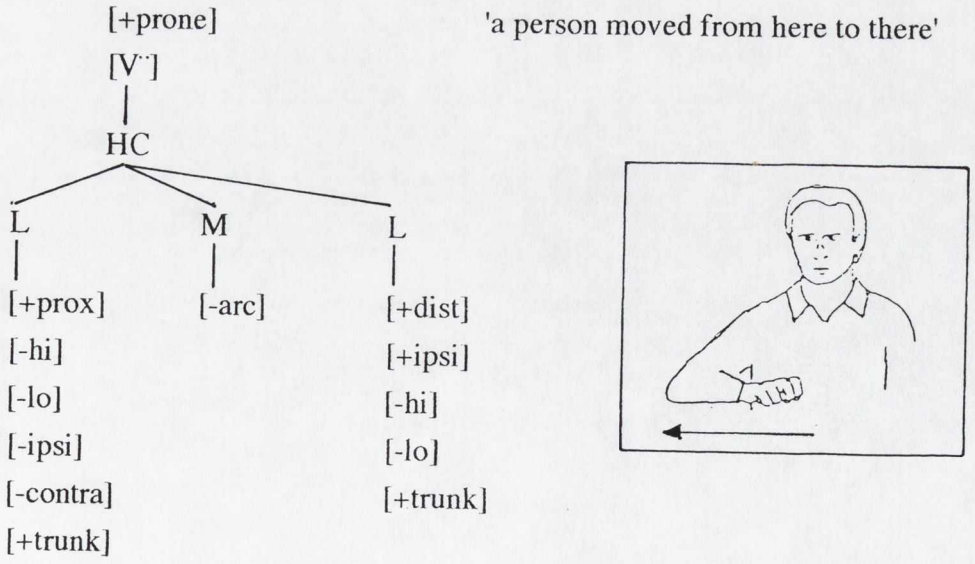



Figure 7.50 UR of a V-CL Predicate

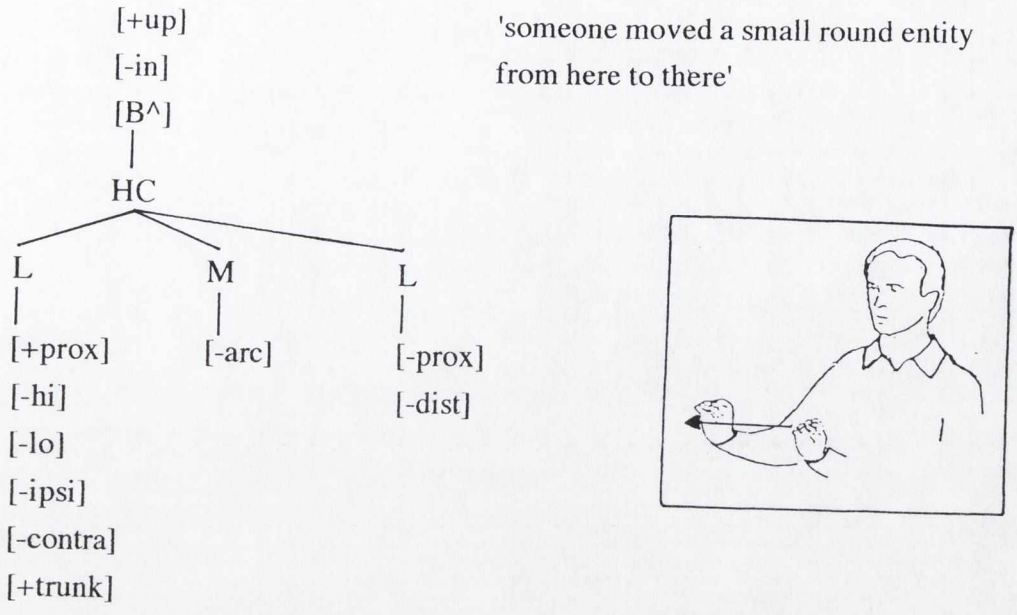



Figure 7.51 UR of a Handle-CL Predicate

In Figures 7.50 and 7.51, the hand configurations differ while the specifications for the L and M segments are similar. However, the interpretations of the movements are different in each case so that similar movements mean different things across hand configurations. If, for example, we wished to refer to the independent movement of a small round entity, a handshape denoting a 'point specifier' such as that shown in Figure 3.6 (i.e. a Size and shape-CL stem) would seem to be the appropriate configuration. It appears therefore, that the hand configuration component incorporates information that has a controlling influence on the meaning of the movement component.

A somewhat similar situation arises in certain spoken languages. In Ahtna Athabaskan (Kari 1992) for example, a verb typically consists of a stem together with a set of obligatory affixes and a variety of optional ones. Each affix has its position in the formation and optional affixes are slotted into this string at the appropriate point in the sequence as required. The minimal specification of the verb is a verb theme which consists of an abstract root, a listing of thematic prefixes, a marking for transitivity, and a specification of theme category. A theme category is a broad group of verb themes that has an identifiable semantic relationship and a common structure in the most basic derived forms.

Specifications for some verb themes in Ahtna Athabaskan are given in Figure 7.52. The symbol # denotes the disjunct boundary and + indicates a morpheme boundary. The symbols G and O represent abstract notation for gender marking and transitivity but the

actual values for G and O are inserted at later stages in the process of verb formation. Figure 7.52 shows three different verb themes with the root *taan* 'classify elongated object'.

| | | |
|---|---|---|
| 1. | / G + Ø + taan / | 'elongated O is' |
| | gender prefix+classifier+root (stat clas) | |
| 2. | / O + G + Ø + taan / | 'handle elongated O' |
| | transitivity+gender prefix+classifier+root (mot clas) | |
| 3. | / x # O + n + gh + Ø + taan / | 'steer O' |
| | thematic prefix # transitivity+n-gender prefix+thematic prefix+classifier+root | |

Figure 7.52 Verb Themes in Ahtna Athabaskan (after Kari 1992: 126)

The themes in 1 and 2 are the basic intransitive stative-classificatory and transitive motion classificatory themes, both of which can occur in thousands of derivatives. Example 3 indicates secondary verb theme formation and represents a stage beyond the basic theme. In 3 the theme 'steer O' has three thematic prefixes as well as the basic transitive theme. The theme formation string of the shape *x # gh* applies to themes that are held, attached, constrained or tethered at one end.

Several points in these examples are of interest in the context of classifier predicate stems in Irish Sign Language. Firstly, Kari (1992: 124) refers to the root *taan* as 'classify elongated object'. Secondly, along with the root in a minimal specification for verb themes, Kari includes an abstract marking for transitivity, abstract entries for thematic prefixes, and a label for theme category. Thirdly, values for these features are understood as abstract notions since the actual values are filled in at later points in the process of verb formation. Fourthly, a verb theme must take at least one aspectual derivation to gain some specific meaning. This derivation adds a set of prefixes and stem suffixes that mark mode and aspect.

A similar model can be used in specifying minimal values in the formation of classifier predicates in Irish Sign Language. In these verbs, hand configuration is commonly thought of as having classificatory function. But as we have proposed, the hand configuration element encodes other information, including transitivity. In Irish Sign Language Handle-entity stems clearly denote a transitive marking and at this stage of research it seems reasonable to interpret Whole entity stems as encoding an intransitive marking. Further, hand configuration must associate with features on the L M tier to acquire some specific meaning. Finally, hand configuration can be given a theme

category label which we may characterise as Motion (following Talmy 1985) and which is realised in surface forms such as 'move', 'be located' and 'extend'. The category of Motion captures an identifiable semantic relationship among all the derived verb forms. Such a semantic relationship among derived verb forms is an important characteristic in the recognition of theme categories in Ahtna Athabaskan.

Thus, the minimal specification of classifier predicates - the verb stem - is encoded in the hand configuration component and may be stated as follows:

± transitivity + referent classification + Motion root
e.g. Handle (move, locate) x kind of entity
x kind of entity (moves, is located, exists, extends)

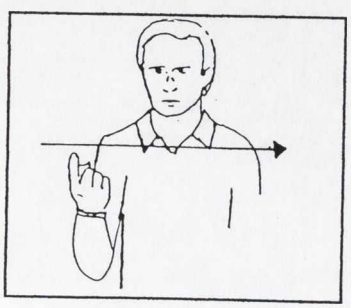
The tier framework proposed in Figure 7.53 attempts to capture the morphological structures and processes which we have discussed in this section. We can then use this model to illustrate the formation of classifier predicates in Irish Sign Language.

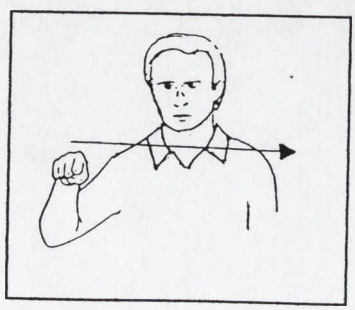
| | |
|---|---|
| Hand Configuration tier | ± transitivity + referent classification + Motion root |
| Skeletal tier | L M ..... |
| Feature specification tier | [ ] [ ] ..... |
| . | |
| . | |
| Surface form | ..... |

Figure 7.53 Morphological Tiers in Classifier Predicates

In Figures 7.54 and 7.55 (illustrated here) two classifier predicate forms are represented in terms of the model proposed above.

7.54





7.55

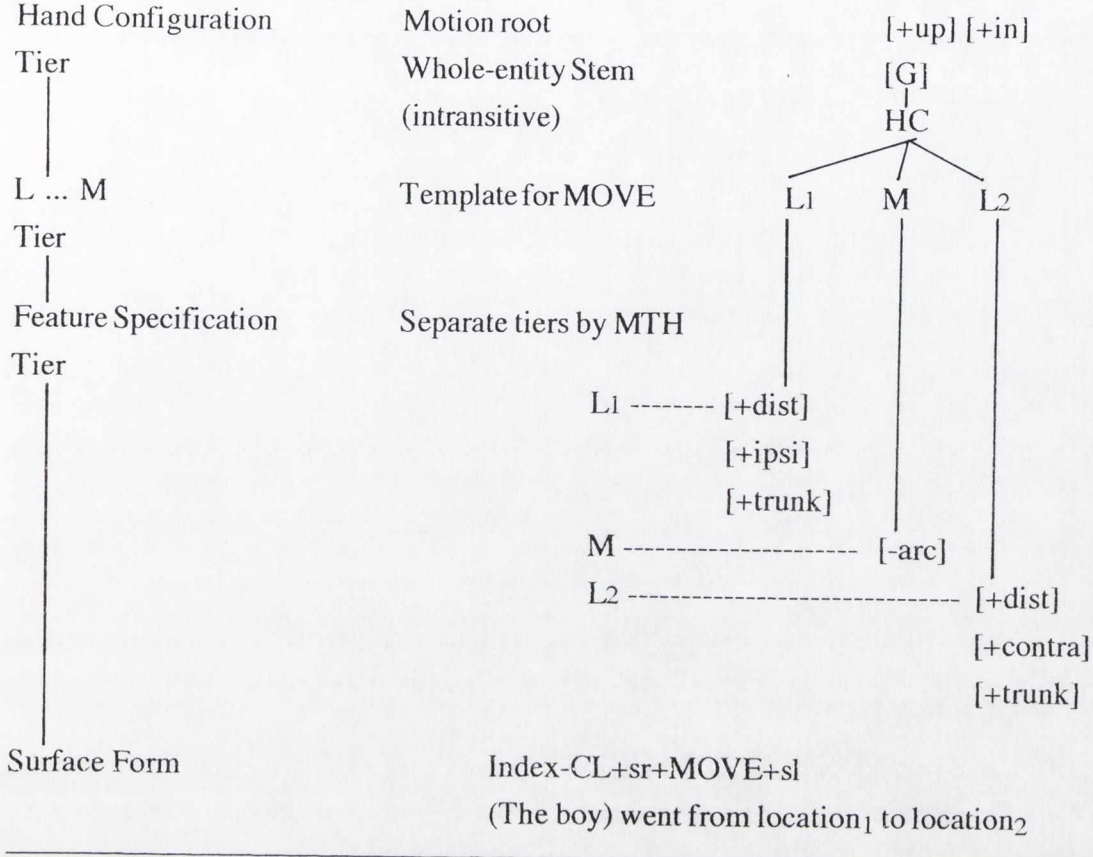



Figure 7.54 Tiers in a Whole-entity Stem

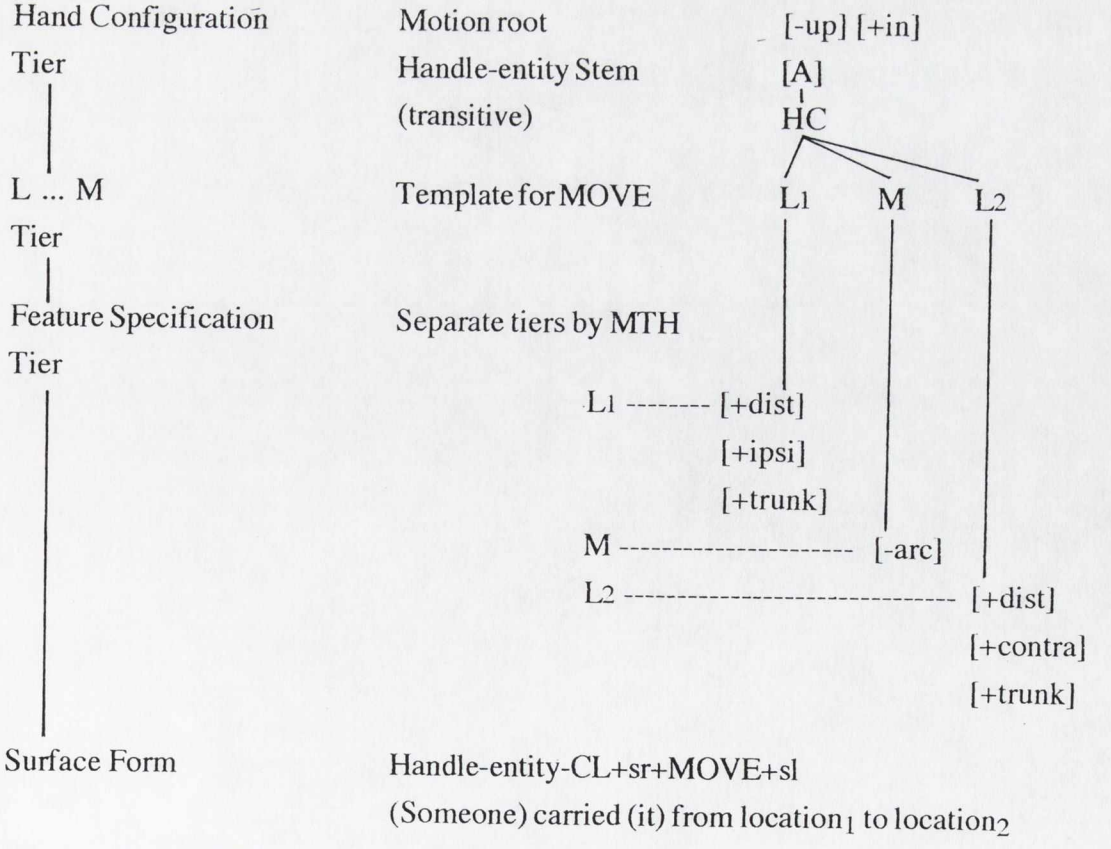



Figure 7.55 Tiers in a Handle-entity Stem

## 7.4 Conclusion

In this chapter we have laid out the beginnings of an autosegmental approach to verb structure in Irish Sign Language. We have seen that Sandler's (1989) Hand Tier (HT) model is particularly useful for this analysis because of the way in which movements and locations are represented on a segmental tier. In the HT model, hand configuration is represented on a separate tier. L and M slots are represented on a timing tier and are realised through bundles of features associated with each slot.

We have applied this autosegmental approach to agreement verbs and classifier predicates in Irish Sign Language. We have seen that typical agreement verbs are characterised by an L M L template. First person and non-first person morphemes are denoted by distinctive sets of features which are represented on separate tiers. We have proposed that a HT framework can be used to establish formal distinctions between person and locative agreement verbs and between different types of person agreement verbs.

We have shown that an L M L pattern also constitutes the basic template for classifier predicates which incorporate a MOVE element and that more complex MOVE elements are generated by reduplication and affixation processes. Although BE-LOCATED and EXIST can be expressed through segmental L slots, there are problems related to how they can be accurately distinguished and represented. Although we have suggested that in the most typical cases, BE-LOCATED is represented by a geminate L slot and EXIST by a single L slot, distinctions between BE-LOCATED and EXIST and the distribution of associated features such as holds, contact and stamping have yet to be explored in detail.

Two further L M patterns were identified. We proposed that distribution is characterised by a basic L L pattern which is reduplicated and linked by M-epenthesis, and that a basic form of EXTENT is characterised by an L L M L L pattern. However, a considerable amount of research remains to be done. In particular, the relationship between L M patterns and a wider range of structures in Irish Sign Language needs to be investigated.

In discussing the verb root in classifier predicates we noted that Irish Sign Language is not unusual in incorporating abstract features as elements in a minimal specification of these verb forms. We proposed that a minimal specification consists of a Motion root, a classificatory marking and a coding for transitivity and that such a specification, encoded in the hand configuration, constitutes the verb stem.

Finally, we noted that a number of important details relating to the HT model remain to be resolved. In the case of agreement verbs, and more especially of classifier predicates, specifications for degrees of laterality and of height will have to be worked out (Sandler 1989: 153). It will be necessary for a comprehensive autosegmental model to distinguish between, for example, a locus 'sr' and a locus 'fr'. It may also prove necessary to include a feature [finger orientation] in addition to the feature [palm orientation] to accurately specify possible hand configurations in Irish Sign Language. These details, however, do not detract from the value of the HT model in providing insight into the structural properties and processes of verbs in Irish Sign Language.

**Notes**

1. The handshapes referred to in this chapter are illustrated in Appendix 2.

# 8 SUMMARY AND CONCLUSIONS

The principal aim of this study has been to identify verb categories in Irish Sign Language on the basis of their grammatical properties. A number of different approaches to verb classification have been proposed by researchers in other sign languages and these were of considerable assistance in establishing an appropriate model for the analysis of verbs in Irish Sign Language. A further aim of the study has been to show that the language of the Irish deaf community shares those grammatical properties which typify the structure of other primary sign languages.

Six deaf informants, three men and three women, provided the main body of data. All the informants attended residential schools for deaf pupils and considered themselves to have native competence in Irish Sign Language. They were all active members of the deaf community and held official positions in deaf organisations. The fact that five of the informants had a specific interest in Irish Sign Language helped to overcome the difficulties that are sometimes associated with research in sign language. It was also a decided advantage that I personally knew the informants since this made it possible to greatly reduce the formality involved in the collection of data.

In our discussion of the linguistic properties of sign languages we argued that Irish Sign Language is a primary sign language and showed that it shares the basic structural features typical of other primary sign languages. We saw for example, that handshape, location and movement are key parameters of sign formation in Irish Sign Language and that linguistic constraints determine which possible combinations of features are allowed in the language.

We saw that non-manual features have an important role in the grammar of Irish Sign Language and that specific sets of features are used to distinguish between negative, interrogative and declarative utterances. We pointed out that spatial metaphors are fundamental to the structure of sign languages and observed that Irish Sign Language exploits visual imagery for linguistic purposes. Although there is a motivated relationship between many signs and their meanings, we showed that this is much more complex than a direct iconic association.

The category of locus is a significant structural feature of sign languages and we suggested that locus is best understood as a meaningful direction from the signer or a meaningful point or area in signing space, standing in paradigmatic contrast with some other direction, point or area. We noted that locus markers play a very important role in

the verb morphology of Irish Sign Language and are used in particular ways to signify the grammatical categories of person and location.

Two discourse features - referential shift and subject argument deletion - are especially relevant in an analysis of verb categories in Irish Sign Language. Signers frequently use the sender locus 'c' to refer to a referent other than the signer so that non-first person referents are realised through first person surface forms. Referential shift in Irish Sign Language is usually indicated by changes in the signer's posture, in facial expression and / or in gaze direction.

In a brief introduction to the main body of the research we stressed the intrinsic importance of verbs as a lexical category, their significance in modern theories of grammar, and their central role in language acquisition and learnability studies. In discussing the categorisation of verbs in sign languages we examined a number of different models. The first attempts to categorise verbs were concerned mainly with formational properties. The primary distinction made in these studies was that while the forms taken by some verbs remained constant in different grammatical contexts, the forms taken by others varied. Subsequent research characterised these differences in terms of inflection. One very influential study (Padden 1988) proposed that agreement verbs inflected for the category of person, spatial verbs inflected for location, and plain verbs did not inflect for either of these categories.

In identifying verb categories in Irish Sign Language we have drawn on similar research in other sign languages but we have not depended on any one particular model. We recognised that categories of verbs can be established in terms of prototypical features but we also allowed that such categories are characterised by exceptions and by fuzzy edges. In terms of our discussion the categories which we propose are illustrated in Figure 8.1 (below).

In this framework, the first distinction we can establish is that between plain verbs and agreement verbs. Plain verbs remain constant in different syntactic contexts; agreement verbs take affixes which mark for person or for location and which alter the form of the verb in different contexts. We can make a further distinction between verbs which mark for agreement with the category of person and verbs which express locative agreement.

We can also identify a category of verbs which we have called classifier predicates of motion and location and which can mark for locative agreement. However, they differ significantly from other agreement verbs and from plain verbs: in classifier predicates, hand configuration has both a morphological and a phonological function; in other

verbs, hand configuration has a phonological function only. Finally, we identify a group of classifier predicates which do not mark for locative agreement but which in other respects are typical classifier predicates.

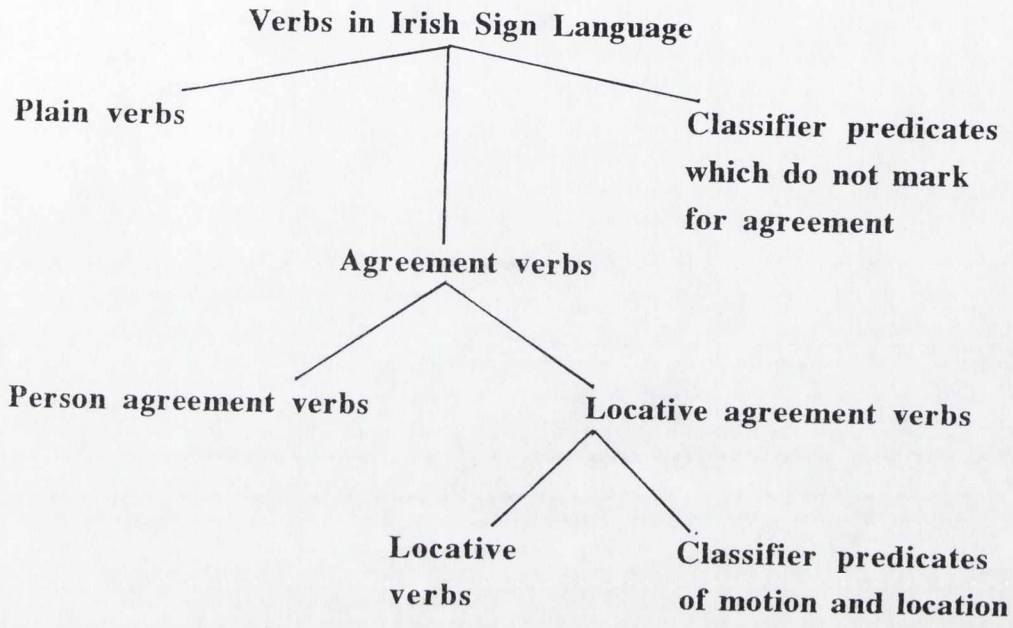



Figure 8.1 Categories of Verbs in Irish Sign Language

In terms of prototypical features, we observed that plain verbs are body-anchored signs, tend to occur in semantically related fields, and often express a motivated relationship between form and meaning. However, not every plain verb shares all of these features. One specific sub-group, because they are not body-anchored signs, can be modified to express pragmatic agreement. Markers for pragmatic agreement are distinguished by the fact that they are not specifically related to verb signs and can occur on other signs such as nouns, pronouns and adjectives.

A second sub-group consists of plain verbs which have a recognisable internal structure. We suggested that these are lexicalised forms and as such the internal elements do not now have independent meanings. The formational properties of these verbs suggests an 'original' or specialised meaning but lexicalisation has led to a more generalised use.

We identified a third sub-group of plain verbs which in some contexts and / or among some signers can surface either as plain verbs or as agreement verbs. It is not yet clear how many verbs fall into this sub-group, but the number appears to be quite small.

In semantic terms plain verbs typically denote subjective states of body, mind and feeling. A characteristic of these verbs is that if they have related meanings they also share a place of articulation. Thus, verbs denoting mental states are typically articulated in contact with, or in proximity to, the signer's head and verbs which refer to emotional states are articulated in contact with, or in proximity to, the trunk.

The discussion on plain verbs suggested a number of directions for further research. In the interests of reliability, it is necessary to relate a larger sample of plain verbs to the prototypical features that we have identified. It would also be useful to explore in more detail the fuzzy edges associated with the categorisation of certain plain verbs, to establish whether lexicalisation processes are involved, and to determine the particular contexts in which some verbs surface either as plain verbs or as agreement verbs.

With regard to agreement verbs, we distinguished between two kinds. We established that the loci associated with locative agreement verbs refer to locations in space while the loci associated with person agreement verbs refer to agent / subject or experiencer, patient, recipient / object arguments. We also established that while person agreement verbs are articulated at a characteristic height in relation to the signer, locative agreement verbs do not have a characteristic height at which they are articulated.

Although the surface forms of both types of agreement verbs are phonologically similar, each type has a prototypical set of relations with its controller nominals. We showed that in a two-tier thematic analysis (Jackendoff 1990), person agreement verbs associate with the action tier and locative agreement verbs with the thematic tier. We found too, that the thematic roles marked on person agreement verbs map on to grammatical relations such as subject, direct object and indirect object, while roles marked on locative agreement verbs map on to oblique grammatical relations.

While we can establish typical distinctions between the two types of agreement verbs, every agreement verb does not necessarily have all the characteristics associated with its type. The person agreement verb GIVE and the locative agreement verb PUT-ON are cases in point. Both of these verbs seem to have an unmarked or canonical form together with a set of variants which are expressed through changes in handshape, a feature not typical of verbs of this type.

With regard to agreement verbs, the possible existence of canonical forms is only one of several issues requiring further investigation. More detailed information is required regarding the formational properties of person agreement verbs, and particular research is needed to establish explicit criteria for identifying agreement marker omission. More

detailed investigation of different patterns of agreement marking is required not only between signers but also in the utterances of individual signers. Another issue requiring investigation is whether there is any relationship between referential shifting in Irish Sign Language and the priority given to agreement marking for object relations.

Although we expressed some reservations about the term *classifier predicate* we decided to retain it as a descriptive term. We proposed that classifier predicates have two structural components - a hand configuration and a movement - and that hand configuration expresses both predicative and classificatory information. We also proposed that the hand configuration element constitutes the verb stem but that the verb form can be realised only when the stem combines with a movement element.

We went on to identify four types of classifier predicate stems: Whole entity-CL stems refer to entities as wholes; Handle entity-CL stems denote how objects are held or touched and imply an animate agent; Extension-CL stems represent the shape or extent of objects; and Body-CL stems refer to particular ways in which the signer's body is used to represent an animate entity.

We also identified four categories of movement, including zero movement as an underlying feature: MOVE signifies an entity's own motion or motion caused by an external agent; BE-LOCATED denotes the location of an entity; EXIST indicates the presence of an entity without any particular reference to its location; and EXTENT indicates the shape and / or dimensions of an entity.

The data collected in this study suggests that not all the stems can combine with all the movement elements. Whole entity-CL stems and Handle entity-CL stems typically combine with EXIST, BE-LOCATED and MOVE. Extension-CL stems combine only with EXTENT and Body-CL stems appear to combine only with EXIST.

We have identified several directions for further research in relation to classifier predicates. Firstly, the question of whether handshapes indicate a selectional rather than a classifying function needs to be addressed. An analysis of hand configurations in terms of selectional restrictions might overcome some of the difficulties associated with the more traditional notion that a handshape classifies entities. Secondly, more data is required to establish clear distinctions among variations in hand configuration and to determine whether some variations constitute marked forms of the same stem or whether they constitute distinct and separate stems. The possibility that certain hand configurations - the form of the V-CL stem, for example - have a canonical form also needs to be investigated.

A third and related question is whether a particular stem may exclude any entities from the category with which that stem is usually associated. The Vehicle-CL stem for example, denotes a wide range of referents and further research is required to establish whether certain kinds of vehicles are excluded from this stem category or indeed whether there are other distinct vehicle stems. Finally, the function of hand internal movement in certain stems requires further study. Additional data and research is needed to establish whether hand-internal movement (such as wiggling) constitutes a variant of the Multiple entity stem or whether it denotes a distinct and separate stem. Research is also necessary to establish the distribution of Multiple entity stems and Multiple small entity stems in relation to one another and in relation to the types of movements with which they combine.

In chapter 8, we proposed an outline for an autosegmental approach to verb structure in Irish Sign Language. We suggested that the Hand Tier model (Sandler 1989) is particularly useful for an analysis of this kind because of the way in which locations (L) and movements (M) are represented on a segmental tier. In this model, hand configuration is represented on an independent tier while L and M features are represented on a timing tier. We proposed that a HT framework can be used to indicate formal distinctions between person and locative agreement verbs as well as between different types of person agreement verbs.

In applying this analysis to examples of Irish Sign Language we showed that an L M L template is characteristic of typical agreement verbs and that complex MOVE forms are generated by reduplication and affixation processes from a basic L M L pattern. We argued that BE-LOCATED forms are best represented by gemination of L slots and that distributive meaning is expressed by reduplication of the basic L L pattern. We suggested that EXIST is most typically represented by a single L slot but pointed out that distinctions between EXIST and BE-LOCATED have yet to be explored in detail. We also suggested that the basic form of EXTENT is characterised by an L L M L L template.

In discussing the verb root in classifier predicates we argued that the hand configuration component expresses both predicative and classificatory information and noted that Irish Sign Language is not unusual in incorporating abstract features as elements in a minimal specification of these verb forms. We proposed that a minimal specification of a classifier predicate consists of a Motion root, a classificatory marking and a coding for transitivity, and that such a specification, encoded in the hand configuration, constitutes the verb stem.

Being an introductory study it is important to place it within a general social, political and cultural context. Therefore, in an appendix to the main part of the study we discussed the emergence of the modern deaf community in Ireland and identified a number of significant formative influences on the development of modern Irish Sign Language. In particular we suggested that the residential schools have played an important role in the transmission of the language.

Through the schools pupils from a variety of backgrounds came into contact with one another. They also came into contact with signs from a variety of sources. As pupils progressed through school they were engaged in several cultural and linguistic processes. Attendance at school became the means by which most pupils acquired Irish Sign Language; it was also a key factor in forging a common deaf identity and experience.

In discussing the sociolinguistic implications of this experience we noted that Irish Sign Language exists in a contact relationship with English and that this has a significant bearing on the status of sign language. Irish Sign Language does not yet have an official place on the school curriculum and its current position remains very much that of a marginalised language.

We concluded our contextual discussion by remarking that there have been several significant developments in recent years. The more public involvement of the deaf community in discussion on education and other social issues, the establishment of adult sign language classes, the development of interpreting services and the beginning of linguistic research have all contributed to a new understanding of Irish Sign Language.

In conclusion, this study has set out to tell us something of the complex morphology of verbs in Irish Sign Language. It constitutes an addition to the growing body of knowledge of sign languages and it is hoped that the findings presented here will prove to be a basis for continuing research as well as a useful resource for teachers and students of Irish Sign Language.

# APPENDIX 1
# IRISH SIGN LANGUAGE AND THE IRISH DEAF COMMUNITY

## A1.1 Introduction

In this appendix we attempt to provide a cultural and social framework for the linguistic study of Irish Sign Language which constitutes the main focus of the research. Since sign languages are typically languages of deaf communities and since a deaf community usually exists as a minority in a predominantly hearing society our discussion will touch on complex relationships involving Irish Sign Language, the Irish deaf community and hearing society.

Firstly, we examine the political and social context in which the modern Irish deaf community developed and then we outline the main characteristics of this community as it exists today. Secondly, we discuss general properties of sign languages and suggest a number of major formative influences on the development of modern Irish Sign Language. Thirdly, we look at the relationship between the deaf community and hearing society in Ireland and explore the sociolinguistic implications of this relationship for Irish Sign Language.

## A1.2 The Emergence of the Modern Deaf Community in Ireland

The modern deaf community in Ireland has its roots in the 19th century and is linked in a particular way to the establishment and development of the first schools for deaf children. The schools provided a new kind of social structure for deaf people. Drawing pupils from different parts of the country, the schools provided an opportunity to create new communities, much larger than any that had existed before. The schools also served as new and possibly more stable channels for the acquisition and transmission of Irish Sign Language and of deaf cultural values (for a modern example see Senghas, Kegl and Senghas 1994).

Developments which affected deaf people during the 19th century are rarely discussed in the wider political, social and economic context of the period (see for example, Hodgson 1954; O'Dowd 1955; Kyle and Woll 1985). It is important in the Irish context to consider the emergent modern deaf community not exclusively as an isolated social group. In Ireland during this period, especially between the years 1800 and 1850, deaf people comprised just one social group among many others, deemed by a variety of private and state agencies to be in need of special social, educational or medical provision (McDonnell 1991). Among such groups were people who were poor, unemployed, mentally or physically ill, or disabled.

In dealing with 'the social problem classes' (Tomlinson 1985: 159), the state embarked on what has been termed an experiment in government (Lyons 1973: 76). Numerous official reports were published; enabling legislation was passed; an extensive building programme was undertaken; particular groups of people were defined in new ways; and a range of professions emerged in order to administer the new institutions (Lyons 1973; MacDonagh 1977; Robins 1986). The larger undertakings, such as the workhouse system, were initiated and funded by the state. In other developments, such as schools for deaf pupils, the state provided moral and organisational support for the efforts of private organisations (McDonnell 1979).

The appearance of new forms of provision, especially if they are associated with groups perceived to be 'disabled' or 'disadvantaged', is frequently portrayed only in terms of progress and reform (The Education of Children Who are Handicapped by Impaired Hearing 1972, Appendix V; Report of the Special Education Review Committee 1993). There is no doubt that the establishment of special schools in Ireland brought advantages to the deaf population but apart from these humanitarian considerations there were other important influences involved.

Among the more powerful of these were the particular economic and social concerns of the state and the vested interests of professional bodies linked to the new institutions (Ryan and Thomas 1980; Tomlinson 1982, 1985; Bannerman Foster 1987; Barton 1988; Oliver 1990; McDonnell 1991). These are also the influences which have subsequently shaped and dominated discourse on deafness, deaf communities and sign languages (Dant and Gregory 1991; Taylor and Laurenzi 1991; Lane 1993).

### *A1.2.1 The Concerns of the State*

The concerns of the state regarding social groups identified as 'disadvantaged' or 'disabled' are expressed in two important respects: one is economic, the other social. The developing industrial societies of the 19th century were characterised by an economic ideology which required as many citizens as possible to be productive and self-supporting (Kinealy 1994; Boylan and Foley 1996; Grey 1995). For example, the National Institution for the Education of Deaf and Dumb Children of the Poor in Ireland was, according to its founder, "a school of industry, in agricultural, gardening, mechanical and household occupations." (Orpen 1836: 54). The annual report of 1820 stated that "the time of all the pupils is nearly equally divided between study and labour or domestic work ... and any person examining the quantity of the various labours performed ... by the pupils ... will acknowledge that they have not been allowed to eat the bread of idleness" (4th Annual Report, National Institution for the Education of Deaf and Dumb Children of the Poor in Ireland 1820: 18). Industrial training became a

key part of the curriculum in schools for deaf children in Ireland throughout the 19th century (O'Dowd 1955; McDonnell 1979).

A related economic concern of the state was the question of how special provision should be funded. Special schooling in particular, was seen as a form of social investment: there were economic returns to be gained which would compensate for the financial costs involved. The Census Commissioners of 1851, for example, pointed out that deaf children who grew up uninstructed and in poverty would remain a permanent tax on their respective unions (Census of Ireland 1851, Part III: 35-6).

Arguments for state aid for the first special schools for deaf children were supported by claims that schools provided industrial training. In 1863 Charlotte Stoker argued that "the government of this country could not refuse so reasonable a demand as the maintenance of an institution for ... fitting for some useful occupation those who would otherwise remain a burden on society" (Stoker 1863: 458).

Another major concern of the state is social control and social control was a crucial issue in Ireland in the early decades of the 19th century. This period was characterised by an expanding population, increasing levels of unemployment and poverty, and by widespread social unrest and disorder (Lyons 1973; McCartney 1987). The state's response to the crisis was a mixture of coercion and conciliation; on the one hand, imposing martial law during times of disorder, and on the other, developing a series of social projects.

During this period the first stages of a basic health service emerged; between 1805 and 1840 more than 600 dispensaries were set up (MacDonagh 1977). The Board of Works was reconstituted to oversee spending on public projects; it eventually became the largest of all Irish departments in the administration (ibid.). Between 1817 and 1821 the legislative basis for the establishment of lunatic asylums was laid down; by 1835 ten district asylums had been built in different parts of the country (Robins 1986: 67 ff.). In 1838 the English poor laws were extended to Ireland; 130 workhouses opened between 1840 and 1845 (ibid. 76).

Education became a significant factor in the state's programme of conciliation . In 1831 the first steps were taken in the establishment of publicly funded mass primary schooling (Akenson 1970). The fact that the state set out to exercise complete control over the school curriculum, the textbooks, and the training and conduct of teachers was an indication "of the concern of the legislature that the national school system would be directed along policy lines of cultural assimilation and political socialisation approved

by the government" (Coolahan 1988: 78). Social control was therefore a primary concern of the administration which shaped the national school system. By 1870, about one million children were enrolled in 6,800 schools (ibid.).

This was the social, political and economic context in which the modern Irish deaf community was formed. Schools for deaf children were clearly part of a much broader movement which affected many different social groups in the general population. Although it did not provide direct funding, the state strongly approved of the schools, and leading figures in the establishment became their patrons. In the years between 1816 and 1849 nine schools for deaf children were founded (Census of Ireland 1851: 33-5) In 1871 the three largest schools had 433 pupils enrolled and by 1877 "the largest Female Deaf-Mute Institute in the United Kingdom was in Cabra [Dublin]; as was also the largest Male Deaf-Mute Institute in the United Kingdom, and the two combined formed the largest Deaf-Mute establishment in the whole world" (St. Mary's School for the Deaf 1946: 11).

In addition to the influence of the state, we must also consider the role of various professionals associated with the new institutions. Personnel from the fields of medicine, psychology, religion and teaching have been closely involved in the development of education provision for deaf children in Ireland (O' Dowd 1955; The Education of Children Who Are Handicapped by Impaired Hearing 1972; McDonnell 1992a) and have had a significant part in shaping society's views of deafness and deaf people (Gregory and Hartley 1990; Dant and Gregory 1991). However, the particular interests of professionals often bear little or no relation to the needs of deaf pupils or the interests of the deaf community (McDonnell 1992; Lane 1993).

### *A1.2.2 Professional Interests in the Education of Deaf Children*

The medical profession has had an influential and enduring role in the development of special provision of all kinds. The involvement of doctors in this field dates from the early 19th century and is linked with their efforts to secure recognition as a professional body (Tomlinson 1982: 39). Their efforts were enhanced by claims to have competence in identifying, assessing and supervising the treatment of people with various kinds of disability (Potts 1983).

The first two schools for deaf children in Ireland were opened by doctors, in Dublin in 1816 and in Cork in 1822 (Census of Ireland 1851, Part III: 33-5). Research and experimentation in the teaching of deaf children were a means of establishing expertise and status in the public domain (Orpen 1828, 1836). Almost from the beginning, a form of medical certification was required for prospective pupils before they were

admitted to schools for the deaf (McDonnell 1979: 46). As the century progressed, doctors acquired a wide range of powers in the field of special provision. They defined and classified disabilities, assessed children, inspected schools, drafted educational policy documents and frequently dictated curricula, timetables and teaching methods (Ryan and Thomas 1980; Potts 1983).

Since the late 19th century, psychologists also have had a significant role in shaping perspectives on deafness and attitudes to deaf people. Psychological studies have tended to portray deaf people as 'concrete thinkers', unable to master abstractions. Among the first to conduct psychological research in a deaf population, Pintner and his associates (1916, 1920) concluded that deaf people were intellectually inferior to hearing people. Forty years later, in a major study, Myklebust (1960: 68) stated that "deaf children fall below average mainly on tests which require a type of abstraction and reasoning process" and concluded that this was because they did not have access to "a verbal language." According to Myklebust, sign language was "not a verbal language" (p. 241).

In an analysis of articles and books on the psychology of the deaf published since the 1960's, Lane (1988) concluded that psychological testing of deaf populations has been seriously flawed. Holm (1987: 15) claimed that psychological test results are so biased that "professionals who work closely with deaf people have responded .... by writing off the whole field of testing."

Medical and psychological discourse has tended to define deaf people essentially in terms of physiological and psychological deficit. Thus, a clinical / pathological model of deafness and deaf people has had a profound effect on educational and social policy, on the attitudes of hearing society and, of course, on the attitudes of deaf people themselves (Lane 1984, 1988; Kyle and Woll 1985; Dant and Gregory 1991; Ladd and John 1991) Medical and psychological discourses of this kind continue to have a profound influence on both planning and practice in Irish health and educational services (*Report of the Special Education Review Committee 1993* ; McDonnell 1992, 1995).

In Ireland there has always been a direct involvement by the churches in special schooling. Their interests are reflected in two important ways. Firstly, special schooling for the deaf was seen as an evangelising and missionary enterprise. The first annual report of the National Institution for the Education of Deaf and Dumb Children of the Poor in Ireland stated that the deaf had to be rescued "from the depths of more than heathen darkness to the glorious light of gospel Truth" (1817: 13). The Catholic

Institution, founded thirty years later, was driven by a similar missionary zeal. Its 16th annual report noted that there were in Ireland "about 4,000 Deaf-mutes doomed to go down to their graves in total ignorance of the existence of a Supreme Being and of man's destiny in this life and that to come, if not rescued from their sad estate" (16th Annual Report, Catholic Institution for the Deaf and Dumb 1862: 10).

The idea of schooling as a mission to deaf populations was not a specifically Irish phenomenon (see for example, Lane 1984: 58 - 59). However, a second way in which church interests were represented in special schooling was perhaps more particular to Ireland. Religious orders were by far the most significant providers of education in this sector (*Report of the Special Education Review Committee 1993: 48* ) and special schools were seen as ideal places in which individual members of religious orders could pursue a personal vocation. Even for lay teachers, work in special schools has often been associated in the public mind with the notion of a special committment or vocation.

However, teachers in special schools have a more obvious vested interest in special schooling. Not only are their jobs involved, their status as teachers is closely linked to the work which, it is argued, can only be adequately done by those having the appropriate training and expertise. Binet and Simon (1914: 10) observed, "Ever since public interest has been aroused in the question of schools for defective children, selfish ambition has seen its opportunity. The most frankly selfish reasons conceal themselves behind a mask of philanthropy and whoever dreams of finding a fine situation for himself in the new schools never speaks of children without tears in his eyes ... . There is no reason for indignation. Everyone has the right to look after his own interests so long as he does not compromise interests superior to his own."

The modern Irish deaf community emerged during a period of great social and institutional change and constituted just one part of a much larger population affected by such change. The development of the Irish deaf community through the 19th and into the 20th century was influenced in particular by the establishment of special schools for deaf children, and in a more general way, by the concerns of the state and the vested interests of professional bodies which administered the new institutions. In the following section I propose to outline the main characteristics of the Irish deaf community as it exists today.

### *A1.2.3 The Modern Deaf Community in Ireland*

The term 'community' is difficult to define. It has geographical and sociological connotations and is used descriptively and prescriptively in both popular and academic

discourse. A community often has no clear-cut boundaries and membership may be defined by several overlapping criteria.

In broad terms, a community implies the existence of a network of relationships of a general and regular kind. One important definition of community (Worsley 1992: 222-3) suggests that the social relationships involved possess certain qualities.There is a 'community spirit' or a 'community feeling' present. This definition "comes closest to a common-sense usage" (Jary and Jary 1991: 99) and it does not imply the existence of a particular area or locality.

There is a sense also in which 'community' is not so much a given as a creation (Berger and Luckmann 1967). In this sense communities come into existence by being recognised, interpreted and experienced as such by the set of people involved (Fishman 1989). For example, it is now common practice for deaf people to declare that they are members of a deaf community and for sign language researchers to refer to 'the deaf community'. In more recent years, deaf communities have themselves become the focus of study by sociolinguists and sociologists; Kyle (1990a: 6) refers to "the discovery of the deaf community."

Empirical studies (see for example, Schein and Delk 1974; Kyle and Allsop 1982) indicate the existence of highly organised patterns of social interaction in deaf populations. In the United States, Schein and Delk (1974) maintain that more deaf than hearing people remain single, but of those who marry, more than 80 per cent marry other deaf people. Kyle and Allsop (1982) found a similar marriage pattern in a British deaf community. They also found that while members of the deaf community were not isolated from hearing society, the primary focus of their social interaction was with other deaf people.

There is no reason to believe that this network of interrelationships is very different in the Irish deaf community. The maintenance of Irish Sign Language over a long period of time and the existence of a variety of deaf organisations catering for educational, cultural, sports and leisure interests, provides ample evidence of a community spirit. The deaf community in Ireland should of course, be distinguished from the deaf communities of other countries. In national terms the Irish deaf community is a scattered community, although there are concentrations of deaf people in the larger urban centres - Dublin, Cork, Galway, Waterford and Limerick (see for example, Irish Deaf Society 1994; National Association for the Deaf 1994).

One early study of a modern deaf community - the deaf community in the United States - proposed four important criteria for membership: audiological, linguistic, social and political (Baker-Shenk and Cokely 1991). Subsequent research, although differing in emphasis, has suggested very similar criteria (Kyle and Allsop 1982; Kyle and Woll 1985; Ladd 1988; Padden and Humphries 1988; Brennan 1992). Many studies claim that deafness, although an important factor, is not always a necessary one in determining membership of a deaf community (Kyle and Woll 1985; Ladd 1988; Brennan 1992). A deaf community may include, for example, the hearing children of deaf parents (Ladd 1988: 36); it may also include hearing people who learn sign language (ibid.) and who support the goals of the community (Padden 1980).

Kyle and Allsop (1982) reported in their study that a majority of deaf respondents supported the view that people who became deaf later in life and people who attended units for hard of hearing pupils, could become members of the deaf community. The principal exclusions were seen to be those deaf people who had a 'hearing attitude', that is, deaf people who preferred to mix with hearing people and deaf people who went to a hearing school. These responses suggest that "a deaf identity must be built up by contact with other deaf people" (ibid. 70).

Obviously, knowledge and use of sign language constitutes an important criterion for membership of a deaf community (Padden 1980; Brennan 1992; Dolby 1992). However, there is some difference of opinion as to whether knowledge and use of sign language is, by itself, a necessary or sufficient condition for membership. Lawson (1981) and Markowicz and Woodward (1978) see sign language as the key element in determining membership. Baker-Shenk and Cokely (1991), Kannapell (1982) and Kyle and Woll (1985) argue that sign language is important but must overlap with other factors. Kyle and Allsop (1982) point out that deaf people with no sign language can be, and are, accepted as members of the deaf community.

Research on deaf communities stresses the importance of identity and of attitudes and values derived from shared social and educational experience (Higgins 1980; Kannapell 1982; Kyle and Allsop 1982; Kyle 1990; Dolby 1992). Such attitudes and values involve having a positive view of deaf people and seeing other members as equals. Baker and Padden (1978) argue that the strength of other key factors, such as sign language and deafness, depends on the expression of positive attitudes towards deaf people. Kyle and Allsop (1982) found that deaf individuals who went regularly to the deaf club were more likely to agree that those who attended the deaf club 'are proud to be deaf', and to reject the view that the deaf club is a refuge for people who do not wish to be part of the hearing world.

The development of a shared identity in the deaf community is related in a particular way to the experience of special schooling (Baker and Padden 1978; Higgins 1980; Padden and Humphries 1988; Ladd and John 1991). In special schools for deaf children in Ireland, sign language is ignored or suppressed and is not included in the school curriculum (McDonnell 1992; McDonnell and Saunders 1993). Brennan (1992) argues that a shared experience of linguistic oppression has created the perception that hearing people belong to a different culture and has provided deaf people with an even stronger sense of a common identity.

In political terms, Higgins (1980) maintains that the sense of 'belonging to the deaf community' arises out of a conscious identification with the deaf world and from participation in its activities. Kyle and Woll (1985: 8) state that the core members of the community "are consulted or elected as leaders in organisation of deaf activities." Kyle and Woll also stress that it is the "individual's committment to the community [...] that determines acceptance by deaf people" (p. 22).

In summary then, it is difficult to define the Irish deaf community in precise terms. Deafness and a shared language are clearly important factors; social interaction and political relations are also important. However, all of these elements interact with attitudes towards other deaf people. Finally, it is important to note that the Irish deaf community is not a static social structure; as the community's view of itself changes, the criteria which determine membership will also change.

An important factor in terms of change involves attitudes to sign language within the deaf community. Many of the studies mentioned were carried out at a time when there was considerable unease and ambiguity about the status of sign languages in deaf communities (Kyle and Allsop 1982; Woodward 1987; Brennan 1992). As deaf people acquire more understanding about the nature and use of sign and express more positive attitudes towards it, then sign language is likely to become a more crucial characteristic in determining membership of deaf communities.

### A1.3 Irish Sign Language

In this section I will firstly describe some general features of sign languages and then discuss a number of major formative influences on the development of modern Irish Sign Language.

### *A1.3.1 General Features of Sign Languages*

It is useful to view human linguistic signing systems as falling into three main categories (Crystal 1992). Firstly, there are primary sign languages (van Cleve 1987; Kendon 1988). These are the languages of deaf communities all over the world (Woll 1983; Loncke, Boyes-Braem and Lebrun 1984; van Cleve 1987; Bright 1992: 436-8). Secondly, there are alternate sign languages (Kendon 1988). These sign languages are used in particular social, religious or cultural contexts by individuals and social groups whose primary language is a spoken language. In this category are the sign languages of native Americans (Umiker-Sebeok and Sebeok 1978), Australian aboriginal peoples (Kendon 1988) and Trappist monks (Barakat 1975). Where they have been analysed, alternate sign languages have been found to reflect the structures of the spoken languages of the users' community. They do not share characteristic features of primary sign languages such as non-manual features, a "complex layered morphology" nor "extensive use of spatial reference" (Kendon 1988: 40).

The third category contains those signing systems which have developed out of the interaction between deaf and hearing people, especially in educational settings, and are usually referred to as manually coded languages (MCLs). Many examples of MCLs date from the earliest attempts to teach literacy in schools for the deaf. Manually coded languages are usually structured on the grammatical principles of the dominant spoken language (Wilbur 1987, chap. 10). Examples from English speaking countries are the Paget Gorman system (Rowe 1982), Seeing Essential English (Anthony 1971) and Signing Exact English (Gustason, Pfefzing and Zawolkow 1975).

### *A1.3.2 Primary Sign Languages*

Misconceptions about primary sign language, common in early writings on the subject, have persisted down to the present day (Perlmutter 1986). One major misconception is that sign language is universal (see for example, Wundt 1921 / 1973). The 17th century philosophers of language looked to sign language as the universal language of mankind and developed linguistic theories and programmes based on this premise (Bulwer 1644 and Delgarno 1661, quoted in Kyle and Woll 1985: 37-50). Modern research has shown that primary sign languages differ from each other in ways that are similar to the ways in which spoken languages differ (see for example, Battison and King Jordan 1980; Woll 1984).

A second misconception is that primary sign languages are derived from spoken languages. Again, research has shown that this is not the case and that primary sign languages have independent phonological, morphological, and syntactic structures (Klima and Bellugi 1979; Kyle and Woll 1985; Wallin 1990; Brennan 1990, 1992;

Bergman 1994). A related misconception is that primary sign languages are 'simple' or 'concrete', or that they are 'ungrammatical'. This perception can be attributed to the fact that a primary sign language was often interpreted or analysed in terms of the grammar of a spoken language rather in terms of its own grammar.

Only in very recent years have the grammars of a number of sign languages been analysed and described. However, the view of primary sign languages as debased languages has proved to be remarkably persistent, especially in educational contexts. For example, after three decades of detailed research in American and other sign languages, van Uden (1986: 197) commented, "Linguistic phonology and functional morphology are not found in signs . A linguistic syntax does not exist either".[1]

The marginalisation of sign languages in modern mainstream linguistics has contributed to these misconceptions (Woll 1990). Modern linguists have tended to see language as a purely vocal / aural phenomenon (Sapir 1921: 21; Bloomfield 1933: 39; Hockett 1963: 8). Perlmutter (1986) criticises Chomsky and Halle (1968) for defining 'the phonetic capabilities of man' exclusively in vocal / aural terms. Popular text-books have tended to ignore sign languages. O' Grady, Dobrovolsky and Aronoff (1993, 2nd ed.) for example, in a text-book of over 600 pages, do not discuss sign languages at all. A chapter devoted to animal communication contains a number of minor references to American Sign Language to the effect that researchers have attempted to teach it to chimpanzees "on the assumption that it was a genuinely linguistic form of communication (of which there is no doubt)" (p. 517). However, more recently published encyclopedias of language and linguistics include substantial sections on sign language (Crystal 1987; Collinge 1990; Malmkjaer 1991; Bright 1992; Asher 1994).

Of course like all languages, primary sign languages are changed through contact with other languages, whether spoken or signed (see A1.3.8 and A1.4.7). Interestingly, recent discussion on the origins of human languages has led to an ironic reversal of positions as to which language modality was derivative. Stokoe (1987) and Armstrong, Stokoe and Wilcox (1995) suggest that the first human languages may have been sign languages. Infants, for example, acquire the fully symbolic use of gestures "earlier than the fully symbolic use of vocalisations as words. This finding suggests that what is true for developing infants may also be for the species ... " (Stokoe 1987: 36). Furthermore, the expression of some syntactic relationships (for example, x gives y to z) in a visual-spatial medium such as sign language, can relate more immediately to the physical event than does the vocal expression of that event. Thus, sign language may have pre-dated spoken language in the development of human language (ibid. 36-7).

### *A1.3.3 Early Perspectives on Sign Language*

References to the use of sign language among deaf people date back to the earliest written records. Early Jewish authors refer to the use of signing by deaf people (Zwiebel 1993). A late second century compilation of Jewish oral law, the Mishnah, "clearly indicates that signing by deaf people was regarded as a suitable means of communication in law" (Woll 1990: 742). Woll also draws attention to a passage from Plato's *Cratylos* (Fowler 1926: 133) which indicates the existence of sign language among deaf people in ancient Greece:

> Socrates: Answer me this question: if we had no voice or tongue, and wished to make things clear to one another, should we not try, as dumb people actually do, to make signs to signify our meaning with our hands and head and person generally?
>
> Hermogenes: Yes, what other method is there, Socrates?

Writers in the early christian, medieval and renaissance periods (see for example, Hodgson 1954; de Saint-Loup 1993) noted that deaf people used signs for communication. Leonards da Vinci advised artists to copy "the motions of the deaf and dumb who speak with movements of their hands, eyes and eyebrows and their whole person" (quoted in Mirzoeff 1992: 19).

More detailed accounts which included analytical discussions of sign languages began to appear from the 17th century onwards (Fischer and Lane 1993; Kyle and Woll 1985). In Britain, John Bulwer (1644, quoted in Woll 1990: 745), argued that sign language was the universal language of mankind. In Spain a Benedictine monk, Pedro Ponce de Leon, used a manual alphabet for teaching the deaf (Lane 1984: 92).[2] Delgarno (1661, quoted in Kyle and Woll 1985: 50-1) also developed a manual alphabet and was one of the first authors to clearly distinguish between sign language and signed versions of spoken languages.

In France in the 1760's the Abbé de l'Epée founded a school for the deaf in Paris (Lane 1987: 53) which was to prove a major influence on the establishment of schools for the deaf across Europe and in America (Lane 1984; Fischer and Lane 1993). Epée believed firstly, that sign language was universal and secondly, that for educational purposes signed French was the way forward (Lane 1984: 59-63). These two perspectives have dominated thinking on sign language and education of the deaf to the present day.

### *A1.3.4 Modern Irish Sign Language*

Modern Irish Sign Language has a complex history. It may be impossible to describe its development in detail because of the scarcity of records and accounts from the past. However, it is possible to propose a general outline (McDonnell 1994). In describing the development of modern Irish Sign Language we can draw on information from four main sources:

1. The collective memory and experience of the Irish deaf community;
2. Documentary evidence, especially reports and other accounts from the early years of the institutions for the education of deaf children;
3. Research in Irish Sign Language and comparative studies with other sign languages;
4. Comparison with conditions and circumstances in other sign languages and deaf communities where we do have direct or indirect evidence from the past.

Misconceptions about the nature of Irish Sign Language and the scarcity of original sources have led to the growth of popular but mistaken beliefs about its origins and development. It has been assumed that Irish Sign Language, like other sign languages, is derived from spoken language (Nicholas 1979). However, there is now no reason to believe that Irish Sign Language is any different from other sign languages in having its own grammatical structures, independent of spoken language (HORIZON Deaf Studies Project 1994).

Another misconception suggests that Irish Sign Language originated in the year 1846 when two deaf girls and two teaching nuns, brought signed French (i.e. manually coded French) to Ireland; Irish Sign Language then emerged at a later stage as a modified form of this manually coded language (Instidiuid Teangeolaiochta Eireann 1993: 21; Nicholas 1979). This view assumes that no sign language existed in Ireland before the middle of the 19th century.

Somewhat similar claims have been put forward regarding the origins of American Sign Language. Frishberg (1975: 699) for example, states that "ASL began in 1816 when Thomas Gallaudet founded the American Asylum in Hartford, Connecticut". With Laurent Clerc, a deaf graduate of the Paris school founded by Epée, he "adapted French signs to the American context" (ibid.). Woodward (1978) disputes this view and argues that what happened in America was a process of creolisation. Woodward presents a convincing argument that modern American Sign Language developed out of the contact between French Sign Language and sign language(s) existing in the United States before 1816.

He points out that sign languages have existed independently of educational systems and other social structures characteristic of modern deaf communities. Epée himself

stated that deaf people in Paris were using a sign language before he founded his school (Lane 1984: 59). There are also examples of isolated deaf communities using sign languages in circumstances which in many ways parallel conditions existing in the United States before 1816 (Kuschel 1973; Washabaugh 1979; Perlmutter 1986; Johnson 1991). Further, Clerc himself noted that deaf people in America were using signs very different from those which he and Gallaudet had brought from France (Woodward 1978: 336).

Woodward also states that the very substantial differences between modern French Sign Language and modern American Sign Language can only be accounted for by a process of creolisation. Evidence of restructuring at phonlogical, lexical and syntactic levels in ASL strongly supports this hypothesis (Woodward 1978; Woodward and DeSantis 1977).

### *A1.3.5 "Old" Irish Sign Language*

Similar arguments can be used to support the view that sign language(s) existed in Ireland before the establishment of special schools for the deaf.[3] Providence Island Sign Language (PISL) is a sign language used on an isolated island in the Carribbean (Woodward 1978, 1978a; Washabaugh 1979; Supalla 1988). During the early 1970s and before, there was no educational provision for deaf people on Providence Island; centres of population were relatively isolated; transport facilities were poor; contact between villages was infrequent; centralising social structures such as deaf schools or clubs did not exist. Yet, varieties of PISL were in use, the structures of which were not derived from the local spoken language. Neither was there any evidence to indicate that PISL was derived from another sign language such as American Sign Language.

Ireland at the beginning of the 19th century had a population of 8 million people, twice its population today. It was largely a rural population but there were also substantial urban centres. Dublin, Cork and Belfast had populations of 200,000, 80,000 and 75,000 respectively (Lyons 1973, chap. 2). It is reasonable to suppose that there were significant numbers of deaf people in Ireland as a whole and in these urban centres. The social circumstances were probably not much different from those on Providence Island while the numbers of deaf people were certainly large enough to sustain a viable sign language (or languages).

There is documentary evidence that sign language existed in Ireland before 1846 and the introduction of other forms of signing from France. The early reports of the National Institution for the Education of Deaf and Dumb Children of the Poor in Ireland refer to the use of signing with pupils. The first annual report of the Institution (1817:

30) stated that while there was an emphasis on speech and articulation, signs were the chief method of instruction.

Reading between the lines of the early reports we gather that sign language did exist in Ireland before the establishment of the National Institution. For example, there is nothing in the reports to suggest that teaching through signs was thought to be in any sense remarkable or that pupils had any difficulties in coming to grips with this method of communication. It appears that for the pupils signing was a familiar activity. Furthermore, pupils would have used signing to communicate with each other; it is unlikely that signs newly introduced by teachers would have met this communication need in any immediate way. It is reasonable therefore, to assume the existence of varities of Irish Sign Language before the establishment of schools for the deaf.

However, these older varieties of Irish Sign Language were later modified greatly by linguistic influences from other languages, both sign and spoken, which were channelled through the schools. Three major influences can be identified. The first, which came through the National Institution, originated in Britain and was linked to British Sign Language. The second came through the Catholic Institution and was associated with French Sign Language and manually coded French. The third influence was an integral part of the teaching methodology of both institutions and derived from manually coded English.

### *A1.3.6 The National Institution and the British Connection*

What was the provenance of the signs used for instruction in the National Institution and mentioned in its first annual report? The report does not elaborate any further. However, a somewhat clearer picture can be gained by examing the circumstances in which the institution was established.

The first school for the deaf was established in Dublin in 1816 by Charles Orpen (Mc Donnell 1979). Orpen had qualified as a doctor and had visited institutions for the deaf in Britain. Teaching methods in the National Institution reflected what seemed to be prevailing practice in Britain at the time where articulation and speech were combined with the use of signs (Kyle and Woll 1985: 40; 1st Annual Report, National Institution 1817: 30).

Early in 1818, Joseph Humphreys was sent by the National Institution to the Braidwood Institution in Edinburgh for training.[4] Humphreys stayed six months and during this time visited several schools for the deaf in Scotland and England before returning to Dublin to take charge of the National Institution (3rd Annual Report,

National Institution 1819: 10-11). Given then, these strong links between the National Institution and institutions in Britain it is reasonable to suggest that the signs used for teaching in the National Institution were signs from British Sign Language.

Evidence from the Irish deaf community supports this view (Saunders 1993; Woulfe 1993; Buckley 1994.) Members maintain that the sign language used by past pupils of the National Institution (later known as the Clermont school) differed from that used by pupils of the schools of the Catholic Institute. They further state that the signing of past pupils of the National Institution was like British Sign Language.

### *A1.3.7 The Catholic Institution and the French Connection*

The Catholic Institution for the Deaf and Dumb was established in 1846, mainly because of a claim that Catholic children attending the National Institution were being proselytised (1st Annual Report, Catholic Institution 1847: 20). A school for deaf girls opened in Dublin in 1846, followed in 1849 by a school for boys. In 1846, two Dominican nuns, Mary Magdalen O'Farrell and Mary Vincent Martin, went to France to be instructed in the system of teaching in the Le Bon Sauveur Institution at Caen. They were accompanied by two young deaf girls, Agnes Beedem and Mary Anne Dogherty, so that they would have "... an opportunity of reducing to practice the education they themselves would receive" (ibid. 14-15).

This is the first evidence we have of a French influence on Irish Sign Language. The sign system used at Le Bon Sauveur was a combination of French Sign Language and signed French (Nicholas 1979; Le Master 1990). The signed French system had been initially developed by the abbé de l'Epée in the late 1700s and was used at the National Institute for Deaf-Mutes in Paris. This system was further adapted by the abbé Jamet to reflect more closely the grammar of spoken French (O'Dowd 1955; Nicholas 1979). After spending six months in Caen, the nuns and deaf girls returned to Dublin to St. Mary's school for deaf girls in Cabra.

When a Catholic school for boys opened in Dublin in 1849 the teacher was trained at the girls' school (3rd Annual Report, Catholic Institution 1849: 25). Later, in 1857, when the Christian Brothers agreed to take over the management of the larger new school for boys in Cabra, some of the brothers spent over six months in preliminary training in St. Mary's and at the earlier boys' school (12th Annual Report, Catholic Institution 1858: 25). Thereafter, teachers were trained in the respective institutions. Thus, there was a direct link between the signing system borrowed from Caen and that used in both schools of the Catholic Institution.

Misconceptions about a French origin for Irish Sign Language reflect the very strong historical associations between French Sign Language and Irish Sign Language. The dominance of this relationship has tended to overshadow other influences on Irish Sign Language, especially those linked with the National Institution. The comparatively larger size of the Catholic Institution may have reinforced this tendency: numbers of pupils at the National Institution fell from 112 in 1840 to 27 in 1891, while numbers at the Catholic Institution rose from 76 in 1851 to 421 in 1891 (McDonnell 1979: 15). The emphasis on the French connection also indicates perhaps, a tendency to ignore influences that were not specifically Catholic.

With the establishment of the Catholic Institution, two educational traditions developed in Ireland. The National Institution was Protestant and had pedagogical and linguistic links with Britain. The Catholic Institution had links with France. Relations between the two institutions had started off badly with accusations and counter-accusations regarding the teaching of religion at the National Institution (26th Annual Report, National Institution 1842: 6; 1st Annual Report, Catholic Institution 1847: 20). As the century progressed, communication between the two institutions, at least at official level, seems to have been non-existent.

However, there is an historical link at pupil level that has important linguistic implications. After the establishment of the Catholic Institution, substantial numbers of pupils transferred to the new schools from the National Institution. The annual report of the Catholic Institution for 1869 states that it had identified "within the past year, ten children who, though their parents are Catholics, were for various periods, averaging from two to six years, in the protestant Institution" (23rd Annual Report, Catholic Institution 1869: 22). These children were admitted to the Catholic Institution schools and obviously brought their school signs with them.

It is not possible to establish exactly how many pupils in total were involved in such transfers nor to gauge the impact of their sign language on their new social environment. Given that they came from a signing community that had been in existence for over thirty years it is likely that the signing which had its roots in the tradition of the National Institution contributed an additional dimension to the development of Irish Sign Language in the Catholic schools.

### *A1.3.8 The Impact of Manually Coded and Spoken English*

Whatever the religious differences between the institutions, their educational aims were identical. For both institutions the main objective of schooling was literacy. Literacy was necessary in order to achieve the religious and vocational aims of the institutions

(McDonnell 1979: 49). Therefore manually coded English became the offical language of the schools and thus, through the educational system, English influenced the development of Irish Sign Language.

The schools emphasised study of the grammar of written English. Exercises in identifying the different parts of speech were begun at an early stage; reading and writing were important aspects of instruction (3rd Annual Report, Catholic Institution 20). The eleventh annual report of the Catholic Institution (1857: 35) stated that writing was the language of the civilized world; signs were peculiar to the deaf and therefore not the method "best calculated ... to be of service to them in later life".

In the late 1850s, Fr. John Burke, chaplin to the Catholic Institution, revised the French-based manually coded language brought from Caen so that it would reflect more closely the grammar and structure of English (LeMaster 1990: 67). This, and other adaptations which were made from time to time, laid the basis for the manually coded English used for teaching purposes in the schools of the Catholic Institution for the next hundred years. Burke described the methods used by teachers as: natural signs, methodical signs and dactyology, and the analysis of written English. Methodical signs and dactyology clearly refer to manually coded language and fingerspelling.[5] It is not exactly clear what he meant by 'natural signs'; it is reasonable to assume that it refers to the language used among the pupils themselves, Irish Sign Language.

In general, spoken languages influence sign languages in three important respects - in sign order, in hand configuration and in the creation of new signs (Fischer 1975; Battison 1978; Wilbur 1987; Brennan 1992). One dictionary of Irish Sign Language (National Association for the Deaf 1979) clearly illustrates influence of this kind. Many items listed in the dictionary are described in terms of initialisation, i.e. the signs glossed as HONOUR, ESTEEM, RESPECT, VENERATE are distinguished only by having handshapes from the manual alphabet which correspond to the letters H, E, R, and V respectively. From this perspective, Irish Sign Language handshapes are assumed to be the equivalent of letters of the English alphabet . However, sign languages do not usually make distinctions on this basis; if they do, it is the result of borrowing from a spoken language (Wilbur 1987: 25).

### *A1.3.9 The Role of Deaf People*

Writing of the development of American Sign Language, Woodward (1978: 346-7) argues that it is naive to believe that two men - Gallaudet, a hearing man, and Clerc, a foreign deaf man - founded American Sign Language; rather, credit should be given to "the American deaf people who drastically modified (if not creolised) French Sign

Language to satisfy their needs". It is reasonable to suggest that a similar, if somewhat more complex, process took place in Ireland.

Deaf people were centrally involved at crucial periods of change during the 19th century. With the help of his first pupil, Thomas Collins, Charles Orpen showed the public "experimentally ... how much could be done in three or four months for their (i.e. deaf pupils') instruction by a person who had no practical experience" (Orpen 1828: 5). In the National Institution, pupils became school monitors and were involved in instructing their fellow-pupils (1st Annual Report, National Institution 1817: 21). Likewise, the Catholic Institution records that "the nuns derive considerable assistance in the management of the school from the aid of the deaf-mute pupil teachers" (11th Annual Report, Catholic Institution 1857: 21). Another report acknowledged that deaf monitors had a particular "facility of communicating knowledge" to their pupils (14th Annual Report, Catholic Institution 1860: 24). This facility was almost certainly due to the monitors' knowledge and use of Irish Sign Language.

The development of teaching programmes in the Catholic schools crucially depended on the contribution of two deaf girls, Agnes Beedem and Mary Anne Dogherty, who accompanied the two hearing teachers to Caen. The girls having interacted for a period of six months with their French peers, must have had an important role in establishing the link between French Sign Language and Irish Sign Language. From the establishment of the schools until the advent of oralism, deaf teachers and monitors had a major role in the educational life of the pupils.

But the schools were more than educational institutions. They were deaf communities and as such they played a vital role in the development of modern Irish Sign Language. New deaf communities were formed as increasing numbers of pupils were enrolled in the institutions. These new social structures created a context in which future deaf adults forged a common identity and experience. Attendance at a school for the deaf became a key factor in becoming a member of the deaf community, in the acquisition and transmission of Irish Sign Language and of deaf cultural values (see A1.3.10).

Deaf pupils bring to school varieties of signing which are acquired as 'home' signs (Goldin-Meadow 1977; Feldman, Goldin-Meadow and Gleitman 1978; Mohay 1982) or as signs from the adult deaf community (Lane, 1984, 58). If Irish deaf children brought 'home' signs to school, the institutions in turn introduced the pupils to signs which had different sources of origin - British Sign Language, French Sign Language, manually coded French and English. The existence of the institutions therefore, brought into being a very complex language contact situation. Pupils were engaged in several

important linguistic processes - modification of older forms of Irish Sign Language, incorporation of new signs, and the creation of school-based varieties of sign language. Each of these processes had a signicant bearing on the development of modern Irish Sign Language.

The introduction of oralism in schools for the deaf has exposed deaf people to further aspects of spoken language. Because of speech training, many signers use silent mouth patterns while signing. Mouth patterns occasionally serve as the only contrastive element between two signs (Woll 1990: 758). The fact too, that the centre of signing space has shifted from the mid-chest to the upper neck / mouth area in American Sign Language (Frishberg 1975: 703) may be the result of oralist practices.

The discussion in this section suggests three areas worthy of further investigation: a comparative study of cognate forms in Irish Sign Language and French Sign Language; a similar study of Irish Sign Language and British Sign Language; and an analysis of the impact of English on Irish Sign Language through a study of initalised and newly-created signs, and mouth patterns.

### *A1.3.10 Transmission and Acquisition of Irish Sign Language*

At this point it is necessary to consider the circumstances in which Irish Sign Language is transmitted and acquired. About 90 per cent of deaf children are born to hearing parents; 5 per cent have one deaf parent and 5 per cent are born into families where both parents are deaf (Schein 1979; Kyle and Woll 1985: 58; Brennan 1992: 3). Therefore only a small proportion of deaf people have access to Irish Sign Language from birth. It is expected that a child's first language will be the language of the parents and, usually, the language of society. However, deaf children born into hearing families will not usually acquire either Irish Sign Language or English at the normal age of acquisition (Markides 1970; Brasel and Quigley 1977; Trybus and Karchmer 1977; Commission of the European Communities 1979; Gregory and Mogfield 1981; Kyle 1981; Kyle and Woll 1985, chap.12).

Hearing parents typically have little or no contact with the deaf community. Professionals from the fields of medicine, psychology, audiology and education usually counsel parents to aim for the development of spoken language skills (*The Education of Children Who Are Handicapped by Impaired Hearing* 1972). Employing a variety of teaching methods, schools for the deaf have always worked towards this goal, but with limited success (Conrad 1977, 1979; Quigley and Kretschmer 1982; Quigley and Paul 1984; McDonnell 1992). Guidance programmes for parents of deaf

children do not include deaf personnel (*The Education of Children Who Are Handicapped by Impaired Hearing* 1972, chap.4).

Therefore for most deaf people the only route to the acquisition of Irish Sign Language is through interaction with peers at a school for the deaf (Meadow 1980; Padden 1980; McDonnell 1992; Woodward and Allen 1993) and schools have been seen by deaf communities as crucial in the transmission of sign languages (Power 1987; Woll 1990; Brennan 1992; Dunne, F. 1993, 1994). The extent to which deaf children in this category develop competence in Irish Sign Language will vary according to individual circumstances, experiences and attitudes.

However, when deaf children do have access to signing models they acquire sign language, proceeding through the usual milestones of language acquisition (Bellugi and Klima 1972; Deuchar 1984, chap.7; Kyle and Woll 1985, chap 4; Wilbur 1987, chap.7). However, for some deaf children of deaf parents even this situation is not always so straightforward. The advice given by professionals to deaf parents often includes warnings not to sign to their children (Irish Deaf Society 1993a). Such advice, founded on a seriously erroneous view of Irish Sign Language and based on a belief that access to Irish Sign Language at an early age will prejudice the child's chances of developing spoken language skills (Nicholas 1976, 1985; Lynas et al. 1988), causes a great deal of distress for deaf parents (Irish Deaf Society 1993a).

Apart from a few small-scale programmes (Hannon 1989; Our Lady's School for Deaf Children, Cork 1993) Irish Sign Language is not included in the curriculum in schools at either first or second level. Thus, the level of proficiency achieved in Irish Sign Language varies considerably from child to child. A small number acquire it through exposure in the family while others may not learn it until they leave school and move into the adult deaf community.

A crucial determining factor is the sociolinguistic environment in which deaf children and deaf adults find themselves. The final section in this appendix examines this issue in some detail.

### A1.4 The Sociolinguistic Context

Deaf people in Ireland live in a complex sociolinguistic environment. A minority deaf community exists in a contact relationship with a dominant hearing society. Thus, Irish Sign Language, the language characteristic of the Irish deaf community is in a contact relationship with English, the language characteristic of hearing society.

In this section I will consider several factors which have a bearing on the language outcomes in contact situations. Among the more significant are issues such as power relations between communities, language status, language variation, participant characteristics, language attitudes and educational experiences.

The question of contact between the Irish deaf community and deaf communities in other countries will be examined and its linguistic implications discussed. Finally, there are other sociolinguistic factors to be considered which are not associated with language contact but which lead to variation in Irish Sign Language use. Two important variables of this kind, gender and age, will be discussed in this section.

### *A1.4.1 Power Relations between Deaf and Hearing Communities*

The relationship between the deaf community and hearing society is asymmetrical in terms of power. Typically, hearing people control the key institutions and services which affect the lives of deaf people. Education and language policies are determined by hearing people (*The Education of Children Who Are Handicapped by Impaired Hearing* 1972; *Report of the Review Committee on Special Education* 1993) and the deaf community is excluded from teaching services and guidance programmes which might offer an alternative perspective on the Irish deaf community and on Irish Sign Language (*Committee on Access and Participation of Students with Disabilities in Higher Education* 1994: 5.9).

Since most deaf children are born to hearing parents, the great majority of deaf children will not normally have access to adult signing models. The hearing community, through parents, controls the language to which deaf children can have access. Hearing parents usually look to professionals in the medical, audiological, psychological and educational services to provide guidance; and professionals, also hearing, usually advise parents to accommodate to the dominant culture and language (see for example, *The Education of Children Who Are Handicapped by Impaired Hearing* 1972, chap.6).

Harlan Lane (1987a) has argued that the experience of deaf communities has been an experience of colonisation. He has pointed to the unequal power relationship between coloniser and colonised; the practice of colonising powers of imposing their language by force on the colonised; and the fact that the predominantly negative character traits attributed to deaf people have been similar to those attributed to colonised peoples. The historical experience of the Irish deaf community is a case in point. It can be argued that a form of colonisation of the deaf community by hearing society has been expressed through, and experienced in, the educational system: special schooling for

the deaf was, at the same time, a missionary enterprise, an economic investment and a political project (Mc Donnell 1979, 1991).

The International Congress on the Education of the Deaf, held in Milan in 1880, is often cited as a major turning-point in the aims and practices of deaf education. The congress recommended changes which were primarily concerned with the 'assimilation' of deaf people into hearing society (Lane 1984: 386 ff.). The Congress resolved to restore "deaf mutes to social life" and affirmed that "the method of articulation should have preference over that of signs in the instruction and education of the deaf and dumb." (ibid. 394).

The goal of assimilation was adopted at different times by different countries and schools. In Ireland assimilationist polices date largely from the late 1950s and early 1960s (McDonnell and Saunders 1993). In recent years, a growing body of research into sign languages and deaf cultures has led to a movement away from the idea of assimilation. These developments, notably in the United States and Scandanavia, reflect an activist deaf movement, a focus on deaf rights and the fostering of linguistic and cultural 'self determination' in deaf communities (Brennan 1992; Dolnick 1993).

Such developments have had a significant influence on the Irish deaf community (O'Leary 1989). The Irish Deaf Society, for example, has begun to advocate change (Irish Deaf Society 1993), to develop language policies for deaf children that challenge existing practices (Crean 1992; Dunne, F. 1993, 1994) and to support and administer new forms of training for its members and for professionals who work in and with the Irish deaf community (Irish Deaf Society 1992; Dunne, S. 1993).

There is a further important dimension that is peculiar to a deaf / hearing contact situation. In lay and professional discourse, deafness is most often defined as a clinical / pathologial condition; deaf people are perceived as 'impaired' or 'handicapped' and provision is structured only in terms of medical and psychological intervention and technological assistance. (*The Education of Children Who Are Handicapped by Impaired Hearing* 1972; *Report of the special Education Review Committee* 1993, 4.2; Taylor and Gregory 1991; Taylor and Laurenzi 1991).

A clinical / pathological perspective emphasises the impairment aspect of deafness; it stresses the importance of acquiring only spoken language skills; it devalues the role of sign language; and by definition it excludes the deaf community from having a significant part in determining policy (Rutherford 1988; Dant and Gregory 1991; Kannapell 1993; Terstriep 1993). The pervasive and dominant nature of a clinical /

pathological model of deaf people has obvious sociolinguistic implications. Labelling deaf people as 'impaired' or 'handicapped' makes it all the more possible to apply negative values to deaf people and their language.

### *A1.4.2 Language Status*

Another important sociolinguistic variable concerns the perceived status of the languages in a contact situation. It is often the case that one language is perceived to be a prestige form and the other a stygmatised form. In the specific case of English and Irish Sign Language, English has always been the dominant language. English is the language of hearing society. During the 19th century it was the language of the most powerful social group. English is the language of the educational system, employment opportunities and social mobility. Irish Sign Language, by comparison, has no public status. It is the language of a minority, a minority thought to be 'handicapped'; and until very recently it was not recognised as a language at all.

John Burke, chaplin to the Catholic Institution, asserted that signing would serve to remind the deaf person "of his inferiority and to give him wholesome lessons of humility" (11th Annual Report, Catholic Institution 1857: 36). More recently, Nicholas (1976) commented that sign language had limited structure and was only capable of expressing concrete ideas. Even after more than two decades of research in the United States, Woodward (1987) noted that "ASL is still considered inferior to English ... in the North American deaf community" (p.153).

The teaching of English has always been a central part of the curriculum in schools for deaf children in Ireland. During the 19th century manually coded systems were devised for teaching English through signs. During the late 1950s the schools began to develop programmes of oral education which emphasised auditory training, lipreading and the development of spoken English skills. The oralist approach had a strong anti-signing bias and strenuous efforts were made to eradicate signing among deaf pupils (Mc Donnell and Saunders 1993).

It seems to be the case that Irish Sign Language was never officially employed as a medium of teaching, even when signing was a normal part of classroom interaction. In the oralist approach all kinds of signing were marginalised or suppressed since signing was believed to hinder the acquisition of good spoken English skills (*The Education of Children Who Are Handicapped by Impaired Hearing* 1972, chap.6).

In Ireland oralism is still the dominant approach in schools and units for deaf pupils. Since language policies in educational systems have a powerful influence on practices

in other social and cultural fields, the dominant / subordinate relationship between English and Irish Sign Language remains very much intact in language contact situations which involve deaf and hearing communities.

### *A1.4.3 Language Variation*

In contact situations involving two or more languages a wide range of language variation may develop. Such variation includes lexical borrowing, code switching, code mixing, foreigner talk, pidgins, creoles and mixed systems (Hudson 1980; Wardhaugh 1986; Holmes 1992). In contact situations which involve a sign language and a spoken language the outcomes are more complex because participants may employ two different modalities, gestural / visual and vocal / aural.

Several studies have described the linguistic outcomes of contact between American Sign Language and English (Woodward 1973; Reilly and McIntire 1980; Lucas and Valli 1992). One early view among both professionals and non-professionals in deaf communities has been the notion of a language continuum (Wilbur 1979; Lawson 1981; Woodward 1987). According to this view, American Sign Language (or British Sign Language) and English stand at the extremes of a continuum which contains a range of intermediate varieties termed Pidgin Sign English (PSE).

Woodward (1973: 17) has observed that PSE is expressed in sign and "seems to be a pidginised version of English. The syntactic order is primarily English but ... there is a mixture of ASL and English structure." Reilly and McIntire (1980: 151) define PSE as "a form of signing used by many hearing people for interacting with deaf people and thus is a commonly encountered dialect of ASL."

Cokely (1983) however, has described the language outcomes of these contact situations in different terms. He argues that in ASL / English contact situations "the pre-conditions for the development of a pidgin are not adequately met" (p. 20). He describes the outcome as "one in which members of the deaf community communicate with hearing people in a foreigner talk register of ASL, and members of the hearing community communicate with deaf people in a foreigner talk register of English" (p. 11).

Stokoe (1969) and Deucher (1984) maintained that the concept of diglossia (Ferguson 1959) is applicable to deaf communities. Stokoe suggested that the 'high' (H) variety, English, was used in formal or public contexts and the 'low' (L) variety, ASL, was used in informal contexts. Lee (1982: 127) however, argued that in deaf communities "code-switching and style-shifting rather than diglossia appear to be the norm."

Some researchers have been anxious to separate native from non-native sign production. Stokoe (quoted in Lee 1982: 131) suggested that in PSE production there may be two continua: PSE (deaf) forms produced by deaf signers and PSE (hearing) forms produced by hearing signers. PSE (deaf) forms are likely to contain more ASL grammatical structures and to omit English inflections; PSE (hearing) forms tend to reflect greater English influence and rarely to approach the ASL point of the continuum. However, most researchers have abandoned the notion of a continuum and now refer to code-mixing: signers are bilingual to a greater or lesser extent and mix languages accordingly.

In their study, Lucas and Valli (1990: 303) claimed that the language contact situation between deaf and hearing communities "is considerably more complex than earlier descriptions indicate." Agreeing with Romaine (1989: 145), they point out it may not be possible to define the outcomes of language contact situations as unified, self-contained or clearly distinguishable events. They argued that in language contact studies the focus should be on the language users rather than on the languages. The occurrence of many ASL and English features cannot be predicted because "the specific linguistic competence of each individual in a specific contact situation plays a central role in what language forms are produced" (Lucas and Valli 1992: 109).

Deaf language users are not unique in this respect. It has been argued that individual characteristics play an equally important, though underestimated, role in contact situations that involve spoken languages (Romaine 1989: 283).

### *A1.4.4 Participant Characteristics*

Given that every situation is unique, an important element in language contact relates to the active and individual choices made by the participants. Thus the outcome of contact between Irish Sign Language and English for example, is shaped by the characteristics and attitudes of the language users. In discussing participant characteristics several significant factors must be taken into account.

In deaf communities there are deaf individuals whose parents are hearing and who did not sign to their children. These deaf individuals typically have attended a residential school for the deaf, learned sign language from peers and were taught a spoken language by hearing teachers. Other deaf individuals acquired sign language from their parents, attended a residential school and had the role of sign language models for their peers. There are still other members of the deaf community who learned sign language after they had left school.

Furthermore, deafness is not a uniform condition in a deaf population. The acquisition of skills in English for example, will be influenced by a range of specific circumstances such as degree of deafness, age of onset of deafness, parental attitudes, experiences of schooling, specific linguistic abilities, and so on (Quigley and Kretschmer 1982; Quigley and Paul 1984). Therefore the degree of proficiency in English among members of the Irish deaf community will vary according to individual circumstances.

Lucas and Valli (1989: 289) proposed a partial list of possible language contact situations that might occur in the American deaf community, according to participant characteristics. Their list included:-
Deaf bilinguals with hearing bilinguals;
Deaf bilinguals with deaf bilinguals;
Deaf ASL monolinguals with hearing bilinguals; and so on.

As Lucas and Valli observed (pp. 289-90), an important point is how bilingualism is defined in this context. The term *hearing bilingual* refers to hearing people who know both ASL and English. They generally have command of both spoken and written English and have acquired ASL as a first language or have learned it as a second language. However, many deaf individuals with fluent English, do not use their voices since they may be unable to monitor aspects of speech production such as volume and pitch. In a deaf community, proficiency in English does not necessarily include speaking it.

There is a difference between hearing people in language contact situations, where the languages are spoken languages, and deaf people in language contact situations, where at least one of the languages is a spoken language. The former may have varying degrees of competence in either of the spoken languages due to a variety of sociolinguistic factors. The latter may have varying degrees of competence in the spoken language for physiological reasons. A deaf person's proficiency in speaking a language is influenced by the fact that he or she does not hear. Therefore, it seems reasonable to apply the term bilingual to deaf people, who, for example, have a command of Irish Sign Language and of signed or written English.

The following diagram (Figure 2.1) illustrates some of the language contact situations that could arise in the Irish deaf community. In this diagram 'bilingual' refers to Irish Sign Language and English in its spoken, signed or written form; 'MCE' refers to manually coded English.

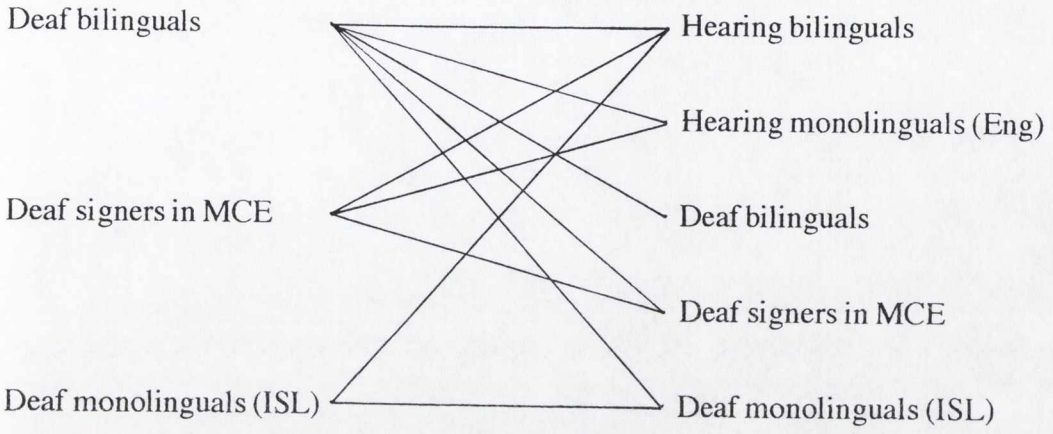



Figure 2.1 Possible Language Contact Situations in the Irish Deaf Community (after Lucas and Valli 1989: 289)

### *A1.4.5 Language Attitudes*

The attitudes of participants have a powerful influence on the linguistic outcomes in language contact situations (Holmes 1992). In communicative interaction between deaf and hearing people several sets of relationships must be considered. Firstly, how do deaf people feel about Irish Sign Language and English? Secondly, what attitudes do hearing people have towards these languages? Thirdly, what attitudes characterise relationships between deaf and hearing people?

The conflicting attitudes associated with language variation and use in deaf communities appear to be similar to those expressed among spoken language users in situations where prestige and non-prestige varieties come into contact. Kannapell (1987: 165) states that "ambivalence is the key word in understanding the language attitudes of deaf people". It is common for deaf people to express negative attitudes towards sign language, although these attitudes are often expressed only in public interaction with hearing people (Woodward 1987: 153).

Social mobility and life chances are normally associated with the standard language in language contact situations (Holmes 1992; Romaine 1994). It is likely, therefore, that English is still regarded as the standard language by the Irish deaf community. However, as Woodward (1987: 153) and Matthews (1996) point out, the deaf community also values sign language because it marks the users as insiders and helps to maintain social identity and group solidarity.

Ambivalent attitudes towards Irish Sign Language have led to some confusion as to how it should be defined. LeMaster and Foran (1987) for example, refer to the native sign language of Ireland as Deaf Sign Language and regard it as an 'informal system' (p. 83). They refer to Irish Sign Language as a system which includes "new signs" so that it can "express every grammatical unit of English" (ibid.). In sign language research such a system would normally be termed 'manually coded English' rather than 'Irish Sign Language'. (For a related discussion regarding Italian Sign Language see Corazza 1993; and regarding Norwegian Sign Language, see Schroder 1993).

Some confusion is also reflected in two sign dictionaries entitled respectively,*The Irish Sign Language* (National Association for the Deaf 1979) and *Irish Sign Language Dictionary* (National Association for the Deaf 1992). Both dictionaries include entries which are characteristic of manually coded English rather than of Irish Sign Language. Among such entries are English prefixes and suffixes and a number of pronouns specified in terms of signed English rather than Irish Sign Language. Handshapes in the dictionaries are presented as equivalents of letters of the English alphabet. In both publications there seems to be either an anxiety to confer prestige on signing by means of a contrived association with the dominant language, or a failure to distinguish clearly between Irish Sign Language and manually coded English.

The attitudes of hearing educators to Irish Sign Language, as expressed through language policies, have been mainly negative. Irish Sign Language has never been considered to have a role in deaf education. Where signing has been seen to have a role, and then only "for children who are not capable of making adequate progress when taught by oral methods alone" (*The Education of Children Who Are Handicapped by Impaired Hearing* 1972: 85), manually coded English is deemed to be the appropriate form. Sign languages, such as Irish Sign Language have been described as "crude and pictographic" (Nicholas 1979a: 2), "primitive" (Lancioni 1981: 77), "lack(ing) systematic structures" (Lewis 1968: 37) and as having a word order "often quite bizarre compared with normal English" (Reed 1984: 88).

Educators have generally equated language with spoken English and so one of the primary aims in the education of deaf children has been the teaching of speech (see for example, *The Education of Children Who Are Handicapped by Impaired Hearing* 1972, chap. 6). This approach has also been based on an assumption that access to signing compromises the ability of deaf children to acquire spoken language skills (ibid. 6.3). Consequently, teacher training and guidance programmes have been structured around a very specific and limited view of language, and research in sign

language and bilingual education have not yet made any significant impact on language policies and practices in Irish schools.

A number studies in the U.K. have reported quite favourable attitudes among the general public towards deaf people and British Sign Language (Bunting 1981; Kyle and Woll 1985). The growth in numbers attending adult sign language classes indicates that similar positive attitudes towards Irish Sign Language now exist in Irish society (Irish Deaf Society 1993). In the post-graduate courses that I teach it is common for students to assume that signing is an integral part of the education of deaf children and to express surprise when they discover that it is not so.

### *A1.4.6 Educational Experiences of Deaf People*

The education of deaf children is a highly ideological process. There are deep differences of opinion on the relative merits of different approaches, particularly with regard to the role of signing and sign language (Nolan and Tucker 1981; Quigley and Kretschmer 1982; Quigley and Paul 1984; Kyle and Woll 1985; Kyle 1987). In Ireland it is a common practice to segregrate pupils in two main ways in schools for the deaf (*The Education of Children Who Are Handicapped by Impaired Hearing* 1972, chaps. 5, 6). Pupils who are taught signed English are segregrated from other pupils; pupils who are deaf are segregrated from pupils who are hard of hearing.The degree of segregation depends on architectural and organisational features of the school and on school policy (McDonnell 1992).

It is therefore not surprising that the language attitudes of deaf people are shaped by their educational experiences (Kannapell 1987; Gregory, Silo and Callow 1991). Mc Donnell's study (1992) showed that in school, deaf pupils place great emphasis on the acquisition of skills in English; English is valued as the link with the hearing world, with education and employment. On the other hand, Irish Sign Language is valued as the link with the deaf community, with the maintenance of friendships and social intercourse.

This study also reports how pupils articulated important sociolinguistic values promoted by the school. Pupils, for example, believed that greater access to signing would lead to a deterioration in spoken English skills. At the same time pupils had considerable knowledge of signing and used it frequently; they also rejected any complete ban on signing in the school. In sum, pupils were very aware that they had different communication needs in different situations.

Educational studies by teachers of deaf children have tended to be conducted within a theoretical framework of deafness as a disability and English as the sole language of education (Wall, 1981; Moore, 1982; St. Mary's School for the Deaf 1985; O' Halpin 1990; O'Neill 1994).[6] However, attitudes among hearing educators have never been monolithic. Teachers have been aware of the gap between ideology and practice, between the intellectual potential of deaf pupils and their very low levels of academic achievement and as a result have advocated the development of bilingual policies in educational programmes for deaf children (McDonnell, P. 1980; McDonnell, J. 1992).

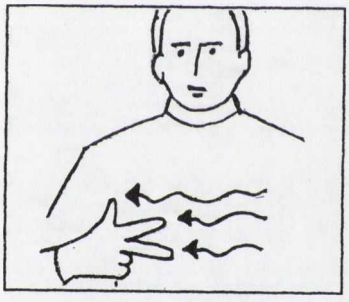
A small number of studies have focussed more directly on sign language issues (O' Murchu 1976; Burns 1991; Maguire 1991; McDonnell 1993, 1994). Kyle and Woll (1985) and Kyle (1987, 1990) note that awareness and use of sign language within deaf education is greatly on the increase in Europe and the United States. They point out that attitudes to sign language are changing and they relate this change to the existence of systematic research programmes which study the languages of deaf communities.

Although deaf people in Ireland in the past have been conscious of the positive benefits of signing in education (St. Vincent's Deaf Community Centre 1981; Irish Deaf Society 1986, 1987, 1988) recent developments in other countries have had a significant impact on the Irish deaf community. Deaf organisations, for example, have taken a more active role in arguing a case for bilingual education (Power 1987; Lynch 1988; McManus 1988; Crean 1992; Dunne, F. 1993). The contribution of the Irish deaf community to the debate on educational provision for deaf children indicates an important change in attitudes towards Irish Sign Language among members of the community. Increasingly, in the Irish deaf community and among professionals working in and with the deaf community, English and Irish Sign Language are being recognised as two distinct languages with the possibility that both can have important but separate roles in deaf education (Irish Deaf Society 1992).

### *A1.4.7 Contact between Sign Languages*

Contact between sign languages has brought about linguistic change in deaf communities in the past. There is substantial evidence, for example, that American Sign Language has been changed through contact with French Sign Language (Woodward 1978; Woodward and De Santis 1977). In this appendix I have already discussed probable influences of British Sign Language and French Sign Language on Irish Sign Language during the 19th century.

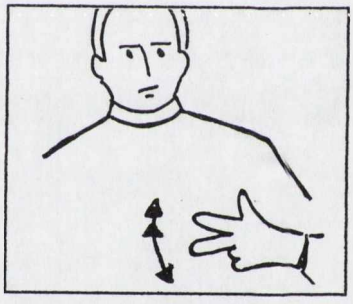
In more recent years other linguistic changes have occurred in Irish Sign Language as a consequence of closer and more regular contact between the Irish deaf community and deaf communities in other countries. Thus, Irish Sign Language signs for the names of countries are being replaced in Irish Sign Language by the signs used by the deaf communities of the countries in question. Instances of this borrowing are the signs, DENMARK and THE NETHERLANDS (examples A1.1 and A1.2 below). Similarly, certain terms that recur in research publications or in papers given at international conferences, are being borrowed by Irish Sign Language users. The sign CLASSIFIER (A1.3) is a particularly interesting example. This sign has been borrowed from American Sign Language and has entered Irish Sign Language probably *via* British Sign Language. In the process of borrowing, the original meaning of the sign has been changed and a movement has been added. In American Sign Language, the sign refers to a particular kind of classifying stem meaning 'vehicle'. In Irish Sign Language it has become a linguistic term for the whole category of classifying stems (see also 6.3.1.3).



(A1.1) DENMARK



(A1.2) THE NETHERLANDS



(A1.3) CLASSIFIER

There is also on-going contact between British Sign Language and Irish Sign Language. The Irish deaf community is aware that its members are borrowing signs from British Sign Language (Buckley 1994; Byrne 1994; Saunders 1994) and this practice is the cause of some concern within the community (Buckley 1994; Byrne 1994).

Contact between Irish Sign Language and British Sign Language seems to occur through two main routes. Firstly, movement to and from Britain has a long history in the lives of many Irish people, hearing and deaf. It is reasonable to suppose that this movement of Irish deaf people would involve contact with the British deaf community. Members of the Irish deaf community observe that the signing of returned emigrants includes "a lot of BSL signs" (Saunders 1994).

A second route of contact has been through British television programmes. The absence of Irish Sign Language-based programmes on Irish television has created a particular interest in British programmes which employ British Sign Language. Since these programmes can be received in Ireland they have become a source of borrowing from British Sign Language by signers in Ireland (ibid.).

Of course the linguistic traffic between Irish Sign Language and British Sign Language has not been all one-way. Brennan (1992: 94) points out that some varieties of British Sign Language have incorporated loan signs from Irish Sign Language. She suggests that such borrowing was due to the presence of members of Irish religious orders in schools and deaf centres in areas such as Manchester, Liverpool, London and Glasgow. However, it is also important to note that these cities have large populations of Irish people, populations which must include many Irish deaf people.

### *A1.4.8 Irish Sign Language and Gender*

The relationship between language and gender is a major issue in sociolinguistics (Wardhaugh 1986; Holmes 1992).[7] Studies of spoken languages have shown that gender-related variations exist in phonology, intonation patterns, vocabulary and other features (Graddol and Swan 1989; Coates 1986). The presence of gender-based lexical variation is a feature of Irish Sign Language use in the Dublin deaf community (Le Master and Dwyer 1991) and in other parts of Ireland (LeMaster 1990; Hernon 1994).

LeMaster found that both men and women demonstrated a high level of comprehension of each other's signs but women were better able to reproduce male signs than vice versa. These findings supported the belief in the community that women learn men's signs but men do not learn women's signs. In the Irish deaf community a gender differentiated vocabulary has its roots in the educational experiences of deaf pupils and is maintained through the socio-cultural elaboration of gender in the adult community (LeMaster 1990).

The special schools attended by the great majority of members of the Irish deaf community are single-sex schools, St. Joseph's School for boys and St. Mary's School for girls.There was some contact between the schools in the years after they were established; as time passed however, each school developed its own distinct expertise in teacher training and designed its own curricula and materials so that eventually they were employing distinctive vocabularies of pedagogical signs. During the period that manually coded English was the language of the curriculum, that is, up to the 1950s, girls were taught 'female' signs and boys were taught 'male' signs.

In spoken languages sociolinguists have suggested that men are more likely to use marked forms of language (Trudgill 1983; Holmes 1992; Romaine 1994); in Irish Sign Language female forms of signing are more likely to constitute a marked variety (LeMaster and Dwyer 1991). The male form is used by men in male / male and in male / female interaction; the male form is also used by women when they communicate with men or with women in the presence of men. LeMaster and Dwyer observe that female signs are maintained by women who are unmarried and interact infrequently with men; they are also maintained during 'women only' social occasions. On these occasions, women who know both male and female signs will tend to use female signs.

### *A1.4.9 Irish Sign Language and Age Related Variation*

Age is an important variable which influences language use (Downes 1984; Holmes 1992; Romaine 1994). The particular age related variable which I wish to discuss in relation to Irish Sign Language is linked to the different educational experiences of deaf pupils who attended St. Joseph's and St. Mary's schools before the late 1950s as opposed to the experiences of those who attended after this period.[8]

From the mid-19th to the mid-20th century, signing was the accepted medium of communication in these schools. Although Irish Sign Language was not the language of the curriculum, there was no debate about signing *per se* ; it was accepted as a legitimate activity and was seen to be an integral element in the education of deaf pupils.

During the 1950s however, St. Joseph's and St. Mary's schools changed to an oral system of education (*The Education of Children Who Are Handicapped by Impaired Hearing* 1972, Appendix V) which emphasised auditory training, speech and lip-reading. Oral programmes were introduced gradually and by the 1960s they were well established. Since oralist educators believed that signing interfered with the ability of pupils to acquire skills in spoken English, strenuous efforts were made to prevent signing among pupils (McDonnell and Saunders 1993).

Younger deaf people therefore, who attended the schools after the introduction of oralism, have not had the same access to pedagogical signs as older members of the Irish deaf community. There is anecdotal evidence that young signers use less fingerspelling and more mouthing than older signers.[9] It is reasonable to argue that increased mouthing is related to the experience of having been taught lipreading and speech at school. Thus, there is no doubt that age related variation in signing exists in the Irish deaf community although its extent and circumstances have yet to be studied.

Age variation interacts with gender differences in Irish Sign Language usage (LeMaster and Dwyer 1991). Since the introduction of oral schooling programmes, gender related lexical differences have diminished among young signers. Although the male form of signing remains the dominant variety, younger male and female signers use some female signs, unware of the historic link between these signs and gender (ibid. 393).

### A1.5 Conclusion

In this appendix we described the political and social context in which the modern deaf community developed and identified a number of significant formative influences on modern Irish Sign Language. We argued that residential schools for deaf children have played a significant role as settings for the transmission of Irish Sign Language and in which Irish Sign Language has come into contact with other languages.

In particular, we noted that Irish Sign Language exists in a contact relationship with English and that this has an important bearing on the status of, variation in, and attitudes towards sign language. Although it is the language of the deaf community, we pointed out that Irish Sign Language has not yet been given any official role in the education of deaf children and that its current position is very much that of a marginalised, minority language.

We have seen that the minority status of Irish Sign Language has given rise in the past to considerable misunderstanding as to its linguistic nature but that several developments in recent years have brought about a different perspective. We also suggested that the active involvement of deaf people in public discussion on education and other social issues, the establishment of sign language classes, the development of sign language interpreter training, and the beginning of linguistic research have all contributed to a new understanding of Irish Sign Language.

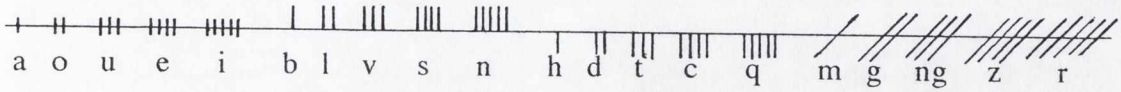
### Notes

1.Although van Uden uses the term 'signs', it is clear from his discussion that he is referring to primary sign language.

2. In a manual alphabet the letters of a written language are represented by particular handshapes as in Irish Sign Language, or by particular arrangements of the hands as in British Sign Language.

3. There is evidence of an awareness in early Irish society that manual signs could be used to express linguistic meaning (see Stokoe 1974). The ogham alphabet was used in writing in Irish from the 4th century AD (O' Boyle 1980). The basic alphabet consists

of 20 characters or sets of characters, divided into four distinct groups. The characters are depicted as notch-like marks along a central line and while they could conceivably be a direct representation of phonemic values in a Q-Celtic language, their organisation suggests a substitution code for the letters of a conventional alphabet.




Most examples survive as stone inscriptions where the letters are notched into the edge of the stone. However, different forms of ogham existed, three of which were called sron (nose) ogham, cos (leg) ogham and bos (palm) ogham. It is probable that these were signed versions of the ogham alphabet in which fingers were used to represent the letters on the nose, the shin-bone or the edge of the palm.

4. Thomas Braidwood began to teach deaf pupils in Edinburgh in 1760. In 1810 a school opened with the one of Braidwood's grandsons as head (Kyle and Woll 1985: 38-39).

5. Fingerspelling is based on a manual alphabet where particular handshapes refer to particular letters of the alphabet. Thus English words can be spelled manually and incorporated into Irish Sign Language discourse.

6. Schools employ an audiometric definition of deafness. Thus, 'deaf' refers to pupils with a hearing loss of 90db or over; 'hard of hearing' refers to pupils with a hearing loss of 85db or under (*The Education of Children Who Are Handicapped by Impaired Hearing* 1972, chap.2).

7. The term 'gender' rather than 'sex' is used in this section in order to focus on the socio-cultural rather than the biological dimensions of male / female differences. In her study of the Dublin deaf community LeMaster (1990) investigated gender-based lexical variations in the following semantic domains:- kinship, religion, people, calendar, time of the day, animals, food and colour.

8. A much smaller number of pupils, mainly Protestant, attended the co-educational school at Clermont, Dublin, while the Ulster Institution near Belfast catered mainly for the Protestant population of Northern Ireland (McDonnell 1979).

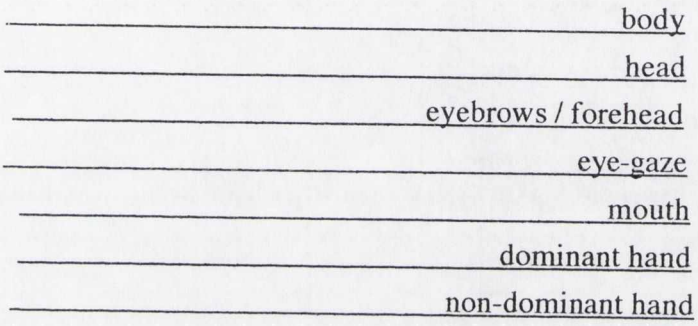
9. Mouthing refers to whispered or voiceless articulation or mouth movement which may accompany signing. It is important to distinguish between different kinds of

mouthing. Some patterns are specific to Irish Sign Language, are an integral part of particular signs and have no connection with English. Other mouthing involves the full articulation, without voice, of an English word. There is also 'reduced English mouthing' where only a part of the English word is preserved. The latter form of mouthing may have become an integral part of an Irish Sign Language sign, but is related to an English word (see Davis 1989; Schermer 1990).

## APPENDIX 2
## GUIDE TO NOTATION

### A Notation 'Score'

Manual signs are given English glosses. The glosses are supplemented by symbols for non-manual features and for modifications of signs. A notation 'score' is used when it is necessary to provide a gloss that includes the activities of a number of different features. Very detailed notation would represent the activities of the features indicated in Figure A1.




### Gloss Guide

| | |
|---|---|
| CAT; DON'T-KNOW | Block capitals indicate nearest equivalent in English. A hyphen is used when more than one English word is required for one sign. |
| OUT^FOR | ^ indicates a compound sign |
| g-l-a-s-s | Hyphenated lower case letters indicate fingerspelling |
| "lunch"<br>FOOD | Signers may accompany a sign with an articulation of an English word or with a mouth pattern that silently imitates that articulation. |
| n<br>TRAIN ARRIVE | Non-manual features are usually indicated by a line over the relevant signs and by an appropriate symbol. The symbol 'n' denotes negation. Other symbols are: 'q' (yes / no interrogative); 'whq' (wh question interrogative); 't' (topicalisation marker); 'ee' (an adverbial meaning 'with effort'). Symbols of this kind usually imply that a number of features from the notation score are combined in a single symbol. |

| | |
|---|---|
| c+LOOK-AT+fr | 'c' and 'fr' refer to particular locations or directions in signing space. 'c' denotes the canonical or sender locus; 'fr' denotes a location or direction forward and to the right of the signer; 's' indicates sidewards and 'l' indicates left of the signer. Neutral locations are not indicated except for purposes of illustration. |
| PRON1 | First person pronoun |
| PRON-f; PRON-fr; PRON-fl | Non first person pronouns |
| PRON-c LIKE<br>PRON-fr ---------- | The upper line represents the activity of the dominant hand, the lower line the activity of the non-dominant hand. The dotted line indicates that the sign is maintained in a particular position. |
| (BOY) c+LOOK-AT+fr<br>(SNOW^MAN) | Nominals not explicitly signed but which are inferred from the context are placed in round brackets. |
| [BE-IN-A-PRAYERFUL-POSTURE ...] | Square brackets are used to indicate a reference shift. (See 2.7.5). |
| Flat-surface-entity-CL<br>Flat-surface-entity-CL | 'CL' denotes the classificatory function of a handshape. The upper line indicates the activity of the dominant hand, the lower line the activity of the non-dominant hand. |
| V-CL | An inverted V handshape denotes saliently two-legged animate entities. |
| Index-CL | The extended index finger, pointing upwards, denotes saliently one-dimensional entities. |
| Body-CL | The signer's body denotes an entity. |
| Vertical-2D-entity-CL | '2D' indicates that the entity is two dimensional. |

Classifier handshapes combine with a great variety of movements. The following are some of the more common examples:

| | |
|---|---|
| EXIST | The hand is held in position but the location as such is not emphasised (i.e. negative movement). |
| BE-LOCATED | A particular location is denoted by an abrupt stop in the movement of the hand. |
| MOVE | A movement of the hand(s) from one location to another. |
| MOVE-arc<br>MOVE-circle<br>MOVE-random path | Different kinds of movement of the hand refer to the motion of an entity |
| EXTENT | Refers to the outline / shape / extent of an entity. |
| IMIT: flip over | Refers to a stylised resemblence to a real world movement or posture |
| orientation-change | The orientation of the fingers and / or palm changes. |

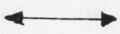
**Symbols Used in the Illustrations**

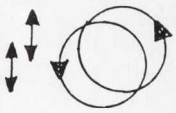

A movement in the direction of the arrow

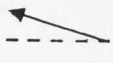

Circular movement on a vertical plane

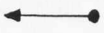

Circular movement on a horizontal plane


Swivelling movement


Movement to and fro


Alternate movements


Movement involving a change in orientation


Movement which begins in contact


Movement in which contact is maintained with another articulator



Movement ending in contact or abruptly in signing space



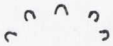
Movement with passing contact



Movement is repeated



Movement towards / away from the signer



Wiggling movement of the fingers



Slow or deliberate movement

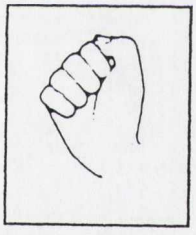


Fingers open from a closed position

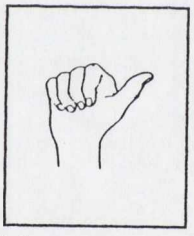


Fingers close from an open position

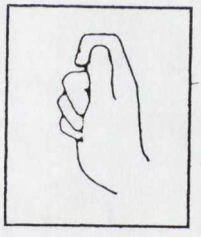
**Selected Handshapes**



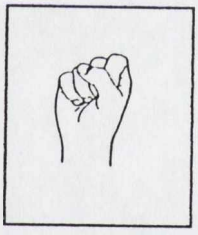
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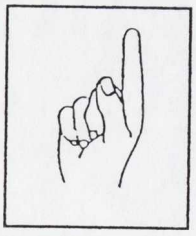
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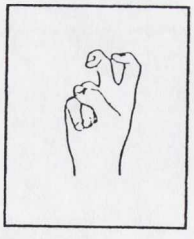
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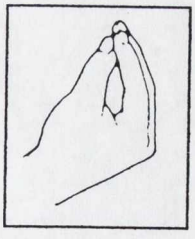
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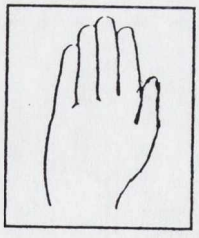
G



V¨



B^



B

## APPENDIX 3
## LIST OF EXAMPLES ON THE VIDEOCASSETTE

### Chapter 2 Structural Parameters of Sign Languages

2.1 B

2.2 Five

2.3 A

2.4 One

2.5 Signing space

2.6 KNOW

2.7 MY

2.8 WAIT (arms version)

2.9 SUPPORT

2.10 DON'T-KNOW

2.11 EAT

2.12 MEET

2.13 DIFFERENT

2.14 SORRY

2.15 SIGN (v.)

2.16 DELAY

2.17 NUMBER

2.18 HOME

2.19 SHARP

2.20 JUDGE (v.)

2.21 SLOW

2.22 ONE

2.23 YOU

2.24 I

2.25 SMALL (person)

2.26 NOW (one-handed)

2.27 PARTY (celebration)

2.28 TREE

2.29 SUN

2.30 ORANGE

2.31 YESTERDAY

2.32 APPLE

2.33 SAME

2.34 CONSULT

2.35 POLITICS

2.36 MEAT

2.37 FULL

2.38 TICKET

Figure 2.1 FORGET (ISL)

Figure 2.2 and example 2.39 LIKE (ASL)

2.40 TWO-PERSON-BE-LOCATED-OPPOSITE-EACH-OTHER

2.41 QUARREL

2.42 ONE

2.43 LIGHT ('candle' version)

2.44 PAIN

2.45 FEEL-ONE'S-WAY (in the dark)

Figure 2.4 WALK-WITH-EASE WALK-WITH-DIFFICULTY

2.46 th
(ISL) ... NOTHING UNBALANCED
(ISL) is not a clumsy language.

2.47 cs
TRAIN ARRIVE
The train just arrived.

2.48 mm
LIKE SNOOKER
I enjoy snooker.

ee
2.49 ...DRIVE
... drive hard

n
2.50 BOY COME HOME
The boy did not come home.

2.51 DRINK

2.52 CANCEL

2.53 BE-DISAPPOINTED

2.54 HOUSE

2.55 SCISSORS

2.56 BIRD

2.57 TREE (ASL)

2.58 TREE (Chinese Sign Language)

2.59 TREE (Danish Sign Language)

2.60 TREE (Irish Sign Language)

2.61 SCOTLAND, SCOTTISH (ISL)

2.62 SCOTLAND, SCOTTISH (BSL)

2.63 DREAM

2.64 BREAD

Figure 2.5 THEN EYE UNDER WALK BALL

2.65 ' ... in the near future'

2.66 CAT (ASL)

2.67 SNOW^MAN BE-THERE-f

2.68 Signer locus (c-locus)+LOOK-AT+f
I looked at (the snowman)

2.69 NO!

2.70 T-V 3D-entity-CL + BE-LOCATED + fl
The television was located there on my left

2.71 c + ASK + fl
I asked (someone)

2.72 c + LOOK-AT + fl
I looked at (someone)

2.73 f / lo
MOTHER c + GIVE + f / lo FOOD
Mother gave him his dinner.

2.74 HERE

2.75 NEAR

2.76 THERE

2.77 FAR

2.78 TO 2.79 FROM

2.80 head and shoulders lean forward and down
body oriented left
[ MOTHER-fl WAIT+fl FIRST Handle-entity-CL+MOVE-imit: put on+c
Handle-entity-CL+MOVE-imit: put on+c
Body-CL+EXIST+shoulders-fl ----------] /
c+RUN+f OUT^FOR

(The boy) hurried downstairs to run out. His mother said, "Wait! First put on your coat." Then he ran outside.

2.81 n
DAY DET-f DAY NOTHING PRON1 KNOW WHY / WE PRAY /
[ BE-IN-A-PRAYERFUL-POSTURE ... Handle small entity-CL+
MOVE-imit: push button+sr / BE-IN-A-PRAYERFUL-POSTURE /
Handle small entity-CL+MOVE-imit: push button+sr OFF ] /
WE BE-UNCERTAIN fr+LOOK-AT+fl+reduplicate
fl+LOOK-AT+fr+reduplicate

That particular day there was none (overhead projector) I don't know why. We prayed. The priest stood there in a prayerful attitude. He switched on the cassette and resumed his prayerful posture. Then he switched off the cassette. We were uneasy and looked at one another.

2.82 (BOY) (SNOW^MAN-f) c+LOOK-AT+f
The boy looked at the snowman

2.83 t
BOY YOUNG BOY V-CL+BE-LOCATED-under-left-hand----------
Flat-surface-entity-CL+BE-LOCATED-over-right-hand
SLEEP WAKE V-CL+BE-LOCATED-on-left-hand+orientation change
Flat-surface-entity-CL+BE-LOCATED-under-right-hand

This young boy went to bed. He slept. He woke up and rolled over ...

(3.1) c+GIVE+f (ASL)
I gave (someone) ...

(3.2) f+GIVE+c (ASL)
(Someone) gave me ...

(3.3) PRON1 LIKE PRON-f (ASL)
I like (someone)

(3.4) PRON-f LIKE PRON1 (ASL)
(Someone) likes me

(3.5) c+ASK+fr (ASL)
I asked (someone)

(3.6) fr+ASK+c (ASL)
(Someone) asked me

(3.7) BOY sr+WALK+sl (ASL)
The boy walked (from location a to location b)

(3.8) c+GIVE+f (BSL)
I gave (someone) ...

(3.9) f+GIVE+c (BSL)
(Someone) gave me ...

(3.10) c+ASK+f (BSL)
I asked (someone) ...

(3.11) f+ASK+c (BSL)
(Someone) asked me ...

Figure 3.1 S-u-e HIT M-a-r-y

(3.12) topic head nod
STICK 10, M-A-R-I-S-A 0 SBP 0 10 CL: HAND [S/S] + BREAK (ASL)
stick-topic Marisa RP- (round-solid-object) causative-break
Marisa broke the stick

(3.13) t avert
STICK 10, SBP 0 10 CL: G/G + BREAK [inchoative] (ASL)
stick-topic RP-negated-long-thin-object-break
The stick broke

(3.14) JOHN 5 (SBP 5) SCARE 4 MARY 4 (ASL)
John scared Mary

(3.15) c+HELP+f (ASL)
I helped you ...

(3.16) BOY V-CL + (c / hi + MOVE + f / lo)
The boy rushed downstairs

(3.17) ANNE fr+ANSWER+c (Danish SL)

(3.18) f+SUPERVISE+c (BSL)
(You) supervise me.

(3.19) not shown

(3.20) c+ASK+fr
I asked (someone).

(3.21) c+EXPLAIN+fl (BSL)
I explained to (someone)

(3.22) fl+GIVE+c (BSL)
(Someone) gave me ...

(3.23) (DAN) fl+EXPLAIN+c (DanishSL)
(Dan) explained it to me

(3.24) (DOG-fl) (CAT-fr) fl+BITE+fr (ASL)
The dog bites the cat

(3.25) (DOG-fl) (CAT-fr) PRON-fr LIKE PRON-fl (ASL)
The cat likes the dog

(3.26) - (3.27) not shown

(3.28) ANNEGRETHE neu+EXPLAIN+c .. 1p (Danish SL)
Annegrethe will explain it to me.

(3.29) fl+EXPLAIN+c (Danish SL)
He told me

(3.30) f+TELL+c (ASL)
(Someone) told me

(3.31) WASH $_a$ (WALL) (a) (ASL)
(Someone) washed (the wall)

(3.32) WOMAN $_a$WANT $_b$WANT $_c$WANT (ASL)
The women $_i$, $_j$, $_k$ are each wanting.
The woman wants this $_i$, that $_j$ and that one $_k$, too.

(3.33) WOMAN WANT WANT WANT (ASL)
$_a$PRO $_b$PRO $_c$PRO
The women $_i$, $_j$, $_k$ are each wanting.
The woman wants this $_i$, that $_j$ and that one $_k$, too.

(3.34) WOMAN GIVE $_a$ GIVE $_b$ GIVE $_c$ (ASL)
$_a$PRO $_b$PRO $_c$PRO
The woman gave it to her, him and her, too.

(3.35) - (3.43) - not shown

(3.44) Handle-cylindrical entity-CL+MOVE-arc+BE-LOCATED+f (ASL)
(I) placed a tumbler on (the table)

(3.45) V-CL+MOVE-arc+BE-LOCATED+f (ASL)
(A bird) landed on (a table)

(3.46) B hand (BSL) (3.47) Wm hand (BSL)

(3.48) H hand (BSL) (3.49) O hand (BSL)

(3.50) F hand (BSL) (3.51) A hand (BSL)

(3.52) 5 hand (BSL) (3.53) 'clawed' 5 hand (BSL)

(3.54) 'curved' 5 hand (BSL)

(3.55) Cylindrical-entity-CL+EXIST+fr g-l-a-s-s
There was a tumbler ...

(3.56) HOUSE COUNTRY FAR General-3D-entity-CL+BE-LOCATED+fr
(The house) was situated in the middle of the countryside

(3.57) WE Multiple-entity-CL+c+PATH+fl ...
Multiple-entity-CL+c+PATH+fl ...
We all went out ...

(3.58) Long-thin-vertical-entity-CL+f+IMIT: recoil+contact-c
BODY-CL+EXIST+face----------
(The punch ball) swung back and hit him in the face

(3.59) Trace-long-narrow-entity-CL+EXTENT+sr
Trace-long-narrow-entity-CL+EXTENT+sl
(There was) a skateboard ...

(3.60) Index-CL+BE-LOCATED-by left hand (Swedish SL)
Vehicle-CL+EXIST+fingertips
... a person is located by the front of the car

(3.61) Vehicle-CL+sr+MOVE+sl+fingers+contact left hand (SwedishSL)
Vehicle-CL+EXIST+mid-part of hand
... the front of one car drove into the side of another car

(3.62) V-CL+('motion'-line+sr)
The small animal moved away

(3.63) Two-dimensional-entity-CL+('distribution'-line+sr)
The books were on the shelf

(3.64) Flat-surface-entity-CL+('extent'-line+sr)
Flat-surface-entity-CL+(hold ----------)
... a board of this length ...

(3.65) Handle-small-round-entity-CL+('motion'-line+sr)
(Someone) moved the bead along

(3.66) fr+ASK+fl
(Someone) asked (someone).

(3.67) PRON-fl ANSWER PRON-fr
(Someone) answered (someone).

(3.68) PRON-fr sr+RUN+sl
(Someone) ran from there 1 to there 2.

(3.69) PRON-fr RUN OUT^FOR
(Someone) ran outside.

(3.70) PRON-fr RESPECT PRON-fl
(Someone) respected (someone)

## Chapter 4 Plain Verbs in Irish Sign Language

(4.1) PRON1 LIKE PRON-f
I like you

(4.2) PRON-fr LIKE PRON-fl
She likes him

(4.3) LIKE PRON-f
PRON-fl ----------
She likes you.

(4.4) _____q
PRON-f LIKE PRON-fr PRON-f
Do you like him?

(4.5) FEEL

(4.6) BE-ANGRY

(4.7) HATE

(4.8) BE-HAPPY

(4.9) BE-FRUSTRATED

_____n
(4.10) PRON-f EXAGGERATE NOT TRUE FATHER D- PRON-sl SAY
"You are exaggerating! It's not true," Fr. D. said.

_____h/n
(4.11) PRON 1 SAY TRUE+reduplicate
I said, "It's certainly true."

(4.12) PRON-sl SAY LIE+reduplicate RUBBISH+reduplicate
He said it was completely untrue ... utter nonsense

(4.13) COLD DAY PRON1 REMEMBER PRON-fl
I remember it was a cold day.

(4.14) _____q

EVENING LATE PRON1 c+GET-ATTENTION+sr REMEMBER PRON-sr

Later in the evening I button-holed him and asked, "Do you remember ?"

(4.15) PRON-sr YES / REMEMBER VERY WELL

He said, "Certainly! I remember very well."

(4.16) PRON1 UNDERSTAND

I understood

(4.17) BOY ... BE-SHOCKED

The boy ... was astonished

(4.18) CONTINUE + reduplicate Handle-general-entity-CL+MOVE-imit: roll
Handle-general-entity-CL+MOVE-imit: roll

(The boy) went on making (the snowman)

(4.19) PLANE DELAY

The plane was delayed

(4.20) BOY ... LAUGH
LAUGH

The boy ... laughed and laughed

(4.21) PRON1 Multiple-entities-CL+f / lo+MOVE-to mouth+reduplicate
Multiple-entities-CL+f / lo+MOVE-to mouth+reduplicate

Handle-small-entity-CL+lo+MOVE-to mouth+reduplicate
Handle-small-entity-CL+lo+MOVE-to mouth+reduplicate

BE-LARGE

I've been stuffing myself. I put on weight.

(4.22) _____n

WAVE-'No' + reduplicate PRON-f PUNISH

Don't do that! You'll be punished

(4.23) _____n

FINISH MASS

(The priest) did not finish Mass

(4.24) BOY c+LOOK+fr ... [STAND-STILL]
The boy looked at (the snowman). It stood there, motionless.

(4.25) PRON1 WAIT
I waited

(4.26) BOY GO RUN OUT^FOR
The boy ran outside

sr
(4.27) (BOY) LOOK
(The boy) looked out

(4.28) SNOW^MAN DOFF-HAT BOW
The snowman doffed his hat and bowed

(4.29) BOY V-CL + c / hi+MOVE+f / lo+rapid ... Index-CL+sl+MOVE+fr
The boy hurried downstairs ... and rushed out

(4.30) ee
RUN ... Index-CL+sr+MOVE+fl ... RUN
He ran out

(4.31) BOY RUN OUT^FOR
The boy ran outside

(4.32) T-V BREAK
The television is broken

(4.33) MEET CHRISTIAN-BROTHER MEET
(He) met a Brother

(4.34) BOY ... FIND-sl ORANGE-sl
The boy ... found an orange

(4.35) BOY ... COLLECT-sl c-o-a-l -sl
The boy ... gathered coal(s)

(4.36) sl
BOY EAT-sl ALL-sl FINISH-sl sl+GO-TO+fr
When the boy had eaten everything he went back outside

(4.37) MAN FALL (ASL)
The man fell

(4.38) CUP FALL (ASL)
The cup fell

(4.39) Handle-small-entity-CL+MOVE-towards mouth
Body-CL+EXIST+mouth ----------
(EAT)

(4.40) Handle-small-entity-CL+MOVE-towards mouth
Body-CL+EXIST+mouth+open+close ----------
(POP-SOMETHING-INTO-ONE'S-MOUTH)

(4.41) AND gesture STOP
Then (he) stopped

(4.42) MEET CHRISTIAN-BROTHER MEET
(He) met a Brother

(4.43)

whq
WHEN S-h-e-i-l-a ARRIVE DUBLIN WHEN
When did Sheila arrive in Dublin?

(4.44) TO-MORROW CAR MEND
The car will be fixed to-morrow

(4.45)
STOP: (F) Two-dimensional-entity-CL+(path-downwards+palm-edge+locate on left hand)
(G) Flat-surface-entity-CL+(hold)
A two-dimensional entity drops on to a stationary flat surface

(4.46)
MEET: (F) Three-dimensional-entity-CL+(path-leftwards+contact with left hand)
(G) Three-dimensional-entity-CL+(path-rightwards+contact with right hand)

Two three dimensional entities approach each other from opposite directions and make contact

(4.47)

ARRIVE: (F) Two-dimensional-entity-CL+(path-arc+fingertips+locate on left hand)
(G) Flat-surface-entity-CL+(hold)

A two-dimensional entity approaches and makes contact with a location on a stationary flat surface

(4.48)

MEND: (F) Flat-surface-entity-CL+(orientation change+contact left hand)
(G) Flat-surface-entity-CL+(hold)

A flat surface entity makes contact with another flat surface entity

(4.49) V-CL+MOVE-arc+BE-LOCATED+on left hand
Flat-surface-entity-CL+EXIST ----------
(A bird) landed on (the bird table)

(4.50) (SNOW^MAN BOY) ARRIVE V-CL+BE-LOCATED+c
V-CL+BE-LOCATED+c
(The snowman and the boy) arrived back (at the house)

(4.51) B-u-s ARRIVE
The bus arrived

(4.52) SHOE PRON1 MEND
I mended the shoe

(4.53) TWO-OF-THEM QUARREL FINISH MEND
They ended their quarrel and made up

(4.54) V-CL+MOVE-arc+orientation change+BE-LOCATED+on left hand
Flat-surface-entity-CL+EXIST ----------
(Someone) got up / out of bed

(4.55) V-CL+BE-LOCATED+on left hand+orientation change+reduplicate
Flat-surface-entity-CL+EXIST ----------
(Someone) tossed and turned / slept restlessly

(4.56) SEE+f AGAIN
(I) will see (you) again

(4.57) (SNOW^MAN) OPEN-DOOR SEE CLOTHES

PRON-sl FATHER CLOTHES

The snowman opened the door and saw clothes, his (the boy's) father's clothes

(4.58) - (4.61) not shown

(4.62) _____n

PRON1 DON'T-KNOW WHY

I don't know why

(4.63) HAVE-IDEA AROUND f-e o-r j- THERE+timeline

I think it was around January or February, about that time

_____n

(4.64) PRON1 BELIEVE PRON-f

I don't believe you

(4.65) LIE-IN-BED ... DREAM ... V-CL+BE-LOCATED+on left hand+orientation Flat-surface-entity-CL+EXIST ----------

change+reduplicate

---

(He) lay in bed ... dreamed ... and tossed and turned

(4.66) P-e-t-e-r BE-STUPID

Peter was stupid

(4.67) PRON1 BE-ANGRY

I was angry

(4.68) A-l-a-n WORRY LITTLE

Alan was somewhat worried

(4.69) LOVE PRON-fr

PRON-sl

She loves him

(4.70) SURPRISE / Small-multiple-entities-CL+f / hi+MOVE+f / lo+wiggle-fingers Small-multiple-entities-CL+f / hi+MOVE+f / lo+wiggle-fingers

He got a surprise. It was snowing

(4.71) DAY BE-COLD
It was a cold day

(4.72) FIRE BE-HOT
The fire was hot

q
(4.73) PRON-f BE-ILL PRON-f
Were you ill?

(4.74) LIVE+reduplicate SNOW^MAN LIVE
He was alive! The snowman was alive.

(4.75) BOY EAT-sl ALL-sl FINISH-sl ...
When the boy had eaten everything ...

(4.76) ee ee
RUN Index-CL+sr+MOVE+fl RUN
He rushed out

(4.77) SNOW^MAN [STAND-WITH-HANDS-ON-HIPS]
The snowman stood with his hands on his hips

(4.78) KNOW (4.79) FORGET (4.80) LOVE

(4.81) BE-ANGRY (4.82) 'goodness' (4.83) 'badness'

(4.84) DRINK (4.85) DIVE

(4.86) BOY SLEEP Handle-entity-CL+EXIST+c
Handle-entity-CL+EXIST+c
Body-CL+EXIST+chin
The boy was under the blankets asleep

(4.87) (BOY) SHAKE-HANDS
The boy shook hands

(4.88) (SNOW^MAN) BOW
The snowman bowed

(4.89) (SNOW^MAN) WAVE 'No'
The snowman said, 'No, no!'

(4.90) CRY (4.91) SMELL (4.92) KILL

(4.93) BE-DISAPPOINTED (4.94) TRY (4.95) BE-READY

(4.96) BOY ... BE-DISAPPOINTED / SNOW^MAN MELT
The boy ... was dismayed. The snowman had melted

(4.97) (BOY) ... SLEEP TRY SLEEP
(The boy) ... tried to sleep

(4.98) _____q
PRON+f BE-READY
Are you ready?

(4.99) BE-COLD (4.100) BE-HOT

(4.101) BE-ILL (4.102) BE-WELL

(4.103) _____fr
STARE
He stared at ...
He stared in this direction ...

(4.104) fl------fr
STARE
He stared at ...
He stared in this direction

## Chapter 5 Agreement Verbs in Irish Sign Language

(5.1) (HOUSE-fr) (SCHOOL-fl) RUN+fr+MOVE+fl
(I) ran from the house to the school

(5.2) (BOY-c) (SNOW^MAN-sl) c+LOOK-AT+sl
The boy looked at the snowman

(5.3) NOTHING
nothing

(5.4) SAY-TO+f
(I) told (someone)

(5.5) BE-PREGNANT
to be pregnant

(5.6) c+ASK+f
(I) asked (someone)

(5.7) CONTROL
to control

(5.8) c+CONSULT+f
f+CONSULT+c
(We) consulted (each other)

(5.9) ASSESS
to assess

(5.10) fr+ARGUE+fl
fl+ARGUE+fr
(They) argued with (each other)

(5.11) DESTROY
to destroy

(5.12) PAY+fr
(I) paid (someone)

(5.13) EARN
to earn

(5.14) Index-CL+fr+MOVE+c
(I) ran from there to here

(5.15) c+ASK+fr (FATHER-fr)
(I) asked my father

(5.16) c+RUN+fr
(I) ran from here to there

(5.17) I $_{c}$GIVE$_{d}$ exhaustive
I gave one to each of them

(5.18) I $_{c}$PUT$_{d}$ ; $_{c}$PUT$_{e}$ ; $_{c}$PUT$_{f}$
I put one in each of those places

(5.19) I $_{c}$PUT$_{d}$ ; $_{c}$PUT$_{g}$ ; $_{c}$PUT$_{h}$
I put one here; I put one near the first, and I put
a third item at some distance from the other two

(5.20) ASK

(5.21) SAY-NO-TO

(5.22) MOTHER (fl) FRIEND (fr) fl+GIVE+fr
Mother gave (something) to her friend

(5.23) MOTHER (fl) BABY (fr) fl+GIVE+fr
Mother gave (something) to the baby

(5.24) BOY c+RUN+f
The boy ran from here to there
(e.g. The boy ran outside)

(5.25) BOY c / hi+RUN+f / lo
The boy ran from up here to down there
(e.g. The boy ran downstairs)

(5.26) WHITE^MAN V-CL+fr+MOVE+c
(Literally: The snowman moved from that location to this location)
The snowman came forward

(5.27) BOY fr+CARRY-BY-HAND+c FOOD
(Literally: The boy carried food from that location to this location)
The boy brought in food

(5.28) BLIND MAN ... V-CL+BE-LOCATED+at left hand
Vertical-2D-entity-CL+EXIST ----
The blind man ... stood by the wall

(5.29) [BOY] (MOTHER^FATHER-sl) c+IGNORE+sl
The boy ignored his parents

(5.30) AT SCHOOL f+ACCUSE+c ALL CLASS
At school the whole class blamed me

(5.31) [BOY] (SNOW^MAN-f) c+LOOK-AT+f
The boy looked at the snowman

(5.32) TELL+plural
(I) told all of them

(5.33) - (5.36) No examples

(5.37) (HOUSE-fr) SNOW^MAN ENTER+fr
The snowman entered the house

(5.38) _____gaze-fl+distant
SNOW^MAN POINT-TO+fl+distant
The snowman pointed into the distance

(5.39) BOY (OUT^FOR-sr) (HOUSE-c) sr+GO-TO+c
The boy came into the house

(5.40) _____t
LONDON S-B FLY-TO+fl
S-B flew to London

(5.41) (BOY) (MOTHER^FATHER-fl) c+IGNORE+fl
The boy ignored his parents

(5.42) (PRON1) f+ACCUSE+c ALL CLASS
The whole class blamed me

(5.43) "lunch"
MOTHER^FATHER c+GIVE+f (BOY-f) FOOD
His parents gave the boy his lunch

(5.44) FIRST PRON1 c+GET-ATTENTION-OF+fl PRIEST(-fl)
First I button-holed the priest

(5.45) PRON1 c+IGNORE+fl (PARTIALLY-DEAF-fl)
I paid no heed to the partially deaf students.

(5.46) (PRON1) f+ACCUSE+c ALL CLASS
The whole class blamed me.

(5.47) "lunch"
MOTHER^FATHER c+GIVE+f (BOY-f) FOOD
His parents gave the boy his lunch.

(5.48) PRON1 WILL c+GIVE-PRESENT+f (PRON-f) SOON
I will give you a present soon.

(5.49) SEE+f (PRON-f) AGAIN
I will see you again

(5.50) _____t
TEACHER(-fr) ALL BOY c+MOCK+fr
All the boys made fun of the teacher

(5.51) _____gaze-fr
LONDON FLY+fr
(I) flew to London

(5.52) PRON1 V-CL+c+MOVE+fr (HOUSE-fr)
I went towards the house

(5.53) BOY (KITCHEN-c) (FREEZER-fr) fr+CARRY-BY-HAND+c FOOD
(Literally: The boy brought food from that location 'fr' to this location 'c')
The boy brought in food

(5.54) HOUSE-fr SCHOOL-fl GIRL Index-CL+fr+MOVE+fl)
The girl went from the house to the school

(5.55) not shown

(5.56) BOY-fr SNOW^MAN-fl fr+LOOK-AT+fl
The boy looked at the snowman
(option A)

(5.57) SNOW^MAN-fl BOY c+LOOK-AT+fl
The boy looked at the snowman
(option B)

(5.58) c+ASK+f

(5.59) c+CRITICISE+f

(5.60) SAY-TO+f

(5.61) c+GET-THE-ATTENTION-OF+f

(5.62) c+ACCUSE+f

(5.63) c+LOOK-AT+fl

(5.64) c+LOOK-AT+fr
I looked at (someone)

(5.65) fr+LOOK-AT+c
(Someone) looked at me

(5.66) c+FAX+fl
I faxed (someone)

(5.67) fl+FAX+c
(Someone) faxed me

(5.68) c+PHONE+fr

(5.69) fr+PHONE+c

(5.70) FIRST PRON1 c+GET-ATTENTION-OF+fl PRIEST(-fl)
First I approached the priest

(5.71) TV-fl BOY c+IGNORE+fl TV-fl
The boy ignored the television

(5.72) "lunch"
(BOY-f) (MOTHER^FATHER) c+GIVE+f FOOD
His parents gave him (the boy) lunch

(5.73) f+ACCUSE+c ALL CLASS

(5.74) PRON1 c+IGNORE+fl (PARTIALLY-DEAF-fl)
I paid no heed to the partially deaf

(5.75) c+CHOOSE+f
I chose (someone)

(5.76) f+CHOOSE+c
(Someone) chose me.

(5.77) fr+CONSULT+fl
fl+CONSULT+fr
They consulted each other / (She) consulted (him) and (he) consulted (her)

(5.78) fr+ARGUE+fl
fl+ARGUE+fr
They argued with each other / (He) argued with (her) and (she) argued with (him)

(5.79) (BOY) (SNOW^MAN) c+TALK+fl
fl+TALK+c
The boy and the snowman chatted with each other

(5.80) AND SHAKE-HANDS / FALSE / c+CONSULT+f
f+CONSULT+c
and (they) shook hands ... imagine! ... and exchanged pleasantries

(5.81) SAY-TO+fr
(I) told (someone)

(5.82) PRON-fr SAY-TO+fl
Someone told (someone else)

(5.83) PRON-fr SAY-TO+c
Someone told me

(5.84) q
PRON-fr LIKE SEE PRON-sl / upwards
Would you like to see upstairs?

(5.85) BOY SEE+f FATHER^MOTHER
The boy saw his parents

(5.86) Thin-flat-entity-CL+c+GIVE+f
I handed you (a sheet of paper)

(5.87) Flat-2d-entity-CL+c+GAVE+f
I handed you (a video cassette)

(5.88) Cylindrical-entity-CL+c+GAVE+f
I handed you (a tumbler)

(5.89) Round-3D-entity-CL+c+GAVE+f
I handed you (a tennis ball)

(5.90) Tiny-0d-entity-CL+c+GAVE+f
I handed you (a pill)

(5.91) - (5.94) not shown

(5.95) (SUPERVISOR-fl) PRON1 PAY+fl TEN POUND
I paid the supervisor ten pounds

(5.96) BOY SEE+F FATHER^MOTHER
The boy saw his parents

(5.97) (SNOW^MAN) OPEN-DOOR SEE CLOTHES

PRON-sl FATHER CLOTHES
The snowman opened the door and saw clothes, his (the boy's) father's clothes

(5.98) _____t
TEN POUND PRON1 PAY FINISH
I've already paid ten pounds

(5.99) PRON1 (n-r-b) (-fr) c+FAX+fr
I faxed the NRB

(5.100) HOSPITAL-fl c-ACCUSE-fl
I blamed the hospital

(5.101) SEE+f (agreement verb)

(5.102) SEE (plain verb)

(5.103) TELL+plural
(I) told all of them

(5.104) c+ASK+dual
I asked both of them ...

(5.105) c+SAY-TO+fr
c+SAY-TO+fl
I told both of them ...

(5.106) (SNOW^MAN-f) Handle-round-entity-CL+BE-LOCATED+f / hi
Handle-round-entity-CL+BE-LOCATED+f / hi

(RIGHT) EYE Handle-round-entity-CL+BE-LOCATED+c (r. eye)
(LEFT) EYE Handle-round-entity-CL+BE-LOCATED+c (l. eye)
Body-CL+EXIST+right eye+left eye ----------

Handle-round-entity-CL+BE-LOCATED+f / hi
Handle-round-entity-CL+BE-LOCATED+f / hi

(He) gave the snowman two eyes

(5.107) (SNOW^MAN-f) Handle-small-round-entity-CL+BE-LOCATED+f / hi

Handle-small-round-entity-CL+BE-LOCATED+c(r. eye)+MOVE-arc+c(l. eye)
Body-CL+EXIST+right eye+left eye ----------

(He) gave the snowman two eyes

(5.108) c+ASK+exhaustive
I asked each of them

(5.109) c+POST-TO+multiple
I posted (it) to all of them

(5.110) c+ POST-TO+exhaustive
I posted (it) to each of them

(5.111) * c + ACCUSE+multiple (movement assimilated)

(5.112) (BOY) Handle-small-entity-CL+BE-LOCATED+c / lo + c + c / hi
Body-CL+(stomach+sternum+upper chest) ----------

The boy put (buttons) there, there and there on the snowman's body

(5.113) c+GIVE+random loci
I gave (books) to some of them

(5.114) PRON-fr SAY-TO+random loci
He told some of them

(5.115) _____q
LECTURE FINISH
Is the lecture over?

(5.116) (SHELF-f) Handle-small-entity+BE-LOCATED+f
(I) placed (it) (on the shelf)

(5.117) V-CL+BE-LOCATED+at left hand
Vertical-2D-Entity-CL+EXIST ----
The man stood by the wall

(5.118) FLY-TO+fr
... fly to there ...

(5.119) (BOY) V-CL+c+MOVE+f OUT^FOR
(The boy) went outside

(5.120) (HOUSE-fr) PRON1 DRIVE-TO+fr
I drove towards (the house)

(5.121) (HOUSE-fr) PRON1 V-CL+c+MOVE+fr
I went towards (the house)

(5.122) BOY c+RUN+f OUT^FOR
The boy ran outside

(5.123) MOTHER fr+BECKON+c HOME
Mother called (him) home

(5.124) BOY fr+CARRY-BY-HAND+c FOOD
The boy brought in food

(5.125) HOUSE (-sl) ENTER+sl
(They) entered the house

(5.126) SUN (-sr) (BOY-c) sr+SHINE+c
The sun shone in (upon him)

(5.127) HOUSE COUNTRY FAR 3D-entity-CL+BE-LOCATED+fr
The house was situated in the middle of the countryside

(5.128) gaze-fl+distant
SNOW^MAN POINT-TO+fl+distant
The snowman pointed in the distance

(5.129) (BOY) V-CL+c / hi+MOVE+f / lo
(The boy) ran downstairs

(5.130) SNOW^MAN V-CL+fr+MOVE+c
The snowman came towards (him)

(5.131) BOY V-CL+sr+MOVE+sl
The boy ran past

(5.132) BOY SLAP+face PRON1
The boy slapped me on the face / The boy slapped my face

(5.133) BLIND CATCH MAN DEAF CATCH-BY-HAND+left arm
The blind man caught the deaf man by the arm

(5.134) POLICE CATCH Body-CL+move-arms-behind-back AND
HANDCUFF+left wrist HANDCUFF+right wrist

Body-CL+move-arms-behind-back

The police caught him, put his hands behind his back and handcuffed him

(5.135) BOY TAKE-BY-THE-HAND+sr (SNOW^MAN-sr)
The boy took the snowman by the hand

(5.136) (SNOW^MAN-f) SHAKE-HANDS+f
(He) shook hands with (the snowman)

(5.137) SCHOOL(-fr) BOY V-CL+c+MOVE+fr+move fingers
The boy walked to school

(5.138) (BOY) Handle-round-entity-CL+BE-LOCATED+c
----------Body-CL+EXIST+head

Handle-round-entity-CL+BE-LOCATED+f / hi
The boy put a snowball on top of the body as a head

(5.139) (WALL-f) PAINT+f
(I) painted the wall

(5.140) (FLOOR-f / lo) PAINT+f / lo
(I) painted the floor

(5.141) WRIST J-o-h-n CATCH-BY-HAND+left wrist
John caught my wrist / John caught me by the wrist

(5.142) SLEEVE PRON-f J-o-h-n CATCH-BY-HAND+sleeve
John caught your sleeve / John caught you by the sleeve

(5.143) (WALL-f) PAINT+f
(I) painted the wall

(5.144) WRIST J-o-h-n CATCH-BY-HAND+left wrist
John caught my wrist / John caught me by the wrist

(5.145) (BOY) BRUSH+teeth
The boy brushed his teeth

(5.146) (BOY) PUT-(glove)-ON + hand
The boy put on a glove / The boy put a glove on his hand

(5.147) (BOY) (use-)BRUSH + teeth
The boy brushed his teeth

(5.148) PUT-ON+head
(He) put on a hat / He put a hat on his head

(5.149) PUT-ON+left hand
(He) put on a glove

(5.150) PUT-ON+shoulders
(He) put on a coat

(5.151) PUT-ON+right leg
(He) put on footwear

(5.152) Handle-thin-flat-entity-CL+MOVE-imit: put on+c
Handle-thin-flat-entity-CL+MOVE-imit: put on+c
Body-CL+EXIST+head ----------
(He) put on a hat / (He) put a hat on (his) head

(5.153) Handle-narrow-entity-CL+MOVE-imit: put on+c
Body-CL+EXIST+left hand----------
(He) put on a glove

(5.154) Handle-entity-CL+MOVE-imit: put on+c--------
Handle-entity-CL+MOVE-imit: put on+c--------
Body-CL+EXIST+right shoulder+left shoulder
(He) put on a coat

(5.155) Handle-entity-CL+MOVE-imit: put on+c
Body-CL+EXIST+right leg----------
(He) put on footwear

(5.156) (BOY) FIND-sl ORANGE-sl
(The boy) found an orange

(5.157) (BOY) COLLECT-sl c-o-a-l -sl
(The boy) gathered coal(s)

(5.158) BOY EAT-fl ALL-fl FINISH-fl sl+GO-TO+fr
When the boy had eaten everything he went back outside

(5.159) Handle-general-entity-CL+MOVE-imit: roll-fr
Handle-general-entity-CL+MOVE-imit: roll-fr
(He) rolled a snowball

(5.160) COLLECT-sr
(He) collected (snow)

(5.161) Trace-large-vertical-3D-entity-CL+(lo+EXTEND+hi)-fr
Trace-large-vertical-3D-entity-CL+(lo+EXTEND+hi)-fr
(He) made a large body

## Chapter 6 Classifier Predicates in Irish Sign Language

(6.1) V-CL+'motion'-line+sr
(The small animal) moved away

(6.2) Two-dimensional-entity-CL+'distribution'-line+sr
Two-dimensional-entity-CL+hold ----------
(The books) were on the shelf

(6.3) Flat-surface-entity-CL+'extent'-line+sr
Flat-surface-entity-CL+hold ----------
There was (a board) of this length ...

(6.4) Handle-small-round-entity-CL+'motion'-line+sr
(Someone) moved the bead along

(6.5) Index-CL+(fr+MOVE-arc+c)
(Someone) came in / here ...

(6.6) V-CL+(c / hi+MOVE+f / lo)
(Someone) went downstairs ...

(6.7) 3D-entity-CL+(BE-LOCATED+fr)
(The house) was situated there ...

(6.8) Cylindrical-entity-CL+(EXIST+fr) g-l-a-s-s
There was a tumbler ...

(6.9) (SNOW) Trace-flat-surface-entity-CL+(fl+EXTENT-large arc+fr)
The snow lay all about ...

(6.10) Handle-entity-CL+(sr+MOVE+c)
(Someone) carried (it) in ...

(6.11) (BOY) Handle-narrow-cylindrical-entity-CL+IMIT: brush+c
Body-CL+EXIST+mouth----------
The boy brushed his teeth

(6.12) TEETH FALSE General-entity-CL+IMIT: insert in left hand
Cylindrical-entity-CL+EXIST ----------

(TEETH FALSE General-entity-CL+BE-LOCATED+in left hand
Cylindrical-entity-CL+EXIST ----------)
There was a set of false teeth in the glass

(6.13) Thin-vertical-entity-CL+f+IMIT: recoil+contact-c
Body-CL+EXIST+face ----------

(Thin-vertical-entity-CL+f+MOVE+c-contact
Body-CL+EXIST+face ----------)
The punchball rebounded and struck him in the face

(6.14) Vehicle-CL+IMIT: turn over

(Vehicle-CL+MOVE-arc)

The car overturned

(6.15) (BOY) BEGIN WHITE Handle-general-entity+MOVE-imit: roll
Handle-general-entity+MOVE-imit: roll
The boy began to roll a snowball

(6.16) (SNOW^MAN-f) Handle-round-entity-CL+BE-LOCATED+f / hi

Handle-round-entity-CL+BE-LOCATED+c
Body-CL+EXIST+nose ----------
(The boy) put a nose on the snowman

(6.17) Trace-narrow-cylindrical-entity-CL+lo+EXTENT+hi
Narrow-cylindrical-entity-CL+EXTENT+lo ----------

Long-thin-vertical-entity-CL+MOVE-to and fro
Ground-entity-CL+EXIST ----------

PUNCH+reduplicate
There was a punch-ball on a stand ...

(16.8) (BOY) V-CL+c+MOVE+f / hi
The boy went upstairs

(6.19) (BOY) Index-CL+(sr+MOVE+sl)
(The boy) went by (i.e. from there $_1$ to there $_2$)

(6.20) (BOY) Index-CL+(MOVE-random+from-c)
(The boy) wandered off

(6.21) Index-CL+(BE-LOCATED+fr)
(Someone) was there

(6.22) Index-CL+(c+MOVE-towards-fl+contact-left-hand)
Index-CL+(fl+MOVE-towards-c+contact-right-hand)
(Someone) met (someone else)

(6.23) Two-CL+(c+MOVE-towards-fl+contact-left-hand)
Index-CL+(EXIST+fl+contact-right-hand) -------
Two people went to meet one person

(6.24) V-CL+BE-LOCATED+on left hand s-t Index-CL+c+MOVE+to left hand
Flat-surface-entity-CL+EXIST ----- Index-CL+(EXIST+f) ----------

Wave 'No' Index-CL+fr+MOVE-arc+fl
---

If he was standing on the street ... no, I would not go up to him ... I would avoid him

(6.25) (FR D-) Index-CL+(fr+MOVE-arc+c)
Fr D- came in

(6.26) (FR D-) Index-CL+(c+MOVE-arc+fr)
Fr D- left

(6.27) *(FR D-) Index-CL+fr+MOVE-arc+c+orientation-f
Fr D- came in / backed in / came in backwards

(6.28) * Index-CL+(c / hi+MOVE+f / lo)
(Someone) went downstairs

(6.29) * Index-CL+(BE-LOCATED+fr+horizontal orientation)
(Someone) was lying down there

(6.30) *Index-CL+c+MOVE+f+'hop'
(Someone) hopped from here to there

(6.31) Index-CL+(sr+MOVE+sl+rapid)
(Someone) went by quickly / rushed by)

(6.32) (BOY) (WINDOW-fl) V-CL+(c+MOVE+fl)
(The boy) went over to the window

(6.33) (BOY) V-CL+(hi / c+MOVE+lo / f)
(The boy) went downstairs

(6.34) (BOY) V-CL+(sr+MOVE-horizontal-arc+fl)
(The boy) ran around

(6.35) (SNOW^MAN) V-CL+(BE-LOCATED-on left hand+MOVE-vertical arc+
Flat-surface-entity-CL+(EXIST+f) ----------

orientation-change+impact-contact+BE-LOCATED-on left hand)
---------- / Flat-surface-entity-CL+(EXIST+c) ----------

(The snowman) fell off (the skateboard) and hit (the floor) with a thud

(6.36) V-CL+MOVE-imit: tangle V-CL+f / hi+MOVE+f / lo+over left hand
V-CL+MOVE-imit: tangle V-CL+f / hi+MOVE+f / lo+under left hand

They both got into a tangle and one fell on top of the other

(6.37) (BOY) (WINDOW-fl) V-CL+(c+MOVE+fl)
(The boy) went over to the window

(6.38) (BOY) V-CL+(c+MOVE+f / hi)
(The boy) went upstairs

(6.39) (BOY) V-CL+(sl / hi+MOVE+sr / hi+horizontal orientation+MOVE+sl / hi +reduplicate)
(The boy) floated through the air

(6.40) BOY V-CL+(sl+MOVE+sr+horizontal orientation+MOVE+sl+reduplicate)
The boy swam several lengths

(6.41) (SNOW^MAN) V-CL+(c+MOVE+f)
(The snowman) moved forward

(6.42) (SNOW^MAN) (BOY-c) V-CL+(fr+MOVE+c)
(The snowman) came towards him (the boy)

(6.43) (BOY) V-CL+(f+MOVE+c+orientation-f)
General-entity-CL+(EXIST+c) --
(The boy) returned to bed

(6.44) _____t
MEET(-fl) DET-fl PRON1 V-CL+(fl+MOVE+c+orientation-fl)
I withdrew from the meeting

(6.45) (HOUSE-sr) V-CL+(c+MOVE+sr)
(The boy) went to the house

(6.46) (SNOW^MAN) V-CL+(hi+MOVE+lo+BE-LOCATED-lo)
(BOY) V-CL+(hi+MOVE+lo+BE-LOCATED-lo)
(The snowman and the boy) descended together and landed on the ground

(6.47) BOY V-CL+(BE-LOCATED-on left hand+MOVE-arc+orientation-change+lo)
Flat-surface-entity-CL+(EXIST+hi) ----------
The boy dived off the board

(6.48) (SNOW^MAN) (BOY-c) V-CL+(fr+MOVE+c+orientation-c)
(The snowman) came towards him (the boy)

(6.49) (BOY) V-CL+(c / hi+MOVE+f / lo)
(The boy) went downstairs

(6.50) (SNOW^MAN) V-CL+(f+MOVE+hi / f+alongside left hand)
(BOY) V-CL+(f+MOVE+hi / f+alongside right hand)
(The snowman and the boy) ascended into the air together

(6.51) (SNOW^MAN) V-CL+(hi+MOVE+lo+BE-LOCATED-lo)
(BOY) V-CL+(hi+MOVE+lo+BE-LOCATED-lo)
(The snowman and the boy) descended together and landed on the ground

(6.52) (BOY) V-CL+(c+MOVE+f) OUT^FOR
(The boy) went outside

(6.53) SHOP(-sl) MAN V-CL+(c+MOVE+sl+fingers move)
The man *walked* to the shop

(6.54) *BOY V-CL+(c+MOVE+f+'hop') OUT^FOR
The boy hopped outside (on one leg)

(6.55) (SNOW^MAN) V-CL+(c+MOVE+f / hi+fingers move)
(The snowman) walked upstairs

(6.56) (SNOW^MAN) V-CL+(c+MOVE+f / hi+alongside left hand)
(BOY) V-CL+(c+MOVE+f / hi+alongside right hand)
(The snowman and the boy) ascended into the air together

(6.57) (BOY) (SNOW^MAN) V-CL+(BE-LOCATED-fr+opposite left hand)
V-CL+(BE-LOCATED-fl+opposite right hand)
(The boy and the snowman) sat down opposite each other

(6.58) (BOY) V-CL+(sl / hi+MOVE+sr+horizontal orientation+MOVE+sl / hi +reduplicate)
(The boy) floated (through the air)

(6.59) BOY V-CL+(sl+MOVE+sr horizontal-orientation+MOVE+sl+reduplicate
The boy floated (on the water)

(6.60) V-CL+BE-LOCATED+by left hand
Vertical-2D-entity+EXIST ----------
(Someone) stood by the wall

(6.61) V-CL+BE-LOCATED+on left hand
Flat-surface-entity-CL+EXIST
(The snowman) lay down (in the freezer)

(6.62) Trace-long-narrow-entity-CL+EXTENT+sr V-CL+MOVE-imit: skate
Trace-long-narrow-entity-CL+EXTENT+sl V-CL+MOVE-imit: skate
There was a board for skating on / a skateboard

(6.63) Vehicle-CL (American Sign Language)

(6.64) Vehicle-CL (Swedish Sign Language)

(6.65) Vehicle-CL (Irish Sign Language)

(6.66) SECOND b-u-s Vehicle-CL+sr+MOVE+f gesture: shrug FULL
The second bus came by but it was full

(6.67) THIRD b-u-s Vehicle-CL+sr+MOVE+f / HALF FULL GOOD

Vehicle-CL+sr+MOVE+f+BE-LOCATED-f
The third bus came by. Fortunately, t was only half full. It came by and stopped

(6.68) Vehicle-CL+MOVE-imit: random path
(The car) went all over the place

(6.69) Vehicle-CL+fr / hi+MOVE+fr / lo
(The motor cycle) went downhill

(6.70) Vehicle-CL+fr+MOVE+fr / hi
(The motor cycle) went up the hill

(6.71) Vehicle-CL+sr+MOVE+contact mid part of left hand
Vehicle-CL+sl+EXIST ----------
A vehicle crashed into the side of another vehicle

(6.72) Vehicle-CL+c+MOVE-arc+f (+orientation-f)
Vehicle-CL+EXIST --------- (+orientation-f)
One vehicle overtook another

(6.73) Vehicle-CL+f+MOVE+c+orientation-c
Vehicle-CL+c+MOVE+f+orientation-f
Two vehicles pass, going in opposite directions

(6.74) Vehicle-CL+BE-LOCATED+$sr_1$+BE-LOCATED+$sr_2$+BE-LOCATED+$sr_3$+

BE-LOCATED+$sr_4$

The vehicles were parked in a row

(6.75) Vehicle-CL+BE-LOCATED+$sr_1$+BE-LOCATED+$sr_2$+BE-LOCATED+$sr_3$+
Vehicle-CL+BE-LOCATED+$sr_1$+BE-LOCATED+$sr_2$+BE-LOCATED+$sr_3$+

BE-LOCATED+$sr_4$+orientation-f
BE-LOCATED+$sr_4$+orientation-c

The vehicles were parked in two rows opposite each other

(6.76) WE Multiple entity-CL+c+MOVE+fl
Multiple entity-CL+c+MOVE+fl
We all went out

(6.77) PARTIALLY-DEAF
Multiple entity-CL+BE-LOCATED+sl

DEAF Multiple entity-CL+BE-LOCATED+sr
Multiple entity-CL+BE-LOCATED+sl

The partially deaf boys were on one side and the deaf boys were alongside them on the other

(6.78) Multiple entity-CL+EXTENT+f+orientation upwards
Multiple entity-CL+EXTENT+c+orientation upwards
There was a long queue

(6.79) KNOW b-u-s FULL Multiple entity-CL+c+MOVE+f BAD
Multiple entity-CL+c+MOVE+f
(The man) knew that the bus(es) would be full and the traffic terrible

(6.80) _____ puff cheeks
Multiple entity-CL+lo+MOVE+hi
Multiple entity-CL+lo+MOVE+hi
(Steam) billowed up

(6.81) BEGIN WHITE Multiple small entities-CL+hi / fr+MOVE+lo / f
Multiple small entities-CL+hi / fr+MOVE+lo / f
It began to snow

(6.82) (BOY) c+LOOK+fl+arc+f BEAUTIFUL

Multiple small entities-CL+orientation-c+EXIST-imit: twinkle
Multiple small entities-CL+orientation-c+EXIST-imit: twinkle
The boy looked about. It was beautiful. All the small lights were twinkling

(6.83) Cylindrical-entity-CL+EXIST+fr g-l-a-s-s
There was a tumbler ...

(6.84) 3D-entity+BE-LOCATED+fr
(The house) was situated there

(6.85) MORNING SOON BEGIN SUN

Solid-round-entity-CL+MOVE-imit: sunrise
Flat-surface-entity-CL+EXIST ----------
It will be morning soon and the sun will begin to rise

(6.86) SNOW^MAN PUNCH Tall-thin-vertical-entity-CL+f+MOVE+c

Thin-vertical-entity-CL+f+MOVE+c-contact
Body-CL+EXIST+face ----------
The snowman threw a punch at the punchball which rebounding, struck him in the face

(6.87) Cylindrical-entity-CL+EXIST+fr g-l-a-s-s General-entity-CL+
Cylindrical-entity-CL+

BE-LOCATED+ in left hand Teeth-CL+EXIST TEETH FALSE
EXIST ----------

General-entity-CL+BE-LOCATED+in in left hand
Cylindrical-entity-CL+EXIST ----------
There was a tumbler and in it there was a set of false teeth

(6.88) (SNOW) Trace-flat-surface entity-CL+sl+EXTENT-large arc+fr
Flat-surface-entity-CL+sl+EXTENT ----------
(The snow) lay all about

(6.89) Trace-general-entity-CL+lo+EXTENT+hi
General-entity-CL+EXTENT ----------
(The snowman) was so big

(6.88) Trace-flat-surface-entity-CL /
Flat-surface-entity-CL------

(6.89) Trace-general-entity-CL /
General-entity-CL------

(6.90) ICE f-r-e-e-z-e-r Trace-long-general-entity-CL+EXTEND+fr
Trace-long-general-entity-CL+EXTEND+sl
(There was) a chest freezer

(6.91) Trace-large-3D-entity-CL+f / lo+EXTENT-staggered+f / hi
Trace-large-3D-entity-CL+f / lo+EXTENT-staggered+f / hi
(The pile of snow) gradually grew bigger and bigger

(6.92) (SNOW^MAN-f) Trace-size-and-shape-CL+EXTENT-imit: smile+f / hi

Trace-size-and-shape-CL+EXTENT-imit: smile+c
Body-CL+EXIST +mouth----------

(The boy) drew a smile on the snowman's face

(6.93) (BOY) Handle-entity-CL+MOVE-imit: put-on-coat+c
Body-CL+EXIST+shoulders ----------
(The boy) put on a coat

(6.94) Handle-entity-CL+sr+MOVE+f ------ RADIO
Handle-flat-surface-CL+sr+MOVE+f
(He) carried in a radio

(6.95) (SNOW^MAN-f) Handle-small-round-entity-CL+BE-LOCATED+fr / hi
Handle-small-round-entity-CL+BE-LOCATED+fl / hi

Handle-small-round-entity-CL+BE-LOCATED+c / right
Handle-small-round-entity-CL+BE-LOCATED+c / left
Body-CL+EXIST+right eye+left eye ----------

Handle-small-round-entity-CL+BE-LOCATED+fr / hi
Handle-small-round-entity-CL+BE-LOCATED+fl / hi

(The boy) gave the snowman two eyes

(6.96) AND COLLECT c-o-a-l Handle-small-round-entity-CL+BE-LOCATED+
Body-CL+EXIST+sternum ----------

c / lo +MOVE+BE-LOCATED+c+MOVE+BE-LOCATED+c / hi Handle-
------ +mid chest --------- +upper chest ----------

small-round-entity-CL+BE-LOCATED+f / lo+MOVE+BELOCATED+f

+MOVE+BE-LOCATED+f / hi

... and he gathered coals and put 'buttons' up along the snowman's middle

(6.97) (SNOW^MAN) Handle-cylindrical-entity-CL+MOVE-imit: tighten tie+c
Handle-entity+EXIST ----------
Body-CL+EXIST+neck ----------
(The snowman) put on a tie

(6.98) Handle-entity-CL+MOVE-imit: tighten belt+c
Body-CL+EXIST+waist ----------
(Someone) put on a belt

(6.99) (BOY) Handle-entity-CL+MOVE-imit: put on glove+c
Body-CL+EXIST+left hand ----------
(The boy) put on a glove

(6.100) Forked-entity-CL+MOVE-imit: put on trousers+c
Forked-entity-CL ----------
Body-CL+EXIST+right leg+left leg ----------
(The snowman) pulled on the trousers

(6.101) (BOY) Handle-entity-CL+MOVE-imit: brush teeth+c
Body-CL+EXIST+teeth ----------
(The boy) brushed his teeth

(6.102) (BOY) Long-thin-entity-CL+MOVE-imit: brush teeth +c
Body-CL+EXIST+teeth ----------
(The boy) brushed his teeth

(6.103) (BOY) Handle-entity-CL+MOVE-imit: comb hair +c
Body-CL+EXIST+hair ----------
(The boy) combed his hair

(6.104) (BOY) Toothed-entity-CL+MOVE-imit: comb hair +c
Body-CL+EXIST+hair ----------
(The boy) combed his hair

(6.105) (SNOW^MAN) Handle-small-entity-CL+MOVE-imit: switch on light+fr
(The snowman) pressed the light-switch

(6.106) (FR D-) Handle-small-entity-CL+MOVE-imit: press button-switch OFF
(Fr D-) switched off (the radio cassette)

(6.107) BOY SLEEP Handle-entity-CL+EXIST+c
Handle-entity-CL+EXIST+c
Body-CL+EXIST+under chin
The boy was under the bedclothes asleep

(6.108) A human moves in steps - Feet classifier

(6.109) A human walks briskly - Arms classifier

(6.110) A human dives - Arms classifier

(6.111) PROBLEM Solid-round-entity-CL+MOVE-imit: sunrise
Flat-surface-entity-CL+EXIST ----------

SOON MORNING

There's a snag.The sun is beginning to rise and it will be morning soon

(6.112) V-CL+MOVE-imit: dive+from left hand
Flat-surface-entity-CL+EXIST ---------
(Someone) dived off the platform

(6.113) Index-CL+fr+MOVE+contact-c
Body-CL+EXIST+chest -------
(Someone) bumped into me

(6.114) (SNOW^MAN-f) ORANGE fr+TAKE+c Handle-round-entity-CL

+BE-LOCATED+f / hi Handle-round-entity-CL+c / hi
Body-CL+EXIST+nose -------

(The boy) got an orange and used it to make the snowman's nose

(6.115) Vehicle-CL+MOVE+sl+contact left hand
Vehicle-CL+EXIST + fingertips --------
One vehicle crashed into the front wing of another

(6.116) Vehicle-CL+MOVE+sl+contact left hand
Vehicle-CL+EXIST+base of palm ------
One vehicle crashed into the back of another

(6.117) TWO BABY ABLE SWIM
The two babies can swim

(6.118) THIRTY FORTY BOY WAIT
About thirty or forty boys waited

(6.119) TWO POLICE RUN
The two policemen ran

(6.120) (DEAF MAN) Body-CL+imit: ward off blows
(The deaf man) raised his arms to ward off the blows

(6.121) V-CL+BE-LOCATED+by left hand
Vertical-2D-entity+EXIST ----------
(Someone) stood by the wall

*(6.122) V-CL+BE-LOCATED+f ---------- (ASL)
Trace-circular-entity-CL+EXTENT
(A bird) stood on the large plate

*(6.123) V-CL-modified+MOVE-circle (ASL)
(Someone) hopped in a circle

*(6.124) Legs-CL-modified+MOVE-circle (ASL)
(Someone) limped in a circle

(6.125) Legs-CL+EXIST-imit: limp (ASL)

Trace-circular-entity-CL+EXTENT
(Someone) limped in a circle

(6.126) Trace-long-narrow-entity-CL+EXTENT+sr V-CL+MOVE-imit: skate
Trace-long-narrow-entity-CL+EXTENT+sl V-CL+MOVE-imit: skate
There was a board for skating on / a skateboard

(6.127) Trace-long-thin-entity-CL+lo+EXTENT-vertical+hi
Thin-entity-CL+lo+EXIST ----------

Long-thin-vertical-entity-CL+MOVE-to and fro PUNCH+reduplicate
Ground-CL+EXIST ----------
There was a punchball on a stand

(6.128) (SNOW^MAN-f) Handle-small-entity-CL+BE-LOCATED+fr / hi
Handle-small-entity-CL+BE-LOCATED+fl / hi

Handle-small-entity-CL+BE-LOCATED+c / right
Handle-small-entity-CL+BE-LOCATED+c / left
Body-CL+EXIST+right eye+left eye ----------

Handle-small-entity-CL+BE-LOCATED+fr / hi
Handle-small-entity-CL+BE-LOCATED+fl / hi
(The boy) gave the snowman two eyes

(6.129) AND COLLECT c-o-a-l Handle-small-entity-CL+BE-LOCATED+c / lo
Body-CL+EXIST+sternum ----------

+MOVE+BE-LOCATED+c+MOVE+BE-LOCATED+c / hi Handle-small-
--------- +mid chest ----------+upper chest ----------

entity-CL+BE-LOCATED+f / lo+MOVE+BELOCATED+f+MOVE+BE-

LOCATED+f / hi
... and he gathered coals and put 'buttons' up along the snowman's middle

(6.130) (SNOW^MAN-f) Handle-thin-flat-entity-CL+BE-LOCATED+f / hi

Handle-thin-flat-entity-CL+MOVE-imit: put on hat +c
Body-CL+EXIST+head ----------

(The boy) put a hat on the snowman's head

(6.131)

A. Head/Shoulders: head tilt to right ----------
Gaze: forward/down ----------
Mouth:
Right hand: Index-CL+(sl+MOVE-arc+sr) AND PLAY+reduplicate
Left hand: Index-CL+(sl+MOVE-arc+sr)

B. H/S: slightly forward ----------
G: forward/down/right ----
M:

Handle-general-entity-CL+(MOVE-imit: roll)
Handle-general-entity-CL+(MOVE-imit: roll)

C. H/S: ----------
G: forward/down ----------
M: effort (ee) ----------
Handle-large-curved-3D-entity-CL+(c+MOVE+f)
Handle-large-curved-3D-entity-CL+(c+MOVE+f)

D. H/S: ----------
G: forward/down/right ----
M:

Handle-general-entity-CL+(MOVE-imit: roll)
Handle-general-entity-CL+(MOVE-imit: roll)

E. H/S: ----------
G: forward/down/right ----------
M: tongue protrudes between lips ----------
Trace-large-curved-3D-entity-CL+(lo+EXTENT+neu)
Trace-large-curved-3D-entity-CL+(lo+EXTENT+neu)

F. H/S: ----------
G: forward/down ----------
M: effort (ee) ----------
Handle-large-curved-3D-entity-CL+(c+MOVE+f)
Handle-large-curved-3D-entity-CL+(c+MOVE+f)

G. H/S: move slightly backwards ----------
G: forward/down/right ----------
M:

Trace-large-curved-3D-entity-CL+(EXTENT+sr) AND
Trace-large-curved-3D-entity-CL+(EXTENT+sl)

H. H/S: head tilt to left ----------
G: forward/down/right ----------
M:

Handle-round-3d-entity-CL+(sr+MOVE-arc+BE-LOCATED+lo)
Handle-round-3d-entity-CL+(sr+MOVE-arc+BE-LOCATED+lo)

I. H/S: gradual tilt up and back ----------
G: gradual shift from forward/down to forward ----------
M: puff cheeks ----------
Trace-large-3D-entity-CL+(lo+EXTENT-staggered+hi+orientation)
Trace-large-3D-entity-CL+(lo+EXTENT-staggered+hi+orientation)

H/S: ----------
G: ----------
M:
change+contact-left-hand)
change+contact-right-hand)

J. H/S: orient to left forward
G: left -- contact
AND STOP

A. (The boy) went back outside to play once more.
B. He rolled a snowball
C. pushed it forward
D. kept on rolling it
E. until there was a large ball;
F. straining, he pushed it forward;
G. it grew bigger;
H. and he added more (snow)
I. until it was high enough
J. and then he stopped

## Chapter 7 An Autosegmental Approach to Verb Structure in Irish Sign Language

Figures 7.1 - 7.4 not shown

Figure 7.5 NOT (ASL)

(7.1) Vehicle-CL+fr+MOVE+c

(7.2) Vehicle-CL+c+MOVE-arc+fr

"lunch"

(7.3) (BOY-f) MOTHER^FATHER c+GIVE+f FOOD

Figure 7.7 c+ASK+fr

Figure 7.8 fl+ASK+fr

Figure 7.9 c+RUN+f

Figure 7.10 c / hi+RUN+fr / lo

Figure 7.11 c+INVITE+fr

Figure 7.12 fr+INVITE+fl

Figures 7.13 - 7.14 not shown

Figure 7.15 c+SAY-NO-TO+f

Figure 7.16 SEE+fl

(7.4) c+CONSULT+f
f+CONSULT+c

(7.5) c+ARGUE+fl
fl+ARGUE+c

(7.6) c+CRITICISE+f

Figures 7.17 - 7.20 not shown

Figure 7.21 '... ACCUSE+c'

Figure 7.22 '... IGNORE+fl'

Figure 7.23 Index-CL+fr+MOVE-arc+c

Figure 7.24 V-CL+c / hi+MOVE+f / lo

Figure 7.25 Vehicle-CL+sr+MOVE+fl

Figure 7.26 Multiple-small-entities+f / hi+MOVE+f / lo
Multiple-small-entities+f / hi+MOVE+f / lo

Figure 7.27 Handle-entity-CL+sr+MOVE+f ----------
Handle-flat-surface-entity-CL+sr+MOVE+f

Figure 7.28 Handle-small-entity-CL+MOVE-imit: press button switch with thumb

Figure 7.29 Vehicle-CL+c+MOVE+f+MOVE+sl+MOVE+f

Figure 7.30 Handle-small-entity-CL+c+MOVE+f+MOVE+fr

Figure 7.31 not shown

Figure 7.32 Long-thin-entity-CL+f+MOVE+c+reduplicate

Figure 7.33 V-CL+sl+MOVE+sr+reduplicate

Figure 7.34 - 7.35 not shown

Figure 7.36 V-CL+BE-LOCATED+by left hand
Vertical-2D-entity+EXIST ----------

Figure 7.37 General-entity-CL+BE-LOCATED+in left hand
General-entity-CL+EXIST ----------

Figure 7.38 V-CL+BE-LOCATED+impact contact on left hand
Flat-surface-entity-CL+EXIST ----------

Figure 7.39 V-CL+BE-LOCATED+opposite left hand
V-CL+BE-LOCATED+opposite right hand

Figure 7.40 Handle-round-entity-CL+BE-LOCATED+f / hi

Figure 7.41 3D-entity-CL+BE-LOCATED+fr

Figure 7.42 Cylindrical-entity-CL+EXIST (-fr)

Figure 7.43 Multiple-small-entities-CL+EXIST-imit: twinkle
Multiple-small-entities-CL+EXIST-imit: twinkle

Figure 7.44 Whole-entity-Teeth-CL+EXIST (-f)

(7.7)

Index-CL+c+MOVE+towards left hand Wave "No" Index-CL+fr+MOVE-arc+fl
Index-CL+EXIST (-f) ----------

Figure 7.45 Index-CL+EXIST (-f)

(7.8) Handle-small-round-entity-CL+BE-LOCATED+f / lo+BE-LOCATED+f+
Be-LOCATED+f / hi

(7.9) Trace-flat-surface-entity-CL+f+EXTEND+fr
Flat-surface-entity-CL+f+EXTEND ----------

(7.10) f-r-e-e-z-e-r Trace-long-general-entity-CL+f+EXTEND+fr
Trace-long-general-entity-CL+f+EXTEND+sl

Figures 7.46 - 7.48 not shown

Figure 7.49 'a small animal moved in a forward upward arc'

Figure 7.50 'a person moved from here to there (fr+dist)'

Figure 7.51 'someone moved a small round entity from here to there (fr+med)'

Figures 7.52 - 7.53 not shown

Figure 7.54 Index-CL+sr+MOVE+sl

Figure 7.55 Handle-entity-CL+sr+MOVE+sl

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