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Investigating Lexical Variation in British Sign Language in Leeds

Lily Blount

This research investigates lexical variation in British Sign Language (BSL) in Leeds, and the extent to which variation in signs for the numbers one to twenty correlate to signer age. Previous studies have compared regional varieties of BSL in eight different UK cities examining the number signs one to twenty, but none so far have explored the Deaf community in Leeds. The work presented here is therefore the first to address this area. Overall, age is concluded to be a strong predictor of variation. Younger signers were found to use significantly fewer traditional signs that are regionally distinct to BSL in Leeds than the older generation of signers. This may be seen as evidence of dialect levelling. This research suggests that lexical change in BSL is taking place and also presents the first documentation of Leeds specific variants, some of which have previously not existed in the BSL literature.

1 Introduction

British Sign Language, often abbreviated to BSL, is a visual communication system where language is transmitted through composed elements of gesture, facial expressions, and body language. BSL is used mostly by the hearing impaired and Deaf community in the UK and is thus regarded as the indigenous language of Deaf British people (Montgomery 1981). Variation is an inherent part of all languages (Labov 1969), and sociolinguistic variation refers to linguistic variation that correlates with social factors such as gender, age, social class, and ethnicity. Lexical variation has been studied in sign languages across the world, for example, Lucas et al. (2001a) confirm lexical variation in American Sign Language throughout African American and White communities, while Bickford (1991) observed lexical variation in Mexican Sign Language, pinpointing variation to age.

Approximately 20% of the BSL lexicon is variable by region (Sutton-Spence and Woll 1999). Variation in the lexical database of the BSL Corpus differs at two levels: phonological and lexical. Phonological variants are those that differ in terms of one parameter, be that handshape, hand location, palm orientation, or facial expressions, but are grouped together as the same sign variant (Cormier et al. 2012, Lucas and Bayley 2010). As this research only considers lexical variants, signs that vary phonologically will be classifed together as the same lexical item and glossed with the same ID code. Lexical variants differ in two or more parameters despite being semantically identical (Cormier et al. 2012). Signs that vary lexically are thus distinguished by separate ID codes. Following the format formally used in Sign Language literature, sign variables are written in capitals, e.g., ONE, and the variants of the lexeme are written with numbers following the gloss, e.g., ONE2, ONE3. In the present study, signs are glossed following the conventional coding system in BSL research (Cormier et al. 2012). Signs are also coded as either 'traditional' or 'non-traditional'. Signs coded as 'traditional' are the lexical variants that are produced by the majority of older, local signers, and are taken to represent earlier conventions of BSL in Leeds. 'Non-traditional' signs are any other variants of those signs, which also correspond to known supralocal lexical variants documented in the BSL SignBank (Fenlon et al. 2014). The current research documents younger signers using a greater proportion of the non-traditional signs and suggests an ongoing process of levelling.

In BSL, lexical variation is suggested to function as an index of three main sociolinguistic variables: age, language background, and school locality (Stamp et al. 2014). In this research, age is the only independent variable investigated. In studies across both spoken and signed languages, age has been dictated as a strong predicator of variation. It is clear from the research that an older speaker, or signer, does not use the same variety of language as a younger speaker (Labov 1963, Sankoff 2006, Stamp et al. 2015, Wardaugh 2002). These conclusions were derived by applying a construct known as the apparent time hypothesis, which shall also be used in this study. This approach groups speakers of different ages and then compares them at one single point in time. Thus, the history of such language variation is interpreted from a contemporary viewpoint, with the apparent time hypothesis acting as a replacement for studies performed in real time.

In BSL, the use of regionally distinct signs among younger signers seems to be in decline, a possible indication of dialect levelling (Stamp et al. 2014, 2015). Research has suggested that this decline is influenced by an increased exposure to regional Deaf TV shows (Woll 1994) and a larger degree of mobility within the Deaf community (Woll 1987). Additionally, the closure of Deaf schools and implementation of language policies have influenced the transmission of sign language to Deaf students (Ladd 2003). Earlier research (Woll et al. 1991, Stamp et al. 2014) has considered lexical variation between different regional varieties of BSL as indicative of language change in process. To date, there has been no other research that investigates lexical variation in BSL in Leeds.

The present study is a similar but smaller replication of Stamp et al. (2014), exploring the relationship between language variation and change of BSL in the Leeds Deaf community. The research questions are:

1. Is there lexical variation in BSL in Leeds?
2. If so, is this variation conditioned by signer age?

The evidence found here appears to answer these questions in the affirmative, suggesting that the processes of language change occurring in BSL (Stamp et al. 2014) are also found in Leeds.

2 Literature Review

The number of Deaf people in the UK has grown from 30,000 in the 1990s (Sutton-Spence and Woll 1993) to an estimated 151,000 (Office for National Statistics UK 2011). The Ethnologue reports approximately 327,000 BSL users worldwide, including those who are deaf, hard of hearing, and hearing, and where BSL is used as either a first or second language (Simons and Fennig 2017). The 2011 Census for England and Wales recorded 15,000–20,000 people who stated that BSL was their official language of use (Office for National Statistics UK 2011). Like any other language, BSL contains variation in syntax, morphology, the lexicon, and phonology. While previous research has examined and evaluated some of these linguistic features of BSL, none so far has investigated lexical variation in the Leeds Deaf community.

The population of Leeds, as reported in the 2011 Census, is estimated at 751,500, with approximately 300 users of BSL resident in Leeds (Leeds City Council 2015). BSL in Leeds has most likely developed as a result of a number of different factors such as changes in educational policies and dialect levelling, both of which will be discussed in succession.

2.1 Education of the Deaf in the United Kingdom

Changes made in the teaching of BSL to Deaf students throughout the past century have strongly impacted the variants used by older and younger signers today. The historical suppression of BSL became prominent during the late 19th century, when BSL, along with many other forms of signed communication, was viewed as inferior to spoken languages (Hutchinson 2007). Oralism, the education of Deaf students through oral language, was enforced as a medium of instruction following the International Congress on the Education of the Deaf in Milan, 1880 (Deuchar 1984). The practice of sign language was banned, and as a result, students were punished if they were caught communicating through any form of gesture (Deuchar 1984). Deaf students, who had relied on Deaf teachers as their main source of sign language, often congregated in small groups to produce their own signed communication system, each of which developed spontaneously (Johnston 1989, Jackson 1990). These basic forms of signed communication were preserved by Deaf school graduates, later becoming the regional varieties of BSL that exist today (Quinn 2010, Stamp et al. 2014). The regional varieties, or "school-lects", stemmed from the lack of communication between deaf and hearing people in school and the lack of an authentic education system for the Deaf, which has varied over the years (Sutton-Spence and Woll 1999).

Though oralism was employed by many schools, it slowly began to decrease in practice in the early 20th century. In response to the policies enforced by the congress in Milan 1880, the British Deaf and Dumb Association was soon founded in 1890. Throughout the 1900s, the explicit use of BSL was popularised through communal activities, which included the premier of the World Games for the Deaf in 1924 and public demonstrations of the first Text Telephone (TTY), a telecommunication device for the Deaf, in 1964 (University College London 2017). By the late 20th century, signing was once again advocated in education, following the Warnock Report in the 1970s. The account proposed that Deaf children should be integrated into hearing schools, or mainstreamed, to increase the chances of "normalisation" while living and encountering everyday activities in a hearing community (Warnock 1978). Eventually, this led to the closure of many Deaf schools and native BSL teachers were replaced by hearing communication support workers, despite possibly having limited knowledge of BSL themselves (Kyle and Woll 1993, Ladd 2003, Brennan 1992). The absence of native signers followed the compulsory action of communicating orally during school time (Johnston 1989). Though signing was permitted, it generally developed amidst Deaf students, taking place outside the classroom through play and in the dormitories of residential schools (Johnston 1989). These reasons are all likely contributing factors to the decline of traditional signs.

Schools gradually shifted from oralism to "Total Communication", the implementation of a "common language" that endorses all methods of signed, oral, written, and visual aided communication (Denton 1987). National sign languages were officially recognised as languages of member states in June 1988 by the European Parliament (European Union of the Deaf 1988), and the first Deaf Studies programmes were established throughout universities in the UK in 1990. BSL soon became a legitimate area of study in language and linguistics, and the first official documented work of the linguistics of BSL was published at the start of the 21st century

(Sutton-Spence and Woll 1999, University College London 2017). Though education of the Deaf prevailed, BSL was only officially recognised as a language by the British Government in 2003 (University College London 2017). Education in the present day for a Deaf child is much more accessible, and developments in technology and institutions aid the development of BSL for children and adults, both deaf and hearing.

2.2 Dialect Levelling

These changes in educational policies are clearly reflected in some differences in the production of BSL lexical variants and signer age (Sutton-Spence et al. 1990). This linguistic change can be analysed through the lens of a process known as dialect levelling: the reduction of regional variants in favour of those that are more standard and less regionally marked (Kerswill 2003). Geographical diffusion has been proposed to explain the reduction of such variations that are viewed as "unusual or in minority" (Trudgill 1986:98). Geographical diffusion looks at how levelling occurs across a geographical space, namely, due to increased levels of mobility and changes in social network structures in an area. Chambers (2003), for example, notes that a high degree of mobility allows access to language markets where different lexical variants are apparent. This access influences an individual's linguistic choices, whether subconsciously or knowingly.

Stamp et al. (2014) suggest that certain variants are unique to those age groups who attended school during a specific period. The older signers who have been exposed to oralism throughout school preserved their own regional variety of BSL, whereas the younger signers who had been mainstreamed were found to use more regionally levelled signs (Stamp et al. 2014). Standard variants have been found to emerge in sign languages across the world and are particularly favoured by younger signers (Stamp et al. 2014, Lucas and Bayley 2010, Senghas 1994, Bickford 1991). In particular, Woll et al. (1991) documented the emergence of a national sign variant in BSL within each semantic category. This has also been recognised by Stamp et al. (2014, 2015) in the BSL numbering system, where variants traditional to London and Birmingham regions were argued to have become seen as "supralocal". Some older signers are beginning to adopt these new standardised variants as well, though a greater majority retain those that are traditional to their region (Stamp et al. 2014). What is more, the younger generation of signers, specifically those under the age of 45, recognise fewer lexical variants in BSL than older signers, supporting the idea that signs can gradually disappear from the lexicon (Woll 1994). Number signs one to twenty in New Zealand Sign Language were found to be systematically conditioned by age (McKee et al. 2008) and particularly representative of lexical change (Stamp et al. 2014, 2015).

3 Methodology

3.1 Procedure

The PowerPoint file used to elicit the data collected in this study was provided by Dr Kearsy Cormier and replicates the lexical elicitation task employed by Stamp et al. (2014). Two practice slides were added to ensure that all participants understood the method. The task consisted of a PowerPoint slide with the sign referents, the numbers one to twenty in a randomised order, appearing all at once (see Figure 1 for example stimuli). The stimuli were not changed from the original provided by Dr Cormier. The presentation of the numbers was in a fixed order, and each study participant therefore saw the same order. This enabled a more efficient process of data transcription.[1] No time limit was applied to the procedure, though the signers appeared to sign the numbers fluently and in a way that seemed to resemble naturalistic counting.

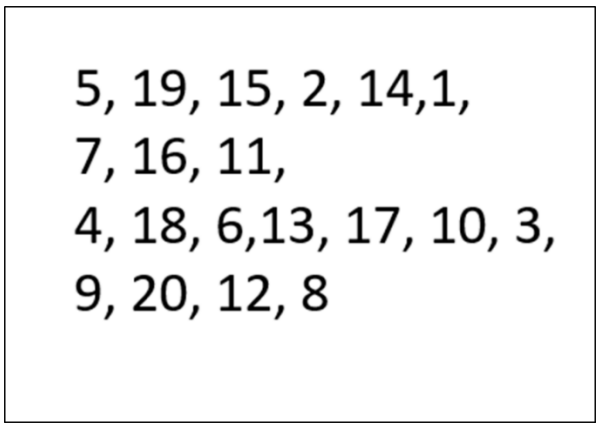


Figure 1: Example of lexical elicitation material.

[1] At the time of coding, the author's level of proficiency in BSL was Level 2.

Participants were asked to provide their most used sign for each number that appeared. Stamp et al. (2014:5) highlight the following limitation of this lexical elicitation task: "signers may respond to normative pressures or perceptions about what is appropriate for their region rather than offer the sign they actually use most". Signs for numbers are not necessarily subject to such attitudinal factors, as suggested in the research conducted by Stamp et al. (2014, 2015). It has however been argued that signs for countries have a greater chance of change as they are often subject to attitudinal factors (Stamp et al. 2014). Signs for foreign countries, such as India and China, or the continent of Africa, have been denoted politically incorrect as they exploit certain ethnic characteristics. These signs have been negatively perceived by both the hearing and Deaf community because the representation of the sign could be seen as racist (Mickelburgh and Syal 2004). In response, newer and politically correct signs have been introduced (Sutton-Spence and Woll 1999). Signs for numbers have no similar reasons for variation. Thus, this limitation does not apply. The semantic concept for numbers was selected based on the existing data provided in the BSL Corpus project and those analysed in previous research (Woll et al. 1991; Stamp et al. 2014), in which numbers were found to be the most vulnerable to variation.

3.2 Participants

The 10 participants were all Deaf members of the Leeds Deaf community, who had BSL as their main language (see Table 1). Participants ranged in age from 20 to 77 and were grouped into two age categories, younger (18–40) and older (41+), relative to year of birth and in line with the age division used in the 2013 BSL Corpus project. This categorisation reflects the different educational policies employed throughout the twentieth century. Some of the older participants, PP1, PP7, and PP8 (Table 1) had been exposed to oralism at school, and so their acquisition of full BSL was delayed until the early stages of their teen years. The remaining signers acquired BSL primarily through both primary and secondary education. Unlike PP1, PP7, and PP8, they thus began learning sign before the critical age period.

Table 1: Participant characteristics

Participant	Age Group (Age)	Language Back-ground	Primary School Location	School Location	School Language	Secondary School Location	School Location	School Language	Place of Birth
PP1	Older (58)	Hearing	Non-Local	Bradford	Deaf	Local	Leeds	Deaf	South Africa
PP2	Younger (20)	Hearing	Non-Local	Nottingham	Hearing	Non-Local	Nottingham	Hearing	UK
PP3	Older (77)	Hearing	Local	Leeds	Deaf	Local	Leeds	Deaf	UK
PP4	Older (71)	Hearing	Local	Leeds	Deaf	Local	Leeds	Deaf	UK
PP5	Older (76)	Hearing	Non-Local	Manchester	Deaf	Non-Local	Manchester	Deaf	UK
PP6	Older (71)	Hearing	Non-Local	Llandrindod Wells	Deaf	Non-Local	Llandrindod Wells	Deaf	UK
PP7	Older (50)	Hearing	Local	Leeds	Deaf	Local	Leeds	Deaf	UK
PP8	Older (58)	Hearing	Non-Local	Bradford	Deaf	Local	Leeds	Deaf	South Africa
PP9	Younger (31)	Hearing	Non-Local	Bradford	Deaf	Local	Leeds	Hearing	UK
PP10	Younger (40)	Deaf	Non-Local	Georgia	Deaf	Non-Local	Georgia	Deaf	Georgia

While the study only includes 10 signers, previous sociolinguistic studies of sign language have also been based on small numbers of participants (see, for example, Patrick and Metzger 1996). As in Stamp et al. (2014), participants were classed as either native, near-native, or early learners of BSL (native are those who were exposed to sign from birth, near-native are those who acquired BSL before school, and early learners are those who acquired BSL at school). Three participants were not born in the UK: PP1 and PP8 were born in South Africa, and PP10 was born in Russia. As expected, PP1, PP8, and PP10 produced different sign variants to the

remaining participants, possibly resulting from the differences in their country of birth and where they learnt BSL (Quinn 2010). This result shall be examined further on in the discussion.

Ideally, only participants who had been living in Leeds for at least 10 years at the time of data collection would have been included, following Stamp et al. (2014). However, one speaker, PP2, had lived in Leeds for only just over a year. She was nevertheless included here because she was one of only three participants representing the population of younger signers. PP2 is originally from Nottingham; however, no current research documents the BSL regional variety used in this area. Stamp et al. (2014) suggest that younger signers prefer signs that are less traditional to their region and instead favour the supralocal variant. Therefore, differences in region would not greatly affect the signs produced by the younger generation, as the same variant would be consistent among the younger group of signers (Stamp et al. 2014). As PP2 is not from Leeds, there is the possibility that she may use the supralocal variant because it is her native variant. As there is no existing data about BSL in Nottingham to suggest this, no claims can therefore be made about Leeds younger signers based on the data from PP2. From this point forwards, PP2 shall be used in comparison to the other two younger signers.

All participants in the present study are female. A number of studies have identified patterns in sociolinguistic variation which illustrate women using fewer stigmatised or regional forms than men, opting instead for variants that are associated with a wide geographical distribution (Labov 1972, 1990, Wolfram and Fasold 1974, Trudgill 1986, Cheshire 2002). Results for gendered variation in BSL are mixed. Stamp et al. (2014) argue that lexical variation in BSL is not affected by gender, while Johnston and Schembri (2007) found Deaf women to lead linguistic change in Australian Sign Language. The latter finding is consistent with Labov's (1990) principles of linguistic change, whereby women tend to exhibit the most innovative patterns in a change in progress. The present study focuses on female signers in order to represent what might be the most innovative group of signers, i.e., young women, in order to give a clear picture of the extent of any changes in progress in this community. As there has been little empirical evidence suggesting systematic lexical variation in relation to gender, ethnicity, and social class (Schembri et al. 2010, Shapiro 1993, Lucas et al. 2001b), these variables will not be considered in this research. An analysis of these variables and lexical variation in Leeds BSL is left for future research.

3.3 Data Collection

Participants were video-recorded in two locations: the phonetics lab in the Linguistics and Phonetics Department at the University of Leeds (for PP1, PP2, PP7, PP8, PP9, and PP10), and the Eastenders Sports & Social Club, Railway Street, in Leeds (for PP3, PP4, PP5, and PP6). The latter location holds weekly events for the Leeds Deaf Club for over 55s. The whole procedure took approximately 5 minutes for a single session. The data were recorded on a Canon Legria Mini X, complete with an HD video camera.

3.4 Ethical Considerations

All participants were made aware that footage was a crucial element of this study. The consent form clearly states that all pictures and videos collated from this research can be published and may be used in further research. It was also important to consider that some participants may not have full comprehension of written English, and so a consent form translated into BSL was provided by the author through the University of Leeds. Throughout the research, questions were answered in person in BSL.

3.5 Data Coding

Twenty lexical items from the semantic category of numbers were analysed in this research, generating a total of 200 tokens. Participants produced only one sign variant per number. The sign emitted was analysed and coded, following Stamp et al. (2014). The data were transcribed and glossed by the author following the system used throughout the sign language literature and across the BSL Corpus project and BSL lexical database.

Each lexical variant is distinguished by a unique ID code, described by Schembri et al. (2013:145–146) as "an English gloss that is consistently used with a unique sign to represent the sign in citation form along with all its phonological and morphological variants". Using the format employed by Cormier et al. (2012) the sign variants are written in capitals, e.g., AMERICA (Figure 2), and lexical variants are written with numbers following the gloss, e.g., the most common variant is glossed AMERICA, the second most common variant AMERICA2, and so on.

AMERICA

AMERICA2

AMERICA3

Figure 2: Example of lexical variants of ‘America’.

To determine lexical variation in BSL in Leeds, signs were also coded as either ‘traditional’ or ‘non-traditional’. As there is no current research on the use of BSL in Leeds, traditional signs were determined through an analysis of existing signs in BSL. Signs were compared to those that have been and are associated with a particular region, described in the literature of lexical dictionaries (Brien 1992), the BSL Corpus, and earlier research (Woll et al. 1990). The BSL SignBank (see Fenlon et al. 2014) provides a visual denotation of BSL signs, along with each

variant and its regional distribution. The BSL SignBank was thus the primary resource used to determine which lexical variants were associated with a particular region. Following Stamp et al. (2014), if a sign variant was produced by a number of older and local signers in this research and did not appear on the BSL SignBank database, it was coded as traditional to Leeds.

During coding, the number of tokens analysed was reduced from 200 to 180. Most of the signs were straightforwardly coded as either traditional or non-traditional, but others were not. Sign variants including 'Nine' and 'Twenty' were not particularly challenging, as there appeared to be no traditional variant (Fenlon et al. 2014). McKee et al. (2008) suggested that 'Nine' and 'Twenty' exhibit more variation than the other numbers, and a similar pattern was also found here. Due to the analytical challenges this variation presented, they were then excluded from the analysis.

3.6 Data Analysis

The data were analysed using the Pearson's chi-squared test in SPSS (IBM Corp 2013). This method tested the probability of two categorical variables, the social variable (age) and its association with traditional Leeds signs, assuming the null hypothesis. The results from the Pearson's chi-squared generated a contingency table, which presented the frequency of traditional and non-traditional variants in relation to the variable.

4 Results

No variation was found for the numbers one to five. Nine lexical items had four or more variants; the signs 'Fourteen', 'Eighteen', 'Six', 'Seventeen', and 'Eight' had four different variants, and five different variants were elicited for the signs 'Nineteen', 'Seven', 'Sixteen', and 'Twelve'. Overall, 75% of the number signs were traditional signs (Table 2). Sign variants NINETEEN5, FIFTEEN2, FOURTEEN2, SEVEN2, EIGHTEEN2, SIX2, THIRTEEN2, SEVENTEEN2, TWELVE2, and EIGHT3 were classified as non-traditional number variants. These variants were produced by the younger signers PP2 and PP10, and have also been found in the regions of London and Birmingham (Stamp et al. 2014, 2015). All variants emitted by PP1 and PP8 were denoted traditional to Leeds.

The chi-squared test results for signer age and sign type were significant, X^2 (1) = 7.97, $p < 0.05$, suggesting that age does correlate with the use of traditional signs (Table 2). The younger age group used fewer traditional signs than the older age group, supporting the hypothesis and the findings of previous research (Stamp et al. 2014). Both age groups thus preferred traditional to non-traditional signs, but the preference is not as strong in the younger age group (Figure 3). This result implies that the use of traditional signs is in decline for younger signers.

Table 2: Results for the frequency of traditional and non-traditional number variants

	Older	**Younger**	**Total**
Traditional	100 (55%)	36 (20%)	136 (75%)
Non-Traditional	26 (15%)	18 (10%)	44 (25%)
Total	126 (70%)	54 (30%)	180

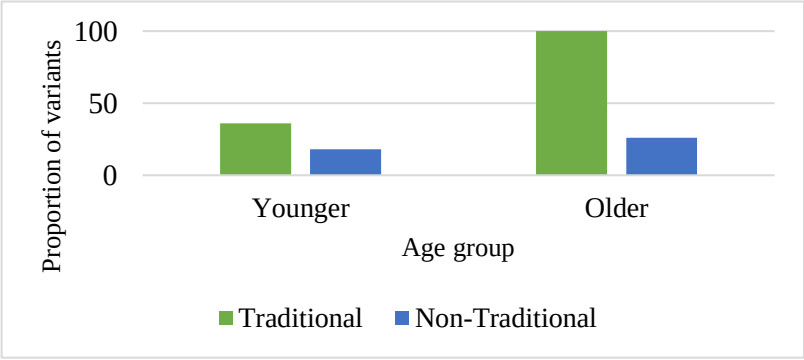


Figure 3: Frequency of traditional and non-traditional variants against each age group.

5 Discussion

The results indicate that there is lexical variation in BSL in Leeds, correlated with differences in age. The results among younger signers varied: PP9, the only young local signer, favoured a majority of traditional signs with the exception of the number 'Nineteen', despite the claim that younger signers favour non-traditional signs. This suggests that number signs are not undergoing change like other signs, for instance signs for countries which are being adapted by BSL communities due to claims that some variants are politically incorrect (Mickelburgh and Syal 2004). Stamp et al. (2014) have proposed that signs for numbers have no similar reasons for variation, thus suggesting why traditional number variants are consistent among the local generations in the Leeds BSL community.

PP2, the youngest signer but non-local to Leeds, produced 12 non-traditional signs, traditional signs being one to five, for which there was no variation among signers. Additionally, the number ten was also a traditional sign. PP10 displayed a total of 5 non-traditional signs ('Nineteen', 'Seven', 'Sixteen', 'Seventeen', and 'Eight'). The variants emitted have also been found in the regions of London and Birmingham (Stamp et al. 2014, 2015), possibly exhibiting some dialect levelling. This result is also suggestive of geographical diffusion—the spread of a regional variant from one region to another. All older signers favoured traditional Leeds signs, in keeping with the findings of Stamp et al. (2014).

It is also notable that several sign variants coded in this research as Leeds traditional sign variants were not recorded in the BSL literature. As this is the first study to consider lexical variation in BSL in Leeds, it was thus expected that some sign variants would not previously have been documented. Unlike Stamp et al. (2014), this study did not use local Deaf community fieldworkers to support the claim of which signs were traditional to Leeds. This research does however present new variants that have not previously been recorded and so offers a platform for any research that should follow.

5.1 Dialect Levelling in BSL in Leeds

Stamp et al. (2014, 2015) have previously investigated dialect levelling in BSL and documented the decline of traditional, regionally marked signs among younger signers. The results of the current research paper are consistent with this finding, at least with respect to signs for numbers. The number signs produced by the younger signers were those traditional to the Birmingham and London regions, resembling a supralocal rather than regional variant. This suggests that the younger generation of signers favour standardised variants.

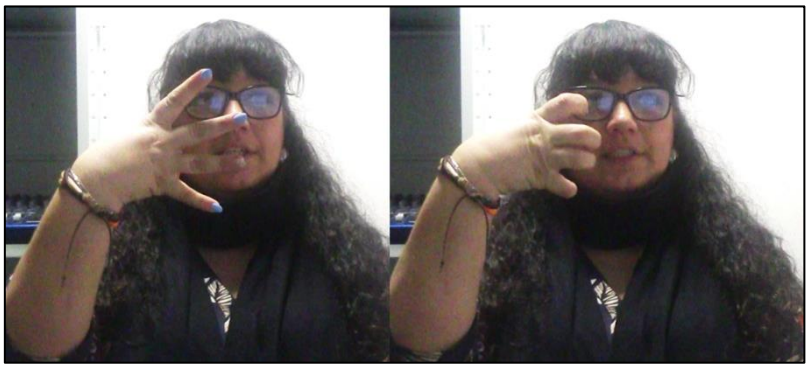
What is particularly interesting is that all of the younger signers, PP2, PP9, and PP10, were educated in completely different regions of the UK, and to some extent the world (Table 1), and yet they produced identical non-traditional variants: SIXTEEN2, SEVENTEEN2, and NINETEEN2. Since PP2 and PP10 are non-local, PP9's pattern might suggest that linguistic convergence may gradually be occurring among younger signers of various regions, following an increased mobility within Deaf communities (Stamp et al. 2014). For example, PP10, who was born in Russia, provides a numbering system dissimilar to some of the other older participants in the research. While this might be attributed to her place of birth, the variants FIFTEEN, FOURTEEN, ELEVEN, SIX, THIRTEEN, TEN, and TWELVE were the same as those used by PP2 and PP9. Thus, the younger signers in this research could be accommodating to the language of their locally raised peers, and/or geographical diffusion may be taking place on a larger scale. Regional variants spread as signers come into contact both face-to-face and through online communication methods such as TTY and SignTalk (Woll 1994). As PP10 is not a native member of the British Deaf community, this possibly indicates that standardised variants are now part of a global spread. Exposure to the media and televised Deaf programmes may have also influenced the distribution of these non-traditional signs as younger signers incorporate the new variants into their lexicon. The popularisation of certain TV shows may have promoted the use of a standard variant, which is used across different regions of the UK (Woll 1994). Al-Fityani and Padden (2010), for example, observed the spread of a standard variety of sign language, Arabic Sign Language, through the use of the media. Similarly, the younger signers of BSL may favour the standardised variants that are exhibited in nationwide Deaf TV shows.

5.2 Variation in 'Nineteen'

One interesting variable was the sign 'Nineteen', in which five different variants were produced overall (Figure 4). This variation is all lexical, rather than phonological, in each case differing in terms of two or more parameters. Comparing NINETEEN and NINETEEN2, for instance, the palm in NINETEEN is facing outwards whereas the palm in NINETEEN2 is facing inwards, and the hand orientation in NINETEEN is vertical while the hand is twisted left in NINETEEN2. In previous studies, the number 'Nineteen' has also been shown to display the most variation (McKee et al. 2008, Stamp et al. 2015).

NINETEEN

NINETEEN2



NINETEEN3

NINETEEN4

NINETEEN5

Figure 4: Example of number variants ‘Nineteen’ in BSL.

Variation between the variants NINETEEN and NINETEEN2 is particularly interesting. NINETEEN was used by all older and local signers. The two younger signers (PP9 and PP10), who have lived in Leeds for a prolonged period of time, both favoured NINETEEN2. NINETEEN2 shares features with NINETEEN: both signs involve flexion of the fingers, distinctive of the Leeds traditional numbering system. Fenlon et al. (2014) also describe NINETEEN as traditional to the Birmingham region and even report usage in Manchester. NINETEEN2 and NINETEEN5, on the other hand, are not recorded online or in BSL dictionaries (Brien 1992). This is surprising, as those signs favoured by the younger generation, being less regionally specific, are more likely to be recorded in those sources (Stamp et al. 2014, 2015). As for NINETEEN3 and NINETEEN4, both of these variants appeared to be distinct to the region where those signers acquired BSL. If so, then it follows from the analysis that signers who acquired BSL during the critical period in school retain those variants throughout their lifetime. This is unlike a younger signer, such as PP2, who produces supralocal variations of numbers, i.e., those with relatively wide geographical distribution.

NINETEEN2 is an adaptation of the traditional sign variant, influenced by the mouthing patterns used in BSL. The data show that the traditional number variants FOURTEEN and NINETEEN have identical handshapes and locations but different mouthing patterns (Figures 4 versus Figure 5). All signers, excluding PP2, PP4, and PP5, who produce other signs traditional to different regions, exhibit the variant FOURTEEN, while NINETEEN is produced only by the older local signers (PP1, PP3, PP4, PP7, and PP8). The older local signers seem to distinguish between the uses of the variants FOURTEEN and NINETEEN through mouthing patterns alone, perhaps a result of oralism in school (Stamp et al. 2015). On the other hand, the younger signers PP9 and PP10, who were not exposed to oralism in school, prefer the adapted variant NINETEEN2, which distinguishes ‘Fourteen’ and ‘Nineteen’ by the different parameters mentioned above.

FOURTEEN

Figure 5: Example of traditional variant FOURTEEN.

Unlike the older participants who were subjected to oralism during school and lacked the transmission of BSL following the execution of mainstreaming, younger signers report signing throughout education. As schools enforced the policy of Total Communication at the start of the twentieth century, Deaf students that at the time of this research were categorised as older signers were encouraged to communicate through sign (Denton 1987). Stamp et al. (2015) have previously found that younger signers particularly prefer the modified variants of the numerals ‘Four’ and ‘Nine’. The results here from ‘Nineteen’ and ‘Fourteen’ show this same pattern, indicating that articulatory changes in number signs are taking place (Stamp et al. 2015). Therefore, NINETEEN2 may be an emerging variant or the component of a new standard numbering system that is developing. Alternatively, ‘Nineteen’ may be an inconsistency, following previous studies where it has been most associated with variation (McKee et al. 2008, Stamp et al. 2015). The current research does not present data on any of the language attitudes towards changes in progress in BSL, which might offer some insight into these new variants. This is a promising area for future study.

6 Conclusion

This research has considered lexical variation in BSL in Leeds. The results show that there is evidence of lexical variation in the Leeds BSL number system, with age being a strong predicator of variation. The older generation of signers favour the use of Leeds traditional signs, whereas the younger signers, regardless of amount of time spent living in Leeds, favour the more standardised variant. This trend suggests a process of dialect levelling. The variants produced by the younger signers PP2 and PP10 were those previously found in the London and

Birmingham numbering systems, which could suggest that geographical diffusion is taking place. These newly levelled variants used by younger signers are most likely promoted through increased mobility and exposure to the media (Woll 1994). The older signers favoured traditional variants, suggesting that the signers retain the variants acquired at school. Respectively, more variation was found among this age group. The implementation of oralism throughout school is likely to account for the patterns among the older signers. Furthermore, articulatory changes in number signs are taking place, possibly in parallel to the transition from oralism to mainstreaming in education. Overall, this research suggests that there are multiple social factors that account for this lexical variation, including school locality, exposure to regional varieties of BSL through the media, and increased mobility within the Deaf community.

This paper has presented the first investigation of lexical variation in BSL in Leeds. A majority of signs coded as the Leeds traditional variants have not previously been recognised or recorded in the BSL literature. While this research analyses only a subsample of the Leeds Deaf community, namely, 10 female participants, it provides compelling evidence for language change and a platform for further studies on lexical variation in BSL in Leeds.

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