Chapter 3

How many people use British Sign Language? Scotland's 2011 Census and the demographic politics of disability and linguistic identity[1]

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1 Introduction

A decade ago, a roadmap (Scottish Government 2009) was produced for the Scottish Government offering directions on British Sign Language (BSL) and the prospects for achieving 'linguistic access' on behalf of the signing community in Scotland. Among its fundamental concerns was the longstanding shortage of reliable, basic information about the size and shape of the country's BSL-using population. Five years later, a review of subsequent achievements by the Scottish Council on Deafness noted, as an 'area of the roadmap still to be addressed' that 'there is still a lack of statistical data. There has been no systematic approach to the collection of data in Scotland' (Reid 2015: 22). In fact, however, the decennial national census conducted in 2011 included a question which instantiated the prospect of a new, meaningful quantification of the BSL community. So how did this question fare in the census? What value can be derived from it, and what weaknesses might be identified in the quality of the resulting statistics? Can further work enhance the state of public knowledge of this population?

This paper discusses the increased visibility of BSL within the 2011 census in Scotland. Against a backdrop of socially and linguistically complex circumstances for the acquisition of signed languages, and consequently of persistent paucity of reliable data on signing populations here and around the world, it is now possible to arrive at more robust calculations of the numbers

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of BSL users. So what is now known, and what gaps remain? The paper is organised as follows: in section 2, I will discuss the role of language questions in national censuses and their underlying ideological nature. In section 3, I present the rudiments of BSL's nature, history and social circumstances. Section 4 illustrates the challenges faced in the production of adequate demographic data about signing populations. Section 5 focuses on the way in which information about language was framed and captured in the 2011 census, with section 6 setting out the picture of BSL usage emerging from these questions. In sections 7 and 8, I explore a series of complicating factors and their implications for interpretation of the data on BSL, before concluding in section 9.

2 Censuses, languages and politics

Each national census offers an important opportunity to ask questions about the characteristics and lifestyle of citizens within a given territory. Questions asked about language use and linguistic identities can be correlated through multivariate analysis with details of demographic profiling, population distribution and social description. Describing the languages known and employed often turns out to be more complex than it may at first appear to be, demanding a degree of interpretative sophistication on the part of respondents and analysts. The results typically take years to unpack, with every account – along with every individual census response – subject to inevitable constraints of social and historical context, enmeshed with ideologies of nation, ethnicity and communication (Kominski 1989, Arel 2002, Laversuch 2007, Zentella *et al* 2007, Busch 2016).

Quantification processes in the realm of public administration can never be politically inert activities that merely uncover 'objective facts'. From the very outset, then, 'the formulation of census questions and categories is inextricably embroiled in politics' (Kertzer and Arel 2002a: 18). Social groups and even languages themselves can be 'nominated into existence' (Goldberg 1997: 29) by virtue of being considered fit to be counted at all. Data-processing categories are the products of underlying beliefs about language and of the ways in which these may be expressed or, indeed, obfuscated. It has been argued, in fact, that 'the entire process of census-taking, from elaboration of the survey instrument through enumeration to tabulation and dissemination of results, is fraught with ideology' (Leeman 2004: 509).

Language questions appear in the national censuses of many countries, including 76% of countries in the United Nations Economic Commission for Europe (Aspinall 2005). The information they supply is communicated (by public servants, politicians and commentators) in ways which necessarily involve the foregrounding and backgrounding of information (Busch 2016, Sebba 2017). Respondents' answers assist in policy development and the management of social provision (e.g., language teaching, translation and interpreting, culturally competent public services). Census feedback also fuels discourses about political directions and priorities, since 'the use of identity categories in censuses … creates a particular vision of social reality' (Kertzer and Arel 2002a: 5).

Unsurprisingly, then, controversies around census questions and processes are plentiful. It is well appreciated by census planners that every aspect of presentation to respondents – from the precise formulation of the questions to the layout within which they are displayed – can influence the data generated. Where language is concerned, the nomenclature employed in the questions may influence responses (e.g., where public perceptions of the distinction between 'language' and 'dialect' are implicitly challenged by seeing some items – e.g. Scots: see Macafee 2016, Sebba 2016 – appear at all). The highlighting of one 'main' language for each respondent may, it has been argued, repress evidence of household and societal multilingualism (Sebba 2017). Diverse interpretations across a population of respondents suggest weaknesses in the reliability of self-reporting of basic familiarity with specific languages (De Vries 1985), as well as of more precise levels of proficiency (Edele *et al*. 2015), including with respect to literacy skills (Finnie and Meng 2005).

Such challenges lie behind repeated uncertainties over the appropriate reading of the statistical data arising from censuses. Sebba (2017: 3) highlights two 'prominent misunderstandings of the census data by senior journalists' in the United Kingdom (UK), both of which are taken to suggest ideological influences at work. The outcomes generated 'in and of themselves *constitute* our most basic understandings of the social sphere and social actors' (Urla 1993: 820 – present author's emphasis). It should be noted, of course, that the act of collecting statistical information about any particular social group at least enacts some level of recognition of the population's existence: where minorities enjoy no formally acknowledged status, no data is usually collected about them (Haug 2003). To enumerate at all typically entails some obligation to address the identified group in policy terms. Who

gets counted, by whom, and for what purposes carries implications both for the distribution of social resources, and for the valorisation of competing claims to truth (Urla 1993: 819). Weaknesses in survey validity and reliability are, however, not always fully appreciated by the relevant authorities, since it is 'not clear that the providers of services who request this data always understand the complexity of language in its social context any better than the general public: languages are resistant to the 'enumerative modality' even though their countability is often taken for granted' (Sebba 2017: 15).

3 Contextualising British Sign Language

Claims to truth about signed languages have come to be expressed in radically altered terms over the course of the last half-century. Benignly overlooked through most of recorded history, their fortunes have experienced two seismic upheavals since the industrial revolution. As economic participation increasingly demanded a more homogeneous workforce in fields, foundries and factories to keep production lines rolling, the ability to communicate in the majority language became an imperative, to the detriment of signing deaf workers (Lane 1992, Davis 1995). Ideologies of national identity narrowed correspondingly to promote the ideals of the empowered (Baynton 1996, Branson and Miller 2002). By 1880, the key formative environment – the education system – had been commandeered across the critical zones of Europe and the USA to the cause of *oralism*, a pro-speech ideology that effectively denied signing a place in the upbringing of generations of deaf children (Lane 1984).

Oralist policies held sway for almost a century, little challenged (except by the 'underground' acts of resistance committed away from the public gaze by signers who knew, without the authorities' approval, what worked for them – see Ladd 2003) until the 1960s. The publication of the first analysis of American Sign Language (ASL) as a full linguistic system (Stokoe 1960) set in motion a vital corrective, demonstrating incontrovertibly that signing was not merely pictorial, but structured using familiar grammatical principles grounded in the duality of patterning common to all human languages. The analyses produced by Stokoe and his collaborators showed that ASL was not 'English on the hands', but – with its own word-order and rules of combination that employed the three-dimensional space around the signer, and the richness of articulation afforded by the simultaneous use of the hands, face and body – a wholly independent and complete language, every bit as

systematic, dynamic and expressive as any spoken language (Stokoe *et al*. 1965, Klima and Bellugi 1979, Baker and Cokely 1980).

Unexpectedly to many, Stokoe's successors around the world also amply demonstrated that the grammar of signed languages is by no means common around the world. By the mid-1980s, BSL had been named (Brennan 1975) and described in sufficient detail to underline its clear independence of both ASL and English (Brennan *et al*. 1984, Deuchar 1984, Kyle and Woll 1985). Whilst orthographic systems have never become commonplace for the writing of signs (though many have been produced: see Jouison 1990, Thoutenhoofd 2003), researchers found other means to verify the many centuries of continued use of BSL (Sutton-Spence and Woll 1999). The status of BSL was cemented through such steps as the presentation of television programmes in the language (with the BBC's *See Hear!* having been on our screens since the 1980s), the development of a framework of structured BSL qualifications and a register of professional interpreters (Simpson 2007), and the publication of a 1084-page dictionary (Brien 1992).

In political terms, though, the position of BSL has, until very recently, been determined by default through neglect. No overt *language* policy has been generated for BSL until the twenty first century – its fate has been set as a by-product of other forms of social policy (Turner 2003). Following a notorious conference of educators of deaf children held in Milan in 1880, oralism effectively held sway across the UK until linguistic accounts of BSL came to prominence a hundred years later. Educationalists such as Conrad (1979) revealed that oralism was failing to afford BSL users access to English, being so poorly taught to them that, even as a second language, it was of insufficient use to be an effective vehicle for literacy. In the home, parents – the vast majority of whom were hearing non-signers – consistently found that deaf children's cognitive and personal development were adversely affected by the denial of access to signing, despite its obvious biological suitability (Gregory 1976). The phonocentric grip of oralism remains resolute, in many respects, to this day, underpinned as it is by the unexamined audist (Humphries 1977, Krausneker 2015) presumptions hardwired into the hearing majority, and the big business interests of bio-medical companies trading in 'technologies of normalization' (Lane 2008: 288), from increasingly powerful hearing aids to cochlear implants and the approaching prospect of widespread genetic intervention (Lane 1993, Blume 2010, Humphries *et al.* 2012, Middleton *et al.* 2010, Mauldin 2016).

Public policy responses have been crafted against this backdrop. Until the 1980s, the dominant mode of engagement positioned BSL users as 'handicapped' or 'impaired' in the terms of the day – employing deficit models of disability which marked the supposedly 'damaged' individual as the locus of the problem (Gregory and Hartley 1991, Lane 1997) – and sought to create change within their person (e.g., by insisting on the use of spoken language by and with them). The late-twentieth century shift towards new models of disability meant that *societal* change became the target, with the Disability Discrimination Act 1995 enshrining the principle that 'reasonable adjustment' was to be made by the providers of goods and services to afford deaf and disabled people greater equality in accessing society. The subsequent 25 years have been a time of some confusion in British policy with regard to BSL users, who – it is slowly coming to be understood – are uniquely positioned at the intersection of 'disability' and 'linguistic minority' categories (Turner 2003, 2009, De Meulder 2017, De Meulder and Murray 2017).

4 Demographics of deafness and the problem of estimating signing communities' size

As 'minorised minority languages' (Krausneker 2003), signed languages have not had the settled benefit of legally protected status anywhere in the world for more than one or two generations (De Meulder 2015). Their ontological security is therefore of the utmost salience to their users. Yet here these languages are at their most vulnerable. Intergenerational transmission of signing is by no means assured, primarily because most signing deaf people do not learn their preferred language from their parents. Estimates vary, but it is clear that, in countries such as the UK and USA, over 90% of this population is raised within households of hearing people with no prior experience of using signed language (Mitchell and Karchmer 2004). The twentieth-century pattern in Britain was that most signers acquired the language among their peers during their school years (Ladd 2003). For this population, with or without the augmentations of technology to boost any residual hearing, signing was found bio-cognitively more accessible and effective, and therefore preferable.

As a collective, though, the signing community was of unknown size. Firstly, not every person whom the audiologists declared to have a severe or profound hearing loss became a sign language user – the opportunity to learn

the language was not always present, whereas medical intervention typically ensured that technological interventions were available, and institutional pressure on parents tended to promote oral-aural language development (Gregory 1976, Gregory *et al.* 1995, Taylor and Bishop 1991, Taylor and Darby 2003). Secondly, whilst UK educational policies largely remained resolutely oralist in character throughout the century, there is no way of knowing how many deaf young people encountered signed language behind their teachers' backs, in dormitories and other informal deaf spaces (Ladd 2003, Gulliver 2009). Thirdly, a proportion of adult signers attest to having come to BSL relatively late in life, often with a sense of relief (Ladd 1979) at finally finding a mode of communication that seems comfortable and natural, a bulwark in too many cases against latent mental health pressures arising partly from a lack of ready human interaction (Hindley and Kitson 2000, Griggs 2004). Fourthly, there has been no UK register of deafness in the modern era – not least because it would always have struggled to distinguish between hard-of-hearing, deaf and deafened people, who might be distinguished from one another by hearing level, language preference, ætiology, or some combination of these, in unpredictable and socially inconsistent ways.

For BSL users, such doubts spelt danger – because a disputed population could more readily be neglected. Signing had no great public visibility or high-profile champion arguing for change; it was inadequately recognized in law; public perceptions of its status were often disdainful; and, to cap it all, perhaps there were simply not many signers at large in any case. Above all, whilst medical evidence (corroborated by historic census data, education and social service records and the like) showed that up to a huge *one-sixth* of the national population experienced some degree of hearing loss, the vast majority of these could be reckoned to be users of the spoken majority language, English – and social attitudes asserted that all deaf people should be aiming or expected to join this number without hesitation. Against such an overwhelming numerical disadvantage, the proportionally tiny community of BSL users stood to secure little attention or resource.

Standing estimates of signing populations, in the UK and around the world, have therefore been made without a high degree of confidence. For the purposes of those designing research studies, Young and Temple (2014) review the issues in some depth. Large-scale attempts to generate accurate statistics have been rare. Schein and Delk (1974) report that the USA's Bureau of the Census was working with figures from 1930 until a grant was awarded to the National Association of the Deaf in 1969. The resulting study,

focusing explicitly on the 'prevocationally deaf' population – i.e., 'those persons who could not hear and understand speech and who had lost (or never had) that ability prior to 19 years of age' (Schein and Delk 1974: 2) – estimated 203 such individuals per 100,000 citizens. The authors' discussion suggests that they believe this may, for modelling reasons, be an underestimate.

Given the uncertainties of measurement alluded to above, it is perhaps unsurprising that a number of major studies (e.g. Kyle and Woll 1985, Davis 1989, Dye and Kyle 2000) have conspicuously refused to venture any calculation of the UK signing population of deaf people. A 'rule-of-thumb' approximation has been widely applied that one in every thousand births was of a severely or profoundly deaf child (Schein and Delk 1973, Sloss Luey *et al*. 1995, Clowes 2000). Since such a level of hearing was believed often to be a predictor of later sign language use, a figure of at least 50,000 became normalised as a working estimate of the number of BSL users – it is, for example, used in the late Princess of Wales' foreword to the BSL/English dictionary (Brien 1992). On either side of this figure, estimates have varied widely until the present day. The British Deaf Association's latest discussion paper on the legal status of BSL (BDA 2014) suggests that it may be 'safe to estimate the actual number of Deaf BSL users to be [between] 89,000 and 125,000' (British Deaf Association 2014: 21). On the other hand, a briefing note produced for the UK Council on Deafness at a similar time, to inform a project estimating telecommunications demands among deaf people in the UK (Cassiopeia n.d.), argues that a figure of approximately 30,000 for 'the number of Deaf people whose first or preferred language is BSL … would appear to be the most appropriate measure'.

In the twenty-first century, various challenges have been articulated to the underlying assumptions behind such calculations. For the US, Mitchell and colleagues (2006) problematise all previous studies of the ASL-using population, arguing that there has never been a systematic, credible account of the scale of this population: writers have, they argue, been compelled to provide working assumptions even though no robust statistics exist. Elsewhere, two persuasive accounts have strongly intimated that signing deaf populations may be in decline. Johnston (2004) reviews Australian figures in order to reach the conclusion that an estimate of 7,000 seems, all things considered, to be appropriate, implying a prevalence rate of well under 0.5 deaf signers per thousand residents of Australia. Johnston weighs up explanations for this re-appraisal and the implications for future action,

highlighting the importance of preservation of linguistic records given the prospect of continuing diminution of the deaf signing community in the country. In Europe, as Schein and Delk (1974) had done before them in the US, Werngren-Elgström and colleagues (2003) sought to draw together information from a variety of national sources before arriving at their conclusions about the Swedish deaf signing population. These researchers developed a comprehensive list of named individuals and their whereabouts by combining multiple databases from public authorities and service providers in many sectors (including education, interpreting, social care) and augmenting these with community-derived knowledge (e.g., local deaf associations' records, supplemented by interviews with key officials). This study calculated a prevalence of 0.7 deaf signers per thousand inhabitants: again, considerably lower than typical estimates.

5 Locating language in the Scottish census

In order to reach more consistent estimates, many countries around the world have taken the opportunity to ask about languages in their systematic national censuses (Ozolins 1993, Aspinall 2005, Sabourin and Bélanger 2013). The United Nations Economic Commission for Europe (United Nations 2006: 96) notes that 'multilingual countries and countries with significant immigrant populations may wish to collect data' including:

a) 'Mother tongue', defined as the first language spoken in early childhood at home;
b) Main language, defined as the language which the person commands best;
c) Language(s) most currently spoken at home and/or work;
d) Knowledge of language(s), defined as the ability to speak and/or write one or more designated languages.

The four countries of the UK each produce their own census once in every decade, refreshing and extending statistics that have, in one way or another, been captured through such a process since 1881. Language questions of varying kinds have been asked in Northern Ireland, Scotland and Wales since the 19th century (though the English census did not address such matters until the 2011 iteration), reflecting the presence as indigenous Celtic languages of Irish, Scottish Gaelic and Welsh, and their relevance to education and societal relations (Sebba 2017).

In Scotland, the (re-)establishment of the Scottish Parliament in 1999, bringing a level of political autonomy absent since the founding of the UK in

1707, acted as an inevitable catalyst for renewed attention to matters of identity and identification (Glen 2010). Scottish censuses have sought information about language issues since 1881, when a question about speaking Gaelic was first included (Mackinnon n.d.): enquiries about literacy (1971) and understanding of the language (2001) were later enhancements. It took over a century for pressure to start to build towards the addition of a question on the Scots language: the case set out by Macafee (1996) argued that causes including the efficacy of language policy, educational provision, cultural development and tourism, academic research, the growth of language industries and the international promotion of the Scottish 'brand' would be advanced by the availability of this data.

Despite extensive testing by and on behalf of the General Register Office for Scotland (now known as National Records of Scotland [NRS]) either side of the millennium, however, it was not until 2011 that the Scottish census finally enquired about familiarity with Scots across the country (Sebba 2016). In that year, the census presented three language questions. The first specifically referred to English, Scottish Gaelic and Scots, asking respondents whether they could understand, speak, read and write each of these languages. The plain question '*Which of these can you do?*' was posed, with the instruction to tick boxes for every applicable skill, or to check a single box marked 'None of these'. The second question addressed English proficiency alone, asking '*How well can you speak English?*' and offering four possible responses: 'very well', 'well', 'not well' or 'not at all'. Finally, participants were asked '*Do you use a language other than English at home?*' and invited to tick as applicable among the given responses 'No, English only', 'Yes, British Sign Language' and 'Yes, other' (accompanied by a request to name the additional language used).

As previously noted, any census is a politically contestable act, and it should therefore come as little surprise that the validity, reliability and value of these questions for Scotland has been disputed (e.g. Macleod 2013, Macafee 2016, Sebba 2016). The four-skills matrix in the first question, for example, has previously been declared 'difficult to understand and interpret for people with poor comprehension skills or English as a second language' (ONS 2009: 27). Furthermore, the status of the three languages named in this question varies widely. The second question, also used in English and American censuses, demands self-assessment of language proficiency, which in itself has been found unreliable (Edele *et al.* 2015, Sebba 2017). The last question contains rather stark ambiguities, as Macleod (2013) has pointed out:

should it be taken to refer to the language used with others who live in the same household (which would mean that over three-quarters of a million lone-dwelling Scots could not legitimately answer 'yes'), or is the aim to capture data about the languages used with visitors to the household (leading to the very different situations of everyday and occasional speakers of minority languages being indistinguishable from one another)? Respondents' confusions are apparent in the census outcomes: to take but one example, official analysis of the four-skills question notes that 'a significant number of respondents indicated that they were fully skilled in Scots … but had no corresponding skills in English – despite then going on to state that they spoke English 'very well' or 'well' in the following question' (NRS 2013: 33).

The significance of census questions, regardless of how they may be worded in themselves, can also be sensitive to the way in which they are set out and otherwise contextualised. Scotland's enquiry about English proficiency, for example, was presented to all respondents, whereas in England those who had declared English to be their main language were instructed to ignore this question on the grounds that they 'might interpret the proficiency question as a measure of social class' (ONS 2009: 40). Only in Scotland, therefore, was it possible for someone to self-identify primarily as an English speaker who nevertheless spoke it with imperfect fluency. Concern has been expressed that anyone who had, in response to the preceding question, acknowledged some facility with Scots – viewed in many quarters not as an independent language but as 'bad' English – may have been subconsciously prompted to downgrade their estimation of their English fluency (Eunson and Murray 2009: 11). Elsewhere, it may be noted that the Scottish question inviting the naming of other languages used in the home, whilst it opens the door to a variety of autochthonous and global languages, overtly precludes any evidence of multilingualism across such languages, since there is only space for *one* additional language to be recorded. Respondents might be confused, too, about whether they should mention Gaelic and Scots again here, since they had already answered direct questions explicitly naming these languages in a previous question.

As for BSL, three key points may be noted. Firstly, the 'household language' question overtly foregrounded BSL as a language other than English that might be used 'at home'. For a language that was effectively neither known to science nor graced with any recognition in public discourse a generation earlier, this denotes a remarkable transformation in status. Correspondingly, it is salient to observe that the topic of BSL is located here

in a section of the census dealing squarely with languages: it is not, as might have seemed more predictable in decades gone by, associated with health, disability or physical disadvantage. This constitutes overt acknowledgement that BSL is understood to be a full linguistic system, rather than a communication tool, educational augmentation or some form of 'corrective' response to a bodily disorder – all common attitudes or assumptions in earlier times (McLoughlin 1987, Grant 1990, Gregory and Hartley 1991, Lee 1992). Lastly, efforts were made to counter the evident risk of 'institutional audism' (Turner 2006a) inherent in asking *in English* questions that presumed the inability of some respondents to understand English. A formidable evidence-base problematising this presumption in relation to BSL users had been available since Conrad's (1979) revelation that the average 16-year-old deaf school-leaver reads only as well as a typical hearing child of 8¾ (effectively re-confirmed a generation on by Powers *et al.* 1999). It was thus appropriate that the Scottish authorities made efforts to sign census questions online as appropriate, producing 38 video clips in BSL (see https://www.youtube.com/playlist?list=PL221A63B2554933B1).

It is worth drawing an explicit counterpoint here with the 2011 census as presented to citizens of England (not least since the English outcome in respect of BSL turned out to appear strikingly different). Only extensive lobbying shifted the Office for National Statistics (ONS) from its initial position that there was 'insufficient evidence of user demand to justify inclusion' (2006: 14) of any language question at all. The ONS eventually put out two questions: '*What is your main language?*': the most prominent answer specified 'English', but also available was 'Other, write in (including British Sign Language)'. For those not answering 'English', a follow-up on English language proficiency was included. (The Welsh census took a parallel approach in respect of BSL, but the wording of the Northern Irish census did not allow conclusions about the signing population to be reached.) In Scotland, meanwhile, the net result of the framing and phrasing of the language questions, their contextualisation and presentation to this audience, was felt to offer the best chance yet of securing good quality, revealing, functional data on Scotland's population of BSL users.

6 Enumerating BSL users in Scotland

Analysis of responses to the Scottish census of 2011 produced the finding that, in answer to the question '*Do you use a language other than English at*

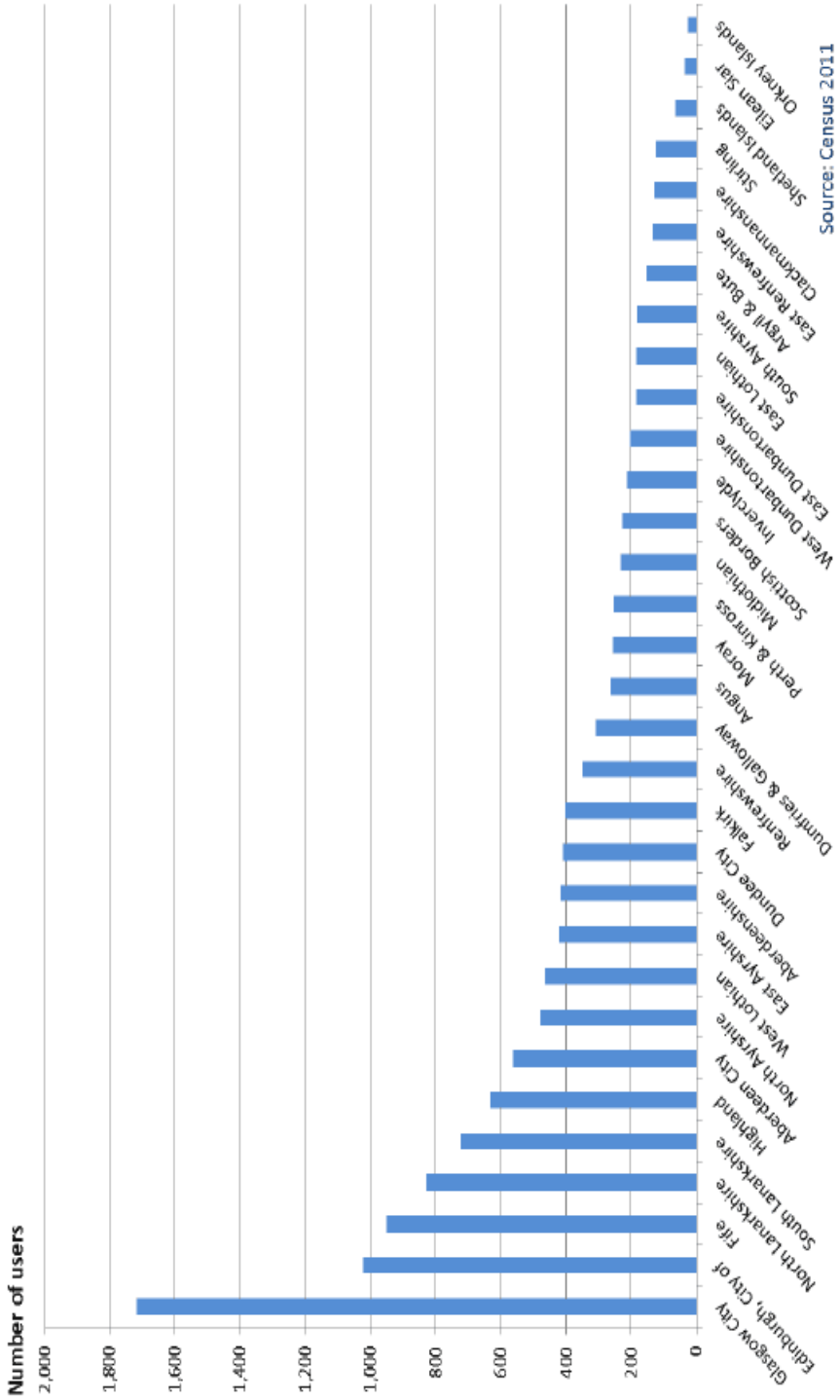

Figure 1. Number of BSL users across Scotland: Census 2011

home?', 12,533 respondents replied by ticking the box marked 'Yes, British Sign Language'. The regional breakdown supplied by NRS (see Figure 1) shows that signers are distributed right across Scotland's 32 Local

Authorities. While numbers reach four figures in each of the two major cities, Glasgow and Edinburgh, there are still small populations even in the northernmost areas, including the Outer Hebrides, Shetland and Orkney Islands.

To put this in perspective, we might consider the ratio of BSL users to the census' account of the Scottish population as a whole (approximately 1: 400). Extrapolating to the level of the UK's population as a whole, the same ratio would give a figure for these isles of perhaps 140,000 BSL users. Against an estimate of 7.7 billion inhabitants of planet Earth today, one might predict a global signing community of over 17 million people – comparable to the population of Chile, for example, or the Netherlands. The basis for the calculation rests on a number of highly insecure assumptions, of course, but with that proviso, it may be noted that these, by any reckoning, are not negligible numbers of sign language users around the world.

Having offered different questions, however, the UK's separate national censuses generated very different outcomes with regard to BSL-using populations. Across England and Wales *taken as a whole*, just 15,487 respondents (out of almost 54 million aged three years or over) were recorded as 'mainly' BSL users. In contrast to the 245 signers per 100,000 citizens for Scotland, 2011 census data report just 29 per 100,000 elsewhere (UKCOD n.d.). There being no other evidence before or since that Scotland in fact boasts an entirely different proportion of citizens with BSL skills, it seems transparently clear that the different lines of questioning provoked vastly different outcomes (Cassiopeia n.d.).

For those who contend that the planning of adequate services is the principal reason for gathering census data about minority language use, however, even the Scottish figure leaves one glaring question mark. It was noted above that one cannot reliably 'read off' from the number of BSL users any specific information about ontological status. We can therefore say nothing at all, on the above information, about how many of Scotland's 12,533 signers are themselves deaf and would, for this reason, be likely to engage with service provision offered in BSL, or translation and interpreting services to mediate between signed and spoken/written language output. In fact, since, as previously outlined, most deaf people grow up in a household alongside hearing people, it is predictable that a significant proportion of those identified will be hearing – the parents, children or siblings of deaf people (Preston 1994, Lane *et al.* 1996, Davis 2000, Singleton and Title 2000, Hoffmeister 2008). Furthermore, the professionalization of BSL teaching

since the 1980s (Denmark 1991, 1994), and the broadcasting of a series offering a 'beginner's guide' to the language by the British Broadcasting Corporation (Miles 1988), laid the foundations for such rapid growth in the number of hearing people acquiring the language *ab initio* in adulthood that, by 2000, BSL was reported to be the second-most popular adult education subject after First Aid (Woll and Adam 2012). Many of Scotland's signers, therefore, are undoubtedly not deaf.

Further insight is, however, available, and it is here that an additional small enumerative miracle occurs. Multivariate analysis brings together data from different sections of the census, which permits the 'overlaying' of expressed language data against information on long-term health conditions. One may then see, for example, that over 3.5 million of Scotland's 5,118,223 inhabitants aged three and over declared no such long-term condition, with Polish speakers providing the largest number of these (notwithstanding, of course, the great majority who self-identified as using only English).

For current purposes, though, the revealing figure is this: NRS data records, on this basis, that precisely 3729 people in Scotland in 2011 could be identified as *both* deaf *and* using BSL. This is a remarkable figure whose significance, given the foregoing discussion, should not be overlooked. Estimates of the size of the signing deaf population have been bandied about for many generations: none has ever been considered reliable as an indicator at the whole-population level. For the UK as a whole, this ratio of one deaf BSL user per 1372.55 citizens (aged three and above) would predict a population of some 40,000 people. By asking a specific, well-formulated and carefully contextualised question on the use of BSL, and coupling this with explicit data about deafness, the Scottish census of 2011 provides the most persuasive answer yet to a question where vague approximations have hitherto been made to suffice.

7 Squeezing the statistical juice

Having come so far in the quest for satisfactory indications of the scale of the BSL-using population on these shores, it is appropriate to press the findings above in order to identify any weaknesses or addenda for future attention. In a number of respects, questions that have been raised in relation to other language data generated by UK census processes can and should also be explored where BSL is concerned. There is inevitably less value, whether that be with regard to the sociology of identity or the development of public policy

responses, in language information of questionable precision. In the matter of deafness and BSL, a crucial factor is the reliability of the headline data on long-term health conditions.

Scotland's 2011 census recorded 350,492 people (aged three and above) to be deaf or partially-hearing. Now, by other estimates, such a figure gives a very low indication of the prevalence of hearing loss in the population. The charity Action on Hearing Loss (n.d.), for example, reports that: 'There are 11 million people with hearing loss across the UK, that's around one in six of us. An estimated 900,000 people in the UK have severe or profound hearing loss'. Taking such figures as a benchmark, it would appear that there 'should' be some 887,000 people in Scotland reporting deafness or hearing impairment. The discrepancy of over half-a-million people is enormous, representing an increase of some 150% upon the figure generated by the 2011 census. A correspondingly revised calculation of the deaf, BSL-using population would suggest a figure of over 9300 in Scotland, and thus rather more than 100,000 in the UK as a whole. This would represent a significant increase on the 24,000 or more people in the UK whom AHL reckon ('although there are likely to be more that we don't know about') to have BSL as their main language (Action on Hearing Loss, n.d.).

Is there reason to believe that the NRS pivot table that gives rise to the figure of 3729 deaf BSL users in Scotland is flawed? If it were found to underestimate the number of deaf and partially-hearing people in the nation, we might be drawn towards the conclusion that there were, in fact, a larger number of deaf BSL users than this – because a greater proportion of the signing population of 12,533 should actually be reported as having a long-term condition affecting their hearing. It turns out, as it happens, that NRS itself anticipates that its figures *are* somewhat suspect: 'For the question on long-term health condition the non-response percentage was 15.2 (which is higher / worse than most other questions) and the agreement rate was 78.7% (which is lower / worse than most other questions)' (NRS 2015). Nothing in this remark would lead to a re-estimate of the order intimated above, but there clearly are grounds to suppose that the pivot table figure may deflate the actual number of deaf BSL users to a significant extent. (On the other hand, in the current climate of pressure upon charitable bodies in the third sector of the UK economy, AHL's estimates might also be viewed with a degree of scepticism.)

Other question marks hanging over aspects of the analytical process align directly with the reported dissatisfaction expressed in relation to the

spoken minority languages native to Scotland. The census offers no information at all about levels of fluency in languages other than English, including BSL. In a context where most of those (deaf or hearing) who did start to sign in their youth never had either the opportunity or the inclination to seek formal qualifications in the language, self-assessments of fluency can be expected to be somewhat rough-and-ready, informal and imprecise. Meanwhile, though it is known that hundreds of thousands of people have been taught BSL in adult education, it has been the case since the early years of the award ladder in the 1980s that only a tiny fraction of learners progress to higher levels at each stage (Simpson 2007). It is therefore hard to be confident that a majority of Scotland's 12,533 declared BSL users can lay claim to a high degree of fluency. The available data simply does not afford any detail on this issue.

We may also wonder whether something akin to the ONS' anxiety about social class effects reported above may be at work in relation to BSL. It is, after all, a language that has been highly stigmatised throughout much of living memory: no sooner witnessed than publicly derided by many members of the hearing majority; scorned and vilified by educationalists, medics and policy experts even long after its status began to be reconsidered by linguists. Many BSL users report growing up with a deep sense of shame associated with their use of the language (Taylor and Bishop 1991, Taylor and Darby 2003), no matter that they also developed an often embittered sense of fierce resistance to this emotional response (Lee 1992, Ladd 2003). In such a context, it would hardly be surprising to find an element of residual reluctance to lay claim to the language in the formal, normative context of a national census. There may, therefore, be BSL users who chose not to identify themselves as such in the 2011 data, despite the inclusion of a direct question on the matter.

Two kinds of confusion may also be associated with the use of the very term 'British Sign Language' in the census forms. The introduction of this name in the mid–1970s itself caused some consternation in deaf circles: like 'American Sign Language' before it (Maher 1996), it was misunderstood by many deaf people to be naming an artificial sign system, rather than the existing, familiar, natural language of the community (Brennan and Hayhurst 1980). Echoes of this uncertainty remain to this day, compounded by the fact that so many artificial or incomplete communication systems – all of which might be considered forms of 'contact signing' (Lucas and Valli 1992) – compete for space in the minds of the unwary within this conceptual territory.

These include assistive vocabularies of gestures (Makaton, Paget Gorman, Signalong) for people with language disorders; signs straitened into the order of English words and doctored with English syntactic markers (Signed English, Sign Supported English, Seeing Exact English); and irregular and personalised home-sign systems arising spontaneously from sibling interaction and sustained into adulthood because they come to serve the informal purposes of their users perfectly adequately (Sutton-Spence and Woll 1999). It is next to impossible to know whether and to what extent any of these may have been subsumed into, or otherwise affected, responses that ostensibly report the use of BSL. Prior to the 2011 census, the *Aye Can* website containing samples of written and spoken Scots was developed at the behest of the Scottish Government 'to help people decide if they use the language' (Unger 2013: 146). It may be that the next census (2021) might usefully see the creation of a similar information resource presenting comparable clarification on BSL to address any remaining confusion on these issues.

The second form of confusion relates to the 'British' aspect of the language title. Global population shifts include deaf migration (Friedner and Kusters 2015), and numbers of deaf migrants, with whom come additional signed languages, are undoubtedly arriving in Scotland. The census can, at present, tell us nothing about how many people use such languages around the country, nor which languages these are. Service providers are therefore left in the dark to deal with a complex and sensitive set of issues. One possible outcome of the inevitable encounters between signed languages – taking place in virtual as well as physical spaces (Breivik 2005) – is the natural evolution through interaction of 'contact' language forms, sometimes described as international signing (Supalla and Webb 1995) or cross-signing (Zeshan 2015). Scotland hosts a globally unique programme for sign language interpreters which addresses the use of such forms (Hessman *et al.* 2011), but without better prevalence data, an informed policy response or national training plan is hard to generate.

Finally, we must return to the issue of the exact wording of the question that brings BSL explicitly into the frame: '*Do you use a language other than English at home?*' A BSL user who is the only deaf person in the household – and we have established that there are many such people – may well decline to answer 'Yes, British Sign Language' in response to this question, even if BSL is, in fact, their preferred (or 'main') language. They may use the language at every available opportunity, but if they live in a rural

area of Scotland, with a small number of other BSL users in the vicinity, and work in an environment that does not require or is not conducive to the use of BSL, their everyday reality may be that the opportunity to 'use' the language is confined to watching translated television programmes or enjoying brief videophone conversations with distant friends. Such a scenario – with BSL, in one way or another, an occasional feature in an environment otherwise dominated by English – is much more likely to arise than its counterpart, the situation where BSL is routinely employed for all interactions by every member of the household. Either, however, might legitimately lead to an affirmative answer to the question as posed – depending entirely upon the respondent's construal of the question. As if there were not already sufficient rationale for caution, this presents yet another reason to tread carefully in the interpretation of the census data, for all its progressive features.

Despite all of the above queries, it remains a matter of undoubted satisfaction that we finally have more robust figures for the numbers of deaf and hearing BSL users. The Scottish census gives us 12,533 BSL users overall, 3729 of whom are deaf. Reproducing these proportions against the overall population for the whole UK leads to estimates of some 140,000 BSL users, including about 40,000 deaf people. On the other hand, the highest estimates that might be produced (calculated on the basis of AHL figures for numbers in the UK population with forms of hearing loss) might suggest over 9300 deaf BSL-using Scots, and perhaps 100,000 across these isles as a whole. One might be led to estimate, therefore (though other interpretations are obviously available), that midway figures of 6500 and 70,000 deaf BSL users, in Scotland and the UK respectively, may be present at this time – making the old one-in-a-thousand rule-of-thumb look remarkably resilient.

8 Issues and implications

Whether one sees such numbers of BSL users as large or small is, of course, all a matter of perspective. As a matter of principle, the point is moot: it has long since been acknowledged that, regardless of absolute numbers, there is a moral and ethical rationale firmly underpinning social provision for signing populations (Wrigley 1996, Rée 1999). With the scientific recognition of signed languages over the past sixty years, public policy has come to reflect this awareness, resulting in legislative action on disability and equality. In the UK, this has been coupled, as noted above, with unprecedented growth in the number of people choosing to learn BSL as an additional language. Growing

visibility, against a backdrop of greater tolerance in social attitudes to human diversity, has been boosted by 'celebrity endorsement' such as the public use of BSL in the 1990s by Diana, Princess of Wales, during her time as the Patron of the British Deaf Association. The 'exoticisation' of signing (Corker 1998) meant that it acquired a certain cachet as a 'new' and even 'sexy' feature of public spaces (such that it was, for example, harnessed for primarily aesthetic reasons in their concerts and videos by popular musicians including Boyzone, Ed Sheeran and others).

Even while this thrilling red carpet was apparently being rolled out to BSL, however, the long-term prospects for the language were also open to question in various ways (Turner 2004, 2009). In particular, cochlear implantation of deaf children was become steadily more commonplace (Thoutenhoofd *et al*. 2005) and the age of implantation decreasing with earlier diagnosis of deafness (Young and Tattersall 2007). The residential deaf schools which had been the engine-room for acquisition of BSL for generations of children were in decline, such that the vast majority of deaf children are now in mainstream education, often with few or no signing peers, while no more than 3% are now in specialist schools for deaf children (CRIDE 2017). A concomitant sense was brewing that increasing contact with English – including through the swelling ranks of 'new signers' (De Muelder 2018) – was having an effect on the nature of BSL itself (Turner 1995, 1996), such that use of the 'heritage signing' that displays maximum evidence of the visual experience of deaf enculturation was in decline (Turner 1999). With bitter irony, the prospect emerges that BSL just might be enjoying a final blooming before its petals are blown and the community starts to wither entirely. De Meulder and Murray (2017: 147) argue, indeed, that 'there is reason to believe' that the vitality of most Western, national signed languages should properly be described as *threatened*.

This issue of possible endangerment chimes, in some respects, loudly and clearly with related concerns for every other minority language in Scotland. The question of what, exactly, is being 'preserved' or 'sustained' when languages such as Gaelic are acquired – with variable linguistic outcomes – without routine access to everyday or intensive interaction with fluent speakers is sharply pertinent (McLeod 2014; MacLeod and Smith-Christmas 2018). Research into the teaching and learning of BSL is not extensive (though see Quinn and Turner 2014; Turner *et al*. 2018), and little empirical evidence from ground level in classrooms and community sites can shed light addressing any such concerns. Further research in this area –

particularly in light of the current government's overt commitment to promoting the language as a curriculum option for hearing pupils in Scottish schools – is becoming increasingly urgent. The wider social policy landscape in relation to *deaf* signers, however, is markedly different than for spoken languages: no-one is advocating invasive surgery to minimise the chances of children growing up with Gaelic, or genetic intervention that would prevent the birth or alter the biology of future Gaelic speakers.

Be that as it may, with the evidence of a five-figure population of BSL users arising clearly from the 2011 census, subsequent years have seen a distinct shift in Scotland's approach to the language. An opposition (Labour) Member of the Scottish Parliament, Mark Griffin, having some direct experience of deafness in an older generation of his own family, put forward a Member's Bill seeking to create definitive change in the status of BSL. Enhanced with apparent enthusiasm by the governing Scottish National Party, the British Sign Language (Scotland) Act 2015 passed, with support throughout the chamber, in September of that year. The Act requires the publication of a National Plan for BSL, with relevant public authorities developing associated plans addressing their own specific responsibilities. The whole process is to be repeated, following appropriate review in 2023, and on an ongoing cyclical basis thereafter.

Scotland's BSL Act – unique at this point within the UK – underlines that the signing community has secured a degree of traction in public consciousness. The records of the Education and Culture Committee (Scottish Parliament 2015), which considered the Bill before its final passage through Parliament, show an overriding sense that existing legislation was not – despite the protestations of responsible authorities, including the National Health Service boards and the Convention of Scottish Local Authorities – adequately serving public requirements in terms of fairness, social justice and quality of life. Implementation of dozens of BSL Plans across the public realm over the coming years will start to show whether and how the relevant bodies can address perceived shortcomings in education, family services, health, justice, access to employment, citizenship, culture and heritage. In every area, however, any residual uncertainties, as outlined above, with regard to the numbers of BSL users – and especially of *deaf* BSL users – will hinder the preparation of clear, measured and proportionate plans meeting the avowed target of the legislation, i.e., to promote the prospects of the signing community through the use and understanding of BSL. At this stage, for all the laudable improvement in data delivered by the 2011 census, the

authorities' ability to train the workforce with appropriate communication skills, to develop the required structures for dissemination and reception of signed information, and to put in place the necessary services to meet public requirements is compromised and constrained by the ongoing queries and conundrums discussed above.

9 Outcomes and conclusions

Across the UK, censuses are a decennial affair, which means that the next (2021) instalment of the story is imminent at the time of writing. Scotland's national records office, like its counterparts in the other constituent nations, is therefore reviewing the format, sequence, wording, layout and presentation of the census questions about languages, alongside every other aspect of the process that will generate, interpret and report these vital national statistics. Census developers are acutely conscious of the fine line they must tread between maintaining a consistency of approach that allows analysts to identify elements of continuity and change in the make-up of the nation; attending to global thinking on best practice, and to the need to facilitate international comparisons; and amending details in response to specific socio-political demands at home. With regard to its treatment of BSL, there is much to value in the approach taken in the 2011 census in Scotland. Fundamentally, we finally have some serious, meaningful numbers about the signing population. The available data is more functional than for any other part of the UK: against a backdrop of longstanding confusion, this represents a major advance in demographic knowledge. We can extrapolate revealingly about projected populations across the UK and beyond.

In brief, after many decades of unconvincing reports of the scale of sign language communities in the UK and worldwide, Scotland's 2011 census investigated in an innovative way, and the outcome offered a credible picture of 12,533 BSL users aged three and over in the country. Of these, 3729 are also reported to be deaf, i.e., 0.07285% of the population. On these proportions, 3871 members of the entire 2011 population of 5,313,600 (ie including all age groups) could be realistically identified as deaf BSL users. Extrapolated to a UK population of 63,182,000 (a cumulative estimate across the national census data captured at that time), this would equate to 46,028 deaf BSL users of all ages. Although the estimates become increasingly imprecise at scale, one might note that, of a world population which the United Nations estimated to have reached seven billion in October 2011, this would suggest

a global community of just over 17 million signers (using a range of different national signed languages), of whom almost 5.1 million would be deaf people.

It is, of course, only proper to treat such estimates with great caution. As robust as census data may be, it is not infallible. In the absence of firmly shared understandings of the names and characteristics of forms of signing, it is not clear that every user of a natural signed language has been noted. Scotland's national records office itself questions the accuracy of its information, specifically with regard to the number of people reporting conditions such as deafness, which may be artificially low. On the basis of an estimated correction, a figure of 6,500 deaf signers in Scotland, and correspondingly some 70,000 across the UK, may be posited (but could not be defended with any great confidence). Around the world, such data as may be available is formulated in very different ways. The incidence of deafness and the spread of signing are not uniform across the globe. Migration and population growth render the international picture subject to ongoing fluctuation. Nevertheless, it is likely that the world's population of sign language users easily reaches eight figures, equating to that of a major nation. It must also be acknowledged that the findings of a range of twenty-first-century studies, in diverse locations, can be seen to suggest that populations of signing deaf people are in decline, given modern medical provision, educational practices, developmental contexts within families, and the advance of biotechnologies. Prevalence rates of approximately 0.7 deaf signers per thousand in the general population have been reported in several countries (including Australia, Sweden and now Scotland). Whilst the legal rights of signing communities have never been predicated on population size – linguistic human rights exist, if at all, as a matter of principle (Turner 2006b) – protection in the eyes of the law may be required to secure the status of these languages.

This paper has also problematised aspects of the Scottish census data on BSL, suggesting that the planning of services in particular may be compromised without further attention to these issues. Questions have been flagged, for example, as to whether the data on long-term health conditions might be improved, so that a clearer image of the deaf population of BSL users can be derived. Attention has been drawn to the likely presence in Scotland of signed languages other than BSL: better information on this issue would undoubtedly assist in the development of appropriate services and support. It has been suggested that there may be uncertainties over the use of naturally and artificiallyoccurring forms of 'contact signing'. Augmenting the

depth and detailing of an appropriate survey instrument might also facilitate the development of more nuanced accounts, in both deaf and hearing populations, both of levels of BSL fluency and of frequency, type and context of signing in everyday life. The 2021 census will usefully pay heed to these points, as outlined in the plans for the next census (NRS 2018 and accompanying *Language* and *Health* Topic Reports). It is possible that, over time, it may be more appropriate and viable to create an adjunct survey under the terms of the National Plan for BSL, and to support its delivery.

The status and fortunes of BSL have undergone significant changes in the modern era, in Scotland perhaps even more than elsewhere. If some of the proposed actions were taken, there might be greater hope of protecting the language against the more alarming of the highlighted prognoses, securing the use of 'heritage signing' for and, crucially, *by* future generations. Scots may ostensibly live in a time and place committed by law to 'promoting' BSL, but this promotion needs to form part of a broader, more informed 'language management' (Spolsky 2009) approach. The census, and the care with which it is read and used, is vital to achieving this ambition.

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