

*British, Australian, and New Zealand sign languages: Origins, transmission, variation and change*¹

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In this chapter, we will examine the historical relationship between signed languages used in the United Kingdom (British Sign Language, or *BSL*), Australia (Australian Sign Language, or *Auslan*) and New Zealand (New Zealand Sign Language, or *NZSL*), as well as work on sociolinguistic variation and language change in all three sign language varieties. Following Johnston (2003), we will adopt the acronym *BANZSL* here (i.e., British-Australian-New Zealand Sign Language) to refer to all three signed languages as a group. We will begin by outlining the history of BSL and its transmission to the former British colonies of Australia and New Zealand, before discussing studies that have compared similarities in the lexicon of BSL, Auslan and NZSL. We will then explore the relationship between phonological, lexical and syntactic variation and change in these three related languages and social factors such as a signer's regional origin, age and gender.

1.1 The deaf communities in the United Kingdom, Australia and New Zealand

The prevalence of deafness in developed societies has long been estimated to be about 0.1 percent of the population (i.e., one in one thousand people) (Schein 1968, Schein & Delk 1974). If this were the case, one would expect the deaf communities of the UK, Australia and New Zealand to number sixty, twenty and four thousand individuals respectively, based on the national populations of each country. The precise number of signing deaf people in all three countries is, however, unknown. Published estimates vary from 30,000 (Sutton-Spence & Woll 1993) to 70,000 (Ladd 2003) for BSL, although higher figures sometimes appear on the internet (e.g., at the time of writing, the British Deaf Association's website give a figure of 250,000 deaf BSL users). Similarly, estimates for the size of the deaf community in Australia range from 6,500 (Johnston 2004) to 30,000 (Deaf Society of NSW 1989). The New Zealand deaf community is estimated to be between 4,500 (Dugdale 2000) and 7,700 (Statistics New Zealand 2001). Recent research indicates that there may be fewer people with severe

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and profound deafness in the populations of developed nations than has previously been assumed (Johnston 2004), so the lower figures are likely to be the most accurate ones in all cases.

Regardless of the numbers, the deaf populations in the United Kingdom, Australia and New Zealand each form thriving, cohesive communities. A representative organisation exists in each country: the British Deaf Association was established in 1890, the New Zealand Association of the Deaf in 1977 and the Australian Association of the Deaf in 1986. National and local deaf social and sporting clubs and associations are active in the major urban centres in all three countries, along with a range of welfare organizations specifically offering services to signing deaf people.

1.2 The history of BSL

The origins of BSL are unknown, as there are relatively few early records of signed language use in Great Britain (although many in comparison with other sign languages). BSL, and thus the related varieties Auslan and NZSL (see §1.3 below), nevertheless may be assumed to be relatively ‘old’ languages when compared to many of the signed languages that have been identified in other parts of the world. For example, Taiwan Sign Language dates back to only the late nineteenth century (Smith 1989), and Israeli Sign Language from the early twentieth century (Aronoff et al. 2003). In contrast, there is some evidence of links between BANZSL and varieties of signing used in Great Britain during the seventeenth century, as we explain below.

The earliest references to signing in Britain date from the fifteenth century, although there is no evidence to link these with BSL as it subsequently developed (Jackson 2001). For example, Princess Joanna of Scotland (1426-1486), who was born deaf, is described in contemporary records as using signs. There is also a report of signed communication used between deaf friends Edward Bone and John Kempe in Richard Carew’s *History of Cornwall* (1602). None of these early references, however, provide any formational descriptions of signs or of sign language grammar.

The earliest actual description of the signs used by a deaf Briton is found in the 1575 parish register of St. Martin’s Church, Leicester (Sutton-Spence & Woll 1999). It mentions that in February of that year, a deaf man by the name of Thomas Tillsye was married to a woman named Ursula Russel, and that Thomas made his wedding vows in sign. This record, however, provides very little detail about the signed language used. It is therefore impossible to know whether Tillsye used a home sign system, or an older variety of a signed language related to modern BSL.

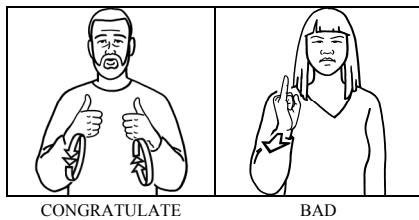


Figure 1. Two signs described by Bulwer (1648) that are still used in BSL, Auslan and NZSL today

Amongst the earliest records which describe the signed language(s) in use in seventeenth-century Britain are two books by John Bulwer, *Chirologia* and *Philocophus*, published in 1644 and 1648 respectively. The latter book was dedicated to a baronet and his brother, both of whom were deaf. Bulwer provided mostly written descriptions of the signs used by the deaf brothers, and some seem to closely resemble signs with a related form and meaning used in BANZSL today, such as GOOD, BAD, WONDERFUL, SHAME, CONGRATULATE and JEALOUS (see Figure 1).

A number of other written sources make it clear that some deaf people were using forms of signed language before the first schools and institutions for the deaf opened in Britain. In the novel *The Life and Adventures of Mr. Duncan Campbell, Deaf Mute*, Daniel Defoe described signs and fingerspelling as being widely used by deaf people in the early eighteenth century (Woll 1987). The famous diarist, Samuel Pepys, described an encounter with a deaf servant who signed to his master, George Downing, to tell him of the Great Fire of London in 1666 (Stone & Woll, in press). This reference has been used as the basis of the claim that an older BSL variety (referred to as ‘Old Kent Sign Language’) was a possible influence on the sign language of Martha’s Vineyard (Groce 1985). Groce herself reports that she was ‘unable to discover any direct references to deafness in the Weald [of Kent] during the seventeenth century’ (1985: 29-30), and no deaf people are known to have emigrated to Martha’s Vineyard. Nevertheless she conjectures on the basis of the Pepys’ diary entry that because Downing is known to have attended school in Kent in 1630, Downing had learned the local signed language. Although a full discussion of this issue is beyond the scope of this chapter, there appears to be no evidence to confirm Groce’s conjecture.

The more widespread use of signed communication among British deaf people, however, most certainly began with the advent of the industrial revolution from the 1750s and its accompanying social and economic changes. The resulting population explosion and the mass migration to cities led to a significant increase in the number of deaf children in urban centres, and this seems to have played a significant role in the introduction of public education for deaf children (Johnston 1989). The first

British school for deaf children (and perhaps the first school of its kind in the world) was opened in 1760 by Thomas Braidwood in Edinburgh, a few months before de l'Epée's institution (Jackson 2001). The school moved from Scotland to London in 1783, later becoming the London Asylum for the Deaf and Dumb in Bermondsey in 1792 (Lee 2004). It is likely, in a similar way to recent reports of the impact of the establishment of deaf education on deaf people in Nicaragua (Kegl et al. 1999), that these educational institutions created the first environment for a British deaf community and BSL to develop.

Joseph Watson (1809), Braidwood's grandson and the head of the London school visited by Thomas Gallaudet in London in 1815, provides a detailed description of the Braidwood approach, describing the use of signed languages as the means of instruction. The Royal Commission's report (1889) which followed the Congress of Milan, supports this view: "The first school for the deaf and dumb in Great Britain was started on the combined system in 1760 by Braidwood in Edinburgh". The 'combined' or 'English' system used both speech and signing. Francis Green (an American who sent his deaf son to Braidwood's school in Edinburgh) testifies that signing was used in that school (Green 1783: 152):

... observing that he [Green's son] was inclined in company to converse with one of his school fellows by the tacit finger language, I asked him why he did not speak to him with his mouth? To this his answer was as pertinent as it was concise: "He is deaf".

From the eighteenth century onward there are more records, including drawings and descriptions in English, of BSL signs and BSL syntax, which provide a relatively rich resource for researchers. The British anthropologist E.B. Tylor (1874: 27), for example, discussed the order of BSL signs as "1. object; 2. Subject; 3. Action", explaining that the signs 'door key open' are used to express 'the key opens the door', and 'I found a piper on the road' is translated by 'road pipe I find'.

By 1870, some 22 schools for the deaf had been established in the UK (Kyle & Woll 1985). Most of these were residential. The existence of these schools supported the creation and consolidation of the British deaf community and of modern BSL. Many schools were set up by former pupils and teachers (who were themselves deaf) at the older established schools, and this pattern of expansion was repeated in Australia, where the first schools were opened by former pupils and teachers from Britain, as we outline in the following section.

1.3 From BSL to Auslan and NZSL

Historical records clearly indicate that Auslan and NZSL developed from the varieties of BSL that were introduced into Australia and New Zealand by deaf immigrants, teachers of the deaf (both deaf and hearing) and others concerned with the welfare of deaf people from the early nineteenth century (Johnston 1989, Collins-Ahlgren 1989, Carty 2004).

Prior to the establishment of the first schools for the deaf, a number of signing deaf people from Great Britain had immigrated to Australia. The earliest known signing deaf person was the Sydney engraver John Carmichael who arrived in 1825 on the *Triton* (Carty 2000). There is a great deal of evidence that Carmichael used BSL and was indeed a talented storyteller in signed language. He was educated at the Edinburgh Deaf and Dumb Institution with Thomas Pattison, who later founded the first school for the deaf in Australia.

In New Zealand, the hearing teacher Miss Dorcas Mitchell arrived in New Zealand in 1868 with the family of a Reverend R. R. Bradley (Collins-Ahlgren 1989). Mitchell was a tutor to Bradley's deaf children, and had worked as an educator of deaf children in London. By 1877, she had taught a total of 42 deaf pupils in New Zealand, using signed communication in all cases.

Thus, historical records suggest that signed languages were in use amongst deaf and hearing immigrants in Australia and New Zealand prior to the establishment of schools for deaf children. The recorded history of the distinct Australian and New Zealand sign language varieties is, however, closely bound up with the education of deaf children and the establishment of schools for the deaf which began in the mid nineteenth century. The first two schools for the deaf in this part of the world were opened within a few weeks of each other in 1860, first in Sydney and then in Melbourne. As mentioned above, Pattison founded the Sydney school, while another deaf man, Frederick J. Rose (a former pupil of the Old Kent Road School for the Deaf and Dumb in London), opened the Melbourne school (Flynn 1984). The method of instruction in both schools seems to have involved use of fingerspelling and BSL, but more details are not known.

The first school for deaf children in New Zealand was opened in Christchurch in 1880 (Collins-Ahlgren 1989). Mitchell applied for the position of school principal, but this post was given instead to Gerrit van Asch, an ardent oralist who believed in an exclusive focus on the development of speech and lip-reading skills. It is said that he did not allow deaf pupils with any knowledge of a sign language into his school, and thus only 14 deaf pupils were admitted. Strictly oralist methods prevailed when additional schools for deaf children opened in Titirangi in 1940 and Kelston in 1958. Despite oralist

policy imposed by the government department of education, it seems that in the Catholic St Dominic's School (which opened in Wellington in 1944), some use of Irish Sign Language (ISL) by Dominican teachers trained overseas may have occurred in the early years.

Some deaf children from New Zealand travelled to Australia or Britain to attend deaf schools in these countries before, and even after, the establishment of the first school for the deaf in Christchurch (Collins-Ahlgren 1989). In the oral schools, however, some signing developed naturally amongst the school children in New Zealand and was used in the school dormitories, but it is difficult to know how much this school-based signing was influenced by BSL. Certainly, a number of signs developed in NZSL that do not appear related to anything documented in BSL (e.g., variants of MOTHER, FATHER, NINE, ELEVEN and TWELVE).

Unlike NZSL, the history of Auslan reflects a relatively smooth transition from BSL, with an uninterrupted pattern of transmission of signed language from Melbourne and Sydney to schools for the deaf in Adelaide (1874), Brisbane (1893), Perth (1896) and Hobart (1904). It appears that deaf children from Queensland were sent to the Sydney school until the opening of the Brisbane institution, and that children from elsewhere in the country were initially sent to the Melbourne school. This pattern appears to have formed the basis for the northern and southern dialects mentioned below.

1.4 BSL, Auslan, NZSL in the twentieth century

Unlike New Zealand, the use of signs and fingerspelling continued for some students in Australian and British schools for the deaf through the late nineteenth century and into the twentieth century, but many other students were also taught to speak and lip-read (Kyle & Woll 1985, Carty 2004). This was increasingly true after the Congress of Milan in 1880 where the majority of educators called for a ban on the use of signed communication in the classroom and demanded purely oral methods of instruction. School records from this period in Great Britain show falling numbers of deaf teachers of the deaf, and a decreasing reliance on signs in teaching (Brennan 1992). In all three countries, however, signed language certainly continued to be used in dormitories and playgrounds (Johnston 1989, Collins-Ahlgren 1989).

In the early to mid twentieth century, educational methodologies in the United Kingdom and Australia became increasingly focused on the sole use of spoken English as a medium of instruction. Following changes in educational philosophies in the 1960s, the emphasis shifted to 'normalising' the education of deaf children as much as possible, and residential schools began to scale down or close.

By the 1980s, deaf children were increasingly integrated into classes with hearing children or attended classes in small units attached to regular schools. The use of signed language came to be seen only as a last resort for those who failed to acquire spoken English. The increase in mainstreaming and closure of centralised, residential schools for deaf children meant that many deaf children did not have children from deaf families or deaf ancillary staff as linguistic role models (Johnston 1989, Smith 2003). Furthermore, from the 1960s, manually encoded forms of English were increasingly introduced into deaf education. This was particularly true in Australia and New Zealand where Australasian Signed English was introduced from the late 1970s. This highly standardised sign system was based on Auslan vocabulary from the Australian state of Victoria, supplemented by contrived signs created by a committee of educators of deaf children.

Despite the many changes in approaches to the education of deaf children in the last 145 years, it seems that BSL, Auslan and NZSL have remained the primary or preferred language of the British, Australian and New Zealand deaf communities throughout much of that time. There can be little doubt, however, that the various educational philosophies which dominated deaf education over the last century—all of which have variously emphasised skills in signed, spoken, fingerspelled, and written English (with different degrees of success) rather than the use of natural signed languages—have had considerable impact on the transmission of BANZSL varieties.

1.5 Comparative studies of the BSL, Auslan and NZSL lexicons

Native signers of Auslan and BSL report only lexical differences between the two languages, not grammatical ones. Indeed, it is part of the linguistic folklore of these communities, and perhaps justifiably so, that there are no major grammatical differences between the signed language used in Britain and Australia. This issue, however, has not yet been the focus of any empirical research, and there may be subtle differences in the grammars of the two varieties (e.g., differences in the marking of perfective aspect, for example). In contrast, comparative studies of the lexicons of BSL and Auslan show clearly that these two varieties have developed many distinctive signs of their own.

Woll, Sutton-Spence and Elton (2001) suggested that Auslan retains a significant number of older BSL signs that are no longer in use in the British deaf community. This claim may be accurate, but the reverse may also be true. Signers of all ages in the British deaf community, for example, continue to use signs for the numbers six (using the pinky extended from the first), seven (the pinky and ring finger extended), and eight (the pinky, ring and middle fingers extended) that are primarily only used by older

signers of Auslan. The processes of language change in both BSL and Auslan appear to have resulted in some older signs disappearing in one community, while being retained in the other.

Accounts of the degree of lexical similarity between BANZSL varieties have varied depending on a number of factors (Woll 1983, Johnston 2003). Studies have used word lists or samples of different size and composition and have involved different numbers of native signers in the research. The type of criteria applied to categorise signs as identical, similar or different has differed from one investigation to the next. The nature of the lexicographical work that produced the dictionaries consulted by the researchers, especially in regard to the recording of regional variants, has also varied between studies. Furthermore, because of iconicity, identical or similar signs may or may not be cognates (e.g., Woll 1983, Guerra Currie, Meier & Walters 2002). Similar signs may have developed completely independently in different signed languages. All of these issues explain why the various studies discussed below report different figures for the percentage of similar lexical items in BSL, Auslan and NZSL.

Woll (1987), for example, reported a similarity score of 90 per cent for the 257 core lexical items in her study comparing Auslan and BSL. In lexicostatistical work of this kind, it has traditionally been accepted that a result of 36 per cent to 81 per cent identical or related lexical items indicates that two languages belong to the same family, while languages with above 81 per cent shared vocabulary are considered dialects of the same language (e.g., Crowley 1992). Figures such as those reported by Woll (1987) would thus tend to suggest that Auslan and BSL are most appropriately considered dialects of the same signed language. However, ‘core’ signs (such as those for family relationships, common actions, basic descriptions of size and shape, etc.) are likely to have a high degree of stability over time due to their high frequency of use and thus may not represent the overall lexicons of the languages well. In order to study a more representative sample of lexical items, the comparison of randomly selected signs from published dictionaries, rather than just the comparison of the signs for a limited set of core vocabulary, is required. However, prior to the publication in the 1980s and 1990s of the first linguistically informed and comprehensive dictionaries of British, Australian and New Zealand signed languages it was difficult to make even lexical comparisons between the three languages with a degree of confidence. The first Auslan dictionary was completed in 1989 (Johnston 1989), the first BSL dictionary appeared three years later (Brien 1992) and the New Zealand dictionary followed in 1997 (Kennedy et al. 1997).

Studies by McKee and Kennedy (2000) and Johnston (2003a) used both a list of basic vocabulary items prepared by James Woodward (this list was originally designed by the American linguist Morris Swadesh but was later modified by Woodward for use with signed languages, see Woodward 2000), and a second, random method of comparison. The comparisons between each set of signed languages indicated that the percentage of identical and similar or related signs in each pairing was consistently high. For NZSL and Auslan, this ranged from 87 per cent to 96 per cent and for NZSL and BSL from 79 per cent to 96 per cent depending upon how criteria were applied and consideration given to regional and phonological variants in each language.

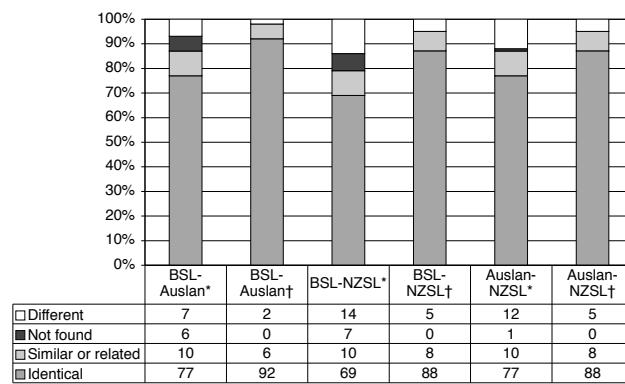


Figure 2: The similarity of signs in a Swadesh list in BANZSL varieties
(*McKee & Kennedy 2000, †Johnston 2003a).

For random based comparisons of the lexicons the degree of similarity is, not surprisingly, lower. Nonetheless it is only as low as 59 per cent between BSL and NZSL, and as high as 82 per cent between Auslan and the two other signed languages.

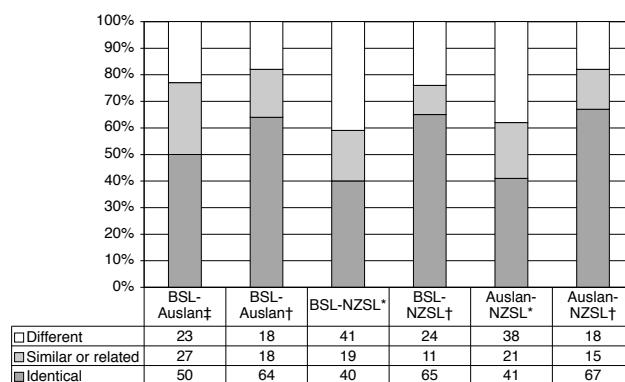


Figure 3: The similarity of randomly selected signs in BANZSL varieties
(*McKee & Kennedy 2000, †Johnston 2003a).

Despite the high percentages of similarity in core vocabulary described above, they are not identical. Indeed, though the divergence in the core vocabulary of the three languages may be small, it

might still be considered higher than one would expect for three dialects of the same language having only recently diverged from a common parent language. For example, a comparative study of thirteen spoken languages with a long tradition of written records showed an average vocabulary retention of 80.5 per cent for every thousand years (Crowley 1992). In the case of identical signs between NZSL and BSL, to retain ‘only’ 69 per cent of core vocabulary in common (the lowest score by the McKee & Kennedy study) after less than 200 years of separation may, therefore, imply a relative rapid divergence. It certainly appears to have created greater differences in core vocabulary than one might find between the varieties of English spoken in the United Kingdom, Australia and New Zealand (Crystal 1995).

The exclusive use of speech and the absence of deaf adult role models in deaf education between 1880 and 1979 may have resulted in a comparatively disrupted transmission of signed language in New Zealand from one generation of deaf children to the next. This was compounded by the relatively small size of the deaf community in New Zealand, and the smaller resulting number of deaf families. The use and knowledge of fingerspelling in New Zealand may reflect this history: research suggests that NZSL signers make significantly less use of fingerspelling than appears to be true of signers from the Australian and British deaf communities (Schembri & Johnston 2007). Indeed, many elderly NZSL signers reportedly only use ‘aerial spelling’ (i.e., spelling out words by tracing the shapes of the letters with an index finger in the air) (Forman 2003).

The continued use of novel school-based signs may partially explain the figures that suggest that NZSL shares fewer lexical items with both Auslan and BSL than these two languages do with each other. Nonetheless, it is clear that NZSL is part of the same signed language family as BSL and Auslan. A recent suggestion that NZSL is entirely an indigenous creole language that developed from the spontaneous school-based signing without significant influence from either Auslan or BSL appears implausible in the light of the reported lexical comparisons (Forman 2003).

1.6 Other signed languages with some BSL contact

One might expect that just as the spoken and written language of Britain (i.e., English) was spread around the world, its signed language—BSL, or at least the varieties of British-based signing used at the time—may likewise have spread. However, apart from some varieties of ASL and South African Sign Language, one can only find the remnants of a possible influence from BSL in some isolated lexical signs and a residual knowledge of the two-handed manual alphabet in some countries of the

former colonial empire such as India and Pakistan (Woll et al. 2001). For example, in a dictionary of the Bangalore variety of Indo-Pakistani Sign Language (Vashista et al. 1985), there are a few signs that are identical in form and meaning to BANZSL signs (e.g., SAVE, SCHOOL, SEE, SWEAR and TOMORROW). Of these signs, a small set clearly derives from the British two-handed manual alphabet (e.g., YEAR, IF, MONDAY and QUESTION)

Maltese Sign Language also shows evidence of contact with BSL (the Mediterranean island of Malta was once a British colony). Signs such as SISTER, BROTHER, WOMAN, GOOD, BAD and the numbers ONE to NINE are the same as BSL signs (Bezzina, n.d.)

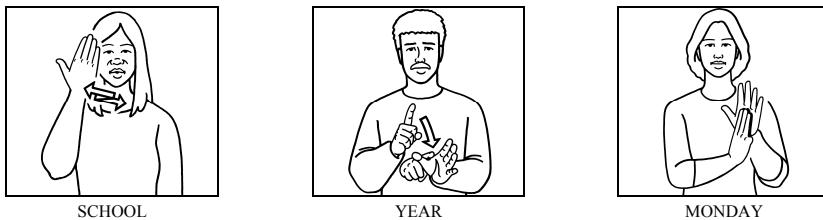


Figure 4: Some Indo-Pakistani Sign Language signs that are identical to signs in BANZSL.

Overall, however, the long-term impact of some of the schools for the deaf established in the days of the British Empire was minimal because the overwhelming majority of deaf children of school age in countries like India did not in fact receive an education. The numbers of deaf children who did attend the special schools of the time were insufficient to have a lasting impact on the signed language of emerging deaf communities, even if some of those schools employed British teachers, or teachers trained in Britain, who may have been familiar with BSL or BSL-related signed language.

In Ireland, many of the signs and the manual alphabet used there appear to result from contact with French Sign Language introduced by French nuns who established Catholic schools for deaf children, but there has also been contact with BSL (Matthews 1996). The first school for deaf children in Ireland was opened in Dublin, in 1816, and the first headmaster was trained in Edinburgh at the Braidwood school. It thus seems likely that some form of signing and fingerspelling may have been used at the Dublin school, perhaps influenced by BSL. This school later became the Claremont National Institution for Education of the Deaf and Dumb, which taught many Protestant deaf children for most of the nineteenth and twentieth centuries until its closure in 1971. Some elderly Irish deaf people who attended this school still use the British two-handed manual alphabet (Matthews 1996).

In North America, lexical similarities exist in only regional varieties of ASL, especially that used in the Atlantic, or maritime, provinces of Canada. Recorded in *The Canadian Dictionary of ASL* are a

number of signs such as ALIVE, ANNUAL, ASK, BAD, BEFORE, BOY, BREAD, BROTHER, BROWN, EASY, FATHER, GOOD, MOTHER, SLEEP and TRAIN (Bailey & Dolby 2002). These are identical in form and meaning to existing signs in BANZSL. Others, such as AGE, APPLE, MORE, SISTER, SURE and NOT-YET, closely resemble variants of signs found in BSL.

In South Africa, it appears that the influences were many and varied (Herbst 1987). Like elsewhere, schools were established by the Catholic church (e.g., Grimley Dominican School for the Deaf was established in Cape Town in 1874 by Irish Dominicans who used ISL-based signing). Other schools reportedly used BSL-based signing. A school for children from Afrikaans-speaking homes was established in 1881. However, South Africa has long been extremely culturally and racially diverse. There appear to be many varieties of signed language in South Africa which are quite unlike or unrelated to BANZSL (Penn et al. 1992), and those varieties in white English-speaking communities that have had contact with both BSL appear to share much lower levels of vocabulary with BSL than Auslan or NZSL (Woll 1987).

1.7 Sociolinguistic variation and change in BANZSL

The socio-historical circumstances of BANZSL varieties contribute to variation in usage, and this has served as the focus of a number of past and current studies of sociolinguistic variation in BSL (Deuchar 1981, Woll et al. 1991), Auslan (Schembri et al. 2006, Schembri & Johnston 2007) and NZSL (McKee et al. 2006). Each of these projects has focused on specific phonological, lexical, and syntactic variables that will be explored in the following sections. Variation in these linguistic features have been quantitatively correlated to social characteristics of age, region, gender, and for New Zealand, ethnicity (Pakeha/Maori).

1.7.1 Lexical variation and change

Lexical variation is significant in all BANZSL varieties and appears primarily to reflect signers' region of origin and age, as we will explore in the following sections.

1.7.1.1 Region

Regional lexical variation in BSL is well-known in the British deaf community. Research carried out at the University of Bristol by Woll, Allsop and Sutton-Spence (1991) involved the collection of lexical variants from BSL signers living in Glasgow, Newcastle, Manchester, London and Bristol. Flashcards with written English equivalents were used to elicit a set of signs from specific semantic fields including signs for colour terms, days of the week, and numbers. Signs for these concepts were known

to vary greatly and in fact, the study showed that signs used in Glasgow for the days of the week MONDAY to SATURDAY are all completely different from signs used elsewhere. In Bristol, for example, these same signs are all lexicalised fingerspelled loans (e.g. -M-M- for MONDAY), whereas in Glasgow, signs completely unrelated to fingerspelling are used. Some of this regional variation has been documented in the Dictionary of British Sign Language/English (Brien 1992) and in other publications (Edinburgh & East Scotland Society for the Deaf 1985), but compared to the lexicographic projects undertaken in Australia (Johnston 1998) and New Zealand (Kennedy et al. 1997), lexical variation and its relation to region in BSL remains relatively poorly described.

Regional lexical variation also exists in Auslan and NZSL. Johnston (1989) proposed that there are two main regional varieties of Auslan—a northern dialect (the states of New South Wales and Queensland) and a southern dialect (all the other states). Most noticeably, these two dialects differed (like BSL) in the signs traditionally used for numbers, colours and certain other concepts, such as temporal information (e.g., YESTERDAY, LAST-WEEK) and question signs (e.g., WHO). Indeed, there are important core sets of vocabulary in certain semantic areas (e.g., colour signs) in which every basic term is different in the northern and southern dialects (Figure 5). The relationship between these variants and BSL lexical variation is not yet well understood, but it must be pointed out that the southern dialect colour signs for RED, BLUE, GREEN and BLACK in Figure 5 below appear to be identical or similar to those signs traditionally used in London BSL (Royal National Institute for the Deaf 1981). This is particularly interesting given the historical links between the first deaf schools in Melbourne and London (see above).



Figure 5: Colour signs in the northern (top) and southern (bottom) dialects of Auslan.

There are also a number of state-based specific lexical differences that cut across this major dialect division, such as AFTERNOON (see Figure 6). Relatively few concepts, however, have more than four

distinct state-based sign variants in Auslan, however. Work is currently underway as part of a large scale sociolinguistic variation project to better describe lexical variation in Auslan and to correlate regional influences with other social factors, such as age, gender and social class.

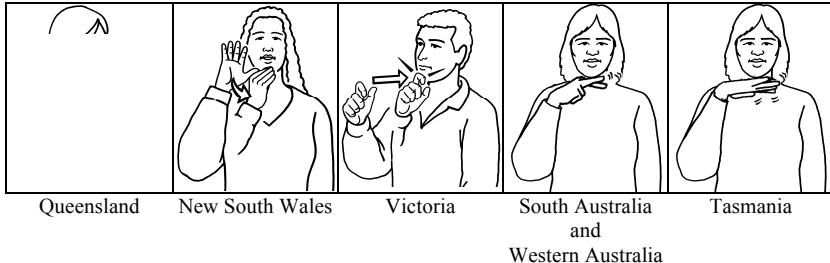


Figure 6: The sign AFTERNOON in various states of Australia.

In attempting to account for regional lexical variation within BANZSL, it should not be assumed that there was a single homogeneous signed language (an ‘Old BSL’) from which the current lexical variants in British, Australian and New Zealand varieties are historically derived. The variation is much more likely to be due to the fact that residential deaf schools were set up independently from each other in different parts of Britain, Australia and New Zealand during the nineteenth and twentieth centuries. When these schools were established, there was no single, centralised training programme for teachers who wanted to use sign language in the classroom; thus the signs used within each school (by the teachers and by the students) must have varied from school to school. Furthermore, in some schools, signed communication was forbidden, leading to the creation of new signs by deaf children while using their signed communication outside the classroom. Because sign languages must be used face to face, and because opportunities for travel were few, each variant tended to be passed down from one generation to the next without spreading to other areas. In a 1980 survey (Kyle & Allsop 1982), for example, forty per cent of people surveyed in the Bristol deaf community claimed that they had never met a deaf person from farther than 125 miles away. As a result, around half of the individuals said they could not understand the varieties of BSL used in distant parts of the UK.

Of course, the situation is very different today. Travel within the UK, Australia and New Zealand (and indeed between these three countries) is much easier, and so signers more commonly come in contact with other regional variants. There is also regular signing on broadcast television in the UK. Thus deaf people are now exposed to many more lexical variants of BSL than they once were. It appears that this is the reason deaf people now report much less trouble communicating with those from distant regions of the UK (Woll 1994). Indeed, it is possible that this greater mixing of the variants may lead to dialect leveling (Woll 1987). There is in fact much controversy amongst sign

language teachers surrounding the issue of dialect levelling and standardisation, with conflict arising between preserving traditional diversity within BSL, Auslan and NZSL and the notion of standardizing signs for teaching purposes (e.g., Elton 2006).

1.7.1.2 Age

As is well known, the vast majority of deaf people have hearing families and the age at which they acquire signed languages may be very late. Thus the intergenerational transmission of BANZSL varieties is often problematic. This can result in some fairly extreme differences across generations, such that younger BSL and NZSL signers sometimes report difficulty in understanding older signers. A study reported in Woll (1994), for example, showed that younger signers (i.e., those under 45 years of age) recognised significantly fewer lexical variants in BSL than older signers. An earlier study of the Bristol and Cardiff communities showed that the BSL colour signs BROWN, GREEN, PURPLE and YELLOW and numbers HUNDRED and THOUSAND used by older deaf people were not used by younger deaf people from hearing families in Bristol (Woll 1983). New signs had replaced these older forms, with the colour signs having an identical manual form that was differentiated solely by mouthing the equivalent English words for ‘brown’, ‘green’ etc.

Sutton-Spence, Woll and Allsop (1990) conducted a major investigation of sociolinguistic variation in fingerspelling in BSL, using a corpus of 19,450 fingerspelled items collected from 485 interviews with BSL signers on the deaf television programme *See Hear*. They analysed the use of the British manual alphabet in relation to four social factors: sex, region, age and communication mode used. There were no significant effects due to gender on the use of fingerspelling, but age was significant. Sutton-Spence and her colleagues found that over 80% of all clauses included a fingerspelled element in the data from those aged 45 years or older. In comparison, fingerspelling was used in fewer than 40% of clauses in the data from participants aged under 45. Region was also an important variable: the most fingerspelling was found in the signing of individuals from Scotland, Northern Ireland, Wales and central England, with the least used by signers from the south-western region of England. Data from signers in northern England and in the southeast included moderate amounts of fingerspelling. Deaf individuals who used simultaneous communication (i.e., speaking and signing at the same time) also used significantly more fingerspelling than those who used signed communication alone.

A much smaller study of fingerspelling use in Auslan by Schembri and Johnston (2007) found that that deaf signers aged 51 years or over made more frequent use of the manual alphabet than those aged 50 or younger. This was particularly true of those aged 71 year or older.

In both Auslan and BSL, these age-related differences in fingerspelling usage undoubtedly reflects the educational experiences of older deaf people, many of whom were instructed using approaches that emphasized the use of fingerspelling. Language attitudes may also play a role here, with older people possibly also retaining relatively stronger negative attitudes towards sign language use, although this has not yet been the focus of any specific empirical study. Language change is important here too, as many older signers appear to prefer the use of traditionally fingerspelled items rather than the ‘new signs’ used by younger people. For example, signs such as TRUCK, SOCCER and COFFEE were used by younger signers in the Schembri and Johnston (2007) dataset, whereas only older individuals fingerspelled T-R-U-C-K, S-O-C-C-E-R and C-O-F-F-E-E. In NZSL, the changing status of sign language manifests itself in generational differences in the extent of English mouthing, rather than fingerspelling, as a contact language feature. A preliminary analysis of variation in mouthing in NZSL shows that signers over the age of 65 years accompany an average of 84% of manual signs with mouthing components, compared to 66% for signers under 40 (McKee 2007).

One of the first studies to emerge from a large scale investigation into sociolinguistic variation in NZSL has revealed that variation in the NZSL numeral signs ONE to TWENTY is systematically conditioned by social characteristics, especially age (McKee et al. 2006). Like the sociolinguistic variation in Auslan project mentioned above, the NZSL sociolinguistic variation project represents a replication of quantitative research into variation in ASL conducted by Lucas, Bayley, and Valli (2001). The study draws on a corpus of NZSL generated by 138 deaf people in conversations and interviews; the sample is balanced for region (Auckland, Palmerston North/Wellington and Christchurch), gender, and age group. All participants acquired NZSL before the age of 12 years, and the majority of these before the age of seven. Multivariate analysis of this data revealed that age has the strongest effect on variation in the number system, followed by region and gender. With respect to region, signers from Auckland (the largest urban centre) are slightly more likely to favour less common variants forms than those from the Wellington and Christchurch, who are more likely to favour the more standard signs that are used in Australasian Signed English. Overall, men are slightly more likely than women to favour less common forms, although gender has the weakest effect of the three social factors.

Variation in numeral usage reveals diachronic change in NZSL, and increasing standardisation in this subset of the lexicon: all 15-29 year olds produced the same forms for numerals ONE to TWENTY,

except for numbers NINE, ELEVEN, TWELVE and NINETEEN which exhibited minor variation. Apart from these exceptions, they uniformly favoured signs introduced from Australasian Signed English. Signers over 30 years of age, and especially above 45 years, exhibited more in-group variation (using a greater range of lexical variants), reflecting the fact that they were not exposed to a conventional signed lexicon at school. These results confirm the powerful standardising impact of introducing total communication approaches into deaf education in 1979.

Distinctive forms produced by the youngest and oldest age groups show that numerals in NZSL (particularly numbers above FIVE) have been partly re-lexified, mostly because Australasian Signed English forms (themselves based on Auslan signs) replaced older variants. For certain numbers, such as EIGHT, the change is complete, in that none of the youngest age group use older forms of this numeral. In other cases, alternate variants still co-exist, or in some cases, a change is apparently in progress towards a standard form.

1.7.1.3 Gender

Although anecdotal reports suggest that a small number of Auslan lexical variants may be used differently by women and men (e.g., the different signs HELLO or HI described in Johnston and Schembri 2007), there have not yet been any empirical studies demonstrating systematic lexical variation in any BANZSL variety due to gender. There have, however, been studies reporting the existence of other types of gender variation. In terms of conversational interaction, for example, Coates and Sutton-Spence (2001) showed that female BSL signers in their dataset tended to set up a collaborative conversational floor, while male signers generally take control of the floor one at a time and use fewer supportive back-channelling strategies. Furthermore, deaf women appear to be leading a language change currently in progress in Auslan (Schembri et al. 2006), as discussed below.

1.7.1.4 Ethnicity and religion

Generally, there are no clearly identifiable distinctions in the signed language used by various ethnic groups in the UK and Australia, unlike what has been identified in deaf communities elsewhere (e.g., lexical variants used predominantly or exclusively by deaf African-American signers of ASL, see Lucas, Bayley, Reed & Wulf 2001), partly because the education of deaf children in these countries has, for the most part, never been segregated by ethnicity. Many deaf people in the UK from minority ethnic backgrounds are, however, increasingly forming social groupings which combine their deaf and ethnic identity (for example, social groups formed by deaf people with south Asian backgrounds) and thus we might expect some sociolinguistic variation reflecting these identities to develop over time.

This is true of the Jewish Deaf Association, for example, many of whom were educated in a separate Jewish deaf school that existed in London from 1866 to 1965 (Jackson 2001). A book of BSL signs used to represent key elements of Judaism was published in 2003.

It has been reported in Australia that the signed communication of some deaf Aboriginal people from regional areas (such as far north Queensland) includes signs that differ from Auslan signs (O'Reilly 2005). This lexical variation in Auslan due to ethnicity remains to be properly documented, however.

More work on this issue has been undertaken for NZSL. NZSL exists in contact with both the dominant host language of English and Maori as the spoken language of the indigenous people of New Zealand. A colonial history of cultural contact means that “the most unmistakably New Zealand part of New Zealand English is its Māori element” (Deverson 1991:18). There is no empirical evidence yet that Māori signers’ use of NZSL varies systematically from that of non-Māori deaf people, whose social networks and domains of NZSL use substantially overlap. It could be expected, however, that the NZSL lexicon would reflect some degree of contact with spoken Maori, albeit constrained by modality difference and by the minority status of both languages in society. Since Māori concepts constitute a local feature that potentially distinguishes the NZSL lexicon from close relatives Auslan and BSL, editors of the dictionary of NZSL sought to record all existing signs in NZSL that represent Māori referents through consultation with Māori NZSL users in 1993 (Kennedy et al. 1997). Twenty five signs with Māori primary glosses (headwords) were recorded in the 1997 dictionary, and these signs are in general usage in the deaf community rather than specific to Māori deaf people. A project was undertaken in 2003 to expand the dictionary database, including documenting further usages with Māori reference which had observably increased in number since the dictionary data was collected a decade earlier. Recognition of NZSL and the training of some Māori-speaking NZSL interpreters from the mid-1990s have enabled Māori deaf people to participate more in hearing Māori domains of cultural activity and to develop a stronger Māori consciousness. Contact between hearing speakers of Maori and the Māori deaf community over the last decade has led to the coinage of signs and translations of Maori concepts that are in the process of becoming established ‘borrowings’ into NZSL – used for both referential purposes and to construct Māori deaf ethnic identity. A total of 72 signs or usages with Maori reference were recorded by 2005, and more have entered the language since. These borrowings (locally referred to as ‘Maori signs’) are constructed by several processes: semantic

extension of existing NZSL signs by mouthing Maori equivalents, loan translations of Maori word forms, and coining of neologisms (McKee et al. 2008).

As it also true of New Zealand, separate schools for Catholic deaf children were established in Britain and Australia. In 1875, a deaf nun, Sister Mary Gabrielle Hogan, came from Ireland to open the Rosary Convent school for Catholic deaf children near Newcastle, Australia (Fitzgerald 1999). In the later half of the nineteenth century and early twentieth century, additional Catholic schools for the deaf were opened in other parts of Australia (St Gabriel's school in Castle Hill, New South Wales, and the St Mary's Delgany school in Portsea, Victoria). Catholic schools for deaf children were also established in Great Britain, such as St John's school in Leeds and St Vincent's school in Glasgow. All of these institutions employed ISL as the language of instruction until the 1950s. As a result, an older generation of signers in the UK and Australia make some use of ISL signs and the Irish manual alphabet, particularly when in the company of those who share their educational background. Some ISL signs have been borrowed into regional varieties of BSL (e.g., READY, GREEN) and Auslan (e.g., HOME, COUSIN) (Brennan 1992, Johnston & Schembri 2007).

1.7.2 Phonological variation and change

There has been only a little work on phonological variation in BANZSL varieties. Deuchar (1981) noted that phonological deletion of the non-dominant hand in two-handed signs was possible in BSL (sometimes known as ‘weak drop’, e.g., Brentari 1998). Deuchar claimed the deletion of the non-dominant hand in symmetrical two-handed signs, such as GIVE and HOSPITAL, was frequent, as in ASL (Battison 1974). She also argued that weak drop in asymmetrical two-handed signs appeared most likely in such signs where the handshape was a relatively unmarked configuration, such as B or S. Thus, variants without the subordinate hand seemed more common in her data in signs such as RIGHT (with subordinate B) than in FATHER (subordinate H). Furthermore, she undertook a pilot study to investigate what social factors might affect the frequency of weak drop. Deuchar predicted that signers might use less deletion in less formal situations. She compared 30 minutes of BSL data collected under two situations: one at a deaf club social event and another in a church service. Based on a small dataset of 201 tokens, she found that only 6% of two-handed signs occurred without weak drop in the formal situation, whereas 50% exhibited deletion of the non-dominant hand in the informal setting. She also suggested that this weak drop variation may also reflect language change in progress, based on Woll’s

(1981) claim that certain signs (e.g., AGAIN) which appear to be now primarily one-handed in modern BSL (and indeed in all BANZSL varieties) were formerly two-handed.

Glimpses of diachronic change in phonological structure emerged in the study of NZSL numeral signs discussed above: McKee, McKee and Major (2006) noted that variants consistently favoured by the younger generation for numerals SIX to TEN utilised only the dominant hand, whereas older signers are more likely to use a two-handed ‘base 5’ (weak hand) plus ‘additional digits’ (dominant hand) system for these numerals (e.g., signing FIVE on the non-dominant hand simultaneously with TWO on the dominant hand for ‘seven’, similar to the number gestures sometimes used by hearing people).

The Auslan sociolinguistic variation project also investigated phonological variation, focusing specifically on variation in the location parameter in a class of Auslan signs that includes THINK, NAME and CLEVER. In their citation form, these signs (like signs in the same class in ASL investigated by Lucas, Bayley and Valli 2001) are produced in contact with or in proximity to the signer’s forehead, but often may be produced at locations lower than the forehead, either on other parts of the signer’s body (such as near the cheek) or in the space in front of the signer’s chest. Schembri, Johnston and Goswell (2006) reported an analysis of 2,446 tokens of signs collected from 205 deaf native and fluent signers of Auslan in five sites across Australia (Sydney, Melbourne, Brisbane, Perth and Adelaide). Their results indicate that variation in the use of the location parameter in these signs reflects both linguistic and social factors, as has also been reported for ASL. Like the American study, their results provided evidence that the lowering of this class of signs reflects a language change in progress, led by younger people and individuals from the larger urban centres. This geolinguistic pattern of language change (i.e., from larger to smaller population centres) is known as *cascade diffusion*, and is quite common cross-linguistically (Labov 1990). Furthermore, the results indicated that some of the particular factors at work, and the kinds of influence that they have on location variation, appear to differ in Auslan and ASL. First, the Auslan study suggested relatively more influence on location variation from the immediate phonological environment (i.e., from the preceding and following segment) than is reported for ASL. This may reflect differences in methodology between the two studies (i.e., unlike the ASL study, the Auslan study did not include signs made in citation form at the temple or compound signs in which the second element was produced lower in the signing space). Second, the Auslan data suggested that location variation in this class of signs in Auslan is an example of language change led by deaf women, not by deaf men as in ASL (Lucas, Bayley & Valli 2001). This

is typical of a language change known as *change from below* (i.e., one that is occurring without there being much awareness of this change in progress among the community of speakers or signers, see Labov 1990). Third, the Australian researchers showed that grammatical function interacts with lexical frequency in conditioning location variation (i.e., they found that high frequency verbs were lowered more often than any other class of signs), a factor not considered in the ASL study.

1.7.3 Syntactic variation and change

There has been little research into syntactic variation in BANZSL varieties, and there have not yet been empirical studies demonstrating whether there are consistent differences between individual signers due to gender, age, social class or region (although see the discussion above about the work of Johnston and Schembri 2007). Many authors have, however, noted the existence of English-influenced varieties of signed communication in the British, Australian and New Zealand deaf communities (Deuchar 1984, Johnston 1989).

Deuchar (1984) suggested that BSL and signed English varieties exist in a diglossic relationship, building on a similar account first proposed by William Stokoe (1969) for ASL, with signed English as the high prestige variety used in formal situations. Deuchar's research was conducted in the deaf social club and church in Reading in the 1970s, and involved the collection of data both from hearing and deaf participants, native and non-native signers. She identified a more English-like variety of signing used in the church services, primarily found in the signing of the hearing missioner but also among some deaf individuals. This variety used a lot of fingerspelling, and lexical items followed English word order. It also lacked typical BSL morphosyntactic patterns, such as extensive topicalisation, exclusively non-manual marking of negation and interrogatives and spatial modifications of signs. While recognizing that such variation exists and that it may be partly situational in nature, there has been some debate about whether it is best characterized as a diglossic situation, and indeed whether this model is at all appropriate for the current social situation in deaf communities (e.g., Lee 1982, Deuchar 1984, Lucas & Valli 1992). English is no longer tied exclusively to some social situations—BSL has become the language of instruction in some schools for deaf children, for example, and is used in nationally broadcast television programmes. Woll, Allsop and Sutton-Spence's (1991) work showed a dramatic shift away from simultaneous communication (spoken English together with sign) among deaf people appearing on the *See Hear* programme during the 1980s: from 52% of all communication in 1981 to only 12% in 1987. More formal varieties of BSL appear to exist, although

how they structurally differ from more informal varieties has not yet been the subject of any specific research.

As part of the sociolinguistic variation in Auslan project described above, variation in the presence of subject noun phrases has been investigated in Auslan narratives (Schembri & Johnston 2006). Like other signed languages, BANZSL varieties exhibit significant variation in the expression of subject. Based on the study of a corpus of 976 clauses collected from spontaneous narratives produced by 20 deaf Auslan signers, Schembri and Johnston found that almost two thirds (63%) of clauses had no overt subject noun phrase. Factors that conditioned an increased tendency to omit subject arguments included the use of a subject that identified a referent that was the same as the one in the immediately preceding clause, the subject having a non-first person referent, the use of role shift and a spatial/depicting verb in the clause and the presence of some degree of English influence in the clause. These linguistic factors are similar to those reported to be at work in other pro-drop languages such as ASL (Lucas, Bayley & Valli 2001), Spanish (e.g., Bayley & Pease Alvarez 1997) or Bislama (Meyerhoff 2000). Unlike ASL, however, multivariate statistical analysis suggested that social factors such as the signer's age and gender were not significant.

Interestingly, some 15% of all clauses in Schembri and Johnston's (2007) dataset showed some example of English influence (e.g., non-nativised fingerspelling, English morphosyntactic patterns and the use of mouthing unaccompanied by signing), highlighting the need for a greater understanding of contact signing in BANZSL. There has been some speculation that increased access to English (e.g., in the provision of captioned television) and growing influence from hearing, non-native signers in the British deaf community may, for example, be leading to an attrition of heritage BSL signing (Turner 1995), but no work has as yet been conducted on syntactic change in any BANZSL variety.

1.8 Conclusion

Much remains to be learned about the synchronic and diachronic relationship between the signed language varieties in the United Kingdom, Australia and New Zealand, and about sociolinguistic variation and language change in all three deaf communities. Major projects currently underway on BSL (Schembri et al. 2007) and Auslan (Johnston & Schembri 2006) using corpus-based approaches together with ongoing work on NZSL (e.g. McKee et al. 2006) are sure, however, to teach us much more in the near future.

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