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The role of the manual alphabet and fingerspelling in British sign language.

THE ROLE OF THE MANUAL ALPHABET AND FINGERSPELLING IN BRITISH SIGN LANGUAGE

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A dissertation submitted to the University of Bristol in accordance with the requirements for the degree of Doctor of Philosophy.

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I certify that this dissertation is my own independent work and has not been presented previously for any other degree.

Signed:...R........⌐H............   Date: .July............4......

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ABSTRACT

The research reported here is a description of, and explanation for, the use of the manual alphabet and fingerspelling in the signing of the British deaf community. This is conducted within theoretical frameworks already existing in mainstream and sign language linguistics.

There are four main strands in the research, each addressing a separate question within the main aim.

The history of the British manual alphabet *per se* has not been documented in great detail before. In this research, the British manual alphabet is traced back to the mid-seventeenth century. Succeeding manual alphabets are described and the features of their evolution commented upon. As many alphabet charts as possible are illustrated. Other two-handed manual alphabets in use in the world are also described.

The use of the manual alphabet by British deaf signers is described, qualitatively and quantitatively, demonstrating that it serves as a major lexical resource for borrowing, and also to permit code-switching. The overall use, and the form of the signs produced using the manual alphabet are shown to vary in variants of BSL.

The form of signs using the manual alphabet are shown to be dictated by an interaction of linguistic and sociolinguistic factors. The phonology and morphology of BSL interact with the orthography and morphology of the English word to produce the final form used. Using the basic description of restructuring of lexicalised fingerspellings in ASL devised by Battison (1978), the restructuring of fingerspellings used by BSL signers is shown to undergo many similar changes, but also to behave somewhat differently due to the two-handed nature of British fingerspelling. As well as the lexicalised fingerspellings described by Battison, this research identifies the influences involved in the creation of single manual letter signs, and of fingerspellings derived from polymorphemic English words.

The research has important implications for a sign linguistics field which, until recently, has virtually ignored parts of sign languages strongly influenced by English. It demonstrates that even when the source for a sign is English, the sign language influences the form and meaning of the derived sign. It is also of direct relevance to mainstream linguistics, demonstrating that the processes and constraints of borrowing between languages can be observed in borrowing between the written forms of spoken languages and signed languages, just as in borrowing between spoken languages.

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NOTES ON THE CONVENTIONS USED IN THE TEXT

When describing signs in this dissertation, the following typographical
conventions will be used:

Uses of British manual letters are written in lower case, with hyphens between
each letter. Thus: -f-i-n-g-e-r-s-p-e-l-l-i-n-g-.

Individual manual letters are written in lower case, preceded and followed by
hyphens. Thus -f-.

Glosses of a sign, whether derived from an instance of use of the manual
alphabet or non-derived are written in upper case. Thus: FINGERSPELLING.

English words are written in lower case, preceded and followed by quotation
marks. Thus: "fingerspelling".

Letters from the English alphabet are preceded and followed by quotation marks.
Thus: "f" or "F".

Fingerspellings made using one-handed manual alphabets (particularly the
American one-handed manual alphabet) are written in lower case, with full-stops
between each letter. Thus: .f.i.n.g.e.r.s.p.e.l.l.i.n.g.

The "alternative" one-handed manual letters used by British signers are written
in upper case, surrounded by full-stops. Thus: .I., .L., and .O.

Terms referring to handshapes, based upon the Stokoe notation system, are shown in upper case, in inverted commas. Thus the open, flat hand is written 'B', and a fist with the extended index finger is written 'G'.

Where a direct quotation is made of another author, their conventions will be observed.

The lack of an accepted written form of BSL leads to difficulties in presenting the forms of signs mentioned in this research. Glossing allows the meaning of the sign to be given, but not its form. A video appendix accompanies this dissertation, giving signed examples of some of the signs. Although it is strongly recommended that the reader uses this appendix in conjunction with this dissertation, all the signs in the video appendix are also described in the text.

No illustrations will be given of examples cited here that use single or multiple manual letters: the forms of the letters in the manual alphabet may be seen in Figure I.1. Many other signs mentioned in the text may be found in the BDA BSL/English dictionary, which contains excellent, clear photographs of signs, and a Stokoe-based transcription of each sign. Where signs are contained in the BSL/English dictionary, the dictionary's reference numbers for those signs are given (in the order of the page in this dissertation on which they appear), in Appendix VIII.

CHAPTER 1

THE MANUAL ALPHABET AND BRITISH SIGN LANGUAGE

1.0 INTRODUCTION

The research presented in this dissertation aims to describe, and account for, the use of the manual alphabet in British Sign Language (BSL), the language of the British deaf community. Before it is possible to conduct such research, it is necessary to define what is meant by the manual alphabet, and by British Sign Language.

This chapter will address the definitions of the central terms used in the dissertation, especially "the manual alphabet", "fingerspelling" and "British Sign Language", as well as outlining the general approach of the dissertation. It will provide analogies between the use of fingerspelling in BSL and other linguistic phenomena in other languages, and also outline the theoretical linguistic and political background to the area of research connected with fingerspelling in sign languages.

1.1 THE MANUAL ALPHABET AND FINGERSPELLING

A manual alphabet is a series of hand arrangements corresponding to the letters of the alphabet. Manual alphabets are capable of representing any alphabet (Carmel, 1975, 1981) or syllabary (Zhou, 1980). The British manual alphabet consists of 26 basic hand arrangements, corresponding to the 26 letters of the English alphabet. Each hand arrangement is a manual letter.

The modern British manual alphabet may be seen in figure I.1a

It should be noted that the hand-arrangements, and the handshapes within these arrangements may vary considerably from the 26 citation forms traditionally found on charts of the manual alphabet. For example, there are two recognised variants of the manual letter -c-, and three variants of -s-, -m- and -b-. The use of these forms depends on the context of use of the letter, and will be discussed in more depth in section 8.5, on p313.

This manual alphabet is two-handed. There is another manual alphabet in use by some members of the British deaf community. This is the one-handed Irish manual alphabet, and is used by some Roman Catholic signers, especially in Glasgow, London and North-west England. This manual alphabet is outside the scope of this study, but its existence should be noted, especially as it may influence the signs of some deaf signers (particularly in the use of some initialised signs), even those who use the two-handed manual alphabet. There is no evidence, however, that those British signers whose signing is influenced by the Irish manual alphabet use the one-handed

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system for fingerspelling: they use the two-handed alphabet. The Irish manual alphabet may be seen in figure I.1b.

Manual alphabets are used in many countries in communication among the deaf community and between deaf and hearing people. They allow a signer to encode the orthography of a written language on the hands, through fingerspelling.

Fingerspelling has been defined as delivering a rapid sequence of hand-configurations (or hand-arrangements), each corresponding to a letter of the alphabet (Padden, 1991b). A fingerspelling is the lexical item produced as a result of this process. For the purposes of this study, the use of two or more manual letters in sequence will be considered to be fingerspelling. The use of a single manual letter will not be considered to be a part of fingerspelling, although it may have other important functions in BSL.

Fingerspelling is not a representation of spoken language, nor, strictly, of written language. It is only a representation of the orthography of the written language. It does not consistently obey conventions of writing such as breaks between words, punctuation or distinction between upper and lower case. These conventions of writing *may* be shown in BSL by some signers, but are not an essential part of fingerspelling.

Some signers do mark the boundary between two fingerspelled words. This may be done by a pause, or by a rapid downward sweep of the index finger, or possibly by a longer hold of the final letter of each word. In the fingerspelling of some signers the possessive apostrophe preceding the

letter "s" is marked by a particular marked hand-arrangement of the manual letter -s-, in which both palms face up. Some hand-arrangements of manual letters are said to be "upper case" forms, although these are usually used at the beginning of words, or as part of acronyms, rather than as capital letters *per se*. BSL also has some iconic signs that are derived from writing conventions, such as FULL STOP, COMMA, PERCENT and THOUSAND. However, these signs are not part of the manual alphabet but are non-derived signs in BSL.

The manual alphabet in BSL is essentially a representation of English orthography, but may also be extended in its use to refer to English speech sounds. One deaf informant in this research, in remarking that speakers with a Bristol accent add /r/ and /l/ to words, used the manual letters -r- and -l- to describe the sounds. Here the manual alphabet was being used to show English phonology through English orthography.

For various reasons - both linguistic and political - the role of the manual alphabet and fingerspelling in sign languages has been little researched.

The manual alphabet is an invention of hearing people (see Chapter 2), and fingerspelling is often (wrongly) identified as coextensive with sign language. In fact it is often only a small part of many deaf people's communicative repertoire, supplementing their natural sign language, and providing one source for new lexical items.

The exact status of the manual alphabet and fingerspelling in British Sign Language is unclear, but it is clearly complex and varied. The majority of

signs in the BSL lexicon have developed naturally within the deaf community. They are independent of English orthography and English grammar. The manual alphabet, on the other hand, was originally introduced to deaf people by hearing educators with the express purpose of representing English. Consequently, one might expect it to have a distinctive status within BSL.

1.1.1 Spoken Language Analogies for Fingerspelling use.

It is difficult to find any exact spoken-language linguistic analogy for the relationship between signs and the fingerspelling of English words during BSL discourse.

Sometimes English speakers may draw letters in the air to spell words. On other occasions, they may spell out a word, by naming each letter, if they do not wish to be understood by a third party (eg commenting that it is nearly b, e, d, t, i, m, e for a small child). The spellings in these instances are vocalised or gestured representations of the orthography of words which are already a part of the language. Although it is true that there are occasions when signers of BSL will spell an English word for which there is an equivalent sign, many fingerspellings occur where there is no generally accepted non-derived sign synonym, so the fingerspellings are used more as loans.

Speakers of Chinese often draw the character for a given word in the air or on the ground or even on their hand. This can be used to avoid ambiguity by distinguishing among homonyms. Again this example shows a visual

representation of a spoken word which already exists in the lexicon of the spoken language.

The use of written English words in written Chinese may provide the closest analogy to the use of fingerspellings representing English words in BSL. There is an illustration in an article by Yau (1993) showing the use of English words in Chinese magazines. Western alphabetic characters depicting English words appear in the midst of pages of Chinese script. The two different ways of representing words, in two different languages within the same modality, seems similar to the mixing of fingerspellings and other signs in BSL.

However, the distinction between loan words and native words in Chinese is only made at the written level. In spoken Chinese there is no such clear distinction between the two. More problematically, for a close analogy to exist, Chinese script would have to have adopted certain English alphabet characters as part of Chinese, just as certain BSL signs are made using manual letter handshapes.

1.1.2 Fingerspelling as a Tertiary Form of Communication.

The manual alphabet is often (though not exclusively) used for fingerspelling, which is seen as a tertiary form of communication. Fingerspelling is a representation of writing, which is itself a representation of speech.

Hearing people, competent in reading and writing, use fingerspelling as a tertiary system, because they use it as just a new set of alphabetic symbols,

substituting for conventional orthography. Deaf signers usually learn most of their fingerspelling through the route of reading and writing, even if their primary medium of communication is sign language. Consequently, it may be said that they use it as a tertiary system. The exception here is fingerspelling in very young deaf signers who have not yet made a connection between writing and fingerspelling (see section 5.2, p172, for discussion of this).

Although fingerspelling is a tertiary system, and is usually used as such, there are exceptional occasions upon which it is not being used as a tertiary system by the fingerspeller. It is possible to acquire language directly through fingerspelling, so that fingerspelling acts as the primary form of communication for that signer. Howard Hofsteater grew up in the 1950's with fingerspelling as his sole linguistic input (Evans, 1978). His deaf parents brought him up by fingerspelling to him all through his infancy, just as hearing parents would speak to their child. His language competence developed through fingerspelling as a primary medium. In his case, reading and writing were secondary forms of communication, dependent upon his fingerspelling.

Padden and le Master (1985) have observed that fingerspelling is a system corresponding to natural language, but that it is not a natural language itself. Others (eg Akamatsu, 1985) have claimed that it can be a part of the primary means of communication. Signers who are unaware that they are using fingerspelling while signing may be said to be using this as a primary form. Indeed, Padden and le Master argue this themselves. What is at issue is not the shapes and movements of the hands but the cognitive processes going on behind them. This will be discussed in more detail later, in Chapter 5, particularly in section 5.2 (p175).

A Comparison of Fingerspelling with Morse Code.

Most signers using fingerspelling to sign a whole English word are using fingerspelling as a tertiary system. It is sometimes claimed that fingerspelling's nearest linguistic analogue is Morse code because Morse is also a way of representing written English, and so is also a tertiary form of communication.

Morse code depends entirely upon time for its meaning. Each letter of the alphabet is represented by one or more dots or dashes, or both. A dash is exactly three times as long as a dot and there is a pause of one dot's duration between each signal. There is a gap of three dots (one dash) between each letter and a gap of seven dots between words. A novice operator must learn the combination for each letter but in time will cease to hear letters as series of dots and dashes and recognise them as a 'tune' which is perceived as a letter. Thus "-.-." is perceived as "c" and not as "dash dot dash dot". This way a signal that is made up of parts is perceived as one meaningful whole, just as in a manual letter, the hand-arrangement is seen as a manual letter, rather than as a combination of a handshape with a particular orientation, a movement and a location. In both Morse letters and manual letters, there is a duality of patterning, as letters are made up of smaller meaningless units in both cases.

Unlike our manual alphabet, Morse does not just have symbols for the 26 letters of the English alphabet. It also has seven continental letters (eg "æ" and "ç"), ten numerals, twelve punctuation marks, and thirty procedural signs (eg signifying "error" or "commencing signal" etc). This is much more

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detailed than the British manual alphabet, and makes it much closer to a written system than the manual alphabet.

Features of fingerspelling include: coarticulation; perception of letter sequences as whole words or phrases and formulae; a variation in speed and rhythm of production depending on the word's context; and holding initial and final letters slightly longer than medial ones. Morse code has none of these characteristics because its meaning is entirely dependent upon periods of time. There can be no coarticulation of Morse letters because straying from the rigid pattern would change the meaning of the letters. Similarly, the letters are perceived individually and are not read as whole words or phrases.

The production of Morse code is generally considered to be easier than its reception for all levels of expertise. This is because the sender knows the word in question, and only has to translate the letters into Morse, while the receiver has the added cognitive load of not knowing what the word is until it has been decoded letter by letter. This differential between sending and receiving is also true for fingerspelling. Novices will find that they perform better on tasks of production than reception. With fingerspelling, it is recommended that novices get as much practice as possible at reading spelling back. They are also encouraged to think about sending whole words rather than strings of letters, to help them see fingerspelled words in the same way.

In both Morse and in fingerspelling, it is very common to shorten words by dropping the vowels to produce abbreviated letter sequences which retain

the sound and meaning of the word. For example in Morse, "copy" becomes "cpy". In fingerspelling, the vowels are often dropped or lessened. Fingerspelled loan signs in BSL tend to have dropped medial vowels. There are also many words shortened by convention to two letters by Morse operators for international communication, for example "wx" means "weather". The restructuring of fingerspelled words often leads to the production of two manual letters. This suggests that some similar natural abbreviation processes operate in both cases. However, evidence will be presented in Chapter 8, particularly in section 8.3 (p286), that a large amount of the restructuring process in fingerspelling is controlled by the phonology and morphology of BSL.

Morse code is particularly used for the international Q code, in which three-letter strings beginning with "Q" have the same meaning irrespective of language, for example, QRA means "my name is" in any language. Morse operators who cannot use the abbreviations and Q codes are "no use as radio operators" (Clayton, Chief Examiner in Morse code, personal communication, July 1991). In fingerspelling, there is no direct comparison, because the words fingerspelled are words from the orthography of particular languages. However, there is an analogous situation in which the letters do not follow English orthography, but make a sign with a different meaning in BSL, for example, -m-f- with the meaning glossed as PARENTS.

It may be seen, then, that fingerspelling is a tertiary form of communication that seems to share several fundamental features with another tertiary system. Morse code, however, is not used as part of the everyday speech of

language users. The manual alphabet is often used within everyday BSL discourse, providing opportunities for loans and code-switching.

Having discussed the concept of fingerspelling, it is now necessary to consider what is meant by "British Sign Language".

1.2 BRITISH SIGN LANGUAGE

It was stated at the beginning of this chapter that BSL is the language of the British deaf community. However, the task of defining the parameters of BSL is not straightforward and this has important implications for this study's aims to find how the manual alphabet and fingerspelling are used within the language.

Although research in the 1970s confirmed the linguistic status of BSL (eg Deuchar 1977, 1978; Woll, Kyle & Deuchar 1981), there is no exact definition of BSL and this can cause considerable problems for research in the area. Setting out the reasons for the problems of defining BSL will help to identify a useful working definition of BSL.

1.2.1 Problems of Defining BSL

There is extensive lexical variation within BSL. This has come about for many reasons, including an educational policy of suppression of BSL for the

last one hundred years, the scattered distribution of the deaf community across the UK, and the lack of any major corpus of literature.

Approximately 90% of deaf children are born to hearing parents, and are unlikely to acquire sign language from their parents. They may well learn some form of signing at school, probably from hearing people who do not belong to the deaf community and only have command of what is frequently termed Signed English (although there is very little agreement upon the meaning of this term). These deaf people may only meet fluent deaf signers at the deaf club after leaving school (Kyle & Woll, 1985).

The situation of language discontinuity between generations, and lack of literary tradition, has promoted a wide variation in the language used by deaf people and led to a lack of "Standard BSL" that might correspond to "Standard English" or "Standard French". There are also different registers of BSL and many signers only control a limited number of registers. Further, the variety of language used by deaf people interacting with other deaf people can be very different from that used between deaf and hearing people or deaf signers and deaf non-signers.

A contact sign language often occurs spontaneously during a signed interaction between hearing and deaf people. It is the natural outcome of interference between a sign language and a spoken language, and is not deliberately constrained to follow either English or the sign language of the deaf signer (Lucas and Valli, 1992). It is possibly closer in type to the Foreigner Talk first described by Ferguson (Ferguson, 1971, Klein 1986).

However, the outcome may be described by some people as a form of BSL, while other people call it "Signed English".

To help in the definition of BSL, it is worth clarifying the plethora of terms concerning languages in the visual modality.

The Problem of Nomenclature

Signed language is any form of language that uses signs as lexical tokens. It may be contrasted with written language which uses written words as tokens and spoken language which uses spoken words.

Signed languages may be contrived sign systems (eg Paget-Gorman signing), signed representations of a spoken language (eg signed English), or may be the natural sign languages of a deaf community (eg BSL). The distinction between signed English and BSL, however, is not clear-cut, as signed English uses a large amount of BSL vocabulary (often with certain grammatical features of BSL), and BSL may show evidence of influence from English because of the bilingual skills of most signers.

The issue of what defines a sign language has been debated since the description and naming of American Sign Language (ASL) by Stokoe in the 1960's. A similar situation has arisen with BSL following Deuchar's description of BSL (Deuchar, 1978, 1984).

Prior to the label "BSL", the sign language used by deaf people was simply called "deaf signing". Linguistic research in Britain and America has subsequently led to the identification and description of various forms of

signed languages, such as Signed English, Sign Supported English and Pidgin Signed English (eg Cokely, 1983; McCracken and Sutherland, 1992).

Some sign systems have been devised entirely by educators for the sole purpose of representing English. They may use the basic vocabulary of sign languages such as BSL or ASL but follow the grammatical and idiomatic features of English. Signed English, in its "purest" form is an example of this. Paget-Gorman signed speech is a totally artificial signed language, using signs created by the language authors, although it also follows English grammar.

There are also artificial systems of communication which do not use signs as lexical tokens but which do still involve the production of language in a visible way, such as cued speech, and the Forchhammer hand-mouth system used in Denmark (Engberg-Pedersen, 1993). Fingerspelling may also come into this category if it is used for the complete representation of English, such as the Rochester method of fingerspelling used in the Rochester School for the Deaf in the USA (Savage, Evans & Savage, 1981).

All these signed languages have been introduced solely by educators. They may be used by deaf people as their only language but, unlike sign languages they are not natural languages, and have been designed to represent English in a visible way. However, features from any of these systems may be borrowed into sign languages, and used to some extent in a deaf person's signing. For example, not only are there many signs that somehow use manual letters, but there are also signs from Paget-Gorman used in some dialects of BSL (including the sign meaning "Paget-Gorman",

which is taken from the base sign in Paget-Gorman used to refer to animals). In Danish Sign Language, certain signs are derived from handshapes used in the Forchhammer hand-mouth system (Engberg-Pedersen, 1993).

With so many descriptions and labels of systems and languages in use by deaf people, it is hard to know what may be considered BSL and what may not. Clearly, Paget Gorman signed speech is not BSL, as neither the grammar, nor the vocabulary is derived from BSL. On the other hand, older deaf signers who use large amounts of fingerspelling are said by some deaf people (including the deaf people consulted for this research) to be using a dialect of BSL, even though much of it is a fingerspelled representation of English.

The arguments for the discrimination between the different systems are unlikely to be resolved in the near future, using linguistic definitions of the language, and may not ultimately prove to be relevant or useful to linguistic research on sign languages. Certainly there seems to be no neat linguistic definition of various *spoken* languages and dialects (Wardhaugh, 1992).

For the definition of BSL to be useful, it must be a sociolinguistic definition, rather than a linguistic one based purely upon the form of the language. There is currently no sociolinguistic definition that has been agreed upon, nor does it seem that there will be in the near future.

It is possible that the problem of the "different sign languages" is caused by the "naming" acts of linguists. Once something is named, it appears to be distinct from something with a different name. Western linguistic

philosophers, and politicians who see language identity as part of national identity, often believe that languages are discrete entities which may be defined and distinguished from other languages. This attitude may also have served to create confusion in the area of BSL, because of the use of terms like Pidgin Sign English, Signed English and Sign Supported English, as well as BSL.

The prevailing opinion of the American deaf contributors to "Communication Issues Among Deaf People" (A Deaf American monograph, 1990) in which this issue was debated, seems to be that deaf people consider ASL to be a broad term. In this monograph, Andersson says "As long as deaf people at local and national meetings understand my lectures, I am satisfied with my sign language variant" (1990:1).

Although Stewart (1990) may overstate the case with his definition of what ASL encompasses, his principle exemplifies a different approach to the definition of deaf signing:

> The reality is that most deaf folks have had to use whatever was at hand at the time, theory be damned, including SEE-1, SEE-2, SEE Heinz 57, Siglish, the Rochester method, Cued Speech, gestures,... eye-blinking, face twitching, head nodding, ear wiggling, and just about anything else that might possibly help to bridge the vast gulf that normally separates us deaf people from one another. (1990:118)

The linguistic approach to sign languages has led to some confusion among deaf people. Kunze (1990) remarks that "...linguistic descriptions of ASL suggest that it has very little in common with English", and that they ignore the aspects of ASL that seem to be influenced by English. Consequently,

Kunze claims, "[S]eparating natural sign language into 'English' and 'non-English' elements forced people to choose - to attempt to identify their signing with one pole or the other" (1990:76). One result of this is that some deaf whose language has been influenced by English are not comfortable with saying that they use ASL.

Bragg (1990) rejects the exclusion of English influences on ASL, remarking that while the style that he terms "traditional ASL" is hardly influenced by English at all, some ASL (termed by him as modern ASL and Englished ASL) is heavily influenced by English. Far from viewing this miscegenation as a problem, Bragg claims that:

> the strength of ASL lies in its 'eclecticism' in that it borrows and incorporates whatever is needed from various usages to complete the communicative acts successfully when Deaf people of different backgrounds or the Deaf and hearing communities meet and need to communicate. The potential for greater communication with ASL lies in its openness to adaptability and creativity.... ASL incidentally or freely incorporates commonly used English idioms, word order, phrases, colloquialism and expressions, as well as a number of foreign signs, fingerspelling and initialisation. (1990:10)

These observations regarding ASL, also seem to hold for BSL. Some deaf signers have strong views about varieties that are not BSL, and other deaf signers are more inclined to accept considerable variation as BSL. This is because many deaf people use psycho-social grounds for their decisions, rather than purely linguistic ones.

Lucas and Valli (1992) describe an experiment that demonstrates how important social attitude is in deciding when a variety of language is ASL.

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Two groups of signers were shown the same video recording of a person signing. One group was told that the signer came from a deaf family, and the other group was told that the signer came from a hearing family and only learned ASL late in life. Both groups were then asked if they considered the signer to be using ASL. The responses from the two groups were different, demonstrating that judgements are made as much by what one knows about a signer's cultural identity as by the linguistic evidence.

Another problem with the definition of BSL is the use of the signer's voice while signing. When BSL is defined, it is usually said to be something like " a visual-gestural system: it is perceived visually and produced by means of bodily gesture" (Brennan, 1992:10), but the role of the spoken language within this language is not specified. Many deaf people also use their voices while signing, even to other deaf people who cannot hear them. Sometimes, this may be called "Signed English" if every sign is matched by a simultaneously articulated word, but this is rare. There are many occasions when deaf people do not speak the whole English message, so that, although they are articulating English words, they are still signing BSL. There are also occasions upon which the signer mouths a great deal of English, but does not articulate the English words.

In view of the problems in reaching a convenient linguistic definition of BSL, a definition based more on sociolinguistic principles must be used, using the views of the language users such as are given in "Communication Issues Among Deaf People". Wardhaugh (1992) remarks that ultimately, this is perhaps the only way to identify varieties and discrete languages.

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In this research, the definition of BSL will be closer to those definitions by the deaf Americans quoted above. It will take a very broad view of BSL, accepting that the signed language used between two deaf adults who are members of the British deaf community is BSL. This will allow for many different social and regional dialects and different registers to be a part of the same language, and may even produce some seeming contradictions. The definition will also include signing that is accompanied by spoken English, when that signing is not a full grammatical representation of English. It might be possible to argue that some of the signing considered here is not BSL, but it is not easy to say what it is, if it is not BSL. In the absence of any recognised "Standard BSL" the broad sociolinguistic definition given here will have to suffice.

As Scotton and Okeju (1973) have noted:

> Speakers of any language can be considered a single unit only in the sense that they share some common core of competence in that language. Otherwise, especially in terms of performance, these speakers must be viewed as members of particular sub-groups within the larger community. (1973:872)

This is the view held here.

Having reached a broad, but working, definition of BSL, it is now necessary to consider the use of the language in more depth. It will be argued that one reason for the use of fingerspelling and the manual alphabet in BSL is to expand BSL vocabulary. This lexical expansion will now be discussed in greater detail.

1.2.2 Lexical Expansion in British Sign Language

BSL is a minority language whose contexts for use have until recently been primarily social. Over the last 20 years, its use in education and formal situations such as television broadcasting has resulted in an expansion of the language's vocabulary. Some new signs have been produced from other existing BSL signs. Others have been borrowed from other languages, both signed and spoken.

Foreign sign languages have served as minor, but significant, donor languages for BSL. ASL, for example, has a relatively large sign vocabulary and some signs may be borrowed from ASL into BSL. However there is a considerable wariness of American paternalism in the British deaf community, and frequently ASL signs are rejected as a reaction against the perceived threat of American culture. One consultant interviewed for this research claimed that it was important for European deaf people to develop a recognisable identity in order to resist American influence which she saw as a threat. One way of doing this is to find alternatives to ASL signs when possible. Some British deaf are looking to other European sign languages as a source for sign vocabulary, especially in the context of international conferences. In some dialects of BSL, ISL is also an important source language for loans (Brennan, Colville and Lawson, 1984).

The major source language for borrowing in BSL, however, has not been another sign language, but English, as most deaf signers are bilingual in English and BSL. The borrowing is permitted either through loan translations or through fingerspelling (see section 4.4, p135). A BSL signer may also

borrow words from other spoken languages (Welsh, French or Finnish) using the manual alphabet (section 4.4, p138).

1.3 VARIATION IN USE OF FINGERSPELLING

Fingerspelling has played many different roles in the language of British deaf people throughout history. Sometimes the role has been a leading one; sometimes only supporting. Sometimes communication has been exclusively through fingerspelling and sometimes the parties concerned have not known the manual alphabet. The situation today is still varied, but among many members of the British deaf community fingerspelling is interwoven with signing. Evidence from analysis of British Sign Language on television suggests that the use of fingerspelling has changed over the last 10 years and is continuing to change as BSL moves away from the influence of English (Woll & Sutton-Spence, 1990).

The amount of fingerspelling used has been shown to vary according to the dialect and the register used in an utterance (Woll & Sutton-Spence, 1990, and Zimmer, 1989). The ratio of fingerspelling to sign used is not necessarily a guide to deciding if the signer is using a more or less "pure" form of BSL. One person may use a good deal of fingerspelling and still be considered by native signers to be using BSL, while another may use a good deal less and be considered to be using "Manual English". This decision is frequently based upon the way that the signer uses the manual alphabet or other

features of language such as mouth patterns or sign order, and is often a sociolinguistic decision.

Deuchar (1978) found that in some registers of BSL the ratio of signs to fingerspellings was 9:1. In other more formal situations, such as educational environments, church services, and where hearing people are present, it approached 2:1.

Deuchar's data for the ratio of 2:1 came from the signing of a hearing missioner to the deaf in late 1970s. Casual observation suggests that most hearing people today do not use fingerspelling to the same extent. However, there are many older deaf people for whom fingerspelling is a major part of signing. At the other extreme, it is also common for quite long stretches of signing to use no fingerspelling at all. This may be true particularly in the lower, more casual registers of many signers, and in the dialects of young signers.

1.4 REJECTION OF FINGERSPELLING AS PART OF BSL

Despite the broad views about the eclectic nature of sign languages such as ASL quoted above (in section 1.2.1, p16), it is nonetheless true that fingerspelling is often seen as something English that "real" BSL does not use. This belief has been observed informally during this research on many occasions, and the reasons for it will be outlined here. To ignore the presence of fingerspelling in the signed language of deaf people is a

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mistake, because it is there, and plays a varied, useful role. Whatever its history and original function, fingerspelling, is - for better or worse - part of the communicative repertoire of deaf people. The failure to consider the use of fingerspelling in sign languages has also meant that linguistic grammars of sign languages designed to describe sign languages may be incomplete, and unable to deal with the influences of spoken and written languages.

Woodward (1978) studied kinship terms in sign languages around the world, but only considered those signs that were not derived from fingerspelling. This method led him to conclude the BSL only has three native kinship terms: BROTHER, SISTER and OFFSPRING. This sort of immediate rejection of use of fingerspelling by linguists has only recently been questioned.

Lucas & Valli (1992) report that some deaf judges of signing refused to accept that fingerspelling was a part of ASL. This rejection of fingerspelling was because it represents English orthography, and because it symbolises the use of English and the oppression of ASL through education by English. Padden (1991a) has remarked:

> Others have explained to me that *pure* sign languages do not have fingerspelling, and that fingerspelling is found mostly among the elite. Real signers don't fingerspell or don't need to fingerspell. They know the signs for everything and use signs more actively. (1991a:2. Author's emphasis)

As a reaction to these beliefs, use of fingerspelling may be inhibited or treated as interference from spoken language.

Many hearing signers today (who often lack advanced fingerspelling skills), have accepted the beliefs outlined above and regard fingerspelling as something to be avoided in signing. Frequently, hearing learners of BSL use fingerspelling only to request a sign translation, in the belief that everything must have a sign. Goodstein (1990) observed hearing American teachers using Seeing Exact English who made up new signs for concepts which did not have signs. They did not fingerspell the English word, because they believed that fingerspelling must be avoided at all costs.

Some deaf BSL teachers do not teach many signs using the manual alphabet to adult hearing students. For example, the less common, iconic sign meaning the English word "kitchen" (reflecting mixing something in a bowl) is sometimes taught rather than the common loan -k-k-. Although one deaf consultant has suggested that this is because the students would not easily understand the meaning of the non-iconic -k-k-, many sign tutors avoid any use of fingerspelling in teaching classes, because they do not want their students to come to rely on it.

The theoretical background against which linguists have worked has had important consequences for the perceived status of fingerspelling within sign languages. The possible reasons for the lack of attention paid to fingerspelling are twofold.

The first reason is that when sign languages were first described, there was a need to prove that sign languages are "real" languages in their own right, and not mere derivatives of spoken languages. Consequently, linguists focussed on the aspects of the language which were most unlike spoken

language, such as the use of space and movement to communicate several morphemes simultaneously.

This demonstration of the *independence* of the sign languages of deaf people is now accepted by most linguists, but has led to a reluctance to acknowledge that most sign languages are *influenced* by the language of the surrounding speech community. One example of this influence is the use of fingerspelling to borrow words from surrounding spoken languages. Although fingerspelling is not explicitly rejected from sign languages by linguists, it has not been mentioned as often as one might expect, unless when discussing the influence of English upon signing. For example, Deuchar's 1984 work on diglossia in BSL implied that fingerspelling belonged at the English end of a notional BSL-English continuum.

A similar situation occurred with the use of mouth patterns clearly derived from the spoken language surrounding a deaf community (termed "word pictures" by Schroeder, 1985). When sign languages were first described by linguists in the 1970s and 1980s, the role of word pictures was ignored, as linguists focussed on the manual component of signs. There was an implication that word pictures were interference from spoken languages, rather than part of sign languages. More detailed study of these non-manual features showed that they formed a fully integrated part of the sign languages (Schroeder, 1985, Ebbinghaus & Hessman, 1990, and Pimia, 1990). It should be possible to demonstrate that, like word pictures, the use of the manual alphabet is not a case of interference from spoken language, but a part of BSL.

The second reason for linguistic research ignoring fingerspelling has been the prevailing theory of sign language phonology since the mid-1960s. Until the mid-1980's, the primary organisation of sublexical structure in signed languages was considered to be almost exclusively simultaneous (Stokoe, 1965, Kyle & Woll, 1985). The meaning from fingerspelled words comes through sequences of letter handshapes and consequently could not be easily fitted into the theoretical framework of "simultaneity" of sign language phonology prevalent in the 1970s and the first part of the 1980s. Rather than rethink the theoretical approaches to either signs or fingerspelling, it was more convenient to ignore fingerspelling's part in sign language. Wilcox (1988) has observed that Battison's (1978) work on lexicalised fingerspellings aimed to show that simultaneous articulation was a defining characteristic of a lexicalised fingerspelling.

More recently however, there have been strong claims that some sublexical components of signs are sequential and that sign language phonology parallels spoken language phonology (eg Liddell & Johnson, 1989). In Liddell and Johnson's "Movement-Hold" model, the simultaneity of sign parameters is seen as analogous to the simultaneity in articulatory bundles in speech sounds, and the sequential nature of the movements and holds in a sign parallels the phonemes of spoken languages. This theoretical approach is considered in more depth in section 4.1, p123.

Despite the importance of the simultaneous nature of signing parameters and the predominantly sequential nature of fingerspelling, there is some overlap. During fingerspelling there are frequent occurrences of the simultaneous articulation of more than one letter and this coarticulation can be seen as an

occasion upon which fingerspelling has aspects of simultaneity. Conversely, many signs may be analysed in terms of both simultaneous and sequential phonological parameters (eg the BSL signs FLOWER and HAPPY). Wilcox (1988) implies that such concessions to sequentiality in signing have made fingerspelling more acceptable in the field of sign language research.

Padden (1991a) has said that

> we [should] confront our prudishness about signed languages, particularly the belief that sign languages are made up of signs, and that fingerspelling or mouthing have no place in signed languages. ...[F]ingerspelling is not an evil distraction, but an integral part of a signed language.... (1991a:2)

This is the view that will be taken here, and provides the basis for further investigation.

1.5 CATEGORISATION OF USES OF THE MANUAL ALPHABET

There are strong theoretical and practical reasons for considering uses of the manual alphabet to be part of BSL. However, the manual alphabet is not only used for fingerspelling, nor only for fingerspelling words that are immediately identifiable as a part of English.

Previous research into fingerspelling has divided the uses of the manual alphabet into two basic types, according to whether it was seen to be a part of BSL or English. Thus, fingerspellings were seen to be either renditions of English words (that is, code-mixing or code-switching between English and

BSL, or English words used within BSL), or established loans that had become a part of BSL by becoming signs. The former were termed "English fingerspelling" and the latter were termed "BSL lexicalised fingerspelling" (Woll 1987, Woll & Sutton-Spence, 1990).

Although this division has many advantages, it is a very broad one and it is not always easy to categorise any given occurrence of a fingerspelling as an established loan or not. The research here will study the use of the manual alphabet, using different categories of uses of the manual alphabet. The classification here maintains the importance of differences between the languages, but focuses more upon the form of the signs produced and their function within BSL, and less on the boundaries between two languages.

1.6 THE AIM OF THIS RESEARCH

The unresolved problems of defining BSL, as outlined above, make description of the status and functional role of fingerspelling within BSL a difficult task. However, the working definition of BSL, given above in section 1.2, p19, makes an investigation possible.

This research has several aims within the general aim to understand the role of the manual alphabet and fingerspelling in BSL. Each aim is outlined here.

1) To trace the history of the development of the manual alphabet, and its use within the British education system, and the British deaf community.

2) To determine the status of the manual alphabet itself in BSL. Also to determine the role of fingerspelling in borrowing between languages.

3) To discover the psycholinguistic factors involved in the use of fingerspelling, and the acquisition of fingerspelling by children.

4) To determine the extent of use of fingerspelling and the manual alphabet in the signing of deaf people. To conduct quantitative analyses of the amount of fingerspelling and instances of the manual alphabet used in BSL as a whole and in differing social dialects and registers.

5) To discover social and linguistic situations in which the manual alphabet may be used. Semantic and grammatical categories of English words that serve as the source of the signs created will be considered.

6) To describe the circumstances in which fingerspellings can become incorporated into BSL and the restructuring that occurs.

7) To describe the processes involved in the creation of signs using a single manual letter.

The overall thesis is that the manual alphabet is used as a minor, but integral part of BSL. Uses of the manual alphabet may be seen as instances of loans from English, showing behaviour similar to other loans in other, spoken languages. The justification for this will be given in Chapter 4 in more detail. The status of these loans varies. Some loans are nonce instances (relying on the bilingual abilities of the signers for successful communication to

occur) and some are an integrated part of BSL. Some fingerspellings may be seen as instances of code-switching from BSL to English. In this case, the fingerspelling follows English syntax (if it is of several words) and takes the grammatical morphological inflections of English. Loans from English using fingerspelling may be incorporated into BSL phonology as they are, or be restructured to take on aspects of BSL phonology and morphology.

A loan is "a linguistic unit (usually a lexical item) which has come to be used in a language or dialect other than the one where it originated." (Crystal, 1985:205). Loan words come into a language through the process of borrowing. Maravcsik says that borrowing occurs when "a language acquires some structural property from another language that is contemporary to it" (1978:95), while Haugen defines borrowing as "the attempted reproduction in one language of patterns previously found in another" (1950:210). It is argued here that BSL uses many loans from English, through the fingerspelling of English words.

Code-switching, on the other hand, is a seemingly random alteration of two languages. Poplack (1980) has argued that code-switches from L_1 into L_2 are ideally completely non-integrated with the L_1, phonologically, morphologically and syntactically. She does accept, however, that there may be times when the phonology of the L_2 items may be indistinguishable from the L_1 phonology. Code-switching may occur within and between sentences, but always at points in the discourse that will not violate the syntactic rules of either language (termed by Poplack, the "equivalence constraint"). Although code-switching is random, it is governed by both linguistic and extra-linguistic factors. Sometimes it occurs because the bilingual person is non-fluent and

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cannot translate the code-switch into the other language. Fluent bilinguals, however, may also code-switch freely and smoothly, with no metalinguistic commentary.

1.6.1 The Structure of the Dissertation

Chapters 2 to 5 will describe the literature available on the use of the manual alphabet and fingerspelling. They will describe historical aspects of fingerspelling use, as well as more recent literature concerned with borrowing between languages, and the psycholinguistics of fingerspelling.

The method of data-collection will be described in Chapter 6. The data for this research comes from five sources. It has been collected in four different ways, namely from written texts (study 1), observation (study 2), elicitation (study 3), and experimentation (study 4 and study 5).

Chapter 7 will present the results of studies concerned with the amount of use of fingerspelling in BSL, and the different ways that the manual alphabet is used, in BSL as a whole, and in social dialects and some registers.

Fingerspellings in BSL also undergo restructuring as they take on features of BSL phonology and morphology. This will be described in detail in Chapter 8. Chapter 9 will deal with one specific way of using the manual alphabet in BSL, the creation of a single manual letter sign (SMLS).

1.6.2 Proposals Concerning the Different uses of the Manual Alphabet

In the process of lexicalisation of a sign using the manual alphabet, it is rare for all letters of the original citation form to be retained. There are various possible combinations of letters retained and deleted. The processes involved may be described as initialisation, abbreviation or contraction. The circumstances determining the processes need further research. Knowing the conditions affecting letter choice will lead to a greater understanding of the processes of formation of lexical items within BSL as a whole and the importance of English in the creation of the new lexical items.

It is commonly said that, as time passes, the fingerspelling may be replaced by a sign, but that if it does not, it may become abbreviated or reduced to only the first letter (eg Battison, 1978). There is, however, no documentary evidence of the progressive shortening of a fingerspelling from the full English word, to the first letter, via various abbreviations. This work proposes a different way of looking at the influences upon the form of fingerspellings and uses of the manual alphabet.

The basic function of the manual alphabet is to allow the signer to produce an articulation that is derived in some way from an English word. Here, it is proposed that it is useful to divide the processes for creating these signs into three basic types.

1) In the first type, the English orthography may be recreated in full, by fingerspelling each letter of the English word. If the fingerspelling is created

at speed or with a frequency that makes a clear fingerspelling redundant, some of the letters (usually the vowels) may be dropped from the fingerspelling, or not articulated fully, but the basic outline of the word is retained.

2) In the second type, a restructured abbreviation or contraction of an English word is fingerspelled. The number of letters in an abbreviation or contraction varies, but the most common number is two. This research will show that the part of the English word selected for retention also varies. Some of the most productive processes include taking the first syllable, the first two letters, the first and last letters, or the first letters from each syllable or salient morpheme. Other features of reconstruction include changes in movement, location and semantic content.

3) In the last type, a sign may be created using only the *first* letter from the English source word. This will be termed a single manual letter sign (SMLS). Another term, "initialised signs" has been used in the literature to refer to some uses of single manual letters as signs. However, this term (frequently used in American sign linguistics literature) is used most frequently to describe a form which has a manual letter handshape imposed upon a non-derived sign. Single manual letter signs are *any* signs that have a single manual letter as their base (initial or other). The SMLS themselves may be further subcategorised into four groups:
a) those with no extra movement ("simple SMLS")
b) those with extra movement that has no other meaning in BSL
c) those with extra movement that has meaning in BSL

d) those that may be seen as a manual letter handshape imposed upon BSL signs already in existence (sometimes called "initialised signs").

It is proposed here that all three of these outlined uses of the manual alphabet have specific roles in BSL and that their final form will be a result of the interaction of four factors:

a) the form of the English word,

b) the word-formation processes of BSL and the morphological processes of BSL,

c) the sociolinguistic attitude of the signer,

d) the skills of the signer in BSL, English and fingerspelling.

It will be shown here that all three uses of the manual alphabet enable signers to borrow words from written language, and to code-switch between BSL and English. The first two uses (fingerspelling whole words and abbreviations) do not allow much integration into the grammar of BSL. The SMLS, however, can be fully integrated into the grammar of BSL, taking on the full grammatical morphology of any two-handed BSL sign.

In order to understand the status and role of the manual alphabet and fingerspelling in BSL more clearly, it is important to look at the field from a historical perspective. Research into this area reveals that the manual alphabet and fingerspelling were frequently used in the past by hearing people who had little or no knowledge of BSL, and that references to the use of the manual alphabet by deaf people rarely address the role that it played within the sign language of the deaf people. From this initial separation of signing and the manual alphabet, Chapter 3 shows how the manual alphabet

became more a part of sign languages as the education of deaf people used the manual alphabet together with signing.

The next chapter will describe the history of the manual alphabet, considering both the one-handed systems used in Europe and the rest of the world, and the British two-handed system. It will also consider some manual alphabets that were never adopted for general use, and other two-handed manual alphabets that are used around the world.

Chapter 2

THE HISTORY OF THE MANUAL ALPHABET

2.0 INTRODUCTION

The literature concerning the manual alphabet and fingerspelling can be traced back many centuries. The review of this literature will be divided into four chapters.

In this chapter the manual alphabet itself will be considered. It will trace the history of the British manual alphabet, as well as that of some one-handed manual alphabets used in other countries. It will also consider two-handed manual alphabets used in other countries.

Chapter 3 will consider the use of fingerspelling in education since the sixteenth century, and the attitudes of educators to the manual alphabet and fingerspelling.

Chapter 4 will review the recent literature concerning linguistic issues surrounding fingerspelling and literature concerned with borrowing between languages. This section will demonstrate that the use of fingerspelling and the manual alphabet in BSL may best be seen as part of a borrowing or code-switching process.

Chapter 5 will review research and theories upon the psycholinguistics of fingerspelling, dating back well into the nineteenth century. It will cover production and comprehension of fingerspelling, as well as the acquisition of fingerspelling by children.

Part of the research into the history of the manual alphabet has involved the collection of manual alphabet charts produced since 1575. Appendix I contains the complete set of manual alphabets collected. Most manual alphabets will be referred to in the text, but others are included simply for completeness.

2.1 THE EARLIEST FINGERSPELLING

Fingerspelling was originally designed by hearing people as an alternative to speech. Barrois (1850) suggested that fingerspelling can be seen in pictures and friezes from Ancient Egypt and Assyria. Barrois attempted to recreate a pre-Phoenician manual alphabet based on the handshapes seen in monuments from ancient times. Although Barrois' work did draw attention to the fact that there are many unexplained handshapes to be found in ancient art, Farrar (1889) considered Barrois' interpretation to be misguided, observing that there is not enough information contained in any one source for anything beyond speculation. Barrois also claimed that sketches of the actors in a Latin manuscript of a comedy by Terence portray fingerspelling. Copies of the manuscript from both the 8th century (in the Vatican) and the

10th century (in Paris) certainly show some interesting handshapes, but it is unclear whether they are fingerspelling or signing (Bijlsma, 1986).

Pennington, in a letter to the Independent Magazine (28 November 1992) reports that medieval wall paintings in English churches depicting biblical stories and lives of the saints "included a complete code of signs and gestures for ease of recognition" by a largely illiterate congregation. She explains that "a curved and elongated forefinger indicated that a person was talking... and the two-fingered salute represented power". It is likely that Barrois was imposing his own interpretation upon a similar system of codes and gestures.

There is more reliable evidence of the existence of systems to represent the letters of the alphabet on the hands in Classical times. In medieval Europe, some religious communities living under rules of silence used fingerspelling in conjunction with their own monastic sign languages and it is mentioned by Bede in the late 7th Century. Bijlsma (1986) gives a more detailed account of this. In "De computo scu Indigitilatione", Bede described the method of representing letters of the alphabet by counting on the fingers and by movements of the hands and posturing of the body.

It is popularly believed that the sign languages of the deaf arose out of the monastic sign languages. Not all monastic sign languages, however, seem to have made use of the manual alphabet. At least, the descriptions of the languages make no mention of it (eg the Benedictine sign language described by Banham, 1991, and Martins, 1958).

Bede reported that the Greeks had a system for representing numbers from 1 to 10,000 on their hands. As they also represented their numbers by letters, they found themselves with a ready-made manual alphabet. Bede did not give an illustration of this system, but Bulwer mentioned the same system (referring to Bede) and gave an illustration of the concept in Chirologia (1644). This may be seen in figure I.6(a) on page 8 of the Appendix.

Although the Romans did not use this system, they did use numbers shown manually to communicate written messages. This was done simply by referring to each letter by the number of its position in the alphabet. Bede explained:

> If thou seest thy friend among wily deceivers and wouldst admonish him to be wary, show him with the fingers III, I, XX, XIX, V and I, VII, V; which in the order of the letters denoteth CAUTE AGE. (Translation in Farrar, 1889:36).

Although Bede made a clear reference to manual methods of representing the written alphabet, he did not link it to communication with deaf people.

> I think that from what I have just made known [ie counting on the fingers] some kind of manual speech can be formed for the purpose quite as much of exercising ingenuity as for amusement by means of which any one, where he has expressed the letters one by one, may convey the words contained in these letters to another who had learned this art, however far away he may be placed, so that [the words] are read and understood. (Translation in Farrar, 1889:36)

All this is evidence that well before the seventeenth century, fingerspelling systems were in use for reasons of secrecy, religion and mere pleasure in communicating in a novel way.

The history of the British manual alphabet is independent of those alphabets which developed in the rest of Europe. The one-handed international manual alphabet and many of those used in parts of Europe and America today can be traced back to a different common root. As this can be traced back further than the British manual alphabet, it will be dealt with here first.

2.2 THE EUROPEAN MANUAL ALPHABETS

The attitude to the alphabets used in Europe was different from that in England. In England, it was the eighteenth century before the modern manual alphabet was published and standardised and people opted for a single conventional method of representing English orthography manually. On the Continent one system was steadily handed down through generations of monks, educators and deaf people and can be dated back at least to the thirteenth century.

2.2.1 The Early Manual Alphabet in Spain.

The first description of the manual alphabet that was later used with deaf people is found in Saint Bonaventure's (1221-1274) "Opuscula". St Bonaventure, however did not link this with deaf people, but only with the communication among the Silent Orders. The first written record known of its use with deaf people is in "Libro Llamado Refugium Infirmorum" written by a

Franciscan, Fr Melchor de Yebra (1524-1586). Melchor De Yebra recommended the use of a manual alphabet in this booklet for people who were unable to speak on their death-beds.

A copy of this book, published posthumously in 1593 by Pedro de Salazar, (described by Ivars 1968) included this manual alphabet attributed to Saint Bonaventure. Importantly, from the point of the history of fingerspelling used by deaf people, Melchor De Yebra said that confessors should make themselves familiar with the alphabet for the benefit of those outside religious communities.

Melchor De Yebra told the story of a priest who had been called to the death-bed of a man who had desperately tried to communicate by means of gestures and fingerspelling. The priest had been unable to understand the man, who had consequently died unconfessed and unshriven. Melchor De Yebra was keen that this should never happen again and urged other clerics to learn the manual alphabet, "so that they may reply and speak to a very deaf penitent who can understand hand letters" (Translation in Ivars, 1968:187).

Bijlsma (1986) has drawn some important conclusions from this story. Firstly, there was a manual alphabet already in existence. Secondly, it was known by people outside the religious communities. Thirdly, it was being used by deaf people.

The idea of using fingerspelling in deaf education had certainly been mooted by that time as an Italian physician, Jerome Cardan (1501-1576) had suggested that deaf people could be taught using a manual alphabet.

A Florentine monk, Rosselius published "Thesaurus Artificiosae Memoriae" (1579) which shows one-handed alphabets. Most letters had three different forms. (See figure I.2 on page 4 of the Appendix)

Rossellius also showed a method of representing letters by pointing to various parts of the body. At this time, there were still many ways of representing letters, and the idea of using single handshapes alone was by no means established.

Pedro Ponce de Leon probably used the same manual alphabet mentioned by Melchor De Yebra to teach the Velasco brothers in the sixteenth century. Baltasar de Zuniga, (cited in Chaves & Soler, 1980) who was a contemporary of Pedro de Velasco, wrote that Don Pedro's nephews spoke to him "by express order of the monk [ie Ponce de Leon]... using certain movements of their hands with which they formed the letters of the alphabet." Although Melchor De Yebra and Ponce De Leon belonged to different Orders, they both had relatives at the Spanish court, and Chaves and Soler believe they would have known each other. One hundred years later, servants of the Velasco family (Ramirez De Carrion and Bonet) were using a manual alphabet similar to Melchor De Yebra's, so it is likely that Ponce de Leon used it and introduced it to the Velasco family, who continued to use it for succeeding generations of deaf offspring. This is only deduction, however, and we have no clear proof which manual alphabet Ponce de Leon used.

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The first clear reference to use of the manual alphabet in deaf education is in "Reduccion de las letras y arte para ensenar a ablar los mudos" (1620) by Juan Pablo Bonet. Bonet used the manual alphabet but did not claim to have invented it. His book was clearly well researched and contained a full account of the methods of deaf education, as well as some beautiful pictures of the manual alphabet very similar to the one drawn by Melchor De Yebra (see figure I.3, page 5 of the Appendix). Clearly, this alphabet had been widely used for some time by then .

Written Spanish very closely approximates the pronunciation of spoken Spanish. This close link between phonology and orthography enabled Bonet to teach speech through writing. The "Reduction" in his title is the reduction of the letter name to the letter sound (eg "zed" becomes [z]). By coincidence, Bonet's method was both a manual alphabet and a system for representing "visible speech". A similar close relationship between spoken Russian and the Russian orthography today makes "neo-oralism" (speaking while fingerspelling under the chin to provide a visual clue to the spoken word) practicable (Lewis, 1968). For most other languages, however, a more complex relationship between speech and fingerspelling must be understood by the deaf person.

2.2.2 The Manual Alphabet in France.

Bonet's manual alphabet spread slowly through out Europe. Jacob Rodrigues Pereira (1715-1780) brought it to France and enlarged it to cope with French pronunciation and orthography. The result consisted of 80

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different characters, designed to represent all the speech sounds of French as well as the clusters of written letters. It is clear that Pereira viewed the manual alphabet as a form of the spoken language on the hands, as well as written language.

Pereira used his manual alphabet in the education of his deaf pupil, Saboureux de Fontenay. Fontenay had, however, already learnt some fingerspelling in France, clearly using another manual alphabet. Charles, the Abbe de l'Epee (1712-1789), founder of the first school for the deaf in France was already using a two-handed manual alphabet which he claimed was in common use among school children across France.

In his "Instruction des Sourds et Muets" he mentioned Madame de St Rose, a nun of the order of the Cross who taught two French children using natural signs and the French manual alphabet. Elsewhere in the same book he referred to "The French manual alphabet that I had known ever since my childhood" (Translated in Francis Green, 1861:12). This was probably the same manual alphabet that Saboureux de Fontenay had used.

It is possible that this two-handed manual alphabet was the one illustrated by Stephani in 1796 (cited in Jussen, 1973). Jussen only gives nine manual letters but they are all, bar one, two-handed (see figure I.4, page 6 of the Appendix). The manual letters for "k" and "x" are the same as those in the British manual alphabet. However, the letter hand-arrangements are all highly iconic, and there are no immediate grounds for considering the manual alphabet to be related to the British one of the time. It is more likely that this manual alphabet was in general use on the continent, as it is claimed to be

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the Franconian alphabet. Deleau (1812) also mentioned a two-handed manual alphabet that was being used in Leipzig at the time. This may, also, have been the same alphabet.

De l'Epee did not make extensive use of fingerspelling, as his system of methodical signs provided a sign for every French word and grammatical inflection. Although the two-handed system was eventually replaced in the Paris school by a form of the imported Spanish alphabet, De l'Epee never really mastered it and preferred to use his own. This could be because De l'Epee's primary interest was not in speech but in signing and written French. Anything more than the basic letters of the alphabet would have been surplus to his requirements. Certainly, the alphabet of 25 letters (no "w") adopted by the French - while possibly using the handshapes modified by Pereira - owed more to Bonet's concept of a manual alphabet than to the embellishments and phonetic adaptations of Pereira.

2.2.3 The Manual Alphabet in Other Countries.

When Thomas Gallaudet and Laurent Clerc took the French education techniques over to the United States, they took the one-handed manual alphabet with them and it played an important part in American deaf education (see section 3.3.5, p103). The modern American alphabet contains a few minor changes but is in effect the same alphabet.

Similar forms of the one-handed alphabet are used in many parts of the world. The International manual alphabet adopted by the World Federation of the Deaf in 1963 is basically the American one, with the exception of the

letters .t. and .f. (the handshapes of the American .t. and .f. are obscene

gestures in many countries, so the international .t. and .f. are based on the

handshapes of the Swedish letters). The Danes have their own manual

alphabet, which was also used until recently by the Norwegians, but Norway

has now changed over to the International manual alphabet. The Swedish

and Portuguese manual alphabets are similar to each other and quite unlike

any other systems. This is because the Swedish educator Per Borg opened

a school for the deaf in Lisbon in the 1823, bringing the Swedish system with

him. Per Borg had studied in France, and although he devised his own

manual alphabet, he had clearly been influenced by the French (Carmel,

1981).

2.3 THE EARLY BRITISH ARTHROLOGICAL SYSTEM

The manual alphabets used in Britain have been of two basic types. Prior to

1698, most were based on methods of allocating letters to joints of the fingers

or areas of the hands, and pointing these out in succession. In these

"arthrological" systems the shapes of the hands did not change and it was

the pointer which distinguished letters. For a few letters in some manual

alphabets, this system was not used. Instead a letter was represented by a

given hand-arrangement. In the later "dactylological" systems the letters

were distinguished by different handshapes, often reflecting the shapes of

the written letters. The most substantial shift from "arthrology" to

"dactylology" occurred in 1698 with the publication of "Digiti Lingua".

The first known reference since Bede to a manual alphabet in England is in John Wilkins' "Mercury, the Swift and Silent Messenger" (1641). The book is a work on cryptography, and fingerspelling was referred to as one method of "secret discoursing, by signes and gestures". After referring to Bede, Wilkins went on to say:

> Hence it is easie to conceive, how the letters, as well as the numbers, may be thus applyed to the severall parts of the hand, so that a man might with divers touches, make up any sense, that hee hath occasion to discover unto a confederate.
>
> This may be performed, either as the numbers are set downe, in the Authors before cited, or else by any other way of compact that may bee agreed upon. As for example. Let the tops of the fingers signifie the five vowels; the middle parts, the first five consonants; the bottomes of them, the five next consonants; the spaces betwixt the fingers the foure next. One finger laid on the side of the hand may signifie T. Two fingers V the consonant; Three W. The little finger crossed X. The wrist Y. The middle of the hand Z. (1641:116-117)

In this passage, Wilkins described the five vowels as exactly the same as the vowels in the modern British manual alphabet. Thus we can trace the modern British manual vowels back to at least 1641. Although Wilkins did not provide an illustration of the manual alphabet, a possible reconstruction can be made, and may be seen in figure I.5, page 7 of the Appendix.

Wilkins referred to deaf people using signs and gestures, including fingerspelling (or arthrology, as he called it). He mentioned that arthrology was of "especial note for [its] use and antiquity" (1641:117). It is clear that Wilkins knew that the manual alphabet he described was used among deaf people, as well as by hearing people. There was no suggestion that the manual alphabet was of his design.

Bulwer's "Chirologia" (1644) is the next known publication which mentions the use of gestures to represent letters. Bulwer's aim was to provide an international language of natural gesture by describing the gestures used in oratory and explaining their meaning (eg clasped hands signifying begging). He arranged various of these signs and gestures so that they could be used to represent letters of the alphabet and "to serve for privy cyphers for any secret intimation" (1644:150). The manual alphabets arranged by Bulwer may be seen in figure I.6 (a to f) on pages 8 to 13 of the Appendix. For Bulwer, however, the emphasis was on the use of gestures as a complement to speech rather than an alternative.

The manual alphabet that Bulwer expected to be used by deaf people is mentioned in "Philocophus, or the Deafe and Dumbe man's friende" (Bulwer, 1648). The book was dedicated to Sir Edward Gostwicke, a deaf man who clearly communicated using signs but was also a skilled lip-reader. In Philocophus, Bulwer mentioned a deafened man, Master Babington of Burntwood, who communicated with his wife using "arthrologie", by pointing to areas of the hand and the finger joints. Bulwer observed that it was also possible to use this form of communication in the dark. Although Bulwer did not give any examples of this arthrology, it would be reasonable to assume that the system was similar to the one described by Wilkins.

Further evidence of the general currency of this arthrological system comes from the writings of William Holder, one of the two earliest British educators of deaf people in England. He wrote in 1669, "Teach him [the deaf child] an alphabet upon his fingers or several parts of his hands, by placing the letters

there, which you may devise at pleasure" (1669:151). He proceeded to

describe an alphabet that he used which involved pointing to joints and areas

of one hand with the other.

> Particularly, let the extremity of the thumb and four fingers of the left-hand (when any of them is pointed at by the forefinger of the right hand, or by any kind of fescue) signify the vowels a, e, i, o, u. The middle of the insides of them beginning at the thumb b, c, d, f, g. The bending of the Fingers on the inside next the Hand, h, k, l, m, n. The back-side joynts below the Nails, p, q, r, s, t. The middle joynts, v, w, j, y, z; anywhere towards the wrist, or crossing the two forefingers, x. (1669:151)

A pictorial reconstruction of this manual alphabet may be seen in figure I.7 on

page 14 of the Appendix. It is particularly notable for the fact that it used

both the palm and the back of the hand.

Despite Holder's suggestion that placing the letters on the hand could be

devised "at pleasure", the system is remarkably similar to Wilkins'. There is

no doubt that Holder was aware of Wilkins' "Mercury", but it is also possible

that Holder was simply using the manual alphabet that was commonly used.

John Wallis was Holder's contemporary, and also a teacher of deaf people.

Wallis seemed to have a similar attitude to the arbitrary nature of the forms of

the letters. In his letter to Thomas Beverly in 1693 (quoted in Green, 1783)

he recommended signifying letters

> by the position and motion of the finger, hand, or any part of the body which may be in stead of written letters. For example, that the vowels may be noted by the ends of the five fingers; the other letters b, c, d, &c by other positions and motion, as may seem convenient, and as may be agreed. (1783:40)

However, despite his claims that any position would be acceptable, the example he gave was not arbitrary (for example, his use of the five fingertips for the five vowels). He was clearly referring to the same manual alphabet which was being used throughout the seventeenth century. Wallis and Wilkins were also well acquainted through the Royal Society, so Wallis would have known Wilkins' form of manual alphabet.

Jussen (1973) has presented a manual alphabet very similar to the modern one, which he has attributed to Wallis. This manual alphabet came from Emmerig (1927) who also attributed it to Wallis. It was first published in the 1720 version of Defoe's "Duncan Campbell", which will be referred to in more depth in section 2.5.1 (p58). It is unlikely that the manual alphabet is correctly attributed, and more likely that Defoe was using a manual alphabet more modern than Wallis'. The manual alphabet attributed to Wallis by Emmerig and Jussen may be seen in figure I.8 on page 15 of the Appendix.

If the illustration given by Jussen is indeed Wallis' manual alphabet, then we must say that it is the first example of the modern manual alphabet. However, the only reason to assume it is Wallis' comes from its publication in a book that refers to Wallis' teaching. The manual alphabet itself is not said to have come from Wallis, and there is no proof at the moment that Wallis created the fore-runner of the modern manual alphabet. The only description that we otherwise have of Wallis' manual alphabet is that of an arthrological system.

A short time after Wallis and Holder were teaching, Dalgarno published "Didascolocophus" (1680), in which he provided the first engraving of the

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manual alphabet in use at that time. This may be seen in figure I.9 on page 16 of the Appendix.

Dalgarno was the first British writer to propose that fingerspelling and writing could be the main means of communication for deaf people, rather than speech. After trying out several systems, he reported having eventually settled on a system similar to Wilkins', by which the signer used the fingers and thumb of one hand to point to different areas of the other hand to signify different letters. He did not claim to have invented the manual alphabet presented, but only that he had improved upon the existing one. He wrote: "After much search and many changes, I have at last fixt upon a finger or hand-alphabet according to my mind, for I think it cannot be considerably mended..." (1680:73).

Dalgarno's system also attempted to provide a means of representing consonant clusters such as "th" "st" or "lt". This idea was not adopted by later authors. Dalgarno used the thumb and any or all of the fingers of the right hand to point to the relevant areas of the left hand. The thumb pointed to the consonants and any finger could point to the vowels.

Dalgarno's was a very practical alphabet and he gave practical advice on its best use. For example, he recommended practising consonant clusters until they were easy to produce He also suggested "multiple touching" of letters so that a whole monosyllabic word could be made simultaneously. (This is the only attempt made in this literature to move away from production of fingerspelled words as a stream of concatenated letters and towards whole, meaningful units.) He also suggested using the initial letter of an English

word to represent an object or concept. This use of initialisation was used by the creators of methodical signs in the eighteenth century and has subsequently become an important part of the role of fingerspelling.

Other systems which he mentioned and rejected include using a two-handed alphabet based on the principles of different handshapes reflecting the shape of the written letter. He proposed that "x" could be made by crossing two fingers, "m" by joining three fingers, "n" by joining two fingers and "t" by "a cross touch upon the end of the thumb". This version proved impractical for the entire alphabet so he did not pursue it. Unfortunately, we have no illustrations of all these handshapes, so the exact forms of the letters can only be guessed at. However, it was a further step away from arthrology and towards the use of distinctive handshapes for letters, marking a growing trend to make the representation of the alphabet less arbitrary and bearing more resemblance to the form of the written letters. He also mentioned tracing letters on the palm, but also rejected that as impractical.

A method of representing letters by using the whole body rather than just the hands (used by Rossellius and partly used by Bulwer) coexisted with arthrology. La Fin's "Sermo Mirabilis" (1692) was an alphabet that used body parts whose initial letters could be used to spell out words, (eg Brow, Cheek, Deaf Ear, Forehead etc). Aware that this would only hold for English, La Fin also produced a parallel alphabet which could be used in Latin. He claimed that the same method could be used for any language such as French or Dutch, although he did not make any suggestions for these. Although body parts were used to represent consonants, the vowels were still placed on the ends on the fingers. Two suggestions were given for "i", however. The

middle finger of the passive hand could be substituted by pointing to the eye, as a pun on the sound of the letter. (See figure I.10, on page 17 of the Appendix).

La Fin may not have been the first to propose this method. Scott (1870) claimed that John Baptista Porta used to denote each letter of the alphabet by touching some part of the body whose name began with the letter required. The word "Carthago" was spelled out by pointing to "caput", "aurem", "renes", "tempora", "humerus", "aurem", "gultur", "oculum". This is a different alphabet from La Fin's, and must have preceded the Sermo Mirabilis by over one hundred years, because Porta was writing at the end of the sixteenth century.

The use of these "corporal alphabets" was never widespread, but the idea of having all the letters of the alphabet pointed out on the surface of one hand remained popular even when alphabets using distinctive handshapes were in common use. In 1883, Alexander Graham Bell attempted to re-introduce a modification of Dalgarno's manual alphabet. This version was entirely upon the surface of one hand, but it read systematically, from left to right, down the hand, making no exception for the vowels (unlike all the early English manual alphabets which placed the vowels on the tips of the fingers). Bell's manual alphabet may be seen in figure I.24 on page 36 of the Appendix.

2.4 THE FORE-RUNNER OF THE MODERN BRITISH MANUAL ALPHABET

"Digiti Lingua", published anonymously in 1698 presented the first manual alphabets with most letters represented by distinctive hand arrangements. The vowels, however, remained at the tips of the fingers as in previous alphabets. The roots of the modern British two-handed alphabet clearly lie in this publication. The author himself was unable to speak and recommended the use of the manual alphabet for anyone incapable of speech, for whatever reason. He suggested that it might be used on occasions when silence and secrecy were needed, or purely for entertainment. He made no explicit reference to the deaf.

Digiti Lingua criticised La Fin's method of pointing to body parts for letters because it placed some letters on the head so that the signer had no visual feedback of his own signing. Additionally, the receiver never knew where to look for the next letter and the signing was very slow. As an alternative, the anonymous author extolled his version as faster to use, easier to receive and requiring only the hands to be visible, rather than the whole body.

It is probably significant that the author of Digiti Lingua used the alphabet himself for everyday communication and so it was far more practical than La Fin's or even the old arthrologies which are hard to read from any distance or at much speed.

The author's primary concern was to maintain secrecy. This is within the prevailing tradition of cryptography seen with Wilkins and also Wallis, and in keeping with the political turmoil in England at the time which increased the need for covert activity. In the name of secrecy the author offered two sets of 26 manual letter hand-arrangements arranged into alphabets, with the recommendation that the reader should allocate different letters to the different handshapes, or even make up new ones.

Although these alphabets were a radical departure from the previous arthrological styles, one purpose seemed unchanged. It is clear that the alphabet was still not considered something which should be standardised to enable strangers to communicate.

Digiti Lingua may be seen as a bridge between the old manual alphabets and the new. Nine of its letters can be traced to earlier versions, and many of its handshapes can be seen in the modern version. Within the two sets of 26 handshapes provided by Digiti Lingua there are handshapes which now represent 17 letters in the British manual alphabet. These are "a", "e", "i", "o", and "u", as well as "f", "g", "m", "n", "p", "q", "s", "t", "w", "x", "y", and "z". (See figure I.11 (a) and (b) on pages 18 and 19 of the Appendix).

In both versions the convention of vowels on the fingertips described by so many earlier authors is maintained. The two sets of vowels run either from thumb to little finger, or from little finger to thumb. The close relationships of "i" and its consonantal form "j", (at that time homographs) and between "u" and its consonantal counterpart "v" (also frequently homographs) are reflected in the design. Whatever finger is used to indicate "i" or "u", the

back of it is used for "j" and "v". This type of design counterbalanced the move towards a more iconic system. Apart from the vowels, and "j" and "v", eight letters are designated by pointing to an area of the flat hand in one alphabet and seven in the other.

The influence of the earlier manual alphabets is also seen in other letters. The -t- is possibly from Wilkins' description, as it involves the placing of one finger against the side of the hand, as Wilkins describes. A far more iconic -t- would have been that which regularly crops up in other highly iconic manual alphabets (such as the two-handed Franconian, Indonesian, North American and Cistercian ones, and the one suggested by Dalgarno) namely, the index finger of one hand pointing straight up and the index finger of the other hand placed across its tip to form a T shape. The -v- (which has been transposed to become the -w- for the sake of secrecy and confusion) consists of two fingers laid against the side of the palm, which is possibly what Wilkins described. It is only in later manual alphabets that the -v- moves from the edge of the hand to the palm. The iconic -x- from version 1 (figure I.11(a)) is the same as Holder suggested. The -y- that involves the index finger touching the thumb-pad of the other hand is the same as Dalgarno's -x-, and the -z- in the centre of the palm mirrors Wilkins' -z-, although this one traces the shape of the letter.

Seven more handshapes used today can be modified from other handshapes given for different letters (those for "b", "c", "h", "l", "p", "v", and "j") For example today's -b- was offered as -d- and today's -v- was -w-. Farrar (1889) suggested that soon after this publication, someone (either the author of Digiti Lingua or someone who had read it) rationalised the alphabets to make

the one we know now, and selected those handshapes which seemed most symbolic of the written letters. This could explain why -d- and -k- were made up and added, because they were not iconic in Digiti Lingua but are in the modern alphabet.

Although the author of Digiti Lingua did introduce several new iconic forms, the creation of a transparent manual alphabet would have jeopardised his need for secrecy, so it is hardly surprising that the letters were disguised. Seventeenth century cryptographers often used the technique of assigning new reference to the different letters of the alphabet, so it should not be surprising that Digiti Lingua did the same. Despite this, the representations of "m", "n", and "z " were so iconic that they were given in both versions.

The -f- in Digiti Lingua is not exactly like the modern -f- but it does involve the fingers of one hand touching the back of the other hand. Although -f- has varied greatly through the eighteenth and nineteenth centuries, the -f- from Digiti Lingua may be found in "The Invited Alphabet " written by someone known only as R.R. in 1809, (which may be seen in figure I.13 on pages 21 to 25 of the Appendix), and was also recommended by Mrs Hippisley Tuckfield in 1839 (whose manual alphabet may be seen in figure I.18 on page 30 of the Appendix).

The two forms of -q- in Digiti Lingua have both been used extensively since that time, one predominantly in Scotland and the other in England and Wales. Farrar reported that both forms were in common usage in 1889. Kitto (1845) also gave these two forms as possible alternatives to -q- although he didn't say if they were dialectal differences or if both could be

used by the same person. Today only the more iconic form is used in fingerspelling although the old Scottish form can clearly be seen in initialised signs such as QUARTER, QUIET and QUESTION. However, this disappearance of the Scottish -q- as part of fingerspelling is only recent. A middle-aged deaf informant recalls seeing it being used during fingerspelling, when he was a child in Glasgow.

2.5 THE MODERN BRITISH MANUAL ALPHABET

The modern British manual alphabet was printed for the first time in a plate published in 1720. The letters are very similar to those used today.

2.5.1 Defoe's Manual Alphabet

In 1720 Daniel Defoe published "The Life and Adventures of Mr. Duncan Campbell", a semi-biographical account of the life of the deaf fortune-teller who was said to possess second sight. The 1720 edition contains the plate that was attributed to Wallis by Emmerig (1927). This is very similar to the modern alphabet (although -j- is missing) with only four other letters different from those used today. The 1732 edition of the same book contains a different, but basically similar, illustration of the manual alphabet, which may be seen in figure I.12 on page 20 of the Appendix. In this later version, a -j- has been added and the -v- has changed to become more like the one that is used today.

Thus, somewhere between 1698 and 1720, our manual alphabet became fixed in roughly the form we know it. It is unlikely that Defoe was the author of this manual alphabet, and it is more likely that he learned of it from Campbell, or perhaps Wallis or Henry Baker (see below) or simply that it was in general use at the time.

In "Duncan Campbell" Defoe described how a deaf child could be taught language. The method was attributed to John Wallis, with whom Defoe and Duncan Campbell were both acquainted. According to Conrad and Weiskrantz (1984), Duncan Campbell's step-mother introduced Wallis to the Campbell family.

Although Defoe's version of the manual alphabet was given as an accepted version, even here he suggested that the teacher must invent the alphabet and he made the allowance that another version could be used if it was agreed upon.

> For example; if, after having invented an alphabet upon the fingers, a master always keeps company with a deaf child, and teaches it to call for whatsoever it wants by such motions of the fingers which, if put down by letters, according to each invented motion of each finger, would form in writing a word of a thing which it wanted; might not he by these regular motions teach its eye the same notions of things, as sounds do to the ears of children that hear? The manner of teaching the alphabet by fingers, is plainly set down in the following table. ...When he has learnt thus far, he must be taught to write the alphabet, according as it was adapted to the motions of his finger; as for instance, the five vowels, a, e, i, o, u, by pointing to the top of the five fingers, and the other letters, b, c, d, &c., by such other place or posture of a finger, as in the above-mentioned table is set forth, or otherwise it shall be agreed upon. (1732: 24)

Defoe had no particular interest in the deaf at the time. His interest in Duncan Campbell stemmed from his interest in the occult and astrology, and from a sense of what would make a good story for his readers. In 1724 he met Henry Baker, the man usually credited with being the first British professional teacher of the deaf. Baker married Defoe's daughter, Sophy, in 1729. Maybe Baker used Defoe's alphabet in his later teaching and the spread of this form of the manual alphabet stems from him. Hay and Lee (1994) suggest that Defoe learned the alphabet from Baker. This is unlikely, as the given date of Defoe and Baker's meeting is four years after the first plate in "Duncan Campbell". There is probably little doubt, however, that Baker did use this manual alphabet, perhaps because it was in fairly common use by that time.

Up until this time in England, manual alphabets were not considered to be universal systems. Wilkins said that the letters may be "performed by any other way of compact that may bee agreed upon". Bulwer offered several completely different types of alphabet, with no suggestion that they should have anything in common with each other (those in his first book were for rhetorical use or secrecy, and the one mentioned in his second book was for use by deaf people). Wallis described his version, saying "as may seem convenient, and as may be agreed."

Throughout the seventeenth century, the expressed aim of manual alphabets was to permit people (deaf or not) to communicate with their immediate friends, co-conspirators or family, and for communication between tutors and their deaf pupils. In this last circumstance, if speech was the aim of the education, then a manual alphabet may have only been seen as a makeshift

stop-gap. For this reason, perhaps, authors describing these alphabets often left the option open for the readers to devise manual alphabets of their own. It was only with the growth of more widespread education for deaf people and the development of a British deaf community that it became necessary for one standard form of the manual alphabet to be used.

2.5.2 Changes in the British Manual Alphabet since 1732

After 1732, the citation forms of letters given in charts of the British manual alphabets remain basically the same, although some letters do vary more than others. A collection of charts from 1698 to the present day shows some of the developments. The charts of manual alphabets since 1732 may be seen in Appendix I, in figures I.13 to I.22, on pages 21 to 34 of the Appendix.

It is necessary to be cautious as to how representative these manual alphabets are. Each alphabet is only one person's version at any one time. We cannot tell if they were in universal use around the United Kingdom. It is quite possible that there were several different manual alphabets in existence at the time and there may have been regional differences.

It is also important to be aware that the charts may not accurately represent the handshapes occurring in *fingerspelling* of deaf people at the time. The charts published today show only one form for letters which, in practice, may be formed in a variety of ways. The BSL/English Dictionary (1992) makes this point very clear when it gives several forms for several manual letters. There are also regional, age and idiosyncratic differences to take into account. Bearing these caveats in mind, however, the drawings of manual

alphabets preserved since the early 18th century give us a guideline as to what was taught at the time, even if the teaching was not put into conversational practice.

The presentation of the manual letters in the alphabet charts varies greatly. The hand-arrangements are usually given from the perspective of the producer but this is not consistent. In Digiti Lingua, for example, the manual letters are all presented from the producer's perspective, except for the -g- in the second version. Defoe's 1732 illustration is even less consistent, with -d-, -f-, -g-, -h-, -w- and -y- being given from the receiver's perspective. This lack of consistency, however, does not appear to impede understanding of the letters. Rather, they seem to have been drawn from whatever angle gave most information about the handshapes and hand-arrangements.

Another interesting point is the number of mistakes that appear in the charts, especially in the way that two right hands are drawn in the same two-handed manual letter. For example, Arrowsmith (1819) and Mrs Hippisley Tuckfield (1839) have two right hands in -z-, while Kitto (1845) has two right hands in -x-, and -z- requires the left and right hands to be crossed over in a physically uncomfortable way. It is most unlikely that the authors intended these letters to be articulated in these ways.

It is worth noting that throughout the development of the manual alphabet, the trend has been away from contact with the back of the hand. In the modern manual alphabet, only -f- and -y- use the back of the passive hand. This shift to the palm of the hand is also seen in other signs of BSL which are not related to fingerspelling. For example THEATRE and SET-UP (both non-

derived signs, unrelated to fingerspelling) were originally articulated on the back of the passive hand, but now may be articulated on the palm, especially in informal conversation.

Another trend through the last two centuries appears to be towards symmetry of the two hands, even if this means a decrease in iconicity, in line with the symmetry constraint operating within BSL generally (Kyle & Woll, 1985).

It must be remembered, however, that the manual alphabets described here are all the work of people whose first language was English, not BSL. Few, if any, of these writers had any in-depth knowledge of sign language. The tendency of letter handshapes to be articulated on the palm of the hand, and their increased symmetry seem more likely to be physical effects external to either the manual alphabet or BSL, but operating on both.

Changes in the Manual Letter -f-

These linguistic forces may be seen in the development of the manual letter -f- which has only recently become fixed in its present form. Figure 2.1 on page 426 shows some of the -f- handshapes over the last three centuries. The -f- in Digiti Lingua (figure 2.1 (i)) involved the fingers of one hand touching the back of the other hand. Although -f- varied greatly through the eighteenth and nineteenth centuries, R.R.'s -f- from The Invited Alphabet (1809) was the same as one from Digiti Lingua, as was the -f- recommended by Mrs Hippisley Tuckfield in 1839 (figure 2.1 (v)). Defoe's (1732) -f- (figure 2.1 (ii)) gave the index finger of the active hand across the backs of the spread index and middle fingers of the passive hand. This is a fairly iconic representation of the written letter "f", but is asymmetrical. Watson (1809)

represented -f- by crossed index fingers, (later becoming -x- for a while)
which is symmetrical but not iconic (figure 2.1 (iii)). John Pauncefort
Arrowsmith (1819) gave -f- as two fingers on the back of the passive hand
(figure 2.1 (iv)). Kitto (1845) followed Defoe with the same asymmetrical,
iconic hand arrangement (figure 2.1 (vi)) as did Charles Rhind (undated)
(figure 2.1 (vii)). Samuel Smith (1864) gave the first known version of the
modern -f- (figure 2.1 (viii)), but other versions from approximately the same
period gave the passive hand facing palm up (figure 2.1 (ix)), as part of a
general trend for the palms to face upwards. The asymmetrical, palm down,
iconic hand arrangement reappeared again in 1893 and approximately 1900.
After 1900, only the modern palm down, symmetrical -f- with both palms
down is cited. It is fairly safe to assume that by the turn of the century the
citation form of -f- was fixed as the one we know now (figure 2.1 (x)). In the
process of fingerspelling, however, even today, it is not unknown for -f- to
have both palms facing upwards.

Changes in the Manual Letter -h-

The manual letter -h- also shows a history of changes in palm orientation,
handshape and movement (figure 2.2, page 427). Defoe's -h- was made with
the active hand on the back of the passive hand (figure 2.2 (ii)). Again we
can see the trend for letters to be articulated on the palm of the passive
hand, as all subsequent forms of -h- are on the palm rather than the back of
the hand.

The effect of symmetry may also be seen by going back to Digiti Lingua.
One -h- in the 1698 charts had the palm orientation and movement of the

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modern -h-, but the active hand was just an index finger and not an open 'B' hand as it is today (figure 2.2 (i)).

The brushing movement that is now part of -h-, however, was not always present, and even an 1890 -h- did not include movement. This is probably not simply because the artists omitted the arrow to show movement. The arrow indicating movement in -j- is shown in alphabets where there is no movement in -h-. The old motionless versions of -h- involved the palms touching (figure 2.2 (iii)).

Changes in the Manual Letter -j-

As may be seen in figure 2.3 on page 428, -j- did not appear permanently in the form we know until Rhind's alphabet, which probably dates from the mid nineteenth century (figure 2.3 (iii)), although it was first given by Arrowsmith in 1819. Records show several different approaches. Defoe's 1732 -j- involved an active 'X' hand, palm down, with the passive 'B' hand covering it from above (figure 2.3 (i)). In Watson's 1809 version, the index finger of the active hand was drawn across the palm of the passive hand. RR's Invited Alphabet, also of 1809, however, used the 'X' handshape in an iconic -j-, as a one-handed configuration with the fingers pointing down. This was also recorded by Kitto in 1845 (figure 2.3 (ii)). The Arrowsmith 1819 version gave both the modern downwards-moving form and its reverse, with the index finger moving up the palm and middle finger of the passive hand . There is no indication if these two forms were meant to be interchangeable according to other linguistic constraints or just a matter of personal preference. They may even have been regional variations. The modern -j- (figure 2.3 (iii)) may move either up or down the hand, depending on the surrounding letters of the

word being fingerspelled. Mrs Hippisley Tuckfield omitted -j- altogether from her manual alphabet.

Changes in the Manual Letter -x-

The early forms of -x- (see figure 2.4, page 429) were of two 'X' hands linked, with the passive palm up and the active palm down (like the BSL sign DEPEND). Defoe (1732) gave this form (figure 2.4 (i)). The similarity between the handshapes and that of the one-handed -x- is probably coincidental. It is more likely that -x- was a contrasting minimal pair with -s- in which the little fingers are linked. Watson (1809) also gave this form of -x- (figure 2.4 (ii)), while his -f- was homophonous with the modern manual letter -x-. The manual alphabets of 1819, 1835 and 1845 (figure 2.4 (iii), (iv) and (v), respectively) all give -x- with the extended active forefinger on the back of the extended passive forefinger. It was the 1864 alphabet (figure 2.4 (vi)) which made the shift back to the palm-facing passive hand that we know today.

Changes in the Manual Letter -z-

The modern form of -z- (figure 2.5, page 430) did not appear until the late nineteenth century. Our first record of it is 1890. Prior to that there were two other forms.

One involved the palm of the active hand cupping the elbow of the arm of the passive hand. A middle-aged deaf consultant helping in this research recognised this "elbow -z-" as the one her grandmother (b 1886) used. The first reference to the "elbow -z-" is in 1732, in Defoe (figure 2.5 (i)) and the latest is in 1864 in Smith (figure 2.5 (v)).

The other form of -z- was articulated with the active hand on the back of the passive hand. This is exactly the same hand-arrangement as Defoe's -h- in 1732. Records of this form of -z- exist from 1819 (figure 2.5 (ii)) to 1845 (figure 2.5 (iv)). (See also figure 2.5 (iii), 1839). This second form was certainly co-existent with the "elbow -z-" as Kitto (1845) gave both forms (figure 2.5 (iv)). Again, it is not clear if the same person was expected to use the two in different situations or if they were regional variants.

The modern -z- is more in keeping with the forms of the modern manual alphabet (figure 2.5 (vi)). All the other letters are articulated with the hands alone and do not use the forearm or elbow. For this reason the "elbow -z-" would be assimilated towards the general pattern of the other letters. The extinction of the second form, which used the back of the hand, again follows the trend of moving towards the palm.

None of the old letter handshapes violated any general rules of sign formation in BSL. All handshapes and places of articulation can be found in other BSL signs.

2.6 UNADOPTED MANUAL ALPHABETS

Although the two-handed and one-handed alphabets of BSL and ASL were pretty well formed by the end of the 17th century there were many

subsequent attempts by linguists, philosophers and other interested parties

to invent other manual alphabets. Harvey Peet wrote in 1851:

> Not a few have since [Bede's time] been devised which have never
> been used, or only used by their inventors; for the various combinations of
> the fingers are almost inexhaustible, and our manual alphabets, like our
> alphabets of the pen, have seemed to many to admit of great improvement.
> (1851:148)

Deleau (1829) designed an arthrological manual alphabet for the Institution

in Paris. Like Dalgarno (1680) before him and Bell (1883) after him, he

proposed using a glove with the letters marked upon it. The vowels were

placed on the edges of the fingers, and the consonants on the surfaces.

Deleau's alphabet was more concerned with phonology than orthography, as

the "alphabet" is laid out according to the sounds represented by letter

clusters. Deleau's manual alphabet may be seen in figure I.17.

In the United States, in 1859, Burnet designed a new syllabic alphabet

designed to speed up communication while fingerspelling, but it was not very

well received. Burnet was hurt by the lack of interest and claimed that its

only fault was that it was unknown. He urged people to try his system,

promising that in a short while they would be able to use it easily, especially

as it had only 30 different hand-shapes. Samuel Porter, in his capacity as

editor of the American Annals of the Deaf at the time, replied to Burnet's

arguments with the overall message that Burnet's alphabet was unnecessary.

In 1897 another alphabet, this time a "Brachial Alphabet", was proposed by

Charles Parker. It involved using various positions of the arms to represent

the letters of the alphabet. The aim was to permit long-distance

fingerspelling. In 1899, another alphabet, based on the idea of Dalgarno's glove was put forward by William Bridges of Kansas city. This received a luke-warm reception on both sides of the Atlantic.

The British manual alphabet also had to face "competition" from new inventions. Lucas (1812) designed a system for "The Art of Reading, Spelling and Ciphering by the Fingers". This placed all the letters on the surface of one hand, in the tradition of Wilkins and Dalgarno, but did not place vowels on the fingertips. Lucas' system may be seen in figure I.15 on page 27 of the Appendix.

Notably, Lucas also proposed using the initial letter of certain words to stand for those words. He recommended that the signer should point to "l" to mean "pounds", to "s" for "shillings", to "p" for "pence" and to "q" for "farthings". He also gave a list of words, from "a" to "z", which could be represented by a single manual letter: "And", "But", "Can", "Do", "Every", "For", "Have", "If", "Judge", "King", "Last", "May", "Nor", "Own", "Perhaps", "Philosopher", "Question", "oR", "Soon", "Shall", "Truly", "That", "You", "Very", "With", "Which", "eXcept", "Yet" and "Zeal".

Lucas also declared that when part of the letters of a word will point out a word, it need not be fully spelled, saying "all that is necessary is, to make the word or sentence to be well understood; there being no more need of true spelling in Chyrology, than in Stenography". This was not the attitude of the nineteenth century teachers who believed that every letter had to be fingerspelled, but it is more like the way that fingerspelling is often used in modern BSL.

In another case, Abraham, in the British Deaf Monthly in 1897, berated Henry Woollen for offering a "Unique Practical Deaf-Mute Manual Alphabet" which was intended for use with phonetic spelling. The technique was to point to various parts of the front and back of the hand for letters representing speech sounds, rather than letters eg [θ], [š], [ð], [g], [k], as well as commas, full stops, colons and semi-colons. The reviewer's comments upon this new system echoed those of the author of Digiti Lingua 200 years previously and reflect a common complaint levelled at those who seek to introduce a system to help deaf people with no knowledge of their requirements:

>...Mr Woollen's phonetic spelling is about the terriblest to look at that
>we can recall... though the phoneticism of Mr Woollen does not go very deep,
>it goes too far for the average deaf-mute...if Mr Woollen had any real
>practical knowledge of manual spelling, he would hardly put forward a system
>that in rapid use would be almost illegible. (1897:83)

Although there were cool responses to the newly invented alphabets, there were also plenty of complaints about those already in use. John Kitto (1845) complained that "upon the whole the system is very defective and is capable of great improvement" (1845:107). Despite the problems of the established system, Kitto was quick to point out that it was better to keep it than to try to develop one with fewer defects. He observed that too many people already knew the existing alphabet and any changes could discourage others from learning it, which would limit the number of people with whom he could converse.

Many authors in the past have suggested that deaf people should know both one-handed and two-handed alphabets. John Pauncefort Arrowsmith (1819)

reprinted both alphabets with the advice: "Make the child learn to talk with both hands and with one, agreeable to the manual alphabets subjoined; they are the same as those in general use at home and abroad." (1819:42) Kitto, too, gave both forms. Late nineteenth century British pamphlets give the two-handed and one-handed alphabets, designating the one-handed version as Irish.

In the 1853 report on the Conferences of British Instructors of the Deaf and Dumb, it is written that Mr Hopper of the Birmingham Institution claimed that the one-handed manual alphabet was very much superior to the two-handed. The conference unanimously agreed that it would be best if the pupils became used to both manual alphabets. The editor commented: "The two-handed alphabet, we will also venture to prophesy, has received its death-blow from Mr Hopper." (1853:253.) This was not to be. In 1875, Buxton observed the preference of many English teachers for the one-handed alphabet but noted that:

> The arguments in its favour, like those for the decimal currency, may probably be admitted; it would be better if we had it. But the rival system has got possession and is in familiar use, and persons are apt to think that the inconveniences of making the change would outweigh the advantages to be expected from it. (1875:114)

A recent attempt to establish the American one-handed alphabet at the Northern Counties School for the deaf (Savage, Evans & Savage, 1981) was also unsuccessful. Evans claims in many places that the American system is superior to the British one. This judgement seems based on the belief that the American, one-handed system can be produced nearer the mouth and hence aid lip-reading, and allows the easier creation of initialised signs.

2.7 "ALTERNATIVE" MANUAL LETTERS IN THE BRITISH MANUAL ALPHABET

It would appear that the present form of the British manual alphabet is fairly stable. However, there is evidence that it is still evolving slowly. In the past, manual alphabets have been created by hearing people but today, British deaf people seem to be making their own changes.

In the official citation forms of the manual alphabet, the letter handshapes do not vary to reflect the allographs of the English alphabet. For example, there are no upper or lower case letters, nor is there a distinction between letters that may be printed or handwritten. One exception to this, however, is the use of separate handshapes to represent the letter "d" in upper and lower case. This distinction does not regularly occur, but is used to reflect the distinction between "Deaf" and "deaf". (The former is the word used in descriptions of the deaf community to describe those identifying with the deaf community, and the latter for all those with any type and degree of hearing loss). The citation form of -d- is iconic and reflects the shape of the capital "D". This is used to refer to "Deaf" people. A new letter hand-arrangement, iconic and reflecting the shape of the lower case "d", is used to refer to "deaf" people. This manual letter is like the letter -p-, but with the tips of the fingers of the active hand touching the base of the index finger of the passive hand, instead of its tip. These allographs, however, are only found for the letter "d" and only in this context.

"Unofficial" one-handed manual letters also exist in BSL. These are the '8' hand (like the Scottish TUESDAY, or the regional sign FINISH) for -i-, the 'O' hand for -o- and the 'L' hand for -l-. These handshapes have several advantages over the normal fingerspelled handshapes. They can be easily distinguished from other similar manual letters and are highly iconic. Also, because they are one-handed they can easily be used in signs with movement without losing information that would occur if the base hand were lost from the citation form of the letter.

The 'O' and 'L' handshapes do appear in other manual alphabets (including ASL) and it is possible that these may be loans from other manual alphabets. However, the British deaf consultants interviewed for this research (see Section 6.3, p189) believe that they have not been borrowed and are simply natural iconic representations of the relevant letters.

The handshapes appear in established BSL signs which are unrelated to foreign signs. Examples of signs made with a handshape which mirrors the shape of a capital "L" include LIVERPOOL, LEEDS, LANCASTER, BROTHER-IN-LAW, LESBIAN, LASER, LAGER, LITRE, LEADERSHIP and LUCK . They are not loans from manual alphabets which use this handshape for "l", but are British signs (unlike LANGUAGE which is based on the ASL .l.).

The 'O' handshape, like the alternative one-handed -l-, allows signs to move. The hand may simply open and close to repeat the 'O' handshape or it may

circle. Established signs with these letter handshapes include OCTOBER and OFFICE.

The existence of these signs is not, by itself, sufficient proof that the handshapes are being used as part of a manual alphabet. However, there is also strong evidence that the 'O' and 'L' handshapes are being used as alternatives to the -o- and -l- of the standard manual alphabet in the creation of nonce first-letter signs. Nonce signs involving the first letter of the English word are made in the same way for these handshapes as they would be for other standard letters of the manual alphabet.

Analysis of the signing collected for this research (see sections 6.2, 6.3 and 6.4, p184 ff) reveals signers using this 'O' handshape for OXFAM (the charity organisation), ORPHANAGE and the "O" of O LEVELS (the old British secondary school qualification). It seems particularly productive in place-names eg, OXFORD, OKEHAMPTON, ORPINGTON, and OBAN. The 'L' handshape seems less productive but may be seen in one signer's sign LEWISHAM.

Stronger evidence still for the role of these handshapes in fingerspelling, comes from the observation that these handshapes may also be used as representations of the letters "o" and "l" in conjunction with other fingerspelled letters. One informant fingerspelled .O.-a-p- for "O.A.P". ("Old Age Pensioner" or "Senior Citizen") using the 'O' handshape for "o" rather than the conventional letter -o-. Another offered it as part of the fingerspelling of "oz" for "ounce". When referring to such places as "Osmotherly", "Oxnam", and "Oban", several deaf informants used the 'O'

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handshape in conjunction with other letters eg .O.-m-m- (Osmotherly), .O.-m- (Oxnam) and .O.-n- (Oban). For the town of Waterloo, one signer signed WATER and then the 'L' handshape for the third syllable "loo" (i.e. WATER.L.). Young deaf people, in fun, may spell use the alternative one-handed 'L' and 'O', to spell "loo" as a sign for TOILET, and in the fingerspelled sign COOL, in the sense of "laid back". (As the British -c- is already one-handed this renders the whole fingerspelling one-handed.). This handshape was also used in conjunction with the manual letter -y- to produce the meaning YOUTH LEADER.

A third "alternative" letter is the letter representing "i". This involves the middle finger and thumb of the active hand touching each other (i.e. an '8' hand). In the standard manual alphabet, the middle finger of the passive hand is touched by the index finger of the active hand. This new form is effectively making -i- one-handed. It usually occurs as an initialisation, for example for the English words "image" and "infection". It may also be used for place-names, for example for "Ilfracombe" , "Islington", and "Ipswich".

It may not be a coincidence that -i- and -o- are developing new forms. Both -i- and -o- can be easily confused in the current British two-handed alphabet. The two new forms are easily distinguished. All three of the "alternative" manual letter handshapes are also more easily incorporated into first-letter signs which involve some form of movement

From the evidence available, therefore, it seems that a system with its roots in secrecy and confusion is finally evolving through its use by deaf people to

become simpler and clearer and more amenable to the sign-formation
processes of BSL.

2.8 TWO-HANDED MANUAL ALPHABETS IN OTHER COUNTRIES

Two-handed manual alphabets are found in other parts of the world. In some
cases they derive from, or are the same as, the British manual alphabet, and
in other instances they have very different manual letters and do not share a
common history.

2.8.1 Two-handed Alphabets in Former Colonies.

The British two-handed manual alphabet spread to many parts of the world
with the British empire.

The Manual Alphabet in India.

Today, educated urban deaf in India who know English use the British
system when fingerspelling, although the vowels are unlike the British ones.
Although there is an Indian manual alphabet for the vernacular languages, it
is little used. Indian deaf education is mainly oral and consequently,
educated deaf people do not fingerspell much, (Carmel, 1981). The Indian
English manual alphabet may be seen in figure I.25 on page 37 of the
Appendix.

The Manual Alphabet in Africa

Carmel (1981) reports that South Africa and countries of the British commonwealth use the British fingerspelling. Uganda, for example uses the British manual alphabet, although as a result of the introduction of the American-initiated Total Communication philosophy, the one-handed alphabet is also used, (Manual of Ugandan Signs, undated).

The Manual Alphabet in Australia

In Australia the British two-handed alphabet was used in all states except Western Australia which used the American one-handed alphabet but later changed over to create unity in the country. Irish priests and nuns opened schools for the deaf in New South Wales, bringing the one-handed Irish alphabet with them, creating a situation in which Catholic deaf used one-handed fingerspelling and Protestant deaf used two-handed (Carmel 1981).

The Manual Alphabet in New Zealand

In New Zealand, all forms of manual communication were forbidden in all schools from 1880 until recently. The early New Zealand settlers were influenced by BSL and used the BSL manual alphabet because they had either learned it in Britain or were influenced by British deaf education. Deaf children were either sent to school in England or British teachers came out to New Zealand to deaf schools there. In Australia there were schools using the British manual alphabet and New Zealanders may also have been educated there. During this period, some initialised signs became incorporated into the language.

In 1880, the National School for the Deaf was opened and sign and fingerspelling were banned. Today, deaf New Zealanders over the age of fifty still do not use much fingerspelling, although they do use the initialised signs in NZSL. In the late 1970's some young deaf adults reintroduced fingerspelling from Australia and also brought many new signs (which were often old BSL signs) to the New Zealand deaf community.

Since the reintroduction of manual media, two-handed fingerspelling has been used but not on a large scale. The manual alphabet has been used by hearing educators using the Total Communication philosophy. Many initialised signs have been introduced but these have often been based on the one-handed manual alphabet because it lends itself more to the process of initialisation. (Collins-Ahlgren, September, 1992, personal communication).

The Manual Alphabet in Canada

Most of Canada uses American one-handed fingerspelling, but British two-handed fingerspelling is still used in some parts of Eastern Canada, (Loew, Akamatsu & Lanaville 1990, and Akamatsu, personal communication, August, 1992).

2.8.2. The Two-handed Alphabet in the Rest of the World

Several other alphabets are two-handed and have handshapes similar to the British ones but contain several letters which are more iconic than the British version. As many letters of the British manual alphabet are iconic themselves, it is not always clear if the similarities between letters in other

manual alphabets are as a result of influence from BSL or coincidental convergence of iconic forms.

The Manual Alphabet in the former Yugoslavia

The manual alphabet used in the former Yugoslavia contains both one-handed and two-handed manual letters. Of the nineteen letters shared between the English and Yugoslav alphabets, eight hand-arrangements are clearly related to the British manual alphabet. This may be seen in figure I.26 on page 38 of the Appendix.

The Manual Alphabet in Indonesia

One form of Indonesian fingerspelling is very similar to the British form, although since 1979 Indonesians have been starting to use the Asian version of the international manual alphabet which is one-handed (Carmel, 1981). The two-handed Indonesian alphabet is more iconic than the British and the letters most like the British ones are those which are most iconic in the British system. This is particularly noticeable amongst the vowels which are totally unlike British vowels and all very iconic. The Indonesian manual alphabet may be seen in figure I.27 on page 39 of the Appendix.

The Manual Alphabet in Norway

The Norwegian manual alphabet today is one-handed. However, many older deaf Norwegians know another, two-handed, manual alphabet. This is very similar to the British system, although, again, the vowels provide more iconic representations of the written letters. Odd-Inge Schroeder (personal communication, October 1992) suggests that sailors may have brought the British system to Norway in the eighteenth and nineteenth centuries, or that it

may be linked with the Scout movement. This manual alphabet may be seen in figure I.28 on page 40 of the Appendix.

The Manual Alphabet in Germany

German Sign Language has not had an official manual alphabet until the recent adoption of the international manual alphabet. A hearing German signer (a teacher in a deaf school) informed me that there was no manual alphabet in GSL. The German sign that may be glossed as SEPTEMBER is made by interlocking two 'C' hands with the index finger of the non-dominant hand hooked onto the thumb of the active hand. The result is a highly iconic letter, motivated by the shape of an upper case "s". The hearing informant claimed that this was only an iconic sign, based on the letter "s". However, there is a two-handed manual alphabet that is known by many hearing German school children, and it includes a manual letter for "s" just as described in the GSL sign SEPTEMBER. Some manual letters are very similar to those in the British manual alphabet, while others are totally different, for example the letter "r" is represented by a click of the fingers. The letter "h" is represented in the same way as in the Italian manual alphabet. This manual alphabet may be seen in figure I.29 on page 41 of the Appendix.

A deaf Norwegian informant has remarked that German deaf people know a two-handed manual alphabet too, and that there is also a two-handed Hungarian manual alphabet. However, it has not yet been possible to confirm this information from other sources, or to find the form of the two-handed manual alphabet used in Hungary.

The Manual Alphabet of Grand Cayman Island

Another two-handed manual alphabet is that of Grand Cayman Island, in the Caribbean, reported by Washabaugh (1981). This manual alphabet appears to have developed independently of other systems, as part of old Cayman sign language. All the letter handshapes are very iconic except for the -i- which is unusual in that it is made by pointing to the eye (as it is in La Fin's Sermo Mirabilis of 1692, and the two-handed American manual alphabet, described below). The two-handed manual alphabet of Grand Cayman Island may be seen in figure I.30 on page 42 of the Appendix.

The Two-handed Manual Alphabet in the USA

Although the one-handed ASL alphabet is well-established in the United States, many deaf people there who were in residential schools before the 1940's do know a two-handed alphabet similar to the British manual alphabet (Loew, Akamatsu & Lanaville, 1990). The main differences between the two are in the vowels and the letters "f", "z", "t", and "j".

The vowels are iconic and look like the letters they represent (except for manual letter -i-). The -a- is made with all fingertips touching with the four fingers close together such that the hands are steepled. The -e- is like -c- but with the index finger of the other hand bisecting the arc. The -o- is made with two hands making the shape of an o or a ball. The -u- is like the ASL .g. but with the fingers pointing up instead of sideways. The -i- is exceptional in that it is made by pointing to the eye (as it is in LaFin's Sermo Mirabilis of 1692).

The -z- is like a one-handed version of the old BSL -z- made using the hand and forearm, and is made at shoulder height with the fingers bent forward (called a "cobra -z-" by Loew et al). The -j- varies but is sometimes made with the index finger running down across the cheek from the eye. This is a remarkable parallel with the modern BSL alphabet which also involves the index finger running down the palm from the middle finger representing -i-. In another version, the "X" hand (also seen in 1809 and 1845 British versions) is articulated at the chin. The -t- is made with the two index fingers in a "T" arrangement.

A form of this alphabet was published in Atlanta, Georgia, in 1923 by Michaels, and may be seen in figure I.31 on page 43 of the Appendix. Here, however, the -z- is like the modern British manual letter.

Loew et al suggest that this alphabet is an older form of BSL fingerspelling, perhaps brought over by British colonists or by deaf people who attended British schools for the deaf before the first American school for the deaf was opened in 1817 but which then was forced "underground" by the arrival of the French fingerspelling brought by Gallaudet and Clerc. This is clearly possible, as the two are very similar, and the iconic letters could have developed independently over time, as they seem to have done in Norway and India.

The use of a two-handed alphabet similar to the British one in the late nineteenth and early twentieth centuries by American deaf people is mentioned in an anonymous booklet printed in 1872 and in a pamphlet by Benjamin Green in 1916.

The 1872 version of the two-handed alphabet is a direct copy of the one given by Kitto in 1845, even to the extent of reproducing the physically impossible hand-arrangement of -x-. It also claimed that the hand-arrangement usually used for -z- was "and".

Green (1916) includes an illustration of the manual alphabet similar to the one used in England at that period. He claimed that:

> Most deaf persons understand how to talk by means of the English, or two-hand alphabet, but it finds little favor in the United States, the single hand alphabet being preferred, because of its clearness and the rapidity and convenience with which it can be used. (1916:3)

Green, deaf himself, also mentioned that his pamphlet was being sold to the Boy Scouts. This supports the claim reported by Loew et al (1990) that many people remember a two-handed alphabet from Scout manuals.

The Cistercian Manual Alphabet

Present day hearing religious communities in which speech is forbidden still use sign languages and may also use fingerspelling. Although Cistercian sign language is used by hearing people with a spoken first language, it is well-developed and has an established manual alphabet. Easy communication is not of primary importance to the monks, and indeed easy, fluent signing is discouraged, as being contrary to the spirit of the silent order. (Bakaraat 1987). For this reason, perhaps, the Cistercian manual alphabet is able to be highly, and clumsily, iconic. As all signs are subject to approval of senior members of the order, there is relatively little scope for

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innovation and the manual alphabet remains unchanged. The Cistercian manual alphabet may be seen in figure I.32 on page 44 of the Appendix.

Not all monastic manual alphabets are two-handed. Gottfried Wilhelm von Leibniz (1717, reproduced in Umiker-Sebeok & Sebeok, 1987) gave a description of a manual alphabet for Cistercians which is one-handed. The Spanish author of this alphabet claimed that its origins lay in the manual alphabet of the deaf. This is interesting, considering that it is claimed (eg Bijlsma, 1986) that the deaf manual alphabet originated from religious communities.

2.9 SUMMARY

The British manual alphabet has not changed substantially since the major changes of the late seventeenth and early eighteenth centuries when the changeover from "arthrology" to "dactylology" occurred, although there are hints that certain letters may still be evolving. Other two-handed manual alphabets from around the world share many features of the British two-handed manual alphabets. Sometimes this is because the two alphabets are historically related; sometimes it is chance, with the similarities arising because the manual letters are so iconic. The vowels in other manual alphabets are rarely like the British vowels, because of the non-iconic nature of the British vowels.

It would appear that the British manual alphabet in its present form is here to stay for a while yet. The history of the development of the British manual alphabet shows it to have been the invention of hearing people, and introduced to deaf people by hearing educators. The role that fingerspelling has played in education over the last 250 years has determined its present use and status within British Sign Language. In the next chapter, the role of fingerspelling and the manual alphabet in education will be considered.

Chapter 3

THE ROLE OF FINGERSPELLING IN DEAF EDUCATION

3.0 INTRODUCTION

The use of the manual alphabet has changed considerably over the last 400 years. Originally, as mentioned in sections 2.1 (p39), 2.3 (p47) and 2.4 (p55), it was intended for those who could hear and speak but for some reason (such as secrecy or religious vows) chose not to.

It was not until the early sixteenth century that its use was advocated by some for those who could neither speak nor hear. The earliest references to fingerspelling considered it as a tool for communicating with people who already have a command of the spoken language (eg Bede and St Bonaventure, referred to in sections 2.1 (p38) and 2.2.1 (p40)) but its first recorded use as an educational tool for deaf people was not until the mid 1500s.

The history of the use of fingerspelling and sign language are closely bound with the development of deaf education and the growth of schools for the deaf. There is no doubt, however, that sign language was flourishing before schools for the deaf were started, as may be seen in section 3.1, below.

3.1 SIGN LANGUAGES BEFORE DEAF EDUCATION

Pierre Desloges (1779, translation in Lane, 1984b) referred to the many deaf

people in Paris who would meet and discuss all manner of things in sign

language, without having had the benefit of any education. Pepys described

a deaf servant who signed to his master, George Downing, to tell him of the

Great Fire of London in 1666 (Jackson, 1990).

The parish register of St Martins, Leicester, mentions that in February 1575 a

deaf man, Thomas Tillsye, was married to a woman named Ursula Russel

(who was probably hearing), making his vows in sign.

> The sayd Thomas, for the expression of his minde, instead of words of
> his owne accord used these signs: first he embraced her with his armes, and
> took her by the hande, putt a ring upon her finger and layde his hande upon
> her harte, and held his handes towardes heaven; and to show his
> continuance to dwell with her to his lyves ende he did it by closing of his eyes
> with his handes and digginge out of the earthe with his foote, and pulling as
> though he would ring a bell with divers other signs approved.

Groce (1985) describes the sign language of the deaf (and hearing) people

on the island of Martha's Vineyard which was being used well before the

Hartford school for the deaf was established in 1817.

It is clear that wherever there were enough deaf people, there was sign

language. Isolated deaf, and particularly rural deaf, however, were not so

fortunate. Aside from some basic home signs, they did not possess a full

sign language. (The same is true today in many parts of the world, as has

been described, for example, in India today, where rural deaf are isolated and have to resort to the creation of their own signs (Jepson, 1991)).

It was these isolated deaf people in particular who benefited from being brought together at schools in the eighteenth century, and whose sign language was profoundly influenced by the social situation created by the schools.

In all these situations of sign languages used by uneducated deaf people, it should not be expected that there would be any use of fingerspelling.

Because of the importance of education in the development of the sign languages used today and the fingerspelling used within those sign languages, it is necessary to trace the developments of deaf education and the attitudes towards - and use of - fingerspelling.

3.2 PHILOSOPHIES OF DEAF EDUCATION

The important point to be made during this description of deaf educational philosophies is that most educators tended to see fingerspelling as an acceptable medium of communication, irrespective of their teaching methods. Many oralists (except for the most extreme) have accepted fingerspelling as some form of English, and manualists (or those advocating the combined method) have accepted it because it is a manual way of giving complete information about an English utterance in the way that lip-reading cannot.

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Today, the terms "manualist" and "oralist" are less important than they have

been in the past, and where they are used, it is negatively by those who

support an alternative policy. Since the emergence of the philosophy of

bilingual education of deaf children, the terms have begun to have less

importance. However, until about 20 years ago, the debate was firmly

polarised, and the history of the use of the manual alphabet and

fingerspelling in education is best seen in the light of these two philosophies.

Joseph Gordon summed up the attitude of many educators in the nineteenth

century:

> Fingerspelling is to the deaf a borrowed art. It was originated neither
> by them nor by their teachers, nor is it essential to their education, yet its
> value can hardly be overestimated. To the deaf-born the mastery of common
> language is an extremely difficult task. Intelligible speech in certain cases is
> well-nigh impossible. Writing is slow, wearisome, lifeless and often
> impracticable. Fingerspelling which may have the rapidity of deliberate
> speech and three times that of writing, permits dramatic action, emphasis,
> accuracy and easy repetition, thus keeping the senses alert and vivid by
> impressing the forms of words and sentences upon the mind. It compels
> practice in our language, and encourages and stimulates the child in his
> efforts to master it. (Gordon, quoted in Buxton 1886:83)

The two philosophies of methods of education, that were pursued until

recently were polarised into "manual" and "oral", but such a simple dichotomy

is unhelpful and misleading, and clarification of the terms is necessary here.

Pure oralism involves communication entirely by means of speech and lip-

reading. In cases of complete breakdown in communication, reading and

writing are used. Signing and fingerspelling are never used, and pantomimic

gesturing is kept to a minimum. In the nineteenth century, the German Method of Heinicke and the school of Leipzig claimed to be totally oral. Harvey Peet in 1851 mentioned "the modern German teachers who reject the use of the manual alphabet altogether".

The term "oralism", however, is not always so rigidly defined. Oralism may be a method or an aim. An "oralist" may be someone whose ultimate aim is to teach speech whether through lip-reading alone, or through signing, or fingerspelling, or any combination, or someone who teaches speech through speech and lip reading only. Consequently, teachers who teach speech using signs and/or fingerspelling may be categorised with those who use lip-reading and lip-speaking only. Some teachers have tried to teach articulation to deaf pupils but have not expected them to rely on lip reading. Others have expected their pupils to read lips but have not expected articulation and have relied on fingerspelling or even signing for language production. All these educators may be termed by some as "oralists".

"Manualists" are the polar opposites of oralists. The meaning of "manualism", however, has changed over the years. The term does not distinguish use of non-derived signs from fingerspelling, nor natural sign languages from signed systems representing the spoken language of the surrounding hearing community.

Before the widespread use of hearing aids (prior to the Second World War) full English fingerspelling was the aim of some educators in Britain, especially in Scotland. Other manualists aimed for perfect representation of the spoken language through the signed version of that language at the

expense of the natural sign language of the deaf population (eg by using Paget-Gorman Signed Speech). Contrary to the impression given by some historians (eg Lane, 1984a), the use of the sign language of the deaf community was not commonly used for the education of deaf children in the past. In many cases, sign language was simply a tool to be dropped when no longer needed.

Since 1945, technological advances have enabled teachers to teach articulation more successfully. Very few people now would advocate the sole use of signs in schools and most "manualists" agree that there is a place for teaching articulation within the curriculum, albeit low on the list of priorities. Still others may wish to educate children in all subjects via a medium of the community's sign language, teaching the spoken language mainly through reading and writing. The policy of bilingual education in deaf schools is gaining increasing acceptance in Britain.

It is possible that the distinction between the two groups is one of order of events. "Oralists" try to teach speech sounds first, followed by reading and writing, while "manualists" teach reading and writing through signs and gesture, before trying to teach speech. Still others confound the neat distinction by doing everything simultaneously.

In the nineteenth century Edward Gallaudet introduced the term "combined method" which described the use of natural and conventional signs, as well as fingerspelling and reading and writing for all education, including articulation. The combined method had been in existence for many years (perhaps ever since education of the deaf began) but had not had a name. It

is certainly a close description of the methods used by the Braidwoods in the late 1700s and early 1800s. Some historians, however, neglect this category, putting many eighteenth and nineteenth century educators in the oralist category because of their emphasis on articulation, despite the evidence of their manual methods.

Francis Green sent his deaf son to Braidwood's academy and described some of Braidwood's methods of teaching (Green, 1783). Green visited the school and saw boys using writing, lip-reading, speaking and signing. His son signed and spoke simultaneously, and also signed to his school friends. The use of simultaneous speech and sign implies that the signing was something akin to methodical signs which would follow the order of English. Green also quoted from Arnot's "History of Edinburgh" in which the boys of Braidwood's academy were said to "converse by the help of the artificial alphabet they learnt, by putting their fingers into certain positions." Clearly, Braidwood was not the total oralist he has sometimes been made out to be.

The English educators, particularly, have been considered to be oralists by American historians who regard manualism as the correct educational method (eg Lane, 1984a). This must be in part because the English originally claimed to use pure oral techniques for reasons of prestige, although in reality they relied considerably on manual and visual media. By the early nineteenth century this myth was exposed, but the oralist accusation remains. This reluctance to admit that the English were not pure oralists may be because the Americans took exception to Thomas Braidwood's refusal to give them his teaching methods without payment. The American teaching methods came from Sicard in France, who offered them

for free. The English schools were still private institutions at this time, while the French and American schools were funded by the state or charities. The Americans seemed to believe that this placed them on a higher moral ground. The English were considered as the villains, and oralism was seen as villainous, so the English were oralists. In fact Braidwood learned his methods from the French and Joseph Watson (Braidwood's grandson and headmaster of a school using these "oralist " methods) revealed in 1809 that he used gestures, signs, pictures, the written word and lip-reading in his broadly-based curriculum which included articulation. That was not far from what the "manualist" Americans were doing ten years later.

With this confusion in mind, it is useful to review the education methods known since the sixteenth century, and to see how fingerspelling fitted in with the methods and sign language.

3.3 THE USE OF FINGERSPELLING IN EARLY EUROPEAN AND AMERICAN DEAF EDUCATION

3.3.1 Fingerspelling in Early Spanish Deaf Education.

Education for deaf people began systematically in sixteenth century Spain. The man credited with the first successful education of the deaf was Pedro Ponce De Leon (1500-1584), a monk at the monastery of San Salvador de Ona. De Leon taught two deaf brothers to read, write and speak, probably using a combination of signs and fingerspelling. He worked on the premise

that if one of the senses is lost, then the others should take over. This first known record of deaf education describes an educator who seemed to use a combined method of education. He did not believe it was possible for deaf people to communicate by lip-reading.

Although Ponce de Leon did not leave a record of his methods, evidence from other sources (as mentioned in section 2.2.1, p42) suggests that his pupils used fingerspelling to communicate with other hearing people, so he must have used it as part of his pupils' education.

Juan Pablo Bonet's teaching methods (nearly a century later) involved signs to establish communication and he expected teachers to explain meanings of words by pointing or pantomime. The written and manual forms of each letter were introduced only later as part of an attempt to teach the pupil speech. For Bonet, the ultimate aim was to teach speech, using whatever means of communication were necessary for this end. Bonet tried to teach himself to lip-read and failed, so he declared it an impractical way to expect the deaf to communicate. Bonet's methods are described in his book "Reduccion de las letras, y arte para ensenar los mudos" (1620). This is the first detailed treatise on teaching deaf people language and speech and contains clear pictures of the letters of the manual alphabet that was used. Bonet is sometimes thought to have invented this manual alphabet but it is too similar to Melchor de Yebra's for this to be possible. In fact, Bonet has been accused of plagiarising the work of Ramirez de Carrion (Hans Werner, cited in Bijlsma, 1986).

De Carrion taught deaf children to read and write before he taught them to speak, using a combination of signs and fingerspelling. De Carrion was very wary of giving away the secrets of his methods but he was acquainted with Christobal de Morales, also a teacher, who may have published them in 1619 as a book "Pronunciaciones generales de lenguas" which contains a description of the manual alphabet which corresponds exactly with the drawings in de Yebra's book, but no pictures. De Carrion's reluctance to publish ultimately worked against him when Bonet published de Carrion's methods under his own name.

Bonet was secretary to the constable of Castile and was living in his house at the same time as de Carrion was teaching Don Luis. He must have been aware of de Carrion's methods and watched the teaching process. De Carrion left the Constable's house in 1619 and Bonet published "Reduccion" in the following year.

3.3.2 Fingerspelling in Early British Deaf Education.

Soon after Bonet had published his teaching methods, the first recorded attempts to teach deaf people in Britain took place. This happened amidst great bad feeling and occasioned a dispute between two members of the Royal Society.

The aim of the first teachers in England was to prove to a sceptical scientific community that it was possible for prelingually deaf people to speak. In the pursuit of this goal, all forms of communication were used: signs, pantomime, lip-reading and fingerspelling. The idea of a manual alphabet was familiar

and used by hearing people, especially in cryptography, and it was a natural tool for the academics to use.

John Wallis taught his deaf pupil, William Whalley, to speak English using a grammar of the language he had originally written for foreigners. Although his aim was to get his pupil to speak, he taught written language first, using pantomime, pointing and natural signs. He taught fingerspelling and writing. His methods involved teaching the child long vocabulary lists in various categories. Only then did he teach articulation and spoken words, through the manual alphabet, as well as reading and writing.

Wallis was adamant that fingerspelling should precede speech. He wrote that "...the position of the finger...may be in stead of written letters...Afterward he is to be taught speech." (Wallis, 1693, in Green, 1783:40)

It was accepted convention in the seventeenth century that letters were the basic units of speech sound, and hence writing and fingerspelling were seen as two ways to represent speech. Wallis was particularly concerned that his pupils should not learn to articulate without knowing the meaning of the words. He declared that deaf people who spoke like this were no better than parrots and he had no time for such a form of education.

Wallis' contemporary, William Holder, taught initially through articulation and was less successful than Wallis (although it is possible that his pupil, Alexander Popham, had other learning difficulties). Holder did teach his pupils the manual alphabet, together with the written alphabet, but only after he had attempted to teach articulation. For Holder, fingerspelling was a way

to increase language but not to help speech. He used the letters as a way to link speech sounds with writing. For this reason he says that the sounds written as "th", "sh", and "ng" must be taught "with that faulty way of writing." A teacher who was only concerned with teaching written language would not have minded that some speech sounds in English are not written with one letter.

Wallis and Holder disputed who had been the first to teach a deaf person to speak. Holder published his work in "An Appendix Concerning the Deaf and Dumb" in "Elements of Speech" in 1669. Wallis only added his preface concerning deafness to the fourth edition of "De Loquela" in 1674, so Holder was definitely the first to publish. Wallis, however, claimed that he had done the teaching first and had been more successful than Holder. Wallis also published a letter to Boyle, antedating the 1669 Elements of Holder, in an attempt to prove he had been first. Holder retaliated that Whalley had only been deaf since the age of five and so did not count as a prelingual deaf person.

Amidst all the bickering, a few things stand out. Firstly, the two men knew each other well, and must have known about each other's methods. At different stages in their teaching, Wallis and Holder both used fingerspelling. It was also the same method of fingerspelling, and was probably similar to the one that John Wilkins (also a fellow of the Royal Society) described in 1641. Wallis knew Kenelm Digby, the courtier of Charles II who had published an account of Bonet's work, and there is little doubt that Wallis knew about Bonet's methods. However, Wallis claimed that he had not

heard about Bonet's work and he certainly did not use the Spanish manual alphabet. Instead he used the one being used in England at the time.

Henry Baker (1698-1775) was the first professional teacher of the deaf in England. Although Baker did not leave any published record of his methods, his unpublished manuscripts show that he used writing, drawing, and lip reading in his methods. There is also evidence that he was familiar with methods used by Wallis. Baker was married to the daughter of the novelist Daniel Defoe, who, in "The Life and Adventures of Duncan Campbell" (1720) described the education of the deaf Duncan Campbell by methods recommended by Wallis. As Baker knew both Defoe and Wallis' work, it is likely that he used fingerspelling of some type, probably the one published by Defoe.

The seventeenth century scholars who taught the deaf to speak did so to demonstrate that deafness and dumbness were not inextricably linked. Their primary aim was to demonstrate a deaf person's ability to speak; the deaf person's ability to learn a language was of secondary concern. To them fingerspelling was merely a tool to enable them to reach the goal of speech, and so we may be fairly sure that their work is not directly relevant to the history of fingerspelling *within* BSL. However, there is no doubt that their use of fingerspelling must have influenced those educators who came after them.

3.3.3 Fingerspelling in Early French Deaf Education.

Eighteenth century France produced two famous teachers of the deaf: Jacob Rodrigues Pereira and Charles Michel de l'Epee. Pereira taught his pupil,

Saboureux de Fontenay, to articulate French speech sounds, read French expressions and speak from Pereira's fingerspellings. Pereira might be called an oralist. He taught articulation and he rejected signs and gestures for both education and communication. However, de Fontenay reported receiving information by a combination of fingerspelling and gestures as well as by lip reading.

De l'Epee's views on deaf education were radically different from those of his predecessors and contemporaries. He recognised that words were not the only means of representing concepts and used signs to teach his pupils French.

De l'Epee began the education of his pupils by teaching them the written and manual alphabets. Only then did he proceed with teaching methodical signs and writing. De l'Epee considered speech a low priority, mainly, it would seem, due to lack of time and staff in his very big school.

The methodical signs were not a major success, and de L'Epee's successor, Sicard, denounced them politely, but firmly. He pointed out that the methodical signs allowed deaf people to transcribe written sentences into manual French, or vice versa, but that it was possible to do this entirely by rote and not have any idea of the meaning of the French. (This is an argument against "parroting", similar to Wallis'. It may be worth pointing out that parroting is equally as easy in writing, fingerspelling or speech.) The deaf students could translate what they read, having learned the corresponding methodical sign, but were unable to produce good written French spontaneously. Also, De l'Epee's new signs for the larger vocabulary

were devised using French morphology so that the sign meaning SURPRENDRE ("surprise") consisted of two signs SUR and PRENDRE, (with the natural meaning of "take over"). An English analogy would be for the sign UNDERSTAND to be made by combining the signs for UNDER and STAND.

In view of these many drawbacks, Sicard tried to teach his deaf pupils the grammar of French so that they would have more control over the language, and to create signs that were not based on French morphology, but he retained the essential idea of methodical signs. Sicard did not teach his pupils the alphabet at the start of their education, arguing that it was meaningless to them until they had experience of words.

Sicard did, however, make use of the manual alphabet. Particularly, he used signs which had the handshape of the initial letter of the French word. The dictionary he made during his time at the Paris school ("Theorie des Signes", 1818) is testament to the importance of the use of the manual alphabet in the creation of new signs used within the school. These signs include "pendant" with a .p. handshape, and "durant" with a .d. handshape, as well as "vin" with a .v. handshape.

Bebian was the educator who realised that there was no need for the full French explanation, and he advocated the use of the sign language used by the deaf, complete with its grammar (Bebian, 1813, "Essai sur les sourds-muets et sur le langage natural." Translation in Lane, 1984b). Again, however, fingerspelling played a role in his planned method.

The Baron de Gerando (1772-1842), a contemporary of Sicard, was also a notable French educator of the deaf and like Pereira, he used signing as little as possible. Initially natural signs might be used to establish communication between tutor and pupil but thenceforth writing was the tool by which the pupil attached the image of the thought to the word. There was no interim sign. De Gerando was happy to use fingerspelling when writing was not practical. He also believed that all deaf people should learn articulation. An emphasis on articulation and the rejection of signing could be enough to consign De Gerando to the group of oralists by some historians, yet fingerspelling was a central part of his method and he did not advocate instruction through lip-reading.

In summary then, de L'Epee, Sicard and Bebian may have used teaching methods in which the manual alphabet was used in conjunction with French sign language, while the methods of Pereira and de Gerando would have been unlikely to contribute much to sign language.

3.3.4 Fingerspelling in Early German Deaf Education.

While the French were concentrating on manual education, the German educational philosophy was centred around the use of lip reading for teaching speech. Theories of the "divine efficacy of speech" had been common since classical times, and many people believed that speech set people (with souls) apart from animals (with no souls). Before the eighteenth century it was commonly accepted that speech was necessary for thought and this was why so much emphasis was placed on teaching articulation. Even after some philosophers had accepted that this was not the case, the

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special place of speech in language was maintained by many influential people.

Heinicke in Germany was the main proponent of the oralist philosophy, demanding that the deaf should communicate only by speech and lip-reading. Signing, and even fingerspelling, are commonly supposed to have been banned. However, in a letter to de l'Epee, Heinicke said:

> If you suppose that I make no use of dactylology in my tuition, you very much mistake; I use it, however, only for the combination of ideas; but the signs which serve for communicating thoughts among my pupils consist in language articulated and expressed in writing. (Quoted in Thomas Arnold 1888:86).

Prior to the founding of the two great schools in Paris and Leipzig, the teachers of the deaf had an open and eclectic approach to methods of education: if it works, use it. The argument between Heinicke and de l'Epee developed into a rivalry, forcing educators into one of two camps, rather than allowing them to choose what was best for their pupils.

In the late eighteenth century, France and Germany, with their large deaf schools, became leaders in deaf education in the western world. Educators from other countries came to learn from them. England, Holland and the United States all sent observers to both French and German schools. Most of them adopted a form of the so-called "French method" involving a methodical sign system. However, the methodical sign system was found to be cumbersome and unnecessary, and most countries developed methods involving more natural signing combined with fingerspelling to teach the spoken language of the country.

3.3.5 Fingerspelling in Early American Deaf Education.

Thomas Gallaudet visited Sicard in the early nineteenth century and learned his methods before returning to Connecticut with the deaf Frenchman Laurent Clerc to found the first school for the deaf in 1817. Within a short time, the American institution evolved a system which used natural signs and fingerspelling as the means of communication in the classroom, and as a tool to teach English.

In 1852 John Carlin referred to fingerspelling as the "principal branch of our system [and] the best and surest channel of knowledge and communication for the deaf and dumb" while maintaining that "the language of signs, properly used, is indispensable to their mental improvement in the school room and chapel." (1852:49)

Even in this heyday of sign language in education in America, fingerspelling was more highly regarded than signs. Carlin (deaf himself) saw "pantomime" or "natural signs" as a necessary step in teaching English, but no more. He recommended, for example, that a teacher might introduce the word "lion" either by presenting a picture of a lion to his pupils or by signing LION, and then immediately fingerspelling the word.

Fifty years after Thomas Gallaudet introduced methodical signs to America, Edward Gallaudet (his son and successor) proposed the superiority of fingerspelling. He believed that signing should only be used for supporting what was read in text-books (rather than in the practice of the time, as the

means of explaining what the text-books said) and stated the ultimate aim of education to be flawless grammatical idiomatic English. To achieve this, he made several recommendations: teachers should introduce new facts by fingerspelling, supported by sign only if necessary; pupils should socialise only in fingerspelling; pupils of over three years standing should ask favours of the principal in correct fingerspelling or be denied; and - as a way of cutting down on classroom chat between the students - insisting that all talking in the classroom be in fingerspelling. Gallaudet believed that the deaf students would acquire the habit of using fingerspelling and would not feel the need to sign in later life (Gallaudet, 1868).

It was a time of much debate about the use of signs and fingerspelling in America. The arguments were often of a bipolar "either or" nature. While the educational philosophers of the time argued about the suitability of the two forms of communication, the deaf were taking matters into their own hands and deaf pupils signing during their leisure time made use of fingerspelling if they wished to refer to something known from writing or fingerspelling but which did not have a sign. The result was a natural interweaving of signs and fingerspelling. This development was rarely capitalised upon by the hearing authorities. However, while Gallaudet was attempting to stamp out the signs that he considered to be pantomime to replace them with solid fingerspelling, Isaac Peet was expanding the vocabulary of ASL in order to make it a more efficient teaching tool (Peet, 1868).

With the rise of the oralist philosophy in deaf education, the use of signs was repressed in favour of lip-reading. It was believed that if the children had access to either fingerspelling or signing, they would not bother to learn

something as boring and inefficient as articulation and lip-reading. Oralism
was seen as the only way that deaf people could integrate into the rest of the
hearing world. The Germans had been the leaders in oralist teaching for
some time. They rejected the use of any manual clues to language and
demanded total reliance on speech and lip-reading.

As oralism spread throughout the world's deaf schools, fingerspelling was
still permitted, initially. Alexander Graham Bell, the champion of oralism in
the late nineteenth century even revived Dalgarno's fingerspelling glove with
the letters of the alphabet printed upon it so that novices would be able to
learn to spell more quickly. After considerable research, Bell concluded that
fingerspelling combined with lip-reading was the best method of education
and communication for the deaf (Bell, 1883).

By the 1920s, however, when oralism was the sole official method of deaf
education, any use of the hands for communication was officially frowned
upon, and frequently forbidden. In practice, many teachers continued to use
some fingerspelling and even some signs in an attempt to increase the
amount of communication between pupil and teacher. Although signing was
not used in lessons for nearly 100 years in American schools, the extent of
"oralism" varied greatly. Some schools permitted signing outside the
classroom and others did not. Fingerspelling never died out and was used in
many schools to support lip-reading. An anonymous oralist in 1886 (Notes
by De Minimis, 1886) claimed that the manual alphabet was not too harmful
to children's education, as fingerspelling was really little more than writing.
Although he did not advocate its use among younger children, he thought
that older children should be allowed to fingerspell or even mix speech and

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fingerspelling. The important point was that the children should not have to "resort" to sign.

The exception to this strong oralist approach in education was the method used in the Rochester School for the Deaf, which made a policy of using fingerspelling as the means of instruction in 1878. This continued until the rise of Total Communication in the 1970s.

3.4 THE USE OF FINGERSPELLING IN BRITISH DEAF EDUCATION SINCE THE EIGHTEENTH CENTURY

In Britain, although the aim of eighteenth and nineteenth century educationalists had been to teach deaf children English, both signing and fingerspelling were used. It was soon recognised that lip-reading and articulation were of limited use for communication but there was a strong feeling in some quarters that use of sign language would cut deaf people off from other hearing people, so fingerspelling was offered as the solution.

3.4.1 Fingerspelling in the Nineteenth Century

The first Thomas Braidwood had claimed to rely on oral techniques, although evidence from Francis Green and Joseph Watson suggests that this claim was based more on a desire for prestige than on truth. When the second Thomas Braidwood (grandson of the first) died in 1825, the French method and methodical signs started to play a more important role in British

education again when De Puget, who had studied under Sicard in Paris, succeeded Braidwood at the Birmingham school. The Doncaster school (opened in 1829) proposed to use first natural signs, then methodical signs, followed by fingerspelling and finally writing. Charles Baker, the institute's headmaster, had been trained by de Puget. William Neill trained under Baker and when he became headmaster of the Northern Counties School he relied on fingerspelling and methodical signs. His successor Andrew Wright claimed in 1892 that the aims of the school were to teach written language through the manual alphabet and natural signs and to teach articulation and lip-reading to those with aptitude or who could benefit. By 1897 the emphasis had shifted towards speech but he still offered advice to parents on lip-reading, signing, fingerspelling, reading, writing and speech. At the Northern Counties School at the beginning of the century, both the one-handed and the two-handed alphabets were in use, perhaps because of the French influence on the teaching, but by the 1930s only the two-handed system was used (Savage, Evans & Savage, 1981).

The Eighth Edinburgh Encyclopaedia (1813, cited in Seigel, 1969) argued against the French methods used by de l'Epee, claiming that it was a waste of time and effort to use "artificial" signs while there was an adequate manual alphabet. When the children left school, it was argued, they would be unable to communicate with anyone else. On the other hand, fingerspelling could be learned rapidly by any literate person. During Victorian times, deaf organisations proposed that pictures of the manual alphabet be on the walls of classrooms so that all pupils could learn it.

The overall result of this sort of approach to education must have been the use of fingerspelling within the sign language used.

There was also, however, a rise of pure oralism in England. David Buxton, a committed British oralist of the late nineteenth century took issue with Joseph Gordon from America, who claimed that practice in fingerspelling was practice in English and so should be encouraged. Buxton retorted (1886) that this might indeed be the case but "it is not practice in speech and lip-reading, and that is what the pupil wants and what we want." To Buxton's mind fingerspelling hindered speech and lip-reading and should be banned. He wrote in italics for emphasis: "it must on no account be admitted into the school" (1886:83). He did concede that deaf adults who had successfully acquired speech and could lip-read might fingerspell if it would help strangers to understand their speech, because by that stage fingerspelling would not harm the acquisition of language. Thomas Arnold had become concerned that the English system of deaf education provided deaf people only with vocational training and not social training. For social success, he believed that oral skills were vital, and in 1891 claimed to be the first English teacher to use the pure oral method.

A survey of British schools in 1881 showed a great variation in the methods of teaching used. In Ireland, both Belfast and Dublin used manual methods. In Scotland, Aberdeen was manual, basically using fingerspelling but using signing with younger children. In Edinburgh, Henderson Row used manual and oral methods, and Donaldsons used signs. In Glasgow they also used combined oral and manual media. In Wales, Llandaff used only writing and did not use either signing or speech. In Swansea they used manual media

and used both one-handed and two handed alphabets. In England, Bristol and Bath both used manual methods. Doncaster used oral and manual media, but for different children. Edgebaston used signs, or signs with speech (this school had a large deaf staff). Hull was manual and relied mainly on the manual alphabet. Manchester and the Northern Counties School in Newcastle were both manual. In London, oralism had the main hold. All six schools in the city used oral methods and only Margate (a branch of the Old Kent Road Asylum for children unable to benefit from oral methods) used the combined method. This oralist enclave in London was set to spread (Fay, 1881).

The great turning point in deaf education is usually seen to be the Milan International Congress on the Education of the Deaf in 1880 at which oralism was recommended as the teaching method to be followed. In fact, oralism was only advocated for some children and the combined method for others. This could even have been a positive step as it could have provided different educational methods for deaf children with different hearing losses and educational needs. Unfortunately, however, the argument between the oralists and the manualists made it a debate of bipolar extremes and the common ground was lost. In fact, in Britain, little was changed immediately by the decision of the congress of Milan. A Royal Commission in England in 1889 recommended that all deaf children should have the opportunity to be educated orally. This was seen as the official seal of approval for oralism in English schools but even then the combined method continued to flourish in schools.

A major influence of oralism in English education was that the orally based teacher-training college at Ealing was transferred to Manchester university upon the opening of the Department of Audiology and Education in 1919. This provided the only chair of Education of the Deaf and also provided the teacher training for almost all teachers of the deaf in England and the Empire (and later the Commonwealth). As a result, the oral method of teaching took over in England and large areas of the English-speaking world, and fingerspelling was used considerably less. The notable exceptions to this were the Scottish schools which continued to use fingerspelling as a major teaching tool, until the 1950s.

3.4.2 Recent Changes in Fingerspelling in British Deaf Education.

In 1964, the Department of Education and Science set up a committee chaired by Professor MM Lewis to investigate the possible place of fingerspelling and signing in British schools for the deaf. At the time most schools in Britain were officially oral, but the resulting report found that some form of manual communication was used on an informal basis in almost all schools (Lewis, 1968). The report concluded that the linguistic status of fingerspelling is no different from that of written language and could be used by itself by educated deaf adults. It admitted that among signing deaf adults fingerspelling would be useful for new or technical terms or for parts of speech that are not signed. It also concluded that fingerspelling could be a useful teaching aid when combined with speech. However, it recognised the problem of speaking and fingerspelling simultaneously: if the speech keeps pace with the slower fingerspelling, it becomes unnaturally slow and loses its rhythm; if normal speech is maintained then the fingerspelling falls behind

and the purpose of using the manual to support the oral is lost. The committee also noted that in the Soviet Union, teachers fingerspelled immediately under the chin while speaking, to get the children to associate the fingerspelled word with the lip-patterns. The Russian children were required to articulate while fingerspelling, and later were expected to learn to lip-read without fingerspelling. The committee proposed that the same system could possibly be implemented in Britain. However, the overall conclusion of the report was that, as British schools should be aiming to teach English to deaf children, fingerspelling could be tolerated provided it was used for this purpose.

In the wake of this report, the Special Education branch of the DES commissioned a further report which confirmed that manual communication was widely used in British Schools. Because it was informally used, and often used against school policy, the teachers received no training in the field. Their skills were often picked up casually from the children they taught. Moves were then made to try to provide training for teachers of the deaf in manual communication.

Although the schools followed stated policies of oralism, sign language flourished within the deaf community, particularly among families with many deaf members. This sign language, however, would have been influenced by the education received by the adults who joined the deaf community on leaving school.

The 1970s were a period of upheaval in deaf educational thinking. In 1965 Bill Stokoe published the results of linguistic research which showed that the

sign language used by the American deaf community was not a mere collection of pantomime and gesture but a real language. Pressure from deaf organisations led to the introduction of signing into schools. In many cases, however, this was not the sign language of the American deaf community, (American Sign Language, ASL) but some form of signed English. Signed English in its "ideal" form is another way of representing spoken English. It uses some ASL vocabulary (or that of BSL, depending on the country) but English grammar and word order. Because of the disparate nature of the grammars, many forms of signed English involve the fingerspelling of function words and certain English morphemes. It should be noted, however, that "pure" signed English, in which English grammar and morphology are retained perfectly is extremely rare in most instances. More commonly, there is also a mixture of the sign language grammar with the spoken language's grammar.

3.5 SUMMARY

Hearing educators have frequently seen the manual alphabet as an important pedagogical tool, because of its link with English. Both manualists and oralists have used the manual alphabet to certain extents.

The current situation in Britain is by no means uniform. There are no longer any schools which rely exclusively on fingerspelling for communication. Some schools (in three areas, Leeds, Derby and Birmingham) have recently introduced bilingualism, attempting to teach English through BSL, but this will

have problems of its own, not least the shortage of qualified teachers of the deaf with adequate BSL skills and fingerspelling skills (Llwellyn-Jones, 1991). Fingerspelling now has a different part to play in the language of the deaf, now that BSL is being accepted as a language in its own right.

The next chapter will review the status of the manual alphabet and fingerspelling in modern BSL, particularly from a view of its use in borrowing lexical items from the written forms of spoken languages.

Chapter 4

THE ROLE OF THE MANUAL ALPHABET AND FINGERSPELLING IN LEXICAL BORROWING IN BSL

4.0 INTRODUCTION

Having charted the development of the manual alphabet and the use of fingerspelling among deaf people, it is now necessary to investigate the role that the manual alphabet plays in BSL today. Central to this chapter will be the claim that loans from English using the manual alphabet are subject to the same processes that operate upon loans between other languages.

Two main problems concerning the status of signs made using the manual alphabet were identified in Chapter 1. It is necessary to investigate firstly the phonological status of the manual alphabet, and its acceptability to signers, and secondly the lexical status of any sign made using the manual alphabet.

Both problems will be considered here. It will be argued that the use of the manual alphabet must be considered a BSL event when it is being used within BSL discourse. Central to the discussion will be the premise that uses of the manual alphabet may be instances of three things. They may be:
a) code-switching or code-mixing with English,
b) instances of borrowing, or
c) the results of native BSL word-formation of signs which share an etymological root with English words but cannot be said to be true loans from

English. This is because no attempt has been made to recreate the English word, but only something derived from a small part of it.

Davis (1989), Woll & Sutton-Spence (1990), and Lucas & Valli (1992) have all considered the possibilities that uses of fingerspelling may be instances of at least one of these options. Here, the issue will be discussed in more depth.

4.1 THE PHONOLOGY OF THE MANUAL ALPHABET AND FINGERSPELLING

In order to discuss the phonology of the manual alphabet and fingerspelling, it is necessary to clarify three terms: handshape, hand-configuration and hand-arrangement.

"Handshape" is used here to refer to the arrangement of the fingers of one hand, eg open and flat as a 'B' hand, curved into an 'O' hand, or with the index and middle fingers extended from the closed fist and together as a 'U' hand.

In literature concerning the ASL manual alphabet, the term "hand-configuration" is often used to refer to the manual letter handshape and its orientation. This term will be used where necessary, and when referring explicitly to ASL manual letters. However, although the term "hand-configuration" is adequate for discussion of a one-handed manual alphabet, it is not enough for description of two-handed manual letters, for which it is

necessary to describe the relationship between the hand-configurations of the two hands.

"Hand-arrangement" is used here to refer to the relative arrangement of the hands (of any handshape, in any configuration) with respect to each other, eg the index finger of the active hand touching the tip of the ring finger of the passive hand, as in the manual letter -o-, or the baby 'C' handshape of the active hand touching the index finger of the passive hand at its tip and base, as in the manual letter -d-. Where the citation hand-arrangement of the manual letters is referred to, the term "the manual letter" will be used.

4.1.1 The Status of the Manual Alphabet Handshapes in BSL

The handshapes of each hand used in fingerspelling in BSL are all handshapes that occur within BSL (with one possible exception, that of the active hand in the manual letter -m-, which will be discussed in more detail below).

Some manual letter hand-arrangements do also occur as part of BSL signs. These are mainly the symmetrical manual letters and the vowels. The vowels -a-, -e-, -i-, -o- and -u- have homonyms in the ordinals 1st, 2nd, 3rd, 4th and 5th. In the consonants, WORTH is homophonous with -b-, the -c- handshape is found, for example in STAY, -f- occurs in LIFT and NOWHERE-TO-BE-SEEN, -g- in REPAIR, -h- in CLEAR, -p- in DETAIL, -w- in AMERICA, and -z- in CHEESE.

The hand-arrangements of some manual letters only occur in the manual letters (eg in -q-) but the handshapes made in fingerspelling are all part of BSL phonology. This is not so in ASL where several handshapes of the manual alphabet are exclusive to fingerspelling or initialised signs.

One possible exception to the harmony between the handshapes of the manual alphabet and other signs in BSL lies is the citation handshape of the active hand in the manual letter -m-. This involves the unspread extension of the index, middle and ring fingers. According to the Dictionary of British Sign Language/ English (1992), it has some use as a size and shape classifier, but otherwise only appears in signs linked with the letter -m- or the Irish letter .p. which has the same handshape. Deuchar (1978) has claimed that the handshape has no part in BSL phonology, except as a part of the manual alphabet.

The handshape, however, is fairly close to the unmarked BSL handshape of the 'B' hand and is frequently replaced by a 'B' hand. Unmarked handshapes are those that are the most perceptually distinctive, most frequent, found in all known sign languages, and are acquired first by signing children (Deuchar, 1984). The handshapes are also maximally distinct. Battison (1978) lists the unmarked handshapes as 'A', 'S', 'B', 'G', 'C', and 'O'.

It is very common to see the -m- in BSL made with 2 'B' hands during conversational signing. When the active hand in the letter -m- changes to become a 'B' hand, it becomes an unmarked handshape, and the hand-arrangement is then symmetrical.

Another exception mentioned by Deuchar (1978) is that the vowels each have a meaningful place on the surface of the '5' hand, which is usually a single Tab (or location) for the active hand. This, however, can be discounted because it has already been shown that the vowels are homophonous with ordinals, first to fifth.

Some handshapes from foreign manual alphabets may be used by BSL signers. Single manual letter sign loans from Europe and the United States are not widespread but do exist. The international signs for countries and cities are increasingly being used in BSL. FRANCE and EUROPE are signs used in BSL in which the handshape is a letter from another manual alphabet (.f. and .e. in the French manual alphabet) and is not part of BSL phonology. Older BSL signs for these places are being replaced by these new signs. The ASL sign OK ("okay"), used increasingly by British signers (especially younger signers) involves the use of a handshape which does not exist in BSL phonology (ASL .k.).

In some cases, these phonologically alien handshapes are retained. BSL can accommodate the foreign handshapes by simply marking them as foreign. In any situation of language contact, if a few loan words violate the native rules of a language they can just be marked as exceptional in the lexicon, and the phonological system of the language remains intact. Present day English uses loans beginning with [ʃ] followed by a consonant. English does not have any consonants after [ʃ] except [r], but loans such as "schlep", "schnapps" and "schwepps" are all accepted by English users.

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If the number of loan words increases greatly, it may become preferable to modify the system to accommodate them (Bynon 1977). Just such an accommodation occurred in English in the nineteenth century when the sound [ʒ] in modern pronunciations of "treasure" and "pleasure" became part of English phonology (Aitchison, 1981). Before the extensive borrowing from the French of words such as "genre" and "aubergine", this sound was not a part of English, and [z] was used instead.

In other cases, the phonologically alien handshape is modified into a BSL handshape. The loan sign OK may use a 'V' hand instead of the ASL 'K' hand. Similarly, EUROPE, using the one-handed .e. whose handshape does not exist in BSL may mutate to a simple closed fist or 'O' hand. This is the usual process in borrowing. The phonology of the loan is altered during the borrowing process in order to fit the phonology of the receiving language.

Other new vocabulary from America involves ASL letter handshapes. LANGUAGE, INTERVIEW, VIDEO and VOCABULARY are loans from ASL, with various degrees of acceptance by BSL signers, and use handshapes from the ASL manual alphabet. WINE may also be a loan from ASL, or from Irish Sign Language. It has the handshape of the manual letter .w. which is the same in ASL and ISL. Although these loan signs use the handshapes from other manual alphabets, the handshapes all exist in BSL phonology and there is no phonological conflict.

It may be seen, then, that the phonological status of the handshapes of the manual alphabet letters is not in question. They are all part of the phonology of BSL, and those handshapes from other manual alphabets outside BSL

phonology may easily be accommodated, either by marking them as exceptional or by restructuring.

Manual Letters as Morphemes

Although manual alphabet hand-arrangements are usually used differently from other BSL signs (because they are derived from a system designed to represent written words at some level in BSL) they are phonologically acceptable in BSL. However, Davis (1989) and Lucas & Valli (1992) go beyond this, and claim that each ASL fingerspelled item is a sequence of ASL *morphemes*, because each letter of the ASL manual alphabet is a morpheme of ASL.

Lucas and Valli say:

> In ASL what has previously been thought of simply as handshapes or as letters are morphemes in the standard meaning of the word: they consist of the pairing of a form with a meaning. They have the segmental structure of ASL signs of which the handshape is one part, and they have the meaning of 'signed symbol for the English orthographic symbol'. They are free morphemes which may also have bound allomorphs when they occur with other fingerspelled morphemes. (1992:42)

It is possible that ASL is at some deep structural level very different from BSL in this respect, but BSL letter handshapes representing English letters are not morphemes of BSL. The argument for the morphemic status of ASL fingerspelled letters is not totally clear, but it implies that when deaf signers are asked what the manual letter .s. means, they reply it means the written letter "s" and do not reply that it has no meaning by itself. Given that the name of the letter is a morpheme and the name is articulated as .s., it is quite

acceptable that the .s. handshape has morphemic status when used as the name of the letter "s". However, there must be a distinction between letter names and letter meanings. The name of a letter has a meaning, but an isolated letter does not have meaning of its own.

The letter "s" in English does have a morphosyntactic function, as a possible plural "s", to show possession as a genitive "s", and as a present tense "s", and to this extent does have some meaning. However, again, it is not the letter itself that has the meaning. The meaning comes from the fact that the bound morphemes showing plurality and the present tense are realised using the letter "s". No other single letter in English is used in this way.

For something to be a morpheme of BSL, it must not only obey the phonological rules of the language but must also have some form of reducible meaning and belong to some given grammatical category. By such criteria, the manual letters in BSL are no more morphemes of BSL than letters of English words are morphemes of English (although the names of the English letters are morphemes, just as they are in ASL or BSL, and some of the names of English letters are homonyms of English words eg "c" and "sea").

It was mentioned earlier that there are signs in BSL which are identical in surface form to letters in the British manual alphabet (eg CLEAR and -h-), but the two are linguistically very different. The signs are morphemes, but the manual letters are not. There are also SMLS in BSL which are realised by one manual letter but these letters serve as morphemes only because they have an allocated place in the structural hierarchy of BSL, having lexical

status. An example is -f- which may have the meaning FATHER when it is used as a SMLS, in the relevant context. Analogously, the English letter "i" when used to refer to the first person singular is a morpheme, but the letter "i" is no more a morpheme than any other letter (eg the letter "h") which is not used as a morpheme .

The fact that letter handshapes have sign homonyms (as was demonstrated above) should not be taken as evidence that the letter handshapes have their own independent meaning. In English, many of the names of letters have another meaning eg "a", "bee", "sea", "Dee", "gee", "I", "jay" etc.

The handshapes from the manual alphabet which are part of SMLS occupy a different position in the structural hierarchy of BSL from those which are part of a fingerspelling. They do not conflict with the complexity constraint (Battison, 1978. See section 4.2, p124, for further discussion). SMLS are BSL morphemes and exist either joined to other signs (eg -m- in FIVE MINUTES) or as free morphemes whose meaning comes from context, usage and, often, lip-pattern, as well as letter handshape (eg -m-m- in MOTHER).

It could be argued that the -m- in 5-MINUTES is a homonym of both the single letter -m- (if the mouth patterns, context etc. did not serve to discriminate between the two) and the letter name "em", but this is not the most parsimonious explanation. Apart from the name of the letter "em", there is still no evidence to support Davis' and Lucas & Valli's view that the manual letter -m- occurring for example in the fingerspelled word -m-a-y- has any more of a morphemic status than the letter "m" in the English word "May".

Davis', and Lucas & Valli's argument that each letter is a morpheme is not helped by observations reported by Poizner, Klima and Bellugi (1987). They describe a left-hemisphere damaged deaf signer who was able to fingerspell whole words (i.e. able to combine strings of ASL morphemes, if manual letters are morphemes), while being impaired in any syntactic function (i.e. unable to combine strings of ASL morphemes).

Part of the problem with the linguistic identity of the manual letter is the definition of a BSL phoneme. According to a definition first proposed by Stokoe (1965), phonemes in BSL are simultaneous, and are defined along the parameters of handshape, location, movement and orientation. Signs which are free morphemes are made up of phonemes from these four parameters. By this argument, each manual letter is made up of four phonemes, defined along the same parameters, because each manual letter has a handshape, a location, an orientation and a movement (even if the movement is realised as a zero movement in most cases). Despite this, it does not have the same meaning as a native BSL sign with the same phonological components. It is easy to accept that morphemes are made up of bundles of phonemes, but less easy to see how the combination of these phonemes does not necessarily make up a morpheme.

Liddell and Johnson (1989) have proposed an alternative for sign language phonology, in which the four parameters of handshape, location, movement and orientation are seen as more analogous to binary articulatory features in speech, than phonemes. The model proposes that signs are made up of sequences of "movements" and "holds". This model is more useful for the linguistic analysis of fingerspellings. It allows fingerspelled sequences of

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manual letters to be seen as sequences of movement and hold segments, just as other signs may be. This removes the perceived need to accord each manual letter the status of a morpheme just because it is made up of phonemes.

4.2 THE STATUS OF FINGERSPELLINGS WITHIN BSL

Although the handshapes of the manual alphabet may all be seen as part of BSL phonology, the phonology of a language also includes constraints on the *sequences* of phonemes in the language. One rule of phoneme combination in BSL is the "complexity constraint". This implicit rule states that no sign in BSL can consist of more than three consecutive movements or two different handshapes (Battison, 1978; Kyle & Woll, 1985). Fingerspelling any word of more than two letters violates this constraint.

Clearly if such fingerspellings are seen as instances of code-switching, there is no conflict, as the signer is simply switching to a language which is not bound by the complexity constraint. However, if these fingerspellings are seen as *loans*, then BSL must either tolerate their exceptional forms or alter its phonological rules. There are many three-letter lexicalised fingerspelling loans in BSL, eg -s-o-n-, -l-a-w-, m-o-n- (MONDAY) and -f-r-i- (FRIDAY), suggesting that fingerspelling more than two letters is not exclusively part of code-switching, but that loans with three handshapes are possible.

Battison (1978) has implied that any lexicalised loan of more than two letters is in a state of transition between unlexicalised multiple-letter loans and lexicalised two-letter loans (although he presents no diachronic evidence to support this claim). An alternative explanation is that these are not in transition at all, but are an instance of BSL rules shifting to accommodate the characteristics of several persistent loans.

Davis (1989) claims that a fingerspelled word is "by its very nature...an ASL phonological event". This is in accordance with the comments already made above on the phonological nature of the BSL manual alphabet. However fingerspelling is not *exclusively* a BSL phonological event because it is possible to fingerspell with no knowledge of a sign language.

In his argument to prove that no fingerspelled word can be considered a loan from English, Davis states that "fingerspelling forms an integral part of ASL (as opposed to being a part of English)." (1989:96) This claim seems to imply that English speakers do not use fingerspelling. This is clearly not true in Britain, either today or in the past.

English speakers with no knowledge of sign languages can use fingerspelling. Every year in Britain many school children learn fingerspelling as a means of representing English. Certainly Wilkins (1641) was recommending its use to those who would have had no concept of a sign language of deaf people. People who use fingerspelling exclusively for communication (such as Kitto, 1845) use it as a form of their spoken language and not as sign language.

Lip-speakers aiding the lip-reading of deafened people may use the manual alphabet in conjunction with the mouth patterns of English. This is normally limited to the first letter of the English word, and is said to be particularly useful for proper nouns. The lip-speakers are producing English mouth patterns, and there is no need for either the lip-speaker or the lip-reader to know any BSL at all. In this case the use of the manual alphabet is entirely within the English language (C. Chubb, personal communication, November 1993).

Admittedly, the converse is also true. It is possible for a person to sign BSL (including signs derived from the manual alphabet and fingerspelling) without any knowledge of fingerspelling or English. Children may not know the manual alphabet or anything about spoken or written English but may be able to use SMLS and lexicalised fingerspellings as part of their sign language vocabulary (eg Akamatsu, 1983). Collins-Ahlgren (personal communication, September, 1992) reports that many adult deaf New Zealanders know no fingerspelling, but use signs historically rooted in fingerspelling, with no idea of their origin. However, these facts are no argument against the existence of fingerspelled loan words, as it is common for a language user to be unaware of the origin of any given lexical item (Higa, 1979).

When an English fingerspelling is articulated, the manual letters are combined according to the rules of English phonology. Similarly, when a British signer uses Welsh or Gaelic fingerspellings (as occurred in the See Hear! corpus, described in section 6.2, p184, and see section 4.4, p134), these are fingerspellings created as a result of the phonological rules of

Welsh and Scots Gaelic. The fingerspelling of these words implies either code-switching, or the loan of the words.

Some uses of the manual alphabet in BSL, however, are the result of combinations of manual letters generated by BSL. In this case, the phonemes do combine according to the rules of BSL to create meaningful signs in BSL. When a set of phonemes previously assembled according to the rules of English are assembled according to the rules of BSL they may be seen as lexicalised BSL fingerspellings. For example, the BSL sign PARENTS uses the fingerspelled handshapes -m- and -f-. These were initially derived from the English words "mother" and "father", but have been reassembled in BSL with a new meaning.

In the creation of abbreviated fingerspellings and SMLS, the combinations of hand-arrangements that result are partly governed by English rules, but are now also a part of BSL phonology. Loans may retain the order of the letters of the English word but not all the letters, and the selection of letters retained may be influenced by BSL rather than English. This will be discussed in depth in Chapters 8 and 9.

4.3 BORROWING IN BSL USING MANUAL LETTERS

Part of the debate over the status of any one item articulated using the manual alphabet centres around the possibility that the item is a loan from English into BSL. It is necessary to consider the definition of loans and the

processes involved in borrowing between other languages, and then to decide if it is useful to see the use of the manual alphabet as a means of borrowing from English into BSL.

4.3.1 Definitions of a Loan

Definitions of a loan have already been given in section 1.6, p30. Here, the definition will be addressed in more depth.

Crystal (1985) defines a loan word as one in which "both form and meaning are borrowed or assimilated, with some adaptation to the phonological system of the new language" (1985:205). Such a definition clearly supports the theory that, while the form of a fingerspelled word is not the same as the form of a spoken word, at some deeper level of representation they do share the same structure.

In written language there is no doubt that words can be borrowed between languages with two different scripts (eg English and Russian, or English and Japanese). It is worthwhile to broaden the scope of definition of a loan word to allow "form" to encompass the form in any modality.

It is important to be aware of the fact that "loans" may be well-established in a language and used regularly throughout the language community, or they may be used for the first time by one or two members of the community. In either instance, the linguistic unit or language pattern is called a loan, even though it has a very different status in each situation.

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The processes involved in borrowing, and the parts of languages that are borrowed, vary according to the linguistic and sociolinguistic circumstances.

The status of the language community tends to dictate the amount and direction of borrowing that may occur. For example, there is often relatively little borrowing between the languages of two dominant cultures, or even two subordinate cultures, and the balance of words moving between the languages is fairly even. There is more borrowing between a dominant culture language and a subordinate culture language, with the majority of the linguistic units (but not all) being borrowed from the dominant language. When a subordinate culture lives within a dominant culture there is most borrowing from the dominant language (Higa, 1979). This last situation best describes the relationship between deaf culture and hearing culture, and the pattern of borrowing between English and BSL reflects this.

4.3.2 The Acceptance of Loans

There are two different constraints on borrowing between languages. The first is structural and depends on the structural similarity of the two languages. The second is non-structural and depends on the degree of proficiency, the number and status of bilinguals in the language community, and the status of the two languages in the community (Maravcsik, 1978).

Bauer (1983) has further described the non-structural, social factors influencing the acceptance and spread of a loan. These are: the status of the person using the loan; the attitude of the language community to the loan word; the attitude of the community to the need for the form; the prestige

gained by using the loan form; and the convenience of using the loan. He also notes that loans may be rejected on the grounds of aesthetics, etymology, perceived vulgarity and grammar or semantics. These are all factors that may influence the use of a fingerspelled loan in BSL.

The *absolute amount* of borrowing between languages is primarily dictated by the non-structural, social constraints described by Maravcsik and Bauer. However, the *types* of loans, and the grammatical categories into which they are borrowed are constrained primarily by the structural constraints of the languages. In this general discussion about borrowing into BSL, social factors will be most relevant. However, in section 4.7, p145, (concerned with the borrowing of verbs) the structural differences between the languages will be discussed in greater detail.

Close Contact between Cultures

In the past it was claimed that loans were primarily of lexical items referring to items new to a culture. Despite observations contrary to this view (eg Weinreich 1966, Haugen 1950) the claims persist, perhaps because these are the most common loans into the English language. There is no doubt, however, that items of core vocabulary may also be borrowed from other languages if language contact is sufficiently prolonged and close, and one language is ready to receive the terms (Bynon, 1977). It is not uncommon to find languages which borrow terms for close family relations, measurement, times and dates despite already possessing active lexical items for these. There is a large concentration of SMLS for these groups of terms in BSL. Loans may even be of closed-class words and grammatical constructions if the contact between languages is close enough. Closed-class fingerspelled

loans have been made by BSL from English, for example the fingerspelled loan sign BUT.

Willingness to Accept Loans

The acceptance of loans of core items is seen by Higa (1979) as a marker of willingness to accept the culture of the other language. Japanese Hawaiians borrow large numbers of English words, as a sign of integration into American life and in order to create a new dialect marking them as belonging to a distinct community. This is also clearly seen in the Nahuatl used during colonial times in Mexico (Karttunen & Lockhart, 1976). After initial resistance to the Spanish language, it became an important part of Nahuatl life and large numbers of Spanish linguistic units were borrowed into Nahuatl, including the Spanish convention of marking the plural by "-s".

Higa (1979) observes that for most Japanese speakers, loans are primarily made out of lexical necessity, with social-psychological needs being of secondary importance. Japanese Hawaiians, however, tend to borrow English words primarily for social-psychological purposes, with lexical needs being less important.

4.3.3 Factors influencing the amount of borrowing

The use of fingerspelling within BSL may reflect either lexical necessity or psycho-social needs. At one extreme, some signers avoid using fingerspelling as much as possible and only fingerspell when forced to out of lexical necessity. At the other, signers fingerspell in order to mirror English more closely. There is also a large area of "middle ground", as deaf people

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use more or less fingerspelling. This became particularly clear as a result of the interviews conducted in study 3 (described in section 6.3, p189).

The amount and type of borrowing into a language is not uniform within a speech community. Scotton and Okeju (1973) observed that sub-groups within a larger community will differ greatly in the amount and type of borrowing used, and suggested that distinctions should be made among: loans into "language X" as a whole; loans into certain regional dialects of "language X"; and loans in certain socio-economic dialects that cut across geographical boundaries. They found that loans for new items are seen mainly among people with a higher education level or those who have travelled widely, whereas loans into the core vocabulary are more widespread across all members of the speech community. Terms for core items of vocabulary may well be better integrated into a language than loans for new items.

Yau (1993) studying Chinese language publications in Hong Kong found that magazines about modern technology (covering topics such as cars, photography and computers) used many English words, while general interest magazines used far fewer, and popular entertainment books used almost none at all. Yau explains this difference by referring to both linguistic and extra-linguistic factors. For many of the technical terms used in some topics, the Chinese equivalent either does not exist or is not well-enough established to be accepted by all bilingual readers. An extra-linguistic reason lies in the link between the status of the technologically advanced Western world and the English language. Writers using technological English words often do so for reasons of prestige.

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The overall amount of the use of the manual alphabet and fingerspelling also varies within sub-groups of the BSL community, as was demonstrated by Woll and Sutton-Spence, (1990) and as will be shown in Chapter 7. However, Woll and Sutton-Spence also showed that widespread, established lexicalised fingerspellings (i.e., core items of vocabulary) do not vary within the BSL community.

4.4 THE RELATIONSHIP BETWEEN FINGERSPELLED WORDS AND THE WRITTEN SOURCE WORD

In the consideration of literature on loan words there are enough parallels between borrowing in spoken languages and the use of the manual alphabet within BSL to claim that fingerspelled words and SMLS within BSL have been borrowed from English. Unfortunately, within the literature on loan words and borrowing, there is no consideration of the possibility that the donor language and the borrowing language may exist in two different primary modalities. In fingerspelling, there is an attempted reproduction at some level in BSL of patterns previously found in English. What is unclear is the level at which this is happening.

When signers use the manual alphabet, either in SMLS or in fingerspellings, the sign produced carries the meaning of the original English word (or a closely related meaning), and the form of the sign is based in some way upon the orthography of the English word. This is evidence enough that a

borrowing event has occurred, according to Crystal's 1985 definition.

However, other linguists do not accept that the use of the manual alphabet to

represent a word from another language is ever an instance of borrowing

from that language, and it is necessary to review their arguments and

comment upon them.

Davis (1989) has claimed that fingerspellings are not instances of *borrowing*

from an English orthographic event, but are simply used to *represent* the

orthographic event. Davis claims that:

> the relationship between the phonological systems of spoken
> languages is truly one of borrowing - one language borrows the sounds of
> another and the result is a loan. At no point however, can the relationship
> between English orthography and ASL phonology be characterised as
> borrowing. (1989:97)

If Davis confines his definition of borrowing to the realm of sounds then his

argument is unassailable. Only when signers use spoken English words

during a signed discourse can they be said to be borrowing an English word.

However, even the mainstream literature on borrowing does not confine

loans to sounds but also includes other language aspects such as word

order, so it should be arguable that reproducing the patterns of the word in

any form could be a loan.

Bynon's definition of loan words is that they are "innovations which cannot be

accounted for in terms of inheritance and which can at the same time be

systematically related to items in a donor language." (1977:217) The rules of

fingerspelling mean that any fingerspelled loan can be systematically related

to the word in the donor language of English. SMLS cannot be fully

systematically related to items in the donor language because of the loss of all orthographic information except for the first letter. However, the relationship between the SMLS and the first letter of the English translation of the SMLS is invariable, and SMLS cannot be accounted for in terms of inheritance.

According to the definitions laid out by other authors on borrowing, it is true that a change in modality is not admitted to be part of a borrowing process. This omission is most likely to be because other authors have not considered sign language while creating the definitions. If it is accepted that a visual language can only borrow from a spoken language using the visual medium then an exception may be made for cross-modal loans not to have to reproduce sounds.

There are many clear examples of BSL borrowing from English using loan translations, where the morphemes of the English word are translated morpheme by morpheme into signs. For example the English noun "smoke alarm" is rendered in BSL as SMOKE ALARM. Idioms may also be translated exactly eg SQUARE ONE in BSL, as a loan translation of "square one". It is also possible for partial loan translations to occur. For example, the computing term "hardware" which may be glossed in BSL as HARD EQUIPMENT. This is also common in translating colloquial English idioms eg "bible basher" may be signed BIBLE HIT. Loan translations, however, are only useful if it is possible to translate each morpheme or word meaningfully.

Fingerspelling of English words provides opportunities for BSL to borrow from English, especially if the words' morphology does not allow the available sign vocabulary to translate the English into signs by loan translation.

One reason for the confusion over the status of fingerspelled loans is that "fingerspelling" is used to mean different things. It can mean the act of stringing together manual letters, or it can mean producing words by this action, or it can mean the words that are produced as a result of this.

Both Davis (1989) and Padden (1991a) emphasise that fingerspelling is not English, but they say so for different reasons. Davis says fingerspelling is not English because it is by its very nature a part of ASL phonology. This is a debateable point. Padden's reasons for rejecting fingerspelling as English are grammatical, rather than phonological. She says: "What makes fingerspelling *not* English is the fact that it does not represent the crucial levels of grammar of the English language." (1991a:3.) Padden sees fingerspelling here as the words that are produced as a result of *stringing together manual letters.*

These two view-points illustrate the confusion surrounding what fingerspelling is. Neither fingerspelling, nor speaking nor writing *is* English. Fingerspelling, speaking and writing are all ways of *representing* languages and words in a language but cannot be languages themselves. To claim that a fingerspelled word can never *be* English is to confuse a language with a word from a language. It is also to confuse a language with its mode of representation.

A given language is an entity far more abstract than its physical representation. Davis confuses a language with its form of production. To argue about the definition of a language from the point of its modality is irrelevant. The Braille version of an English book is no less English than one written in ordinary print because it is perceived through touch. The words are English words whether heard, seen or touched, so long as they can all be re-created in a form recognisable by a speaker of English upon the application of simple, logical rules.

For signers to be able to understand an unintegrated English fingerspelling, they must know both the English word and the rules of fingerspelling. That is, signers need a knowledge of both another language and the relationship between the representations of the languages. Given that signers have the ability to reconstruct the English letter sequences from the fingerspelled sequences, they will be able to recognise any fingerspelled word they perceive. If they know the meaning of the English word that results from decoding the fingerspelled letters, they can understand it. If they do not know the meaning of the English word, they cannot understand it, despite being able to recognise the letter sequence as coming from an English word.

In analogy, a knowledge of the Greek alphabet allows an English reader to construct ΕΛΛΑΣ as "Ellas", but this only has any meaning to the reader who knows that this is the Greek word with the English meaning "Greece".

Signers of BSL may also use fingerspelling to borrow from spoken languages other than English. Examples from the corpus studied (described in section 6.2, p184) include words from Italian ("I pagliacci"), Finnish (borrowed from

Swedish) ("bjork"), Scots Gaelic ("ceud mille failte") and Welsh ("nosda"), all used by BSL signers. For this to be possible, however, the written form of the languages needs to be one that the British manual alphabet can represent. Greek, Russian or Japanese words can only be meaningfully fingerspelled by using the manual alphabet from those countries, or by transcribing the word into an English approximation first. (Another possibility is that the fingerspeller may use the manual letters of the English alphabet letters that most closely approximate the form of the written letters in another script. A signer knowing no Russian might fingerspell Russian words written as CCCP and PECTOPAH as -c-c-c-p- and -p-e-c-t-o-p-a-h-, although the Russian letters represent very different sounds and in the English alphabet would be written as SSSR and RESTORAN, making the fingerspelling of -s-s-s-r- and r-e-s-t-o-r-a-n- more exact).

In all these loans considered above, it is necessary to know the meaning that the source word has in the source language. However, once a fingerspelling or a SMLS has been restructured and become fully integrated as a loan, signers do not need to know the English word to understand it. The lexicalised fingerspelling or SMLS has its own meaning in BSL. In many cases, it would not be easily intelligible to one who knew both the manual alphabet and English but not BSL.

Both fingerspellings and SMLS must be seen as loans from English. Their forms may be different, and their degree of integration into the language may differ, but they are both ways of borrowing from English into BSL. Section 4.5, below, will consider the problem of differing degrees of integration of a loan into a language, with the aim of determining if it is possible to identify

fully lexicalised and less well integrated loans in BSL, and if this may be done using linguistic or sociolinguistic criteria.

4.5 INTEGRATION OF LOANS

It has already been observed in section 4.3 (p127) that loan words do not all have the same status within the recipient language. There are several stages in the process of integration of a loan into a language. At the first stage, the loan can only be used by a bilingual, and must be coupled by some sort of explanation of what the loan means for the benefit of monolinguals. Later it may be used by monolingual speakers who are aware that they are using a word or feature from another language. Whenever the word is used, it is accompanied by an explanation of meaning for the others who do not know the loan. As the word achieves currency, the explanation becomes unnecessary, but the word is still seen as a foreign word. Ultimately if the borrowed word is used often enough and is accepted by the speakers of the language, that word may become so integrated into the language that it no longer seems foreign in any way (Crystal, 1985).

Higa has remarked that "loan words are not given full citizenship immediately." (1979:280.) In written forms of languages, this may show itself in various ways. For example, English loan words are often printed in italics when they first appear in writing, or are accompanied by an explanation. Later, explanations are dropped and the word may be written normally. In Japanese, loan words are written in Katakana, a script used exclusively for

foreign words. In this case a word cannot be naturalised into Japanese because there is no process for integrating the words by using Kanji characters. In written Hong Kong Chinese, the Chinese term is followed by the English term in brackets.

In BSL, fingerspellings are noticeable as having different forms from other signs. Later, a fingerspelling may become more integrated into BSL but only on rare occasions does it lose its fingerspelling identity completely. Although all uses of the manual alphabet are loans from spoken language in some way, some are more integrated into BSL than others. Justification for this claim, based on the degree of restructuring and the frequency of use, will be provided later in Chapter 8.

In the discourse of bilinguals, it is not always clear when a particular token is being used as a loan and when as a result of code-mixing. Especially, the stages of integration seen with other loans will not be seen, because participants in the conversation will know the meaning of lexemes from either language and there will be no need to explain them.

At any stage in the loan process, the word may be restructured phonologically, morphologically and semantically in order to fit the recipient language. Factors determining the extent of integration of a fingerspelling into BSL may not only be linguistic however, as sociolinguistic or psycholinguistic factors may also be important. Evidence from all three areas may not be readily obtainable for all loan words, but each area may provide support for claiming that a given fingerspelling has been (or has not been) lexicalised in BSL.

4.6 CRITERIA FOR IDENTIFYING A LOAN

It is not always easy to decide which signs using the manual alphabet are established BSL loans and which are not.

Lucas & Valli (1992) say that lexical borrowing should include some kind of integration of the item into the recipient language and that it should be widely used and accepted by users of the language. Their definition of an instance of code-switching or code-mixing is that of a complete switch to a new language without any integration.

The distinction is not always easy to make, however. Gardner-Chloros (1987) has attempted to describe the dividing line between code-switching and borrowing and concluded:

> All in all, it would appear that the distinction between code-switching and loans is of a 'more-or-less' and not an absolute nature:
> 1. loans are *more* likely to be brief (one word or phrase) than code-switches, though the majority of code-switches are also lexical;
> 2. loans are *more* likely to be linguistically integrated into the receiving language than code-switches;
> 3. loans are *more* likely to be filling a semantic gap in the language than code-switches.

> Whilst all these criteria may be of some help in carrying out an analysis, the most important criterion would seem to be a psychological one: is the imported element in some sense *felt* to be part of the surrounding language by the speaker and those listening to him, or is it *felt* to be part of a different system? If it is an innovation on the speaker's part, it is a code-switch. If it is frequently used in that speech-community - whether or not in

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free variation with a native element - then it is at least on its way to becoming a loan. In short, a loan is a code-switch with a full-time job. (1987:102, author's emphasis)

Romaine (1989) has said that "nonce words differ from established loan words only quantitatively with respect to frequency of use, degree of acceptance, [and] level of phonological integration". (1989:142)

Poplack, Sankoff and Miller (1988), reporting on their study of French loan words in the speech of English-speaking Canadians, also claim that there are rarely any physical differences in words that are fully integrated into the language and words that have only been borrowed for the nonce. They say:

> Between the time an English word first appears in French discourse, and the time (if ever) it qualifies for dictionary (or other word list) status, many changes in form, usages and acceptability occur. There is no natural way of identifying a discrete point within this interval before which the words are not an integrated loan, and after which it suddenly becomes one. We can, of course, distinguish between those that occur only once in our corpus ('nonce' loans) and those used by many speakers (widespread loans) but a priori we cannot take for granted that this purely operational distinction correlates either with the degree of linguistic assimilation or with its history of attestation as a loan word in the language. (1988:50)

Poplack et al distinguished between loans that were widespread (used by more than 10 people in their corpus) and those which were used fewer than 10 times by only one speaker, or which were recurrent in that they were used ten times but not necessarily by 10 speakers. They found that this division was justified because when they checked the loans in a dictionary, 80% of the loans they had classified as nonce were not in the dictionaries they consulted, while 80% of the loans they had classified as widespread were in

their dictionaries. Consequently, they were able to categorise loans as nonce loans or as widespread loan words with some degree of confidence.

Poplack et al were able to rely on dictionaries to decide which words were established loans and which were not. This is not so simple in BSL because there is no recognised standard of the language and dictionaries cannot provide a similar resource.

Where there is no standard form of a language, the production of a dictionary is often one of the means of actually creating a standard form. The process relies on the circular argument that what is standard is put in a dictionary and that what is in the dictionary is standard. Despite this circularity, dictionaries are often looked to for a decision upon the status of a lexical item within a language.

Lucas and Valli (1992) have observed that making dictionaries and devising teaching curricula for ASL determine what is and is not part of the language. The judgements made in the creation of these shape the notion of what the language is, even if these judgements are contradicted in everyday use. They also note that dictionary-making and curriculum planning are social and political activities so that these non-linguistic factors are vital in decisions concerning the status of lexical items, including loans.

Until very recently, BSL had no dictionary, apart from a few basic vocabulary lists of some sign equivalents of English words. The Dictionary of British Sign Language/English (1992), organised upon principles of BSL phonology rather than the English alphabet, contains considerably more signs than any

other dictionary, and includes regional variants of some signs. However, even with 1739 signs, it cannot hope to represent all the signs used by British signers. There is also the problem, identified by Brennan (1992), that many signs are "D.I.Y." signs, created by signers as the need arises using creative combinations of classifiers and other sign morphemes, rather than "off the shelf" or established, signs which are established in the lexicon.

The dictionary also contains very few SMLS, (and only one fingerspelled loan, -t-v-) and so cannot be used to decide which of the lexical items in the corpus are part of BSL and which are not. The scarcity of fingerspelled signs in the dictionary cannot be purely due to the low frequency of the signs. For example, days of the week and months of the year are not included (with the exception of "Friday"), yet these are widespread in many parts of the BSL community. (A list of the SMLS that are given in the dictionary may be seen in Appendix V.)

Consequently, while the BSL/English dictionary may provide additional evidence that a given loan is indeed a part of BSL, the absence of a sign in the dictionary is not necessarily evidence this is a nonce usage. The decision for this will continue to be based upon the judgements of the available deaf consultants, especially those who took part in Study 3, described in section 6.3, p189.

Kegl (email to the Sign Language Linguistics Network, August, 1993) has discussed the possible linguistic definitions of a fingerspelled loan word. One argument is that any phonologically restructured fingerspelled forms are loans. Another line of thought is that if an alternate sign for the form does not

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exist, then the fingerspelled form is not a loan. Neither of these is very useful because, as demonstrated above, sociolinguistic factors can over-ride any possible linguistic criteria.

4.7 INFLUENCE OF GRAMMATICAL CATEGORY ON LOANS.

There are grammatical constraints upon what is borrowed into any language. Open class words are more likely to be borrowed than closed class, and of all the open class categories, nouns are the most frequently occurring category (Bynon, 1977). This is the case in BSL, and other sign languages, too.

Padden (1991a, 1991b) found that fewer than 1% of all fingerspellings in her corpus of ASL signing were verbs, and this same lack of loan verbs may be seen in the BSL corpus from See Hear! (described in more detail in section 6.2, p184). Verbs formed only 2.2% of all whole English content words that were fingerspelled, and only 0.8% of the entire fingerspelling corpus. In the entire See Hear! corpus, containing 512 examples of nonce SMLS, only 12 (2.3%) were verbs.

Padden (1991a) has remarked:

> ...fingerspelled items are overwhelmingly nouns, and almost never verbs...[I]f fingerspelling is indeed supposed to be infiltration of English into ASL, why is it so constrained to one type of grammatical category? (1991a:3)

This section will discuss the possible reasons for the predominance of fingerspelled noun loans in BSL, using the observations made concerning loans in other (mainly spoken) languages. It will be argued that this lack of fingerspelled loan verbs is not peculiar to sign languages and is not caused by the unique situation of borrowing between languages in two modalities. Rather, the patterns seen are similar to those seen in borrowing between many world languages. As mentioned in sections 4.3.2 (p129) and 4.3.3 (p131), the main argument for this pattern is the structural constraints imposed upon borrowing by the donor and recipient languages, although non-structural constraints will be considered.

4.7.1. Borrowing Verbs in Spoken Languages

The percentage of verbs borrowed by different languages varies, but studies of various languages show that they are frequently small. Yau (1993) found that English words used in Hong Kong magazines were "overwhelmingly" nouns, although the exact numbers are not given. Kartunnen and Lockhart (1976) investigated borrowing from Spanish into Nahuatl in the sixteenth and seventeenth centuries and found that only 3.5% of all loans were verbs. Throughout the entire Colonial Period, noun loans outnumbered loans in all other grammatical categories by more than twelve to one. Arakawa (1931, cited in Higa, 1979) found that loans from English into Japanese were mainly nouns, and only 2.1% of the loans were verbs. Cannon (1987) reviewed three dictionaries of American English and found 1,029 recent loans of foreign words from 84 languages into American English, of which only twelve were verbs. One exception to these figures are those of Witney (1881, cited in Haugen, 1950) who found that verbs borrowed from English into American

Norwegian and American Swedish made up 18.4% and 23.2% respectively of the total loans.

Class Size as a Factor in Borrowing Verbs

Some of the difference in borrowing is because of the overall sizes of the classes, so that the number of words borrowed from each class could be proportional to the size of the class. Nouns make up approximately 60% of English vocabulary, while verbs account for only 14% and adjectives 12%. Consequently, it would be expected that more nouns would be borrowed than any other class.

However, the percentage of verb loans is frequently far smaller than one might expect even given the proportion of nouns and verbs in a language. Size of class cannot account completely for the large numbers of nouns and the very small numbers of verbs that are sometimes borrowed. There are other factors constraining verb loans.

Length of Time of Contact as a Factor in Borrowing Verbs

The length of time the languages have been in contact affects the number of verbs borrowed. Nouns are borrowed first, and verbs only when the languages have been in contact for some time (Bynon, 1977). This may be seen in the records of Spanish loans into Nahuatl after the Spanish contact with the Mexican people. In the whole of the sixteenth century, over 200 Spanish words were borrowed into Nahuatl and only one verb. By the end of the seventeenth century over 700 words had been borrowed, and 33 of those were verbs. There were more verbs among eighteenth century loans because a practice had developed to increase the degree of linguistic

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integration of verbs by borrowing the Spanish infinitive and adding a Nahuatl suffix.

This argument about length of contact between languages is not an important one in the case of BSL and English, however. BSL and English have been in very close contact for as long has deaf people have received formal education (at least 200 years), so length of time cannot be the explanation for the rarity of loan verbs in BSL.

Grammatical Inflection of Verbs as a Factor in Borrowing Verbs
One reason for resistance to verb loans is their grammatical inflection. To a considerable extent, the number of verbs borrowed is a reflection of the structural similarity between the two languages. Loan verbs account for approximately 18% of borrowed words into Norwegian American from English (Haugen 1950) but only for 2% of borrowed words into Japanese (Arakawa 1931, cited in Higa, 1979). Norwegian and English are structurally much more similar than Japanese and English.

The structural dissimilarity between English and BSL could account for the small number of verbs borrowed from English into BSL through fingerspelling.

Maravcsik (1978) claims that it is a universal feature of language borrowing that an inflectional affix cannot be borrowed into a language unless a derivational affix has already been borrowed. As there are no derivational affixes borrowed from English into BSL, inflectional affixes cannot be borrowed, according to this rule.

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These are reasons why a language may not find it structurally "convenient" to borrow verbs. However, it is also possible that the lack of loan verbs is due to a lack of need for them.

General Applicability of Words to Describe Actions

One possibility is that verbs are more applicable in new situations than nouns. Verbs may be said to be more "versatile" than nouns, because a given verb may be applied generally to actions perceived as similar in some way, while nouns are applied specifically to name things. A consequence of this is that new verbs are *required* less often than new nouns. This means that fewer loans might be required.

This general applicability of verb lexical items is seen in the records of loans into Nahuatl, in which verbs tended to just extend in meaning. Even after the convention of adding the native suffix "-oa" to Spanish infinitive verbs was established in the seventeenth century, so that, formally, any verb could be borrowed, only technical, specialised verbs (eg verbs meaning "canonise" and "consecrate") were borrowed. Karttunen & Lockhart (1976) recorded that "More basic, colloquial, frequently used verbal concepts were rendered through meaning extension". (1976:43)

4.7.2 Manual Letter Verbs as Neologisms

So far, the use of the manual alphabet has been seen as the use of loan words in BSL. However, it is important to consider that the idea of a loan may not always be the most appropriate, in view of the amount of

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"reconstruction" that occurs. It is useful to consider the possibility that some uses of the manual alphabet are genuine neologisms, rather than loans.

The Longman Register of New Words contains 12% verbs, and Cannon (1987) found that two-thirds of new words in English were nouns, and one-sixth (17%) were verbs. Given that these findings closely reflect the proportion of nouns to verbs generally, it is more likely that the use of the verbs in BSL is constrained by the effects of borrowing, rather than those of natural word-formation.

This result, however, is only for the proportion of new nouns and verbs in English. It can only be assumed that the proportion is the same for BSL, but there is no readily available information on this. Attempts to make such a count might well be thwarted by the fact that BSL makes so much use of a "D.I.Y." lexicon (Brennan, 1992) and because there is a relatively small established lexicon.

4.7.3 The Factors Constraining the Use of Fingerspelling in Loan Verbs

The previous section outlined reasons why languages do not borrow many verbs. In view of the small number of fingerspelled verbs occurring in the corpus, it should be asked what constrains use of fingerspelled English verbs in BSL and in what situations verbs can be borrowed from English. It is also worth asking what restructuring processes of lexicalisation do allow fingerspellings of English verbs to become integrated into BSL.

The general lack of verbs could have several explanations, all related to the different structures of English and BSL, and the ways that BSL incorporates other morphemes into its verbs through inflection.

Incorporation of Manner in BSL Verbs

One influencing factor could be the incorporation of manner into verbs in BSL. In English, differences in manner are frequently expressed by different lexical items. For example, in English, changes in manner to "walk" render words such as "stroll" or "hack". Such equivalents in BSL could include the single verb WALK, inflected differently for the different actions. This type of modulation could result in a decreased necessity to borrow lexical items from English.

A second - and perhaps more important - factor is the problems caused by the need for inflection of any verbs used in BSL. A new verb sign which is not a fingerspelling can easily be inflected using BSL grammatical morphology whereas if a fingerspelled verb is to be inflected, there is a conflict between BSL and English grammatical morphology.

Conflict between English and BSL Verb Morphology

There are two basic factors that must account for the lack of verb borrowing: the way that verbs are inflected and what morphological information is contained in the verb in the two languages.

Inflection, or modulation, in BSL verbs is not shown by the addition of affixes, as it is in English. Instead, there are several ways of adding morphological information. These include a change in movement and location of the verb

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sign, a change in handshape and additional (or a change in) non-manual features. The changes in movement may be changes in speed, size, and intensity of the movement, number of repetitions, and direction of movement .

The morphological information contained in BSL and English verbs is not the same. BSL verbs may contain information about person, number, location and aspect, as well as manner and the physical form of the subject or object. Unlike English, however, they do not show tense, which is realised lexically.

In order to appreciate the way that BSL verbs show morphological information, it is necessary briefly to describe the verb classes within BSL.

Sign Language Verb Classes

It has been claimed that sign languages have three different classes of verbs: plain, agreement and spatial. This is the basic division proposed by Padden (1990), although Brennan (1992) has added a fourth category of invariant verbs, which do not appear to modify to show information about aspect, and Liddell (1990) has challenged the distinction between agreement and spatial verbs. For the sake of this discussion, however, Padden's distinctions will be used.

Plain verbs in BSL only inflect for manner and aspect (eg LOVE, SMOKE). Examples of BSL verbs modulated to show manner are:

```
---------mm
SMOKE
"Smoking casually"
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and

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-------ee
```
WORK
"Working with effort"

An example of a BSL verb modulated for aspect is:

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SMOKE +++
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"Smoking regularly"

(+ indicates repetition of the sign)

Agreement verbs also inflect for person and number, moving in syntactic space (eg ASK, GIVE). Inflection for number and person is shown by direction of movement. The verb sign moves away from the agent and towards the object. For example, in the verb ASK, the sign I-ASK-YOU (sing) moves from the signer towards the grammatical location of the second person, whereas the sign YOU (sing)-ASK-ME moves from the grammatical location of the second person towards the signer.

Spatial verbs do not show person or number but do show location, using real-world, topographical space (eg PUT, TOW). Spatial verbs frequently contain classifier predicates that are contained in the handshape. For example in SOMETHING-MOVE-FROM-A-TO-B, the handshape varies depending on what is moving eg a car, a bicycle or a person.

Some BSL verbs (of all three verb types) also incorporate information about the object into the handshape of the verb. For example WASH may incorporate the instrument and object for WASH HAIR or WASH CAR or WASH WINDOWS etc. For the verb SMOKE, the sign differs according to whether a pipe, cigarette, cigar or joint is being smoked. The verbs GIVE and CARRY have handshapes dependent upon the object and its size, so

that GIVE-A-BIG-BOX differs from GIVE-A-SMALL-BOX and both differ again from GIVE-A-PENCIL, GIVE-A-FLAG, GIVE-BUNCH-OF-FLOWERS, GIVE-A-TROPHY or GIVE-A-BABY.

It is these morpho-syntactic differences that can be used to account for the pattern of BSL verb borrowing from English.

Using English inflections in fingerspelling loans results in the inclusion of information not naturally contained within a BSL verb inflection (eg tense) and the exclusion of information that is usually carried in BSL inflection (eg aspect , manner, and (sometimes) spatial location and object).

Another problem is that even the morphological information that is shown in the verbs of both languages is shown differently. In English, most verbs are inflected using a suffix, with some commonly used notable exceptions (eg "sing" and "sang").

One common method of dealing with an unlexicalised loan in spoken languages is to borrow the root and use a native affix for the verb inflection. This happened in the Nahuatl of colonial times in Mexico when the Spanish verbs were borrowed using the Nahuatl verb suffix "-oa". It also happens in modern Japanese (Akamatsu, personal communication, June, 1992). The suffix "-suru" is added to Japanese nouns to make verbs, for example "sanpou" ("a stroll") becomes "sanpou-suru" ("to go for a stroll"). This suffix can be added to loan nouns to make verbs in the same way. The noun "furai" (from the American English word "fry", or "chip") can become "furai-

suru" ("to deep-fry") and "demo" ("a demonstration" or "protest") can become "demo-suru" ("to demonstrate").

This addition of a native affix is not possible in BSL because BSL does not have affixes. The two means of inflection in BSL are movement of the sign and additional or changed non-manual features, which occur simultaneously with the sign.

It is not possible to use movement for inflection in a fingerspelled loan because BSL does not permit fingerspelling of more than two letters to move through signing space. The data to support this claim will be found in section 8.4.1 (p303).

As a result of this restriction on verb movement, any verbs borrowed must either be borrowed and used uninflected, or must be borrowed complete with the English suffix so that the utterance becomes a code-switch into English, complete with English grammar. In this case, there are then no devices for showing the information that would normally be carried in the BSL inflection, and there is redundant information about tense in the loan fingerspelling. It is possible that in order to avoid this, few verbs are borrowed (unless as SMLS) and alternative solutions are found.

This question will be discussed in further detail in section 8.4.1 (p303).

4.8 SUMMARY

It is clear from this review of borrowing between languages generally, that fingerspelling is used for BSL to borrow from English. Manual letters have been demonstrated to be a part of BSL phonology, and fingerspelling has been shown to be one way in which the form and meaning of a word in English can be used in BSL.

The structural and psycho-social constraints upon borrowing appear to be very similar in all cases, even though it is not easy to decide what is an integrated loan, and what is not. The structural constraints that prevent the loan of fingerspelled verbs have been shown to be qualitatively no different from those operating in other languages.

What is not clearly documented, however, is exactly how the manual alphabet and fingerspelling are used in BSL. There is a need for a qualitative description of uses of fingerspelling within BSL as a whole, and within dialects and registers of the language.

It is also necessary to document the changes that occur as part of the restructuring that occurs when a fingerspelled word becomes part of the phonology and morphology of BSL.

For these descriptions to be possible, it has been necessary to collect different types of data. The methods of data-collection, and the signers providing the data will be described in Chapter 6.

Before that, however, Chapter 5 will describe the psycholinguistic research that has been conducted on the use of fingerspelling, and studies of adult learning of fingerspelling and its acquisition by children.

Chapter 5

THE PSYCHOLINGUISTIC ASPECTS OF FINGERSPELLING AND CHILD ACQUISITION OF FINGERSPELLING

5.0 INTRODUCTION

This chapter will concentrate on the psychological processes involved in the production and reception of fingerspelling, including the learning of fingerspelling by adults. It will also consider the acquisition and use of fingerspelling by young signing children.

Firstly it will review the psycholinguistic research conducted on fingerspelling.

5.1 THE PSYCHOLINGUISTICS OF FINGERSPELLING

The psychological processes behind fingerspelling are not yet well understood. Since academic interest in deaf people's language has usually concerned their use of either spoken English or the "natural" sign languages, the use of fingerspelling has been neglected. The acquisition of fingerspelling by deaf children and the learning processes by older children and adults has been the subject of some recent research but

there is still much to be learned. The psycholinguistics of the production and perception of fingerspelling is still unclear. Most of the research available concentrates more on the perception of individual letters and less on the perception of the overall words. There is very little literature on the cognitive processes involved in the production of fingerspelling.

5.1.1 Cipher Models versus Gestalt Models

There are two possible approaches to the analysis of the cognitive processes involved in fingerspelling production and perception: top-down and bottom-up. There are the psychophysical theories based on the belief that we cannot hope to understand the whole if we do not understand the parts. These theories view fingerspelling as strings of individual letters. There are also the Gestalt theories that the whole is much more than the sum of the parts. These theories see fingerspelling as more than the concatenation of manual letters.

Some research has focused on the production of each letter (eg Blasdell and Clymer, 1978), while other researchers have concentrated on the overall form of the fingerspelling produced, paying less attention to the individual letters (eg Akamatsu, 1982, and Wilcox, 1988) and more to the movement of the hands and the transitions between the manual letters.

Akamatsu (1982) has made this explicit division of fingerspelling into two types. The first is cipher fingerspelling, for the careful, clear, letter-by-letter fingerspelling of new words which would only be understood by their reference to the English word. It is also used by children who are

acquiring fingerspelling skills for naming letters. The second type involves the complex interaction of movement and hand-configuration to produce "movement envelopes", and is used for real-time communication of fingerspellings, often during a sign language discourse.

5.1.2 Processing Fingerspelling.

When considering the question of intelligibility in fingerspelling, then, it should be noted that in some cases the clarity of the individual letters is important (that is, the fingerspelling fits the cipher model), and in others the importance lies in the ability to produce a clear perceptual pattern of a whole word. The former process is frequently used in the fingerspelling of nonce loans that are only identifiable by knowledge of all the letters in the word. The latter process is frequently found in loans that have been frequently used as part of the signers' discourse in the past.

The intelligibility of a person's fingerspelling may depend on several factors. Fischer and Husa (1973) found intelligibility was correlated with neither a signers' degree of hearing loss nor years of experience of fingerspelling. Clearly, then, intelligible production is a learned linguistic and motor skill, and is neither an innate ability linked to deafness, nor - more importantly - something that comes with mere practice. There is a technique to be learned.

Intelligibility of Individual Letters

John Kitto offered some advice on how to spell clearly in his publication "The Lost Senses" (1845) . He blamed much of a reader's uncertainty on:

.... the inconsideration of the person using his fingers....It is evident that the reader of the fingers, can only have a right point of view when he is either placed at the right side of the speaker, or when that person so turns his hands as to give a perfect view of the inside of his left hand and of the play upon it, to the person addressed. This duty is the more imperative as it would not be very decorous for the deaf person to be constantly changing his place, to obtain a right view of the hands of those who address him. Yet scarcely any one thinks of this. It is quite usual for a person to work away with his fingers, with the back of his left hand towards the other party, so as to render it impossible for him to see the play of the fingers of the other hand upon the palm. (1845:91)

Several writers have mentioned the problems in reception of fingerspelling caused by the way the manual alphabet is printed in charts. Hollister, in 1870, made a plea for the ASL manual alphabet charts to be printed properly so that the orientations of the hands would be correct. In BSL this is less of a problem, because orientation of the hands is not phonologically significant in fingerspelling, but the fact remains that novice fingerspellers are rarely taught how to hold their hands for maximum effect. It may be that the best way to hold the hands for maximum intelligibility has yet to be determined.

It is also possible, however, that the orientation of the hands is only important for those relying on the perception of each handshape of the active hand. Skilled signers may not need this information, but use information from the degree of flexion and rotation of the wrists to distinguish between manual letters, or to perceive an overall "envelope" of hand movement from which they may understand the fingerspelled word. This is a problem that can only be solved with future research.

Problems of intelligibility are inherent within the form of the manual alphabet. Several manual letter consonants are easily confused, for example -d- with -p-, -l- with -t-, -r- with -t- and -n- with -v-. Kitto found vowels to be very difficult to distinguish on other people's hands (and hard to produce accurately, himself). He claimed that -a- was rarely confused because it is made on the thumb, and -u- was also distinctive, being on the end of the hand. However, -e-, -i-, and -o- were easily confused. He declared that vowels were " in every way a sore evil" as they were hard for the speller to hit accurately (making -e-, -i- and -o- prone to confusion) and hard for the viewer to distinguish easily.

Fischer and Husa (1973) devised a scale to rate the distinctiveness of the letters in the ASL manual alphabet. They found that the vowels were less distinct than consonants. Reed, Delhorne, Durlach and Fischer (1990) found a similar effect. Although the BSL manual vowels are totally different in form, Shipgood (1991) found that of 33 substitution errors made by spellers in a given test, 27 were of vowels.

This implies that the problem does not lie entirely in the form of the manual letters. In view of the fact that vowels are hard to distinguish in ASL (even though they have different handshapes) and in BSL (in which the hand-arrangements are very similar for all vowels), it is likely that the problems with perceiving vowels derive in some way from English orthography in which vowels generally are less salient and less important than consonants.

Mandel (email on Sign Language Linguistics Network, August, 1993) has remarked that some vowels in ASL fingerspelling are not represented by manual letters at all, but have been assigned to purely oral components. If this observation is true (and Mandel admits that his conclusions come from "my (limited) experience"), it would mean that signers are finding alternative, and perceptually easier, ways of showing information about vowels. Further research would need to be done to see if the same process of mixing oral and manual components holds for fingerspelling in BSL.

Intelligibility of whole words

There is little work concerning the intelligibility of whole words. There has been some work investigating the speed of production as one factor influencing the comprehension of fingerspelling. Reed et al (1990) varied the speed of ASL fingerspelling to see how speed affected intelligibility. They found that experienced deaf readers could comprehend fingerspellings at rates two or even three times greater than they could produce them, but that performance deteriorated for the majority of signers as speed increased. Sentences which were more predictable were easier to read than less predictable ones. It is commonly stated that a knowledge of the context of the fingerspelled item aids comprehension (eg Mowl 1981). Shipgood's study of hearing fingerspellers in BSL showed their performance to be significantly lower with faster fingerspelling.

A major constraint upon intelligibility is the reader's linguistic ability. While any word may be read by fingerspelling, once the manual alphabet

is learned, the word will not necessarily be understood. Readers' ability is at best proportional to their linguistic knowledge (Scott, 1870).

Reading skills of the signers may also be a factor in comprehension. Mowl (1981) claimed that achievement in reading ASL fingerspelling could be affected by the readers' skills in reading written English. Mowl claimed that when people read fingerspelling, it is often necessary to reconstruct the lexical items from fragments of information because many of the letters have been missed or forgotten. Mowl reasoned that an ability to anticipate words and recreate whole sentences from incomplete information is necessary in a good fingerspelling reader. People who are good at this in the written mode should be good fingerspelling readers. He found a strong correlation between the two, but the finding could only be used as a predictor because there is no suggestion that one ability causes the other. It could be that a generally high level of linguistic competence helps both these processes.

5.1.3 The Unit of Perception in Fingerspelling.

A major issue of debate is the unit of perception in fingerspelling. It may be at the word level or the letter level. Alternatively, it could be somewhere in between, at some level at which clusters of letters are singled out. It is also possible that fingerspelling can be perceived in more than one way. It is known that writing may be read via several cognitive routes, depending on circumstances such as type of writing, type of word, ability of the reader and so on. The questions, therefore,

should not be concerned with the way in which all fingerspelling is perceived but with how it is perceived in what conditions.

In investigating fingerspelling, it may be necessary at the least to be aware of - if not separate out - several variables which may affect the cognitive processes involved. Firstly, it is very possible that ASL and BSL fingerspelling are read differently due to the different forms of the manual letters in the two alphabets. Secondly, it is also possible that different people may process the same utterance differently. Although the distinction may be between hearing and deaf people or skilled and non-skilled signers, it is possible that some skilled signers may not process fingerspelling in the same way as others. Thirdly, even signers who do process some words as a whole rather than as a sequence of letters may not do so exclusively (any more than readers of the written word use only one reading process) and their approach may be determined by the fingerspelling being produced.

Nineteenth Century Theories on the Perceptual Units in Fingerspelling
The way in which deaf people perceive fingerspelling was debated by the nineteenth century educators of the deaf. The American Annals for the Deaf and Dumb in the late 1850's carried a prolonged discussion upon this problem. Burnet (1858, 1859) believed that the units of perception and production of fingerspellings for deaf people were letters, while for hearing people the units were syllables. He claimed that a word of seven letters for a deaf fingerspeller required as much cognitive effort as a word of seven syllables did for a hearing person. He admitted that the written word may be understood as a unit, but it was a unit made up of strings of

letters, rather than of groups of syllables. This view is not entirely

dissimilar to Davis' (1989) view that each manual letter constitutes a

morpheme in ASL. Burnet argued that if deaf people really saw a

fingerspelled word as one unit, then they should read very much faster

than hearing people who have to read words as sequences of syllables.

Burnet wished to introduce a syllabic manual alphabet in order to

increase the reading speed and fingerspelling speed of deaf people. As

the receiver would have fewer bits of information to process before the

word was recognised, communication would be easier. Unfortunately,

Burnet did not offer any hard evidence to support his theories.

Porter (1859) took issue with Burnet's intuitions concerning the

psychological processes involved in fingerspelling. He did not agree that

all deaf people repeat words to themselves as finger movements, as

Burnet had claimed. Children learning to read eventually learn to see a

word and to know its sound without spelling the letters out and Porter

argued that deaf people could see the letters of a word and bring to mind

an idea or a sign that they connected with that word. Porter claimed deaf

people perceive letters grouped as clusters of letters, and hearing people

perceive letters grouped into syllables. If a polysyllabic word can be

perceived as one unit by a hearing person, then a sequence of letters

should be perceived as a whole by a deaf person. Porter also claimed

that, while hearing people can repeat words in their heads (in what is

today termed the "auditory short term memory"), deaf people can either

visualise the fingerspelling sequence or the written form or use some

abbreviated form of either. It is a common observation that literate

hearing people "see" words that they say.

Hanson's Research on the Perceptual Units in Fingerspelling

If Porter and Burnet ever settled their differences, the A.A.D.D. of 1859

does not report it. However, Hanson (1981) made a detailed study of the

way in which native deaf signing Americans processed fingerspelling.

The study aimed to determine whether fingerspelled words are read letter

by letter or as recognition of letter groupings. Although her study involved

ASL fingerspelling, it contains many interesting findings which may be

extended to BSL. Hanson's research treated the hand-configurations as

the important part of fingerspelling.

In her experiment, Hanson used a combination of real words (eg

"pumpkin" and "vinegar"), non-words which were orthographically

plausible (eg "cadermelton" or "preckor") and orthographically impossible

words (eg "hsperach" or "pganterth"). The orthographically impossible

words were also phonologically impossible in English. The words were

an average of 8.3 letters long, so they were long enough not to be words

which could have been lexicalised fingerspelled signs in ASL. The deaf

subjects were asked to judge if the fingerspellings were of real words,

non-words or impossible words. They were also asked to repeat the

fingerspellings.

The subjects judged real words most accurately (correct 93% of the time),

then possible non-words and then impossible non-words. The correct

spelling of the word after the decision also varied by category. Real

words were spelled correctly most often (63% of test items) possible non-

words were less easy (28%) and impossible words hardest of all (13%). It

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is significant that the students could read many words that they could not spell correctly. They could sign the word, so clearly recognised it but could neither write nor fingerspell it. This is very different from many hearing people who can write or fingerspell better than they can read fingerspelling (Shipgood 1991). It suggests that the two groups may be using different cognitive processes for the same task.

Hanson found that for words and possible non-words, the probability of reporting all the letters of a word was greater than the probability of reporting independent letters and so concluded that the processing of one letter is influenced by the other letters in the word. In other words, the processing involves use of the knowledge of the orthographic structure of the word. For the impossible words, the probability of reporting all the letters was less than or equal to the probability of reporting independent letters. This she took as evidence that the letters were being processed as unrelated letters. As 60% of all errors for the impossible words made them closer to English orthography, she also suggested that word familiarity plays an important part in the processing of the English words.

Perceptual Units Taught to Adult Learners of Fingerspelling
The unit of perception of fingerspelling has important implications for the way that fingerspelling is taught. In an attempt to improve the fingerspelling abilities of hearing people, courses emphasising certain skills have been developed. Guillory (1971) suggested that ASL fingerspelling should be learned in the same way as children learn to read and write, that is, by learning the sounds of the English words rather than the strings of their letters. During fingerspelling, the accompanying mouth

patterns usually mirror the English word (see section 7.1.1, p211, section 7.2.11, p231, and section 7.4.2, p243). However, novices who fingerspell letter by letter may mouth the letter names instead (eg the mouth patterns accompanying "book" may be "bee oh oh kay" rather than [bʊk]). Guillory warned against this practice. In analogy with handwriting, Guillory suggested that short words should not be analysed in the mind as letters, and that longer words should be broken into syllables which are then fingerspelled as units. This is a move towards the idea that fingerspellings are more than the sum of the letters.

Scouten (1978) set out rules for improving sending and receiving skills in ASL fingerspelling. For senders he recommended aiming for clarity rather than speed. Like Guillory, he cautioned against learning each letter individually, and proposed teaching combinations of two- three or four letters.

Blasdell and Clymer (1978) first demonstrated experimentally that a cipher model of letter by letter processing can usefully describe some ASL fingerspelling . They found that the length of time taken to fingerspell a word is linked to the number of letters in the word. They claimed that this showed that there was a one to one correspondence between handshapes in the manual alphabet and letters in orthography. They were, however, selecting a cipher model over proposed phonological and syntactic models, rather than choosing between a cipher model and one relying on transitions between coarticulated letter handshapes. They were looking at the clear, letter-by-letter fingerspelling that Akamatsu (1982) has identified in ASL as being used by many people

with English as their dominant language, or by deaf signers introducing a new English word.

Kitto (1845) was deafened at the age of twelve and had a good command of spoken English. He used the two-handed British manual alphabet. Like many people today with a full awareness of the sound of English and good reading skills, he relied on reading every letter of the fingerspelled words. In other words, he used the cipher model of fingerspelling. It was for this reason that he declared the best fingerspellers to be the most distinct. He claimed that "the perfection of a dactyloglot is to form the characters with rapidity and distinctness." (1845:107.) He considered beginners to be too slow ,and proficients to be indistinct. The combination of speed and distinctness was a rare and lovely thing for Kitto.

In contrast to these studies reviewed above, which viewed fingerspelling in terms of a cipher model, Wilcox (1988) and Akamatsu (1982) have both claimed that the movement between the manual letters is a major part of the fingerspelled word in ASL, and is as important - if not more so - as the hand-configuration.

Akamatsu (1982) proposed that the important feature of manual letters in ASL is not their specific handshape but whether the hand is open or closed. She argued that much of the information in the fingerspelled word comes from the movement produced by the opening and closing of the hand. The interaction of movement and hand-configuration produces a four-dimensional movement envelope that changes shape through time as

the word is fingerspelled. She observed that many hand-configurations are neutralised or deleted during fingerspelling, implying that there is considerable redundancy in the hand-configurations. This is possible because of the information contained in the movement of transitions between manual letters. Akamatsu's work will be considered in more depth in section 5.2.2 (p175), concerned with acquisition.

Wilcox (1988), following Akamatsu, proposed that, although each ASL letter is a static handshape (except for -j- and -z-), fingerspelled words are not a sequence of static handshapes but are the product of a sequentially ordered, dynamic, continuous and coarticulated process. If fingerspelling is viewed as a sequence of static handshapes then the reader must be targeting each handshape, ignoring the transition between each one as mere noise. Wilcox, however, viewed it as the product of a continuous dynamic process, and claimed that the perception of fingerspelled words is dependent on the patterns of movements. His work is on ASL, so it is not clear how relevant this is to BSL fingerspelling without more research. However, it has already been suggested that the flexion and rotation of the wrist joints may be an important part of BSL fingerspelling.

An anecdotal piece of evidence from a BSL signer shows that the redundancy provided by the creation of a movement envelope can be very useful when the signer is not sure of the spelling of the English word. The signer claimed that she never knows the order of the vowels in the word "focus", but by creating a movement envelope of "-f-, open hand for a vowel, -c-, open hand for a vowel, -s-", it never matters.

It is frequently claimed that there is a one to one relationship between the handshapes made in a fingerspelled utterance and letters in a written passage. Educators have been pleased to believe this because they have argued that fingerspelling allows a complete representation of full English on the hands. This review has demonstrated that this view may be true at a syntactic level, but it may not be so otherwise. In many instances, when the fingerspelling is produced by deaf signers, it loses many of the manual letters and relies on the overall movement envelope for its meaning. This has important implications for the restructuring of fingerspellings that occur in the loan process. This will be discussed in Chapter 8.

Developmental studies have revealed valuable information about the way fingerspelling may be cognitively represented. The major studies of recent years will now be considered.

5.2 DEVELOPMENTAL STUDIES OF FINGERSPELLING ACQUISITION

Akamatsu (1982) has argued that children do not produce ASL fingerspellings either as letters or as whole words, but as signs consisting of movement envelopes. Similarly, Padden (1991b) has claimed that children initially are not concerned by the letters in an ASL fingerspelled word. They then go through a phase in which the letters are important, but not the sequence. By the end of their fourth year, children seem to have grasped the principles of both selection and sequence.

Observations of children's beliefs about fingerspelling are not new. John Kitto (1845) wrote of his children

> while yet in arms, falling to finger-talking whenever they see me - from mere imitation...later...they will stand before me, plying their fingers and looking up into my face with infinite seriousness and resting in the full confidence that I have understood them, or ought to have done so. (1845:107)

Kitto's children had realised that fingerspelling movements led to communication with their father but they had no idea that the fingerspelling was a representation of English orthography. Consequently Kitto had to guess what his children wanted of him. This early realisation that fingerspelling communicates, coupled with an ignorance of how it does so, is reported consistently in more modern studies of signing children.

5.2.1 Development in Fingerspelling in Children over the Age of Three

The recent published work on the use of fingerspelling in young signing deaf children of signing deaf parents has been done in America, but even so it yields useful insights into the role that fingerspelling plays in the signing of children, and may be usefully applied to the use of fingerspelling by British children.

Observations of young deaf children show that what may seem to be a representation of English orthography is not always perceived as such by the child. Signers who do not know any written English may still use

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fingerspelling, but psycholinguistically, it is a part of the sign language. There is an anecdote of a British deaf child asking her teacher how "if" was spelled, by using the manual letters -i-f- to ask the question. Children who are native signers frequently learn to fingerspell before they learn to read.

O'Grady, Van Hoek and Bellugi (1987) demonstrated a changing relationship between writing and ASL fingerspelling in children between the ages of three and ten years old. The children were shown pictures and asked to name the object using ASL signs, fingerspelling and writing. All the children were able to name the pictures using ASL signs with 100% accuracy.

Three year-olds were willing to offer fingerspellings although they were not correct. They tended to offer the same two or three letters for all pictures. They were also happy to "write" the name, although they only scribbled and produced no words. They knew that it was possible to name things either by writing or by fingerspelling but did not know how this was done.

Four-year-olds refused to fingerspell but did offer a random combination of letters when asked to write the name. It could be concluded from this that they realised that fingerspelling required a skill that they did not have, but that they had not associated this with writing.

The five-year olds were willing to write and to fingerspell. Fingerspelled words which have an ASL lexicalised loan sign equivalent (eg "dog") were

more likely to be correct than those which did not (eg "pie"). This suggests that the children had discovered the link between loan signs and fingerspelling. The errors in writing were not the same as the errors in fingerspelling, however, which indicates that the children had not made the link between fingerspelling and writing.

By six years, both writing and fingerspelling were fairly accurate and mistakes in one medium were reflected in the other, suggesting that a recategorisation had taken place. For example "apple" was fingerspelled by one child as a-l-p-p-e and written "alppe". O'Grady et al claim that the children depended on fingerspelling to write and would copy letters from their hands onto paper. Clearly, by this age fingerspelling and writing are linked. It is only later, in school, that fingerspelled words are taught as representations of written English words. British deaf adults will also fingerspell words to themselves before writing a word if they are unclear of the spelling, or may write the word before fingerspelling it.

5.2.2. Acquisition of Fingerspelling in Young Children

The attitude that children have to fingerspelling depends on the way their parents introduce them to it. O'Grady et al (1987) and Akamatsu (1985) describe children who were taught fingerspelled words as part of sign language, while Maxwell (1988) and Bonvillian, Cate, Weber and Folven (1988) report on children whose parents tried to demonstrate the link between writing and ASL fingerspelling. A comparison shows that the children used fingerspelling differently in their early years.

The children described by Akamatsu (1982, 1985) ranged in age from 3:8 to 5:2. Fingerspelling involves many fast, fine movements of the hand which may be too difficult for children to catch. The children produced "fingerspellings" which preserved only certain features of adults' fingerspellings, producing a similar envelope of shape and movement, but with different handshapes. The gross opening and closing of the hands were usually maintained, and the first and last handshape segments were often correct, but the rest was fairly arbitrary. Akamatsu suggested that children rely on the overall shape of the hand (eg fist, fingers extended upwards or downwards, or twisting) rather than the finer features. She reported one adult signer who in his youth had fingerspelled the Gestalt approximation of "Safeway" which he had copied from his mother. When he was nine years old, he suddenly realised he had been fingerspelling something which was a combination of the English words "safe" and "way". When he tried out the "new" pronunciation of "Safeway", his mother did not notice the difference. Anecdotal as this story may be, it does emphasise that children can produce the same physical form, while perceiving it in two different ways.

The children also produced spontaneous fingerspellings with clear handshapes which had no relation to the adult form. For example, -g-c-f-o-c-b-o-l-s-s- was produced to mean "almost morning". They also included handshapes which were not from the manual alphabet, but which were numerals (eg m-c-5-b, "crib"). In ASL both numerals and letters are made with a single hand, so it is possible that the roles of the two were not yet distinct in the children's minds. (Maxwell also reports this mixing of numbers and letters.) These children clearly did not feel the need for a

fingerspelled word to represent a sequence of English letters, and were attempting whole words rather than individual letters.

It would be interesting to see if signing British children confused numerals with letters. It is unlikely that they would, if only because the hand-arrangements are so different. It would seem that American children are more likely to "mix" the two categories because they are so similar, formationally. It is also possible that these children do have a clear understanding of manual letters and numerals, but simply fail to make a letter handshape correctly. The problem, then, would be one of performance rather than one of competence.

Akamatsu proposed that when a child imitates an adult's fingerspelling, the fingerspelling can be explained using the cipher model, but that this model cannot explain their spontaneous fingerspellings. The spontaneous fingerspellings are made by using movement envelopes.

Alice, the child studied by Maxwell (1988), had a far greater awareness of the relationship between written letters of English words and fingerspelling. She very rarely produced the non-English fingerspelling described by Akamatsu, and almost all of her spontaneous fingerspellings were correct spellings. This was doubtless because her parents had taught her how to fingerspell words, letter by letter.

Bonvillian et al (1988) describe the child, V., who learned fingerspelling exceptionally early from her well-educated signing parents. Her learning of the manual alphabet was closely tied to learning print, and like Alice,

she learned to spell words by letter rather than by picking out shapes and movement from a whole word. At 27 months, she fingerspelled the written word "toddle" as e-h-i-j-k-l-m-n-s-p-. Bonvillian et al take this as evidence that she had learned the alphabetic principle behind fingerspelling. Perhaps she had learned that fingerspellings are made up of letters, but that is physically no different from realising that fingerspellings are made up of certain handshapes.

Padden (1991b) has claimed that children use system internal and system external strategies in their acquisition of fingerspelling. System internal strategies are based on the generalisations they can make about fingerspelling from what they already know. Evidence of these strategies in action is seen in errors in which only the first letter is correct and also in comparisons between words (eg spelling .b.l.u.k.e. for "blue" because of the perceived link of letter combination and word category between "blue" and "black"). The system external strategies are linked with ASL rather than fingerspelling and English orthography. Initialised signs in ASL have the same handshape as manual letters, and children use many of these signs regularly (eg for colour terms), but children fail to distinguish initialised signs from non-initialised signs. Thus "airplane" is fingerspelled by a seemingly random selection of letters beginning with .y. because the ASL sign AIRPLANE is made with the 'Y' handshape and "tree" is fingerspelled using the '5' hand because the ASL sign TREE is made with the '5' hand.

Padden argues that children's fingerspelled vocabulary is small for two reasons. Firstly, their parents do not fingerspell much to them, but use

special invented "home" signs instead. Secondly, fingerspelling rules are external to sign language, so the child cannot work out how to fingerspell other words from its current knowledge of fingerspelling. They have to learn about written English in order to increase their fingerspelled vocabulary.

5.2.3 The Use of Fingerspelling by a British Deaf Child

There is presently no published research on young children's use of fingerspelling in BSL, but current British research on children's acquisition of BSL may shed some light on the question in the near future.

A brief, limited analysis of a video recording of a British deaf child's use of the manual alphabet, however, was made for this research. The video recording was of a girl, aged seven, signing to a deaf sign language linguist. The girl was a native deaf signer from a signing deaf family. In the video extract analysed, she was explaining about her family and her school. The extract was approximately ten minutes long. The recording is part of the Centre for Deaf Studies' archive of children's use of BSL.

The child used only three full fingerspellings. The first was of her name, which was five letters long. Interestingly, she actually misspelled this, replacing the -i- with an -e-. Perhaps, as vowels are so easily confused, (see section 5.1.2, p162, above) this should not be a great surprise. The next fingerspelling was of a three-letter word, -z-o-o-, which the child used as a BSL sign, with no attempt to use a non-derived sign. The third word was interesting, because she used fingerspelling of an English word to

clarify a sign. She signed WORRY, and the researcher seemed confused, asking why she was worried. She misinterpreted this as meaning that the researcher had not understood the sign, so repeated the sign, and fingerspelled -w-o-r-r-y-. On another occasion, she was describing what she did in games lessons, and started to fingerspell "rope" when referring to her skipping rope. However, she stopped herself, and changed the sign to ROPE.

These examples demonstrate the child's sophisticated understanding of the different roles that fingerspelling can play in BSL. She uses it to represent her full name, but also as part of her BSL lexicon, and as a tool to allow her to use English as a Lingua Franca when she code-switches into English to explain a BSL sign. Her change of mind when referring to the skipping rope demonstrates her understanding of the appropriateness of use of both English and BSL.

The rest of the girl's use of the manual alphabet is of SMLS, only. She used fingerspellings for both content and function words. On several occasions she used -r- to mean OR. She used established SMLS, such as -m- (MUM), -g- (GAME), -y- (YEAR) and -g-PIG (GUINEA-PIG). She also used several nonce SMLS, including ORANGE-s- ("orange squash") and PLAY-g- ("playground").

Although her understanding of when to use the manual alphabet was sophisticated, she did not always produce the correct hand-arrangements of the relevant manual letters. For both MOTHER and FATHER, the manual letters were not correctly made. In MOTHER, the active hand of

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the manual letter -m- was a 'G' hand. She signed FATHER twice. In the first instance, the active hand was the correct 'H' hand, but the passive hand was a 'B' hand. In the second instance, the passive hand was the correct 'H' hand, but the active hand was a 'G' hand. It is possible that she was making a generalisation about the use of the 'B' hand as a manual tab for family members, because MOTHER, FATHER and BROTHER (a non-derived sign) were all articulated at some stage using the 'B' hand as a manual tab. In this case, the child appears to have restructured the signs according to the semantic category of "family members".

She also showed an interesting practice of combining the active hand of the manual letter, with a passive hand upon which she was counting out a list. She was asked to list the members of her family, and did so by counting off each one on the fingers of her passive hand. She used -m- (to refer to her mother?), by touching the first finger of the passive hand with the active hand from the -m- hand-arrangement. She then gave the initials of three other members of her family, while counting them off on her hand, with each one accompanied by the full English mouth patterns. The last member of the family was the hamster (-h-) which was signed using the active hand from the manual letter -h-, but the passive hand was again the fist being used for numbering the family members.

This "malformation" of manual letter handshapes shows how the child combined her knowledge of the possible rules of BSL with her knowledge of the manual alphabet, creating signs that used features of both, even if they contravened the conventions for use of manual letters. This is an

area of developmental linguistics which would be of considerable interest if it were pursued further.

5.3 SUMMARY

From this review, it can be seen that fingerspelling is a psycholinguistically complex phenomenon, in which English language knowledge, reading skills and fingerspelling ability all interact. To this extent, while fingerspelling may be used during BSL discourse to permit loans from English, it is often acquired and used differently from other non-derived signs.

The review of literature, both recent and historical, has shown fingerspelling and the use of the manual alphabet to be phenomena that are integral parts of the language of deaf signers. The questions that need to be addressed now concern the way that the manual alphabet is used at present by signers in the British deaf community.

The remaining chapters will be concerned with this. Most specifically, they will address the use of the manual alphabet and the restructuring that may be applied to uses of the manual alphabet as a result of influences from BSL.

Before that, however, the methods of data collection will be described.

Chapter 6

METHODS OF DATA COLLECTION

6.0 INTRODUCTION

The data for the research presented in this dissertation comes from
several separate sources. The methods of collection of data, and the
signers providing the data will be described in this chapter.

The information gathered from the first study mentioned here has been
used extensively in Chapter 2 and Chapter 3. The information from the
other four studies described in this chapter will be reported and
commented upon in the following chapters.

6.1 WRITTEN TEXTS (Study 1)

Written texts have been invaluable in tracing the history of the British
manual alphabet. Apart from basic descriptions and drawings of
vocabulary, there is very little record of the form of sign languages before
the twentieth century, when filming became possible. There are some old
films held in the archives of the British Deaf Association, which show
signers using BSL in the early part of the twentieth century.

Unfortunately, it was not possible to view these for this research, although it would be interesting in the future to analyse the use of fingerspelling there. However, although films are rare, and not easily accessible, books from as early as the ninth century describe the existence, form and use of manual alphabets.

The major holder of old books concerned with deafness and sign language is the library of the Royal National Institute for Deaf People (RNID) in London. The majority of the manual alphabets referred to in Chapter 2 and listed in Appendix I come from the archives of this library. Some of the books are original volumes from the sixteenth, seventeenth and eighteenth centuries. The library also contains a complete collection of the American Annals of the Deaf and Dumb, in which there are reprints of relevant earlier works.

The two-handed manual alphabets from around the world have been gathered from many sources, but the principal source has been Simon Carmel's collection of manual alphabets from around the world.

6.2 THE SEE HEAR! CORPUS (Study 2)

In order to gain a real understanding of the use of fingerspelling and the manual alphabet in BSL, large amounts of signing must be collected from many deaf people, interacting and conversing upon many and varied topics.

This creates the problem of how to gather large amounts of signing data from many signers, given limited time and resources. Another problem is ensuring that the signs produced during any period of observation by a linguist have not changed as a consequence of the linguist's presence. Labov's "observer's paradox" (1966) is now a well-known pitfall, and must be avoided, especially in the situation of a hearing linguist observing deaf signers in which there may be a perceived status imbalance. Deaf signers may still believe that they need to shift their style of signing to suit the perceived requirements of the researcher. Deuchar (1977 and 1978) has already observed that the forms of signing associated with hearing people may contain more fingerspelling than other forms, and this would be a particular problem for this research. Also, the signers may accomodate to the signing of conversational participants to ensure understanding, perhaps by altering the amount of fingerspelling they use.

The solution to this problem was to use data from eight years (from 1981 to 1989) of See Hear!, the BBC television magazine programme for the deaf. This data is held in the archives of the Centre for Deaf Studies at Bristol University. The Centre also holds written transcripts of the subtitle translation of all the signing used on these programmes.

Even this data is not completely satisfactory, because it is possible that even if signers were not influenced by linguists, they may have been influenced by the programmes' producers or other linguistic monitors. However, at the least, this source provides a single, large corpus of data collected under similar circumstances (and therefore in approximately the

same formal "television" register), without the signers being aware that their use of fingerspelling would be analysed. If time and resources were to be available, a comparison study could be made using signing from another register (see section 7.5.4, p258, for further discussion of fingerspelling variation in different registers).

See Hear! has been broadcast weekly or fortnightly since 1981, usually for 26 weeks each year. The topics covered in the programmes are varied, but include items of deaf community news, interviews with deaf and hearing people on subjects relevant to the deaf community, and information on current events, sport and technology. There have also been several dramatic productions, especially of Christmas pantomimes. In the programmes analysed, there were usually two full-time presenters of the programme who acted as anchor-people for the magazine programme. They interviewed guests, and presented other items. Members of the deaf community frequently appear as guests on the programmes, especially when the programme goes on location to deaf clubs around the country.

The programmes involve participation of deaf signers from all backgrounds and the programmes analysed totalled almost 60 hours (not all of this, of course, was of deaf people signing). Analysis of the programmes yielded information from 504 deaf signers of all ages and backgrounds, and from all over the country (including 18 people who were acting as guest presenters), as well as five full-time programme presenters. Any signer who was deaf, and used signing alone or signing with speech was included in this corpus. The very few deaf people who

used spoken English as their main form of communication, but accompanied this speech with occasional signs, or manual forms of first letters of the words they spoke were not included in the corpus.

The data derived from this source is problematic in many ways. Its main drawback from the point of any statistical analysis is the great variation in the amount of signing produced by each signer. Some signers may sign for several minutes and some for only several seconds. Another problem is that the signing used on television changed greatly during the 1980s when these programmes were made, and it has been shown that the use of the manual alphabet and fingerspelling changed over that time, both in quantity and type (Woll and Sutton-Spence, 1990). Further, it was not practical to make any assessment of the competence of the BSL of the signers on the programme. It is possible, therefore, that some signers were less skilled in BSL than others.

As a resource for qualitative analysis of the use of the manual alphabet, the corpus is invaluable. As a source of signing that may be subjected to rigorous quantitative analysis, however, it is less than perfect. Yet, despite the large variation in the data, it is still possible to make useful gross generalisations about trends that may be seen in use of the manual alphabet.

For all the programmes available from the first eight years of broadcasting, the signing of all the deaf signers, and the presenters was watched. Any instances of fingerspelling and of use of simple single manual letter signs were marked on the transcripts.

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A table was then made for each signer appearing on each programme. This table contained demographic information about the signer, such as age, sex and, where possible, their place of origin. The form of communication used was also noted as sign only, sign with some speech or sign with simultaneous speech. The instances of use of the manual alphabet were then transcribed onto the table, in categories according to whether they were full, abbreviated or single manual letter signs, content or function words, and whether they occurred alone or as part of a sign that also contained a non-derived sign. The number of sentences uttered by each signer was also noted.

The total number of words in the transcription of the signing of deaf people on See Hear! was calculated using the number of words in the transcripts of the subtitles translating the signing.

The word-count of the transcription of the signing is only a rough estimate of the number of signed lexical items produced. It may well over-estimate the number of signs produced, because BSL signs are generally more morphologically complex than English words and BSL does not use as many free function words as English, particularly articles and auxiliary verbs. Consequently there are frequently (although not exclusively) fewer signs in a BSL utterance than there are words in an English translation of that utterance. If this is the case, it will under-estimate the proportion of use of the manual alphabet in the corpus.

There were 190,006 words in the transcripts and the signing data provided 19,450 examples of uses of the manual alphabet. Those signs which have specialised movement or location as a result of extra BSL phonology were not included in the original count. Given that this rough, conservative estimate shows that an average of 10% of signing in this corpus involves the use of fingerspelling, fingerspelling should not be ignored by linguists or denied its place within the language, if only for the frequency of its use within BSL.

6.3 ELICITATION THROUGH INTERVIEW (Study 3)

The data from the See Hear! corpus provides a large amount of information about the different uses of fingerspelling and the manual alphabet, in different situations and by different people. However, once such a broad view has been obtained, it is necessary to find out more detailed information about the use of fingerspellings, the forms they take and their acceptability within BSL. For this, it was necessary to interview signing deaf consultants.

The consultants were given a list of English words and asked how they would sign them. The list covered semantic areas for which it would be expected that many signs would be fingerspellings or SMLS, as well as words which had been fingerspelled or produced as SMLS by at least one signer in the See Hear corpus.

A full copy of this list may be seen in Appendix II, together with a transcription of the responses from one consultant. The list was designed to elicit single manual letter signs (including simple SMLS and those SMLS with added movement) as well as fingerspellings which were abbreviations of English words, and fingerspellings of whole words, including acronyms.

The list was in two parts. The first section of the list contained days of the week, months of the year, kinship terms and units of measurement of time and space. These groups were selected because of the large number of fingerspelled signs that appear in them. Consultants were asked about an exhaustive range of words in each category, including those for which there is no commonly accepted fingerspelled sign, in order to impress upon them that they should always give their sign for the term even if it was not a fingerspelling or SMLS.

The second part of the list contained words from See Hear!. These English words were the sources of fingerspellings or SMLS that had been used by signers in the See Hear! corpus. The consultants were asked what sign they would use for these words, in any given situation. The consultants were also asked whether they thought it would be acceptable to use a fingerspelling or SMLS for that particular word as a BSL sign in the deaf community, even if they did not use it themselves, or if it would be regarded as a nonce formation from non-fluent signers or hearing people. The list was certainly not exhaustive but was designed to cover various aspects of use of fingerspelling and to elicit further comments from the consultants.

The list contained acronyms such as "FYD", "AGM" and "BBC". It also contained English words including "parents", "doctor", "subject", "Bristol" and "hard of hearing", all of which had given rise to several instances of abbreviated fingerspellings from signers on See Hear!. A further list of words which had given rise to single manual letter signs on See Hear! was also presented. This list included the words "normal", "young", "games" and "information". Words that were frequently fingerspelled fully on See Hear! such as "day", "son", "map" and "art" were also presented, together with some that had only been fingerspelled on single or few instances such as "pop", "dog" and "leek". A list of function words such as "if", "but", "and" and "for" was also included.

A large amount of useful information was elicited from seven deaf consultants who agreed to be interviewed on their use of fingerspelling. The deaf consultants are all deaf BSL users who are members of the Bristol deaf community. Five women and two men were interviewed. Six consultants have been deaf from birth and the seventh became deaf as a young child. All regard BSL as their native language.

All consultants were told that the purpose of the interviews was to find out how they used fingerspelling within BSL.

They were all well known to me, and accepted that their role was to inform me of their use of fingerspelling, rather than to be tested on some task in which they might feel obliged to conform to some perceived image of what a hearing linguist might expect to be told.

The consultants were also asked to comment on occasions upon which they might use only one hand when fingerspelling.

The interviews with the consultants were conducted at the Centre for Deaf Studies in all but one case. The seventh consultant was interviewed in his own home. All interviews were recorded on video tape and transcribed, by translation into English, using notation based on Sutton Sign-Writing (Sutton, 1989) where necessary.

6.4   CREATION OF SIGNS: THE PLACE-NAMES STUDY (Study 4)

The See Hear! data and the interviews with consultants provided valuable information concerning the use of the manual alphabet and fingerspelling by BSL users. However, it was also necessary to investigate further the role of the orthography and morphology of the English word and BSL phonology and morphology in creating the restructured forms of fingerspellings and SMLS that are used by BSL signers.

This was not something that could be done simply by observation because of the shortage of certain types of fingerspellings in the See Hear! corpus.

It could also not be done using a straight-forward interview, for two main reasons. Firstly, although the main area of research had been identified,

there was still not enough information to formulate specific questions. Secondly, while it is easy to ask a consultant about particular signs, it is less easy for them to explain why they sign something in a certain way. The consultant could not be expected to have an explicit awareness of the processes involved in restructuring of fingerspellings.

In order to overcome this, it was decided that a method would be used in which the materials were designed to elicit information that could be used to answer certain theoretical questions. However, the experiment was followed by specific questions to discover the signer's intuitions about the forms they had produced in response to the experimental stimuli.

The experiment concentrated on the creative use of the manual alphabet. The aim was to investigate how the manual alphabet is used in BSL word-formation. Of particular interest was the process of restructuring that occurs during BSL word-formation when the manual alphabet is involved.

The semantic category of source words used here was British place-names. In the See Hear! corpus place-names were realised using many signs utilising the manual alphabet, with fingerspelling restructured in several different systematic ways. It was, therefore, a natural choice for further investigation.

The subjects, materials and procedure for this experimental elicitation will be elaborated here.

6.4.1 Subjects

Twenty people participated in the experiment. Ten were hearing signers, and ten were deaf signers. Five of the deaf signers had participated in the previous study (Study 3), and five had not.

Of the ten deaf signers, nine grew up using BSL as their first language and the tenth learned BSL after leaving school. Of these native signers, seven have had some form of linguistic training, making them more linguistically aware than many deaf signers. All the deaf signers use BSL as their preferred language now, and regard it as their native language.

All the deaf signers in this study were aged between twenty and fifty. Nine were female and one male. All were well known to me.

The hearing signers were all training to become interpreters and possessed signing skills of a minimum standard of the Council for the Advancement of Communication with Deaf People qualification, CACDP Level II. All were aged between twenty and fifty. Six were female and four were male. All were well known to me.

Hearing signers were involved in this part of the research because they were less fluent than the deaf signers, both in BSL and fingerspelling, and also might be expected to show more influence of English in their use of fingerspelling. It was informative to compare the use of the manual alphabet by both groups.

It may seem unusual to include a study of those whose first language is not BSL. However, by no means all signers are skilled in BSL or fingerspelling, and yet they use the manual alphabet in their signed discourse. Use of hearing signers demonstrated some of the effects that lack of fingerspelling skills can have on the use of the manual alphabet in BSL. It must be remembered that this comparison of deaf and hearing signers here is, in effect, a comparison of fluent and non-fluent fingerspellers, but that it is fully possible for hearing people to be fluent fingerspellers, and deaf people to be non-fluent fingerspellers. The hearing signers here may be taken as a group of signers with non-fluent fingerspelling skills. The hearing signers in this study all had a full command of English, and if fluent English was all that was required to fingerspell in BSL, there would be no difference between the performance of the two groups. The non-fluency of deaf fingerspellers could be due to their skills in English or their skills in fingerspelling. Without conducting extensive test into the English skills of deaf participants, it would not be easy to separate out these two variables. If more time and resources were available, it would be useful to compare fluent and non-fluent deaf fingerspellers with fluent and non-fluent hearing fingerspellers.

6.4.2 Materials

The materials used were place-names in the British Isles, drawn from the index of the AA British Road Atlas. In the final analysis, 179 place-names were used.

The place-names were selected according to the form that the words took. Different categories of words were chosen according to their orthography, and syllabic complexity. The categories were selected to test the theory that different forms of English words would be restructured differently. Examples of place-names within each of these categories may be seen in Table 6.1 on page 198.

The words were of one, two, three, four and five syllables.

There were three-letter words of both one and two syllables. There were also four-letter words of one and two syllables.

The four-letter and three-letter words were also divided into categories according to the order of vowels and consonants in the word. Three-letter words were in three categories: CVC, VCV , or CVV . There were seven categories of four letter words: CVVC, VCCV, CVCV, CVCC, VVCV, CCVC, and VCVC.

There were also some monosyllabic words of six or seven letters.

The bisyllabic words were categorised according to the letters they contained, and the letters that occurred at the syllable boundaries. Some words had consonant clusters producing a single speech sound at the beginning of the first syllable. Others had such clusters at the beginning of the second syllable. Some words had unclear syllable boundaries when pronounced. The rest of the bisyllabic words had no such clusters at the start of each syllable, but some did have a "low frequency" letter in

either second place in the word or in final place. For the purposes of this study, "low frequency" letters were "f", "k", "w", "x" and "z". These were chosen as a result of running a frequency count of letters occurring in four pages of text from chapter 2 of this dissertation. The five letters used here were the five that occurred with the lowest frequency.

Place-name word form	Place-name
3 letter monosyllable - CVC	HAM
3 letter monosyllable - CVV	DEE
3 letter monosyllable - VCV	ORE
3 letter bisyllable - VCV (where "y" is treated as a "vowel")	ELY
4 letter monosyllable - CVCC	DISS
4 letter monosyllable - CVVC	QUIN
4 letter monosyllable - VVCV	AIKE
4 letter monosyllable - CCVC	CLUN
4 letter bisyllable - VCCV	EMBO
4 letter bisyllable - CVCV	JURA
4 letter bisyllable - VCVC	ETON
Monosyllables of 6 letters or more	STREAT THREAVE
bisyllables - 1st syllable consonant cluster	SHAPWICK
bisyllables - 2nd syllable consonant cluster	BELCHAMP
bisyllables - unclear spoken boundaries	WORCESTER
bisyllables - no 1st or 2nd syllable clusters	BODMIN
bisyllables - 2nd letter is low frequency	IXWORTH
bisyllables - last letter is low frequency	KIPPAX
Trisyllables	WALLINGFORD
More than three syllables	ABERGAVENNY CHITTLEHARNHOLT

Table 6.1: Examples of place-names in each category in Study 4

A complete list of the place-names in each group may be seen in Appendix III.

Of the 179 place-names that were finally used in the analysis, two were fabricated in order to fit the experimental design ("Kilmarnough" and "Quivox"). None of the signers questioned that either of these two words did not refer to a place in Britain. Because of the relatively small number of three-letter place-names in Britain, several three-letter river names were also included. Again, none of these was queried. On a few occasions, the signers did query the existence of a place or such a name but it was always genuinely possible to assure them that the particular place-name did exist.

All the test items were then pseudo-randomised in order to disguise the specific forms of the items in the different categories selected.

6.4.3 Procedure

Each person was interviewed alone. The experiments with the deaf people were all filmed on video tape and their answers transcribed later. The manual letters used were noted, as well as the number of repetitions of any multiply articulated manual letters, and any added movement given to any of the manual letters. The hearing people were not filmed, as the pilot work had shown that there was no advantage to be gained from filming over simply writing down the signer's responses at the time. The responses were written in the same way as those from the deaf signers.

Each person was given a written list of the British place-names and the task was explained to them. The explanation was given in BSL for the

deaf signers and in English for the hearing signers. Each person was told that the aim of the research was to find out how frequently-used fingerspellings are shortened or changed to become signs. It was pointed out that place-name signs are rarely full fingerspellings and that the choice of manual letters used does not always follow the same pattern. Examples of -c-c- for "Chepstow" (using the first letter only), -b-f- for "Bradford" (using the letters from each syllable) and -g-w- for "Glasgow" (using the first and last letters) were given. In all cases the signer agreed that this was the case.

It was explained that place-names on the list before them had been taken from the index of the AA British Road Atlas. The signers were then asked to imagine that they referred to each place on the list on a frequent and regular basis because their sister lived there. They were told that the person they were addressing would know this place and where it was, so there was no need to give the full English name for information or for the purposes of establishing context.

Given this situation, the signers were then asked how they would sign the first place on the list. All the signers found this task straightforward. To make sure that they had read the name correctly, they were asked to fingerspell the place-name fully first, and then to give the abbreviated or altered form they would use (if any). The hearing signers also read the name of the place out loud.

It was stressed that if they felt they would not use an abbreviation or if they would prefer to use a sign that did not use fingerspelling, then that

was what they should answer, rather than creating something that would seem unnatural to them. If they could not decide which of two possibilities they might chose to use, both responses were accepted. They were asked not to consider each place-name for too long but to give the first response that felt right. If they could not think of a "natural" or "comfortable" abbreviation or fingerspelling after a brief consideration, the item was passed over to the next one.

For the entire study, there were only 23 non-responses, to a total of 3580 presentations (less than 1%). There were 162 occasions upon which two possible responses for a given place-name were offered. This amounted to nearly 5% of the responses.

The results of this study will be presented and commented upon throughout this dissertation where appropriate, with the main part being considered in Chapter 8 and Chapter 9, concerning the restructuring of fingerspellings and the use of SMLS.

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6.5 MORPHOLOGY INCORPORATION (Study 5)

One of the features of any sign that is borrowed into BSL, rather than used as an instance of code-switching, is that it should be able to accommodate BSL morphology, and so act in a similar way to any other sign.

The aim of this fifth study was to investigate the way that different realisations of a lexical item could incorporate BSL morphology. It was hypothesised that many of the SMLS nouns would allow incorporation of this morphology in the same way that the non-derived synonyms do, and that the full fingerspellings would not allow morphological incorporation. It was also hypothesised that the full fingerspellings of the verbs would not be acceptable if they realised BSL morphology in the same way as non-derived signs or SMLS verbs. Both these theories had been implied by the comments of signers in Study 3, but needed experimental verification.

6.5.1 Subjects

The subjects for this experiment were ten deaf signers and ten hearing signers. The deaf signers were all native signers. Three were male and seven were female. The ages ranged from twenty to fifty. The hearing signers were all training to be interpreters and possessed signing skills to a minimum of CACDP Level II. The ages ranged from twenty to fifty. All the hearing signers in this study were female. The signers here were not all the same as those in the previous study because fourteen months had elapsed between the two studies. Many of the signers were students at the Centre for Deaf Studies, and the overall length of time spent by a student at the Centre is such that many of the signers from Study 4 were not still at the Centre by the time Study 5 was carried out.

All signers had some linguistics training, having either completed at least one course in sign language linguistics to Certificate level at Bristol

University, or worked in sign language related research at the Centre for Deaf Studies for several years.

6.5.2 Materials

In this study, a selection of nouns and verbs was investigated. Each noun or verb, was realised in three different ways: as a non-derived sign that has no link with the manual alphabet; as a single manual letter sign; and as a full, or shortened fingerspelling.

An example of a noun in this stimulus set is that translated in English as "kitchen", which was realised in three ways: using the iconic non-derived sign KITCHEN; using the SMLS -k-k-; and fingerspelling the full word -k-i-t-c-h-e-n-. An example of a verb in this stimulus set is that translated in English as "answer" which was realised in three ways: using the non-derived sign ANSWER; using the SMLS -a-a-; and fingerspelling the full word -a-n-s-w-e-r-.

Stimulus sentences were created in which the signs were required to incorporate some morphological information. Some of the noun signs had to be located within topographical signing space. Others had to be used in conjunction with numerals. The verbs needed to move in order to show information about person, number and aspect. In all cases, sentences were included which contained the same signs, but articulated in neutral space, and placement or movement through space was effected using indexical pointing.

An example of a stimulus item for a noun in this data set is: "When I stayed in the student hall of residence, I had my own room but I did not have my own kitchen. Luckily there were a lot of kitchens. There was a kitchen on every floor."

An example of a stimulus item for a verb is "They answer him".

The method of preparation of the materials was as follows. The stimulus sentences were signed onto video by a native signer. Each sentence was signed once with each of the three forms of the lexical item. The same sentence was also signed using these lexical items in conjunction with indexical pointing. The sentences containing the lexical items were presented in pseudo-randomised blocks.

It should be noted that the signer found some of the sentences very hard to sign. Some of the items required her to move her hands through signing space while fingerspelling. This task was particularly difficult. As the signer is a very competent fingerspeller, she finally managed to sign the sentences, but not without several takes. The complete data set for this study may be seen in Appendix IV.

6.5.3 Procedure

The subjects were told that the aim of the research was to find out how signs can move in space in BSL. They were told that the primary interest of the research was the way that fingerspellings and signs using manual letters could be used as part of BSL. All subjects were given written

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instructions in English. All the deaf subjects also had the instructions given in BSL. The researcher remained in the room in order to answer any questions they might have, but remained well away from the signer in order to avoid seeing their responses as they wrote them.

For each item, the relevant sign in the sentence was given and next to each sign was the scale of one to three. They were asked to watch the sentences and decide how acceptable the sentences were. They were asked to rate the sentences by giving them a score of "1" to "3" and circling the relevant number on the scale.

If the sentence would be used by a user of BSL, even if the signers would not use it themselves, they were asked to rate it "1". If the sentence seemed a bit odd, but might be accepted as a sentence used by a user of BSL, they were asked to rate it "2". If they considered the sentence unacceptable in BSL, they were asked to rate it "3".

All the signers found this an easy task. They were told that they could pause the video tape at any time if they wanted time to consider what they had seen, or rewind the tape and play the item again if necessary. They were also told not to spend too long thinking about any one item but to put down their first impression.

The results from this study will be used mainly in the discussion of topics considered in Chapters 8 and 9.

6.6 SUMMARY

The studies outlined above have used four different methods of obtaining information for the research. Information has come through the study of texts (many of them over 100 years old), through observation, through elicitation and through experimentation. All these sources will be used in the rest of the research,

In Chapter 7, the overall use of the manual alphabet and fingerspelling in BSL and its dialects and registers will be described and discussed.

The restructuring and changes made to fingerspellings and uses of the manual alphabet will be considered in Chapters 8 and 9. Initially, the question of the function of fingerspellings and single manual letter signs within BSL discourse will be addressed, considering its use in the language as a whole, and in some social dialects and registers.

Chapter 7

THE USE OF THE MANUAL ALPHABET IN BSL AND ITS DIALECTS AND REGISTERS

7.0 INTRODUCTION

There are no published detailed qualitative or quantitative descriptions of the use of fingerspelling and the manual alphabet in BSL. Here, such a description will be presented, with reference to different dialects and registers of BSL. The description will be based upon the See Hear! corpus and the in-depth interviews with deaf consultants, as well as some instances observed in casual conversation with the same deaf consultants on occasions other than the interviews.

The situations in which fingerspellings may occur, and the semantic and grammatical categories most likely to include signs using the manual alphabet will be described.

A quantitative analysis of this use of fingerspelling will show its extent and variation among deaf signers. The data here comes from the See Hear! corpus. After a general description of the occurrence of fingerspelling in this sign corpus a more specific analysis will be made according to dialect and register.

7.1 GENERAL PROFILE OF SEE HEAR! DATA

The See Hear! corpus used here was described in section 6.2, p184. It is particularly useful to show what fingerspelled items occur, and in what quantities.

7.1.1 Absolute Quantity of Fingerspelling

Padden (1991b) reports an average of approximately 6% fingerspelling in the ASL signed utterances she observed, although this varied according to topic discussed, from 12% for a recipe to 4% for an account of an encounter with the police. For the See Hear! corpus, the percentage of fingerspelling within signing was 10.3%. This much higher figure seems to contradict Padden's remarks that American deaf people tend to fingerspell more than those in other countries. However, Padden's data was only based on two signers. The See Hear! data comes from all types of signers, including those whose signing is influenced by English, in which more fingerspelling would be expected. BSL signers whose signing is strongly influenced by English fingerspell many more function words than those whose signing is little influenced by English, and it is this fingerspelling of function words that makes the average use of fingerspelling in the data from See Hear! so high. Nearly one third of the uses of the manual alphabet in the See Hear! corpus was for function words, either fully fingerspelled or abbreviated.

The distinction between content and function words is here based upon the definitions given by Crystal (1985). By his definition, content words are those "which have stateable lexical meaning - the majority of words in the language, in fact, apart from the few function words, whose role is primarily to express grammatical relationships" (1985:78).

Types of Words Fingerspelled

The types of words fingerspelled in this corpus may be seen in Table 7.1

Whole proper names	18.6%
Whole other content words	19.0%
Acronyms	9.2%
Whole function words	20.5%
SMLS	9.1%
Abbreviations	21.0%
Manual letter with non-derived sign	2.6%

Table 7.1: Breakdown of uses of fingerspelling in BSL within the corpus of 19,450 fingerspellings.

It is commonly claimed that fingerspelling is used to represent whole English words, and this made up the largest group of fingerspelling. By whole English words, it is meant that the fingerspelling is more than the first letter or an obvious abbreviation. It is not at all uncommon for some letters to be omitted during the fingerspelling of a "whole" word. There were 7,319 examples of whole English content words in the corpus, making up 37.6% of

the total amount of fingerspelling. Of this, half were proper nouns, such as

names of people and places, (18.6% of the fingerspelling corpus) and half

were other English words (19.0%). A further 9.1% of fingerspellings involved

the initial letter only of the English word. This is rarely mentioned as part of

BSL and yet it is clearly extensively used. It is particularly common once

reference has been established. For example, once a person's name is

known, only their initial need be used for future reference. It is also common

to use the initials of a person's first name and surname as a name sign. For

example -l-l- or -c-m- or -a-f-d- and -a-b-h- all occurred in this corpus to refer

to people with those initials.

Fingerspelling of acronyms also makes up a significant proportion of all

fingerspelling. Here, acronyms will be used to mean any lexical items

produced as a result of taking the initial letter from each word of a phrase.

Some authors (eg Cannon, 1987) have distinguished between abbreviations,

which are lexical items produced from initial letters in which the name of each

letter is pronounced (eg ATP from adenosine triphosphate), and acronyms, in

which the lexical items are derived in the same way, but the letters are

pronounced in sequence, resulting in a form that may be pronounced as any

other word (eg Laser, from "Light Amplification by Stimulated Emission of

Radiation").

Here, a variation on the definition used by Quirk, Greenbaum, Leech and

Svartvik (1987) will be used. They define acronyms as words formed from

initial letters that make up a name, and divide them into two types:

a) alphabetisms, in which the sequences of letters are pronounced, and in which the letters may represent either full words or constituents in a compound or parts of a word eg ESP, UFO, TV, ID and TB;

b) acronyms pronounced as a word and often used without knowing what the letters stand for eg Wasp, Radar and NATO.

The term "acronym" will be used here to mean both these word-types, but retain the term "abbreviation" to mean a shortened form of a single word (subsumed under "alphabetism" by Quirk et al.).

It is important for this research to distinguish between items that are created as a result of taking the first letter form each word and those that are created by shortening a single word. In the first case there is no choice over the letters used, because the first letter of each word is always taken. The accompanying mouth patterns of these fingerspellings (of the names of each letter or the pronunciation of the sequence of letters) might be of interest in further research but are not the focus here. In the second case, the abbreviation may be made in any number of ways, and the letters that are selected or rejected during the process of abbreviation are of interest to the research here.

In this corpus, acronyms accounted for 9.2% of the fingerspellings in the corpus. Examples include -w-f-d-, -r-n-i-d-, -i-r-a- and -b-a-t-o-d-. In some respects, acronyms may be treated as a subgroup of whole English words in as much as they act as words independent of the words from which they are derived. It is possible that the source words are not to be known to a signer, and the acronym has the meaning contained solely within itself. The large

proportion of acronym use is perhaps unsurprising. The English words for new concepts are frequently fingerspelled in BSL at first. Sometimes a sign emerges for the referent but sometimes, in the case of an acronym, it is not linguistically necessary because the acronym is rarely more than three letters - an acceptable length for a fingerspelling in BSL (see section 8.2, especially p272 ff). The preponderance of fingerspelled acronyms used by BSL signers suggests that Battison's notion of a maximum of two different handshapes in a fingerspelling might be over-conservative. Cannon (1987) has calculated that acronyms are the most common new words in English, and are predominantly of three letters, so BSL can be expected to borrow these new words as they arise, with no need for restructuring.

Padden remarks on the use of fingerspelling in ASL to specify the meaning of a sign. This use also occurs in BSL. Of the fingerspelling in the corpus, 1.2% comprised the juxtaposition of a sign with fingerspelled English equivalent and a further 1.4% comprised a sign with the first letter of the English equivalent. This could occur when a new sign was being used or when the signer was using a regional sign that might not be known by the signer's audience, or simply, perhaps, for maximal information.

The use of fingerspellings to produce abbreviations of English words is also extremely common, and abbreviated fingerspellings made up 21% of the corpus. These fingerspellings were of well-established abbreviations, such as -n-o-v-, and -m-o-n- (and many other days of the week and months of the year), and also nonce occurrences such as -t-r-a-n-s- (from "transfer") and -f-e-r-t-e-r-s- (from "fertilisers"). The abbreviations selected letters from many different places in a word. Although almost all used the first letter,

some used the first syllable only as a back-clipping (see, eg Marchand, 1969), and others made other letter selections. The processes involved in the letter-selection of abbreviations will be discussed in more detail later, in section 8.3, p276.

Fingerspelled Verbs

Padden makes the observation that the grammatical categories of fingerspellings are constrained in ASL. By far the greatest number of fingerspellings of content words are nouns, and very few are verbs. Her research found that less than 1% of all fingerspellings were verbs. This is also true of this BSL corpus. Verbs formed only 2.2% of all whole English content words fingerspelled, and only 0.8% of the entire fingerspelling corpus. See section 4.7.3, p150, for the reasons for this.

Fingerspelled Function Words

The use of fingerspelling for function words also requires an explanation. It is frequently claimed that fingerspelling may be used to represent English function words, but in fact fingerspelled function words also occur as part of BSL. In this corpus, function words accounted for 31.6% of all fingerspelling. Of these, 11.9% were function words which are accepted by the deaf signers interviewed in Study 3 as having a place within BSL (eg "but" and "for") and 19.7% were used to represent function words that were seen by the consultants in Study 3 to be a part of English grammar (eg "and" and "the").

This high percentage of English function words, is probably due to the fact that some signers used signing heavily influenced by English grammar. This was particularly common in the earlier episodes of See Hear! when signing

on television was more influenced by English. Analysis of the data for the longest serving BSL presenter (a deaf native signer from a deaf family), revealed the proportions to be very different. Function words accounted for only 23% of the total amount of his fingerspelling, and, more significantly, 16.2% were BSL function words with only 6.6% English function words. However, even though the form of signing on television has changed, there is no reason to believe that other signers have ceased to use fingerspelled English function words.

The deaf signers in this corpus come from all linguistic backgrounds and do not all use the BSL of native signers from deaf families that is most often studied by linguists. Some, for example, are elderly Scots, Welsh and Irish signers whose signing uses much fingerspelling of English grammatical markers. Others are people who may speak while signing, and, in following English word order, fingerspell more function words. The important point is that it is not meaningful to claim that "BSL" uses function words of certain types or with certain frequencies, because there are so many varieties of BSL. It is, however, clear from the data that function words are fingerspelled in significant amounts, and that the exact amount depends on the linguistic background of the signer and the variety of signing they are using.

In view of the fact that fingerspelled BSL function words are a large percentage of the fingerspellings in this corpus, it is necessary to ask why this may be so, especially as function words are commonly claimed to be the class of words least likely to be borrowed into a language (Higa, 1979). The data here was analysed by counting the occurrences of all instances of fingerspelling and not the numbers of different words fingerspelled. The

number of fingerspelled function word types in BSL is certainly very much smaller than the number of fingerspelled noun types or even verb types. There are fewer than half a dozen fingerspelled function words which have a commonly accepted role within BSL (eg -b-u-t-, -i-f- and -o-r-) but these occur with a high frequency. All these function words have a sign equivalent, but the fingerspelled sign is also used, and the two signs are frequently not considered exact synonyms. For example, some deaf consultants claimed that the signs BUT and OR would normally be used in conversation, but that -b-u-t- and -o-r- would be used for emphasis.

BSL signers grow up influenced by English and particularly by English grammar. Although educationalists were wrong to claim that BSL has no grammar of its own when they combined BSL vocabulary with English grammar, one effect has clearly been that some English grammatical markers have been incorporated into BSL. It is worth noting that these fingerspelled function words are frequently accompanied by the same non-manual features of the BSL non-fingerspelled equivalents.

It should also be remembered that the borrowing of function words between languages is only rare - not non-existent. The borrowing occurs when languages are in very close contact. This is a good example of two languages that are in very close contact. It should also be born in mind that BSL allows different grammatical constructions, according to the degree of influence of English.

Having described some of the variations in the absolute amount of fingerspelling used, and the different uses of the manual alphabet, it is now

necessary to describe the situations in which the manual alphabet is used. That is, the situations in which code-switching or borrowing occurs.

7.2 USE OF THE MANUAL ALPHABET AND FINGERSPELLING FOR BORROWING ENGLISH CONTENT WORDS

It is clear that the production of letters from the manual alphabet may occur for lexical items borrowed directly from English or which are established as lexical items in BSL. It is commonly claimed (eg Deuchar 1977 and 1978) that a major role of fingerspelling in BSL is to borrow words from English by fingerspelling whole English words during a signed BSL discourse. Beyond a few generalised comments about what is borrowed and why, there has been no detailed research into the circumstances in which words are borrowed through use of the manual alphabet.

One important role of fingerspelling is the borrowing of new words to fill lexical gaps in BSL, but it must be born in mind that it has many other roles and much fingerspelling is of core vocabulary items.

Fingerspelled words may occur within a signed discourse for several reasons. The reasons for fingerspelling will be discussed here. The discussion will cover use of fingerspelling:

i) to introduce an English word which has no sign equivalent,

ii) to explain a regional sign that may not be well-known,

iii) to use when a sign equivalent does exist throughout the sign community but the signer does not know it,

iv) to accompany a new concept expressed in sign,

v) to introduce a sign which is then used for the rest of the discourse only,

vi) to produce English idioms in code-switching,

vii) to use as part of the interpreting task,

viii) to produce euphemisms,

ix) for convenience and time-saving,

x) to use as part of the core vocabulary of BSL.

xi) to represent English acronyms.

7.2.1 To introduce an English word with no Sign Equivalent

The most commonly cited reason for use of fingerspelling is the introduction of an English word which has no sign equivalent. This might be part of code-switching, or as part of the borrowing process. A lack of native equivalent is the most frequent reason given for borrowing in any language (although social-psychological needs may also be important. See section 4.3.2, p129).

Until recently, BSL has been used almost exclusively in informal settings and its vocabulary has evolved to suit these requirements. With increased awareness of the rights of deaf people to use BSL in other situations (such as in higher education) BSL has had a great need to enlarge its vocabulary. Signers are able to use English as a vocabulary resource because of their bilingual skills. One way of introducing new vocabulary into BSL is through fingerspelling the English word. This does not mean that it is not possible to

express the idea behind the word in sign, but merely that there is not yet an accepted sign equivalent. Examples from the See Hear! corpus include the use of fingerspelling "minicom", "community" and "discrimination" in the early 1980s before non-derived signs emerged in the deaf community (Woll, 1991). These will be described in more detail below.

One major use of fingerspelling of this type is to represent the names of people and places. This is common in many languages. Yau (1993) found that use of English words in Hong Kong Chinese technical literature is mainly for the names of people, places and product names.

Again, there is no reason why names and places in BSL may not be signed, but initially, at least, the fingerspelling of the English word is used if the sign for the referent is not well-known. Again, this process relies on the signers' bilingual skills and knowledge of English names. Supalla (1992) observes that the correct social procedure for the use of personal name signs in ASL is to present a full fingerspelling of the English name first, and then use the name sign. Observation of the See Hear! corpus confirms that this is the practice in BSL too.

On a larger scale, within the language community generally, fingerspelling may be a temporary measure and later be dropped from regular use when an accepted sign emerges. Fingerspellings may introduce new English words which are subsequently used with high frequency. In these cases, fingerspelling of the full English word is rarely retained.

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In a study on change in BSL, Woll (1991) found that fingerspelled words used on the BBC television programme See Hear! in the early 1980s were later replaced by signs. For example, in the early 1980s there was no widely accepted sign COMMUNITY, probably because at that time members of the British deaf community did not think of themselves as a community. If a sign was used, it was often the sign GROUP, but the English word was more frequently fingerspelled c-o-m-m-u-n-i-t-y-. With the increase in political awareness of the deaf community a sign COMMUNITY eventually evolved and the fingerspelling is now rarely used.

The word "discrimination" was also fingerspelled in the early years of the 1980s. It was sometimes abbreviated to -d-i-s-c-, but was eventually replaced by a sign that is now nationally recognised as DISCRIMINATION. This example is unique in Woll's study in showing any evidence that fingerspellings are abbreviated over time. Most fingerspellings were initially full length and then replaced by a sign. There are no instances at all of a fingerspelling being reduced over time to a sign of only two letter handshapes, such as have been proposed by Battison (1978).

Another example of the replacement of a fingerspelling by a sign is the sign FAX. When the fax first came on the market, -f-a-x- was fingerspelled but now a sign FAX has developed which is in common use.

It is important to note that FAX may be used both as a noun and a verb. The verb FAX is a directional verb and may be inflected according to the verb morphology of BSL, in a way that fingerspelling -f-a-x- may not. The language here has chosen to use a form that is most convenient. Higa

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(1979) shows how Japanese native words and loan words are used according to their convenience, including their length. The loan word "computer" was used in preference to the longer Japanese "denshi keisanki", but when the form "densanki" developed, it was adopted because it was shorter. The Japanese word "hyakaten" was used in preference to the English loan word "department store" until the form "depaato" developed. Then the native word was dropped in favour of the loan. Fingerspelled loans may be selected over non-derived signs, or non-derived signs selected over fingerspelled loans, for the same reasons of convenience.

If a sign does not emerge for the referent of a high-frequency fingerspelling, a restructured fingerspelling may be used.

7.2.2 To Use when a Sign Equivalent Exists but the Addressee does not Know it

Another reason for fingerspelling is to use English to explain a sign that the addressee may not know. This may be because the sign is one used in a particular regional dialect, eg a Scottish dialect sign TUESDAY + -t-u-e-. This is possible because the signer may assume that all British signers are bilingual in Standard English and BSL, even if the dialects of BSL are not always mutually intelligible. Here, fingerspelling the English word is using English as a lingua franca to help understanding of dialects of another language. Yau (1993) describes a similar situation in Hong Kong Chinese, when the written English word is used in conjunction with the written Chinese word because not all Chinese readers may be familiar with the Chinese form, but are all expected to know the English word.

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This use may be extended for any signs used by the signer, which the addressee does not know, for whatever reason.

7.2.3 To Use when Sign Equivalent Exists but the Signer does not Know it

A signer may also fingerspell if a sign equivalent does exist throughout the sign community but the signer does not know it. This is frequently the reason for a hearing signer to fingerspell. The fingerspelling of an English word is used as part of a request for a sign, and has been frequently observed during this research while watching non-fluent signers interacting with fluent signers. For example, on one occasion a non-fluent signer was observed to fingerspell the words "appropriate" and "available", as requests for the signs.

This use may also occur in interpreted sign discourses. When interpreters are unfamiliar with a subject area, they are unlikely to know specific signs for the technical words used, and a signed circumlocution is impossible if the interpreter does not know the meaning of the words (see, for example, Rasmus & Allen, 1988, and Caccamise, 1989). In such a situation, the interpreter will be forced into fingerspelling, while hoping that the audience will know the English word. This is may not always be a successful strategy.

7.2.4 To Accompany a New Concept Expressed in Sign

Frequently a new concept is expressed in sign, either before or after the fingerspelling. This sign may be formed either through a loan translation or by using other sign creation resources (especially iconic) available to sign languages. The fingerspelling may be full (eg -f-o-r-u-m + FORUM), or abbreviated (eg -s-e-c- + SECTION). The signer may also use only the first letter (eg -c-CONVOY).

Another example of such a use in the See Hear! corpus, is in a piece of signing concerned with meningitis, when the English word was fingerspelled and a sign MENINGITIS immediately given. This was because the sign was fairly recent and not all members of the television audience would be expected to know the sign.

7.2.5 To Introduce a "Nonce" Sign

Where there is interaction between signers, a nonce sign may be used temporarily to represent a given fingerspelled word. Where there is no two-way interaction (eg in a lecture or on television), the first manual letter may be used to represent the word for the referent, once the word has been spelled fully at least once. This SMLS may also be used in conjunction with lip-patterns of the English word. This is particularly common with low frequency words for which no established sign is needed. Again, there is no evidence of a fingerspelled word getting progressively shorter, as the

discourse proceeds. The common process is to go from full fingerspelled word to SMLS.

Fingerspelling of whole words is particularly common in educational situations where the exact English word is thought to be an important part of the message, even if the signer knows an approximate sign translation.

Often, in educational settings, the signers are hearing interpreters interpreting from speech. The interpreting task frequently leads interpreters to use fingerspelling. A signer or interpreter may use a sign that other people may not know and then it is common for the fingerspelling of the English word to precede the sign with the same meaning, as it is in normal BSL signing.

If the English word does not have an exact translation in sign, the word may be fingerspelled, followed by a sign similar in meaning, after which the sign may be used on its own with the new meaning. Similarly if the sign is being used in an unfamiliar way, particularly in an interpreting situation, fingerspelling may help to clarify the meaning. For example "poetic licence" might be translated as POETIC FREEDOM but immediately followed by l-i-c-e-n-c-e- as an explanation that FREEDOM has an unusual meaning (see Newell, Stinson, Castle, Mallery-Ruganis & Holcomb, 1990).

7.2.6 To represent English Idioms

Idioms may be fingerspelled to show their English basis eg h-e-g-o-t-a-w-a-y-w-i-t-h-m-u-r-d-e-r-, although it is also acceptable to sign the phrase using

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non-derived signs with deliberate English lip-patterns. If the signer is reporting exact English, the inflections of the English word may be important and in this case the inflection will need fingerspelling.

Here, the fingerspelling is an instance of code-switching, rather than of normal borrowing, because English grammar is preserved.   An example in the See Hear! corpus of this is the signing of the idiomatic euphemism "there is going to be a happy event", which was fingerspelled entirely except for the words "there is".

In ASL, in this sort of situation, some signers prefer that the whole word be spelled out eg not RUN-i-n-g- but r-u-n-n-i-n-g- (Newell et al, 1990). In view of the fact that the fingerspelling is being used to code-switch here, Newell et al's findings are in keeping with the rules of code-switching outlined by Poplack (1980) that code-switches cannot occur at the boundary of a bound morpheme.

7.2.7 To Use as part of the Interpreting Task

Another instance of code-switching into English using fingerspelling is seen in interpreting situations. When under pressure and fatigued, interpreters tend to shorten the lag-times behind the speaker, in order to lessen their cognitive load. When this happens, interpreters may find themselves faced with an unexpected idiomatic phrase or unanticipated grammatical construction when it is too late to interpret the correct meaning into BSL. Fingerspelling the English word is then one way out.

Whether to continue to use a fingerspelled word or to use a new sign is frequently a problem for interpreters, especially in technical fields. Rasmus and Allen (1988), studying ASL, report that there are no signs for complex terminology in biology and interpreters at lectures of university level are forced into slow and inefficient fingerspelling. This is a strain for the interpreters to produce and a strain for the deaf audience to receive. Rasmus and Allen also observe that fingerspellings lead to signs that are based on the English words for a referent rather than the referent itself. They do not state why this is a bad thing, nor why a sign is better when based on a referent than on an English word. They devised signs for the terminology used in lectures at Gallaudet University, of which only 5% of signs were fingerspelled and 9% were initialised fingerspellings (that is, SMLS with an extra movement added). Students who received the new signs were more likely to participate in discussions stemming from the lectures. They also claimed to prefer the signs to the fingerspellings. Interpreters, too, preferred the signs.

What this study does not make clear is the difference between full fingerspellings or SMLS of various types. The two are seen as equally undesirable. Researchers at the NTID (Caccamise 1989) defend the use of initialisations and initialised signs in ASL by saying that they are in general use, and that the vocabulary items should be allowed to develop naturally. Rasmus and Allen would have provided far more meaningful data if they had compared the interpreting situations a) with fingerspelling alone, b) with SMLS related to the English word and c) referent based signs only.

7.2.8 To produce Euphemisms

One purpose of fingerspelling may be euphemism. Occasionally, words may be fingerspelled where the non-derived sign equivalents may be considered socially inappropriate. In English, euphemisms are frequently derived from Latin words, because the status of the words from that language makes them acceptable. For this reason, taboo parts of the anatomy or sexual acts may be euphemised using Latin words. A similar process of using another, high-status language for euphemism may be seen as words from English are fingerspelled in signed discourses. This may be seen in the taboo areas of sexuality, bodily functions and disability.

Rudner and Butowsky (1981) found fingerspelling used in this way when they described the signs used in the American deaf gay community. They gave various signs glossed as GAY to heterosexual and homosexual men and women and found that the fingerspelled word .g.a.y. was rated the most positive of all the signs by all four groups. It was the only sign with the meaning "gay" which was considered suitable for all settings and was the most widely accepted and least offensive sign. More recently, a sign that is best glossed as QUEER (a positive sign with no particular negative connotations) has come into use in the American deaf gay community . This sign is an initialised sign with the manual letter .q. articulated at the chin (Today newspaper, January 1994).

In BSL, the English word "sex" is often fingerspelled -s-e-x-. The deaf informants interviewed for this research claimed that the various signs

glossed as SEX are frequently seen as vulgar or improper, especially in the presence of older signers and fingerspelling of the English word is more acceptable. There is also a derived sign, using the extended index finger and little finger of both hands, which is often used, and is also considered more acceptable than the non-derived signs.

The SMLS -t-t- (TOILET) may be used as an acceptable sign when other signs that may be glossed TOILET would be considered too informal or inappropriate.

Recently, a new sign glossed as DISABLED has come into use, involving the -d- handshape with a specialised movement. This replaces signs which were seen to be offensive to disabled people. One old sign was an iconic sign which could also be glossed CRIPPLED, and another was a loan-translation of the English word "handicap". Use of the neutral letter -d- is an attempt to escape the negative connotations of the other signs.

7.2.9 To Use for Convenience and Time-saving

Shortage of time may make fingerspelling more likely to occur. If the signer is an interpreter working from rapid spoken English into BSL, and the interpreter cannot find a direct sign equivalent for an English item, there may not be the time for a signed circumlocution. In this case fingerspelling the word prevents the lag between speaker and signing becoming too great.

A similar pressure occurs in television broadcasting, where the producers set tight time constraints on the signers. A fingerspelled word followed by a sign

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is quicker than a sign explained by a signed circumlocution. This strategy was often seen in the See Hear! corpus. Deaf people, when asked about this strategy, have rated it as effective (Kyle, 1979). Again, it relies upon the bilingual skills of signers for its success.

7.2.10 To Use as Part of the Core Vocabulary of BSL

Apart from whole English content words which are new to the language, there are other fingerspelled loans from English which involve core vocabulary. This borrowing of items for which there is already a native equivalence is common in many languages. Maravcsik (1978) has noted that Yaqui has borrowed immediate family words, including the word for "mother", and that Nahuatl borrowed the Spanish plural suffix which replaced the Nahuatl "-me" plural suffix.

Most of these loans have become lexicalised and have undergone restructuring to become an integral part of BSL. This is discussed in more detail in section 8.2 (p272) and section 9.3 (p371). Many have non-derived sign synonyms but the lexicalised loan is still in extensive use.

Areas of core vocabulary where borrowing from English is highly prevalent include family relationships, and measurements of time and space. Almost all the loans here take the form of SMLS. The main exception to this is -s-o-n-, which is only three letters long, and frequently omits the medial vowel, producing the form -s-n-. It is probable that these lexicalised signs have come about as a result of being introduced in schools, where the influence of English and fingerspelling would be expected to be great.

Scotton and Okeju (1973), basing their claims on research conducted with the Ateso language of East Africa, say that borrowing of core vocabulary is usually widespread through a speech community whereas the borrowing of new lexical items is restricted to those who are educated to a high level or who have travelled widely. Borrowing core vocabulary also shows that the languages are in very close contact.

Several of the deaf consultants interviewed for Study 3 remarked that some uses of the manual alphabet were acceptable synonyms for non-derived signs, but were considered to be "hearing" or "social worker" signs. Such uses included -i-i- for INFORMATION and -h-o-h- for HARD OF HEARING. That is not to say that other deaf signers do not use these signs, but that they are more linked with the social dialect that identifies the signing of hearing people.

7.2.11 To Use in Acronyms

It has already been mentioned that acronyms here are considered to be lexical items created as a result of the selection of initial letters of words in a phrase. Fingerspellings are frequently used to represent acronyms, although this is not the only way of referring to something that is an acronym in English. The words of the expanded form of the acronym may be signed in loan translation, eg "BSL" may be signed as -b-s-l- or as BRITISH SIGN LANGUAGE or simply as SIGN.

BSL also deals with acronyms by using a sign which glosses an English word derived from the letters. For example, the Bristol-based Deaf Information Project ("D.I.P.") was signed DIP in Bristol (although the rest of the country fingerspelled -d-i-p-). A Bristol University course module entitled "Law, Education and Social Services" has become lexicalised as the sign LESS, through the fingerspelling of the acronym "L.E.S.S.".

The sign need not always be an exact representation of the English acronym. Some letters may be excluded, so that, for example, "C.A.C.D.P." (the Council for the Advancement of Communication with Deaf People) has become CAP. On the other hand, "A.B.S.L.T.", (Association of British Sign Language Tutors) is signed ABSOLUTE, as a kind of back-formation.

Some of these acronyms may be loans for new items (eg U.N.H.C.R., the United Nations High Commission for Refugees, active during the civil war in the former Yugoslavia) or they may be thoroughly established in BSL, for example, -m-p- ("Member of Parliament"), and -b-b-c- ("British Broadcasting Corporation").

The form of acronyms produced is different in ASL and BSL. In ASL, each letter handshape of an acronym is made with a small circular movement to distinguish this from the normal spelling of a regular word. (Akamatsu, personal communication, June 1992). In BSL there is no such convention for changing the movement of the letter handshapes but acronyms are distinguished from ordinary words by the accompanying lip patterns.

The lip patterns in an acronym often parallel those produced by speakers of English. Where the names of the letters are produced in English, the corresponding mouth-patterns accompany the fingerspelled acronym. For example, the "Educational Reform Act" may be shortened to E.R.A. and the mouth patterns accompanying the fingerspelling e-r-a- would be [i: a: rɛi] rather than "era", thus distinguishing it from the existing English word "era".

The mouth patterns may also be of the English expansion of the acronym. Thus, for example, -r-n-i-d-, may be accompanied by the mouth patterns [a: rɛn ai di:] or "royal national institute for the deaf" (or none at all). It is not necessary, however, for the signer to give any information on the expanded acronym and the acronym may be accepted as the reference for a referent without any knowledge of its derivation.

Other acronyms in English are pronounceable as ordinary English words, as the letters are pronounced in sequence. These may also be fingerspelled, but in these instances mouth pattern is usually (although not exclusively) that of the English word pronounced. Thus, acronyms such as S.W.A.P.O. and G.A.T.T., may be accompanied by the English mouth patterns and not the letter names.

Having completed a description of the different uses of the manual alphabet in different situations in BSL, it is now useful to investigate the different forms that fingerspellings and other uses of the manual alphabet may take. The See Hear! data provides an excellent corpus of signs from which one may observe the natural occurrence of signs using the manual alphabet. The interviews in Study 3 provided further information. However, they give little

information about the forces behind the form of the sign and the process of manual letter selection. The place-names study aimed to determine the forms of fingerspellings, abbreviations and other uses of the manual alphabet that are used in BSL, and to identify the factors that influence the final form. Chapters 8 and 9 will draw heavily on the information collected in the place-names study, but a general profile of the study (Study 4) will be given here. The details of data collection for Study 4 are given in section 6.4 (p192).

7.3 GENERAL PROFILE OF PLACE-NAMES DATA (STUDY 4)

Seven strategies of responses given to the place-name stimuli were identified. These were as follows:

1) Full production of the English word.

2) First letter only of the English word.

3) First and last letters only of the English word.

4) Letters from the start of two syllables of the English word.

5) Producing a sign unrelated to fingerspelling, alone or as a "compound" with a fingerspelled letter.

6) First and second letters of the English word.

7) Any other combination of letters, or more than two letters (for example taking the first two letters from the first syllable and some other letter, or taking the first and last letters of the word and letters from the start of another syllable. See section 8.3.4 (p297) for further examples).

A frequency count performed on these strategies demonstrated the relative productivity of each strategy. This may be seen in Table 7.2.

STRATEGY	FREQUENCY	PERCENT
1	533	14.2
2	977	26.1
3	396	10.6
4	399	10.7
5	492	13.1
6	268	7.2
7	654	17.5

Table 7.2: Percentage of responses for each strategy in the place-names study

As part of an inquiry into the difference in use of the manual alphabet by deaf and hearing signers (who were fluent signers and less-fluent signers, respectively), this analysis was also done separately for the deaf and hearing subjects. This may be seen in Tables 7.3 and 7.4. A graphic comparison of the responses of the two groups may be seen in figure 7.1, on page 431.

This basic frequency count, alone, reveals a great deal about the word-formation processes in BSL. Eighty-two percent of all the responses fell into one of the six specific strategies, and only 18% fell into the category of "other". This is strong evidence that there are definite rules involved and that the forms of the fingerspellings and the abbreviations are not being produced randomly.

Apart from the production of a single manual letter, discussed in the chapter on SMLS, other processes were all reasonably productive, with only the use of the first and second letters (Strategy 6) accounting for less than 10% of the responses.

The factors producing the forms in these different strategies will be discussed in greater detail in section 8.3, p276.

STRATEGY	FREQUENCY	PERCENT
1	335	17.7
2	476	25.1
3	147	7.8
4	153	8.1
5	380	20.0
6	65	3.4
7	319	16.8

Table 7.3: Percentage of responses by deaf subjects for each strategy in the place-names study

STRATEGY	FREQUENCY	PERCENT
1	198	10.8
2	501	27.1
3	249	13.5
4	246	13.3
5	112	6.1
6	203	11.0
7	335	18.1

Table 7.4: Percentage of responses by hearing subjects for each strategy in the place-names study

It is clear from the data tables above that the responses from the different subjects were not uniform. It had been hoped that all subjects would give similar response patterns, enabling statistical tests to be carried out on the responses. Unfortunately, the wide variation precludes meaningful statistical analysis (the inter-subject data being too different to allow any analysis to treat data as though it was from one source). However it is still possible to extract considerable information from the results obtained.

The fact that there was such a wide variety of methods of using fingerspellings is important in itself, and should be considered.

From the above table, it may be seen that many subjects have their own preferred strategy for abbreviating fingerspelled placenames. This raises the whole question of the number of informants any research should use in an attempt to describe processes occurring within a language. If the study had used fewer signers (or even just one informant), more detailed questions could have been asked, but the responses could have led to conclusions that would not have held for other signers. Using twenty subjects is no guarantee that the picture is complete, but it does demonstrate that there are several possible preferred strategies that may be used.

In this discussion of the subjects' responses, the deaf subjects are identified by a number preceded by "D", and the hearing subjects are identified by a number preceded by an "H".

Of the deaf subjects, some had definite preferred strategies which they used for place-names of many different types. Subjects D2 and D5, for example used the first letter of the place-name (Strategy 2) over 50% of the time. Subject D10 used either the full fingerspelling (Strategy 1) or some sort of sign translation (Strategy 5) for 85% of all her responses.

Of the hearing subjects, Subject H1 used the first letter only (Strategy 2) for 72% of all responses, and Subjects H5 and H7 used this Strategy for nearly half of their responses. Subjects H2, H8 and H9 used many different strategies. A full description of the uses of the different strategies by the different subjects may be seen in Appendix VI.

The deaf subjects preferred to use three strategies: 7, 2, and 5. That is, use of the first letter, creation of a sign or a strategy not part of the six clear strategies. Five subjects used Strategy 2 most, three subjects used Strategy 5 most, and two subjects used Strategy 7 most.

The hearing subjects showed a different pattern, with strategies 1, 2, 3, and 7 being preferred by some. That is, full fingerspelling, use of the first letter, use of the first and last letter, or strategies that were not part of the six clear strategies. Two subjects used Strategy 1 most, four subjects used Strategy 2 most, one subject used Strategy 3 most, and three used Strategy 7 most. Appendix VI contains a table showing all the preferred strategies of all the subjects.

The significance of these different preferred strategies will be discussed later. What can be said about the variety of strategies is that there are several possible basic strategies, and that individual signers may prefer one over others, when other factors are equal, and that deaf and hearing signers (or, fluent and less fluent signers) may adopt different strategies.

Because of the nature of BSL there is, as yet, no standardised form of the language, and signers have few explicit rules for how to deal with certain aspects of the language. Instead, they rely on what feels right. Many of the respondents in this study tried more than one possible response before giving their answers, commenting "that one feels better". To a certain extent this is true for the users of any language. There are many words that English speakers may use but be unsure if they are being used properly. However, the situation is more pronounced in BSL because of the lack of a standard

form, or any authority such as a recognised comprehensive grammar book.

Perhaps if there were standardised rules for the creation of signs from

English words by fingerspelling the strategies used by the signers would be

more uniform. On the other hand, if other factors such as fingerspelling skill,

signing skill and sociolinguistic attitude are important determiners, these

differences could be expected to continue.

7.4 QUANTITATIVE DESCRIPTION OF FINGERSPELLED VERBS IN THE SEE HEAR! CORPUS

In sections 4.7.1 (p146) and 4.7.2 (p149), the reasons for the lack of loan

verbs using manual letters were discussed. This section will give more detail

about the verbs that were used, and the forms they took.

7.4.1 Fully Fingerspelled Verbs

There were only 163 instances of fully fingerspelled verbs in the corpus. Of

these verbs, 31% were fingerspelled by people whose signing was heavily

influenced by English. These people were using predominantly English

grammar within their signing, by using English word order and function words

(or BSL sign translations of function words) and so would not have been

concerned if the verbs required English verb endings which could otherwise

have clashed with BSL grammar. As some of these verbs included English

verb morphology, they should be regarded as instances of code-switching,

even though many of the words were single word switches. For example,

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one signer, commenting on the poor organisation of a certain testing body, said that it reflected badly on the deaf assessors, and he fingerspelled "reflects" complete with the English verb inflection "-s", but this was the only fingerspelling he used in the utterance. There were many other verbs, however, which were used in the infinitive. These verbs were produced by only 18 people, most of whom spoke while signing, and the verbs occurred predominantly in the early series of See Hear! when signing was more often accompanied by speech than in the later series (see Allsop, Woll and Spence, 1990 for more details of this). Eighty-four percent of the occurrences of verbs of this type occurred in the first five series.

A further 31% of the verbs in the See Hear! corpus were produced by older Scottish, Irish and Welsh people whose BSL involves considerable fingerspelling. This is best considered as code-switching, because the verbs frequently are fingerspelled using English grammatical morphology. For example, one elderly Scottish woman signed a sentence translated as "I got a doll which was made of wax...I really loved that doll but I was always picking pieces off it". The words "got", "was", "loved" and "picking" were all fingerspelled complete with English verb morphology.

Only a small proportion (13%) either had no commonly accepted sign equivalent (eg -l-o-b-b-y- or -o-u-t-l-a-w-) or accompanied a sign for clarification (eg -a-b-s-e-i-l-i-n-g- ABSEIL or -i-n-s-u-l-a-t-e- INSULATE) or were being used in an unusual way (eg -s-w-e-a-t- as a culinary term) .

A further 5% were being used as exact quotations of English, for example, the title of a television programme ("-h-a-n-d-l-e- WITH CARE") or a

quotation of a speaker ("YOU -g-o-i-n-g- -t-o- -b-e- -a- -d-a-d-, CLEVER -c-h-a-p-"), or to explain an acronym ("-t-a-c-k-l-i-n-g- ACQUIRED-DEAFNESS").

3% were fingerspelled for emphasis (eg "HOW -d-a-r-e- YOU TELL-ME...!").

Another 3% were for explaining the meaning of a sign in English (eg "HIBERNATE. THAT SIGN FOR -h-i-b-e-r-n-a-t-e-").

4% were verbs being used nominally, adjectivally or as part of noun or adjective phrases (eg doing lots of -m-o-d-e-l-l-i-n-g- at school)

The remaining 12% (eg -c-o-p-e- or -h-e-l-p-) have adequate sign equivalents within BSL but were still fingerspelled. Importantly, all these were in the infinitive. The significance of this will be discussed below.

7.4.2 The Use of SMLS in Loan Verbs

The structural differences between English and BSL, outlined in section 4.7.2 (p149), are the cause of so few fingerspelled loan verbs in BSL. However, the most common process used for lexicalisation of a loan fingerspelling into BSL is to take only the first letter of the English source word and create a SMLS. The use of SMLS verbs will now be considered.

The creation of a SMLS verb is the only way to borrow through the manual alphabet and avoid breaking the following two rules of BSL:

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a) In BSL fingerspelling, the hands do not move through the signing space during the articulation of a word.

b) In BSL signs, when two hands move and change shape, they are subject to the "symmetry constraint" which requires both hands to have the same handshape (eg MAGIC). In BSL fingerspelling the second, passive, hand is often a different shape from the active hand.

It is possible that some lexicalised verbs which involve only one manual letter behave as agreement verbs. In this type of sign, the verb may be inflected through movement for person and number. In some cases this handshape is made repeatedly as the sign moves through syntactic space. Two agreement verbs are QUESTION (-q-) and ANSWER (-a-). Both these lexicalised signs have sign synonyms which are not based on modern fingerspelling. The synonyms, however, inflect slightly differently. This is discussed in greater depth in section 8.4.1 (p303).

ADVISE (-a-) was used in the See Hear! corpus, modulated through movement, but the handshape was not repeated. Other possible agreement verbs include PROPOSE, RECOMMEND, REPRESENT and VISIT. These mirror other BSL signs with similar handshapes and movements eg HELP and ROLE-MODEL. It is possible, however, that these verbs move for reasons other than grammatical inflection. The surface form of the handshape moving away from the speaker may not be driven by movement from first person to second person. Instead, it may simply be a plain verb that has an iconic movement incorporated into it (as SMOKE does). It is also possible that some signers may use the sign as an agreement verb and some as a plain verb, depending on their perception of the sign's derivation (i.e

either a fully integrated BSL sign or an English-based fingerspelled sign). It is also possible that many of these "verbs" are not verbs at all but function more as nouns than verbs.

This showed up clearly in Study 5, in which the 'verbs' PROPOSE and REPRESENT were offered in a selection of sentences. They were treated not as verbs at all, but as nouns. For example, a sentence that had been expected to be interpreted as "The BDA represents each of those people" was frequently interpreted as "Each of those people is a BDA representative".

If the verbs described above are indeed verbs, then they are single manual letter handshapes, fully integrated into the phonology of BSL, and which should have no problems moving just as any other BSL verb sign, but they still are very rare. In the entire See Hear! corpus, producing 512 examples of nonce SMLS, only 12 were verbs. This is 2.3% of the SMLS. As these were only the first letters, there is not always evidence of any intended English inflection of these verbs (there is no BSL inflection visible), but from the translation of the signing, and from the signs that are accompanied by speech, it would appear that eight of these verbs are in the infinitive.

Sections 4.7.1 (p146) and 4.7.2 (p149) outlined the structural problems that occur when verbs need to be borrowed from English to BSL. It is proposed here that the reason for this lack of SMLS verbs is linked to the structural differences and lies in some of the ways that BSL shows morpho-syntactic information. The two important features are changes in handshape and addition of BSL mouth patterns.

The handshape of a single manual letter sign and its accompanying English mouth pattern are vital for its meaning. This is the problem with SMLS verbs.

If the handshape of a SMLS changes, the whole identity of a single manual letter sign has gone. Consequently, verbs that incorporate the subject or object into the handshape cannot be single manual letter signs. An example of the structural conflict may be seen in the verb GIVE. There is no physical reason why the -g- handshape cannot be moved exactly as the handshapes used in GIVE. In fact, if a bunch of flowers is given, the handshape is virtually identical. So it must be the inability of the sign to contain all the information that renders it unworkable.

A single manual letter verb must have the English mouth pattern to give it meaning. There is not enough information in the manual part of the SMLS for full identity. Consequently, if a SMLS is used, it must be accompanied by the English mouth pattern. This mouth patten is vital for the disambiguation of potential homonyms. For example REPRESENT and RECOMMEND would both look exactly the same on the hands, and must be disambiguated by the mouth patterns. However, it has already been mentioned in section 4.7.3 (p151) that manner and aspect in BSL are frequently marked using BSL mouth patterns, including "mm", "ee" and "th", expressing ease, effort, boredom, length of duration etc.

This situation causes another conflict, because two separate mouth patterns, showing different information, are required simultaneously. Consequently a

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verb SMLS cannot show all the information necessary. It is for this reason that these SMLS "verbs" may, in reality, be nouns, for which only the English mouth pattern would be needed. Admittedly, it is possible for nouns to take adjectival non-manual features. However, the adjectival non-manual features are not essential, and the SMLS nouns in this data do not appear to use them to any great extent.

There are fingerspelled verbs of two manual letters that are fairly commonly used in BSL, but for this to occur, either the verb does not move, or the fingerspelling becomes one-handed. There is one lexicalised fingerspelled plain verb that is two letters long: DO (-d-o-). DO may also be made using only the active hand. It is worth noting that in this verb the handshape does not change much and it is possible to make the sign simply by moving the active hand along from the index finger to the ring finger of the passive '5' hand. So far, there do not seem to be any lexicalised two-letter verbs which are not plain verbs.

Battison (1978) describes several restructured lexicalised ASL loan verbs containing two manual letters. This is possible because the one-handed nature of the fingerspelling means that movement during the spelling of two manual letters does not violate the symmetry constraint, because there is no second hand.

There are also some lexicalised BSL loan verbs which are one-handed. They may have their roots in fingerspelling with two two-handed hand-arrangements or they may be loans from languages using one-handed manual alphabets. For example the verb NO (meaning "I say no to you")

may be derived from the two-handed letters, although it is one-handed now. The -n- is articulated using only the active hand and the -o- is no longer the traditional British -o- but a modified form of the unofficial alternative one-handed 'O' handshape. The result is a one-handed sign with properties similar to the ASL one-handed lexicalised fingerspellings which are able to move when there are two letters eg #OK and #OFF (as mentioned in Battison (1978). Battison uses the # prefix to show that the sign is a restructured ASL fingerspelling loan). The sign #OK has been borrowed into BSL from ASL. During this research, however, it was never used in BSL as a verb, but only as an interjection or an adjective.

It seems that the grammatical requirements of BSL prevent nonce use of single manual letter verbs (which by definition have an English mouth pattern and a fixed handshape) because of the need within BSL to have grammatical information (through changes in mouth pattern and handshape) within verbs.

The above section has outlined the reasons for the lack of loan verbs using the manual alphabet. Although the specific reasons for the lack are unique to the situation of borrowing from written and spoken English into BSL, the general principle has been shown to be the same as for other languages. This is that the loans of a certain grammatical class are subject to the structural constraints operating between the two languages.

7.4.3 Loan Function Words

Some fingerspelled English function words are those which reflect English grammar and are not normally used in BSL. The reasons for borrowing these

are different from the reasons for borrowing a new lexical item. Rather than being borrowed through lexical necessity, these function words are often borrowed as a result of sociolinguistic factors. English function words tend to be used by those whose language is strongly influenced by English, either because the signing is accompanied by speech, or is being read from an English script, or because it is based on the pedagogical system of manual English, where articles and other morphological features of English are added to signs from BSL (Southern Working Party, 1985). Examples include a-n-d-, -t-h-e-, -t-h-a-t-, -a-, and -i-t-. They may also be used when a signer is quoting a speaker or some text exactly eg the book title "When the mind hears" was signed in the See Hear! corpus as WHEN -t-h-e- MIND HEAR.

Some function words have clearly been lexicalised within BSL and (as one deaf informant commented) "it's impossible to avoid using them". Examples are -o-r-, -f-o-r-, -s-o-, -b-u-t- and -i-f-. These function words may undergo modifications as part of the process of lexicalisation described in the following chapter.

Although it is often claimed (eg Haugen, 1950) that function words are rarely borrowed between languages, the form of English function words makes them particularly unproblematic for borrowing into BSL, having only two or three letters. The close contact between English and BSL is also a factor.

It is not clear why some function words are borrowed and some (such as "and") are not. Certain English function words, such as articles have no place in BSL, as the language does not use separate articles. Independent signed prepositions are not often used either, because the spatial

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relationship between referents is shown in other ways. There are, however, independent non-derived signs for prepositions, and there is also a common non-derived sign AND. There is no readily apparent reason why fingerspelled signs should not be used as synonyms or near synonyms for these and other closed-class lexical items, just as they are for "if" and "but". It is easier to explain why a linguistic unit *has* been borrowed than it is to explain why a unit has *not* been borrowed.

The use of the function words, and their relationship with BSL signs fulfilling the same function is complex. Some of them have slightly different meanings, and some are register or dialect differences. For example, some of the signers interviewed for this project claimed that BUT would normally be used in general signing, with -b-u-t- used as a more forceful interjection. Interestingly, others claimed the reverse to be true.

The fingerspelled forms of some function words may also be used as time-fillers while the signer is thinking. The words "but", "so" "or" may all be used to buy time in both English and BSL, by indicating that the speaker still wishes to hold the floor, but in BSL the fingerspelled forms are longer than the other BSL signed forms, giving the signer more time to think how to complete the phrase.

7.5 DIALECT AND REGISTER IN THE USE OF FINGERSPELLING

7.5.1 Use of fingerspelling in variants of BSL

It is clear that the use of fingerspelling and the manual alphabet is not consistent throughout all dialects and registers of BSL. Lexical borrowing is not uniform in any language community. Scotton and Okeju (1973) have noted:

> An adequate model for lexical borrowing must take into account the subgroups of speakers involved in the language-contact situation and their sociological profiles. Speakers of any language can be considered a single unit only in the sense that they share some common core of competence in that language. Otherwise, especially in terms of performance, these speakers must be viewed as members of particular sub-groups within the larger community. (1973:872)

Previous research (Woll and Sutton-Spence, 1990) has shown that the amount of fingerspelling used varies according to age, regional dialect and the amount of spoken English accompanying the signing. This study, however, only distinguished between use of fingerspelling and the manual alphabet as an established part of BSL, and as a result of nonce borrowing from English. The research showed that the use of "BSL fingerspellings" (i.e., those fully established in BSL) did not appear to vary among dialects. Fingerspelling of "English fingerspellings" (i.e. those only used once or twice and not by many signers) did vary.

It is rarely easy to decide if two language varieties are dialects of one language or two separate languages. This decision is easier for some languages than others. Kibbee (1993) remarks that the strict linguistic controls placed upon French by the institutionalised guardians of the French language makes the definition of French a relatively simple task. English, however, recognises far greater lexical, phonetic and syntactic differences (see also Wardhaugh, 1992, and Trudgill, 1983). To judge from much of the literature on sign language variation (eg Bragg, 1990), and from data collected for this research, the lexical, phonetic and syntactic variety tolerated within BSL and other sign languages is even greater than that in English.

Frequently the boundaries between languages are defined by sociolinguistic criteria, rather than linguistic ones. Members of the deaf community interviewed as part of this study were asked if they considered the language variety that is used by older deaf people (and heavily influenced by fingerspelling) to be a form of BSL, English, or something else. They all felt strongly that it was a dialect of BSL. This must be a sociolinguistic decision, as older deaf people are an important part of the deaf community, with strong cultural identities, but their language is very different from that of younger deaf signers.

However, there are also linguistic reasons for seeing older people's use of fingerspelling as something other than English orthography on the hands. The fingerspelling of older signers is produced with a coarticulation, rhythm and pattern peculiar to BSL signers. It is more than a mere concatenation of citation forms of letters of the manual alphabet as seen on fingerspelling

charts. It is also not uncommon for the signer to omit letters from the English words, which may indicate that the fingerspelling is within BSL rather than being code switching into English. This patterned form of fingerspelling creating a "movement envelope" is discussed in greater depth in section 5.1.3 (p160).

The syntax, as evidenced by the order of lexical items and use of signing space, may also be different from English. The fingerspelled words produced by older deaf people are often produced in BSL sign order rather than English word order and may be placed within the signing space according to BSL placement rules. They may also be used in English word order, mixed with BSL signs. One older deaf Scottish signer in the See Hear! corpus (described in section 6.2, p184) signed the following utterance:

-e-v-e-r-y- -m-m-(MOTHER) -s-o-n- YOU -f-r-o-m- -m-m- (MOMENT) BORN YOU -p-a-m-p-e-r-e-d- -p-e-t-t-e-d- -a-n-d- POWDER -a-n-d- GROW-UP -e-x-p-e-c-t-i-n-g- SAME -a-l-l- YOUR LIFE. ("Every Mother's son of you, from the moment you're born, you're pampered, petted and powdered, and you grow up expecting the same all through your lives.")

In this utterance the signer uses established fingerspellings (-s-o-n-), established SMLS (MOTHER), English words (-e-v-e-r-y-) and inflected English words (eg -p-o-w-d-e-r-e-d-), as well as BSL signs (BORN) and inflected BSL signs (YOUR pl). (See section 1.6.2, p32.)

Fully fingerspelled utterances are less common among younger signers who have not used it extensively in school. Fingerspellings are interwoven with a

predominantly signed discourse. Some occurrences of letter handshapes are of lexicalised fingerspelling signs and should not be seen as having any link with English, beyond a historical one. The occasional fingerspelling of English words can be seen as a form of code-switching between BSL and English (if a phrase is fingerspelled), or as using less well-established loan words derived from English (if a single word is fingerspelled or a single manual letter is articulated). The signing of younger signers is often accompanied by extensive use of English mouth patterns.

7.5.2 Analysis of the See Hear! data

An analysis of the See Hear! data (described in section 6.2, p184) using the different types of use of the manual alphabet, as outlined in Chapter 1, will demonstrate how social dialects of BSL use the manual alphabet in very different ways. For this purpose, the use of the manual alphabet may be divided into 4 categories:

a) use of the first letter only (SMLS),

b) use of more than one letter, forming an abbreviation of the English word,

c) fingerspelling a complete proper noun,

d) fingerspelling any other complete English word.

The strategy of "whole" fingerspellings was divided into those of proper nouns and those of complete English words because it has been shown that these two may be used differently by different signers (Deuchar, 1978).

The analysis was carried out for two groups of signers, observed signing on See Hear! The first group consisted of presenters of the programme, for

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whom there is considerable data. The second group contained all other British deaf signers who signed on the programmes. For each individual in this second group, there may be very little data, but there are many individuals, and together they produce a large quantity of data.

The total number of occurrences of each of the four types of use of the manual alphabet, was recorded for users of various dialects and registers. This total was divided by the number of sentences signed by the users, to determine the number of fingerspellings per sentence. The figure obtained was multiplied by 100 in order to make numbers larger than one. These scores will be referred to as "modified percentage" for ease of expression, although it must be remembered that the actual score is one hundred times smaller. The use of data with such wide variation, in which it is not possible to conduct any statistical tests as part of any analysis has already been justified. An analysis of the modified percentages here for each group, however, is very informative, even if statistical significance cannot be meaningfully tested.

7.5.3 Dialects

The variation in use in social dialects will be considered here. The data shows that the use of the different types of fingerspelling is linked to the signers' affinity to English. The important variables in this dialectal investigation appear to be the age of the signer and the use (or otherwise) of simultaneous speech and sign.

Variation According to the Sex of the Signer

Preliminary analysis of the fingerspelling of men and women showed that sex was not a relevant factor in creating a difference in the use of types of fingerspelling. The modified percentage for women's use of SMLS was 12.8 and that for men was 10.7. The modified percentages for whole English words were 29.8 (women) and 28.0 (for men). It cannot be shown from this data that there is no statistical difference between the modified percentages, but these figures are not widely different, and given the wide range of individual differences within each group, it is highly unlikely that any significant figure would emerge. This may be seen in Table 7.5

	Men	Women
SMLS	10.7	12.8
Whole English words	28.0	29.8

Table 7.5: Uses of full fingerspelling and SMLS in men and women

Variation According to the Age of the Signer

There is a strong link between the age of the signer and the use of first letter only. As the age of the signer in the corpus increases, the number of uses of SMLS decreases.

The use of fingerspelling to recreate the orthography of a complete English word ("whole words") is also linked to the age of the signer in the corpus. As

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the age of the signers increases, the number of fingerspellings of whole words increases, as may be seen in the Table 7.6 below.

Age group	SMLS	Whole English words
Under 25	16.5	8.7
26-45	12.2	24.2
Over 45	6.7	52.3

Table 7.6: Percentage occurrence of uses of SMLS and whole English words in age groups

It may be claimed that young people have a good command of neither BSL nor fingerspelling, which leads them to resort to use of first letters of the English word. A less value-laden explanation could be that this is the natural outcome of a language contact situation in which the bilingual users utilise their skills in both languages.

Variation According to the Influence of English on the Signing

There is also a strong link between the type of communication used by the signer and both the amount of SMLS used, and the number of whole English words fingerspelled.

The population of signers was divided into those who signed and used their voice simultaneously (SSVV), those who used their voice occasionally while signing (SSV) and those who signed only, and never used their voice (SO).

The use of SMLS increased as the signers used more spoken English in their signing. The modified percentages may be seen in Table 7.7.

The use of whole English words decreased as signers used more spoken English in their signing, although the decrease is not smooth going from SO to SSW. The modified percentages may also be seen in Table 7.7.

	SMLS	Whole English words
SO	6.9	32.0
SSV	12.9	22.0
SSW	22.33	24.3

Table 7.7: Percentage occurrence of uses of SMLS and whole English words in dialects variously influenced by English

It is likely that there is some degree of interaction between these two factors of age and type of communication used, as certain age groups show preferences for certain communication modes. Older signers are much more likely to use signing unaccompanied by any speech. There is not, however, a simple relationship of age of signer and preference to use simultaneous sign and speech.

The following table (Table 7.8) shows the percentage of users of each communication mode within each of the three age groups.

	Under 25	25 to 45	Over 45
SO	52%	66%	79%
SSV	29%	10%	8%
SSW	19%	24%	13%

Table 7.8: Percentage of users of each communication mode within each of the three age groups.

However, another important explanation for these results could be that signers who sign and speak simultaneously do not have time to fingerspell whole words while speaking at a normal rate. It is easier, therefore, to sign only the first letter, as the articulation of a single letter can be fitted in to the time-span available.

Further evidence for the importance of communication mode in the use of different types of use of the manual alphabet comes from the analysis of the use of fingerspelling and the manual alphabet by the presenters of the series. Of the four deaf full-time presenters on the programmes, two signed and spoke simultaneously (i.e. SSW), while two did not speak at all while signing (i.e. SO). All four signers were between the ages of 25 and 45. The modified percentages for the use of SMLS and whole English words were calculated in the same way as those for the other signers appearing in the series.

For the two SO presenters, the modified percentages for SMLS signs were both 7. For the two SSW presenters, the modified percentages for SMLS were 15 and 13. (See Table 7.9.) Thus, it may be said that the influence of spoken English is more likely to increase the use of SMLS.

	SMLS	Whole proper nouns	Other whole content words
SO Presenter 1	7	30	19
SO Presenter 2	7	24	12
SSW Presenter 1	15	27	20
SSW Presenter 2	13	29	13

Table 7.9: Percentage occurrence of uses of SMLS and whole fingerspellings for different presenters of See Hear!

When considering the use of fully fingerspelled words, it is important to note that all four presenters were skilled fingerspellers, so ability to fingerspell cannot be a relevant factor here in any variation in fingerspelling that may be found. All presenters were required by the nature of the television register to fingerspell the names of people and places relevant to the programme. The modified percentages for fingerspelling whole names were 30 and 24 for the "SO" presenters, and 27 and 29 for the "SSW" presenters.

For these presenters, however, the data is less clear concerning the fingerspelling of whole English words that were not proper nouns. Analysis of the other signers on the programme showed that those using SSV and

SSVV (i.e. using speech while signing) had a tendency to use fewer whole fingerspellings than those using SO (i.e. who did not speak while signing). Of the two SSVV presenters, one had a modified percentage of 20, and the other a modified percentage of 13. Of the SO presenters, one had a modified percentage of 19 and the other of 12. The modified percentages of the SO presenters do not need explanation as there is no physical factor constraining the amount of fingerspelling while signing. However, the modified percentages for those who speak while signing do need further consideration.

These SSVV signers might be expected to have quite a low modified percentage for fingerspelling whole words because of the stated problem of synchronising relatively rapid speech with relatively slow fingerspelling.

The SSVV signer with the relatively high modified percentage of 19 may be an exceptional signer, however. In an interview conducted with her in 1990, she remarked that as part of her work as a television presenter, she had worked hard to develop her ability to say one thing and to sign and fingerspell something different at the same time. Given this particular skill, the signer would be less constrained by the time available to speak and fingerspell simultaneously.

7.5.4 Register

The question of register is also important for a complete study of the use of fingerspelling within BSL.

It is a well-established observation that language use varies according to the social situation in which it is used. The form of the language used as a result of a given social situation is the register used (Joos, 1968, and Zimmer, 1989). In spoken languages, differences in vocabulary, grammar and pronunciation may all be observed depending on register.

There has been far less detailed research on register in sign languages, and even less in BSL, although Deuchar's work on diglossia in BSL is a useful starting point (Deuchar, 1978).

Deuchar considered the use of fingerspelling in the H and L varieties she identified. She made the general observation that there was more fingerspelling used in H varieties, than in L varieties, and attributed this difference to the influences of English upon BSL in the higher variety of BSL, claiming that H had more fingerspelled loans from English than L.

While Deuchar's work is a useful start, particularly in considering formal and informal varieties of BSL, this is only one aspect of register. The use of fingerspelling is not known for other registers, nor the way that different forms of fingerspellings or SMLS are used in each register.

Zimmer (1989) has reported some research in the area of register, and provides information about the use of fingerspelling in different registers in ASL. Like Deuchar, Zimmer also used a model of register that is defined by the relative formality of the situation. This model, proposed by Joos, is not an entirely satisfactory model, as Zimmer herself admits, but provides a useful initial framework for research. However, Zimmer's results are limited

to the *amount* of fingerspelling used, and there is no analysis of the types of use. Halliday's work concerning register (1968) may be more useful, as it allows the consideration of any variety of language that is specific to a given social situation, not just those varieties defined by the formality of the situation.

Because of the nature of this particular corpus, it is not possible to study the relationship between fingerspelling and register in any depth. The conversational sign data for this study comes from a register specific to television. Indeed, to be able to make useful comments about the variation of fingerspelling in relation to the dialects of the signers, it is important to have the data produced in one general register.

It had been hoped that it would be possible to look at uses of different registers within the overall television register. Especially, it had been hoped that it would be possible to compare the signing used in "information giving" discourse (that might be seen as a higher register), with the signing used in interactive discussion with other signers (that might be seen as part of a lower register). Unfortunately the data did not permit this, because the presenters for whom there were sufficient data only participated in discussions in the role of questioner, which limited their signing output considerably.

In order to study the amount of fingerspelling used and the different types of fingerspelling used in different registers, it is necessary to have a large amount of signing data from one signer. The signer should be using several registers, to enable comparison. Such a study is outside the scope of this

one. However, within the See Hear! data, it is possible to select one signer (a presenter, using SO) for whom there is considerable data and look briefly at two identifiable registers, within the general "television" register. These are the signing that the presenter uses while addressing children, and the signing used in theatrical productions.

"Child" Register of an Adult

For both these registers, the signer would be expected to use less fingerspelling than usual. Children would be expected to fingerspell less because children's English orthographic skills necessary for decoding fingerspelling are less well developed. Padden (1991b) has noted that parents deliberately fingerspell less to their small children, and may substitute home signs when they might otherwise fingerspell. An example Padden gives is the use of the sign MONSTER CEREAL for the "Count Chocula" cereal brand (see section 5.2.2, p175).

The average number of uses of the manual alphabet per sentence for this See Hear! presenter in the corpus is 1.2. The average number of uses of the manual alphabet for this signer when he is addressing children is 0.15 (a total of only 27 instances of use of the manual alphabet).

Of these uses of the manual alphabet, 48% were fingerspellings of two and three letters and were whole words or acronyms, such as -b-s-l-, -w-e-b- and -f-o-r-. Thirty percent were SMLS such as -y-y- (YOUNG) and FAMILY. Unusually, perhaps, the remaining 22% were longer proper names and longer words. The signer fingerspelled a full name twice (one might expect the use of a name sign when addressing small children). He also

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fingerspelled the words "smudge" and "candle" to young children. In both cases, however, the fingerspelling was accompanied by the BSL sign translation.

"Theatrical" Register

It is commonly claimed that there is less fingerspelling in the BSL of theatrical drama because the fine movements of fingerspelling are hard to read in a large theatre, and because the different phonology and morphology of fingerspelled words interrupts the flow of BSL signing. If the former of these two reasons is most important, then there may be less restriction on fingerspelling when the drama is for the television medium in which the distance of the audience from the signer is not a factor.

Again, the signer studied here used the manual alphabet considerably less in the theatrical register than in general signing. The average number of uses of the manual alphabet per sentence in the three pantomimes for which there is data is 0.23 (a total of only 24 instances of use of the manual alphabet). Of this, 21% were SMLS such as -m-m- (MOTHER) and 33% were fingerspellings of words of two or three letters and acronyms, such as -b-u-t-. A further 21% of the fingerspellings were names of the characters in the pantomimes and 25% were fingerspellings of words of more than 3 letters. Table 7.10 shows how the uses of the manual alphabet compare in the two registers. Most noticeably, the use of fingerspellings longer than three letters is far greater in the "theatrical" register than in the "child" register, especially of anything other than a person's name.

Form of sign	"Theatrical" register	"Child" register
SMLS	21%	30%
2 or 3 letters long	33%	48%
> 3 letters long	25%	7%
Character names	21%	15%

Table 7.10: Percentage of different types of lexical items using the manual alphabet in "theatrical" and "child" registers

From this brief study, therefore, it may be concluded that there is evidence to support further claims made by Zimmer (1989) and others that certain registers use the manual alphabet differently and in different amounts.

7.6 SUMMARY

This chapter has shown that the use of the manual alphabet and fingerspelling in BSL is widespread and varied. The use varies according to dialect and register, as well as the grammatical and semantic strategy of the lexical item.

The next chapter will consider in more depth the form of fingerspelling in BSL, paying particular attention to the way in which the word-formation rules

of BSL influence restructuring of the fingerspellings produced in different ways.

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