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# Assessing the Vitality of New Zealand Sign Language

## Abstract

New Zealand Sign Language (NZSL) became an official language (NZSL Act 2006) when its vitality was already under pressure. Even though its institutional status has improved recently, the traditional community domains of NZSL use and transmission are apparently shrinking inasmuch as most of the deaf children who have cochlear implants are acquiring a primary spoken language, with or without exposure to NZSL. Census figures show a decline in the number of NZSL users. Whereas the health of Te Reo Māori, the other official language of New Zealand, is regularly surveyed to inform revitalization priorities, no sociolinguistic assessment has informed an accelerating level of language planning around NZSL. In light of this, I undertook a mixed-methods assessment of the vitality of NZSL, which was informed by UNESCO's (2003) Language Vitality and Endangerment (LVE) framework and the Expanded Graded Inter-generational Disruption Scale (EGIDS) (Bickford, Lewis, and Simons 2015), both of which have been adapted for signed languages. Findings of the study reveal objective evidence of a "threatened" status (level 6b of EGIDS), juxtaposed with a mix of optimistic and pessimistic subjective perceptions of vitality within the NZSL community.

LIKE MANY MINORITY languages, New Zealand Sign Language gained official recognition (NZSL Act 2006) at a time when its vitality was already under pressure. Even though its status in society has improved in the last two decades, the traditional community domains of NZSL use and transmission are apparently shrinking, inasmuch as

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the majority of deaf children who have cochlear implants are acquiring a primary spoken language, with or without exposure to NZSL. Recommendations for strengthening the ethnolinguistic vitality of a minority language characterize the initiatives that have occurred for NZSL in recent years include expanding speaker numbers through second language teaching, encouraging intergenerational transmission, organizing cultural activities that garner public attention, and taking the language into new domains to extend its functionality (Fishman 1991). However, the initial step that Fishman (*ibid.*) recommends is a sociolinguistic assessment to identify the demographics of the language community, domains of language use, resources, attitudes, and goals of the speakers, all of which should inform language planning and policy (LPP) measures and raise critical awareness in the language community in question. Whereas the health of the official indigenous language of New Zealand, Te Reo Māori, is regularly surveyed to guide and reevaluate revitalization priorities (Benton 1979; Te Puni Kōkiri 1998, 2008, 2010), no wide-ranging survey has similarly informed an increasing level of investment in LPP with regard to NZSL, which is also an official language. In light of this, I undertook an assessment of the vitality of NZSL, which was informed by UNESCO's (2003) Language Vitality and Endangerment (LVE) framework and the Expanded Graded Intergenerational Disruption Scale (EGIDS) (Bickford, Lewis, and Simons 2015), both of which have been adapted for signed languages.

### Threats to the Vitality and Endangerment of Signed Languages

As is the case with minority spoken languages, the ethnolinguistic vitality of signed languages (SLs) is broadly threatened by the existence of small and spatially dispersed populations, disrupted intergenerational transmission, restricted domains and modes of use, lack of documentation, pejorative attitudes, limited community influence on institutional interventions that affect language vitality, and weak policy measures to protect language rights (Johnston 2004; Wilcox, Krausneker, and Armstrong 2012; Nonaka 2012; Bickford, Lewis, and Simons 2015; De Meulder 2015b).

Sign language communities have small reference populations that are not bounded by the kind of territorial, ethnic, or familial heritage

markers that define spoken language minorities. Intergenerational transmission is inherently precarious, as only about 5 percent of deaf children are born to deaf parents (extrapolated from U.S. population data; see Mitchell and Karchmer 2004). In urban<sup>1</sup> deaf communities that share a national SL and identity, traditional vectors for intergenerational transmission of SL are schools for deaf children, intergenerational deaf families, and deaf organizations (Woll and Ladd 2003). In most developed countries, schools for deaf children have been downsized or closed, and inclusive education policies disperse deaf children into mainstream schools, thereby creating a diaspora effect that weakens the transmission of SL and the formation of collective identity (Ladd 2002; Johnston 2004).

Sign languages are inevitably surrounded by spoken languages, and normative pressure to move toward a majority language is mediated both overtly by medical and educational interventions that promote spoken language as more prestigious and more useful, and also implicitly by pejorative attitudes and lack of societal recognition of SL (Hill 2015; Krausneker 2015). Typical LPP interventions that negatively affect vitality are the exclusion of SL and/or the selection of artificial sign systems in the education of deaf people, solo mainstream school placement, and pedagogical assumptions that the use of assistive listening technology obviates the relevance of SL and Deaf cultural identity to deaf children (Humphries et al. 2012; Wilcox, Krausneker, and Armstrong 2012).

Although SL communities include nondeaf people, a critical mass of deaf people is the “native host” for the existence of a primary SL (Nonaka 2012; Johnston 2006). This reference population is diminished by medical innovations that reduce the incidence of congenital deafness, such as rubella immunization and in-vitro genetic screening for deafness (Johnston 2006; Wolfe and Young 2006). The implementation of universal neonatal hearing screening, followed by high rates of early cochlear implantation in deaf infants, has increased ideological support for auditory-verbal first-language acquisition approaches and reduced support for SL acquisition (Boyes-Braem and Rathmann 2010; Bruin and Nevøy 2014; Humphries et al. 2012; Johnston 2004).

A counterbalance to threats to SL vitality (although not originally couched in those terms) was the promotion of bilingual approaches

in education for deaf people beginning in the 1980s, premised on moral arguments for linguistic rights and instrumental arguments for the advantage of SL as an accessible first-language medium for cognitive, psychosocial, and literacy development (Knoors, Tang, and Marschark 2014). Although the educational gains brought about by bilingual pedagogy are still being debated (Knoors and Marschark 2012; Swanwick 2016), the contribution to sustaining SL vitality is more manifest. Ironically, acceptance of bilingual principles in New Zealand coincided with a policy shift to the placement of deaf children in mainstream school contexts, which are antithetical to deaf bilingual pedagogy and socialization in NZSL (Branson and Miller 1993; McKee 2008; Fitzgerald & Associates 2010). The rise of early cochlear implantation (CI) has meant better auditory access to spoken language for many children, which also challenges the implementation of bilingual approaches (Swanwick 2016). Increasingly, young deaf children with CI are “bimodal learners, who are likely to use sign language—or variations of signing—as a secondary or supplementary mode of communication” (Knoors and Marschark 2012, 291). The blended, bimodal nature of these children’s linguistic repertoires is a form of language shift that will likely alter the norms of SL use and the identity profile of future deaf communities, as has already been observed in countries with smaller populations and universal healthcare, such as New Zealand (Bathard 2014), Norway (Ohna 2003; Vonen 2006), Sweden (Nilsson and Schönström 2014), and Finland (Takkinen 2012).<sup>2</sup>

### Assessing the Vitality of Signed Languages

*The UNESCO Language Vitality and Endangerment Survey  
Adapted for Signed Languages*

The relevance of an endangerment framework for national SLs was highlighted by Johnston’s (2004) analysis of demographic and educational data on deaf children in Australia, from which he forecast a rapidly diminishing population of users of the national sign language, Auslan. Johnston’s claim that a declining incidence of deafness, the loss of schools for deaf children, and normalization of cochlear implants were precipitating SL endangerment stimulated debate about the necessary and possible conditions for the maintenance of deaf SL

communities. Although most commentators agreed with the macro-trends he identified, some questioned the imminence of the threat posed to SL vitality, in light of the historical resilience of SLs to external pressures (e.g., Hyde, Power, and Lloyd 2006; Moores 2006; Carty 2006; Mitchell 2006). In 2011, the World Federation of the Deaf (WFD) responded to steadily growing concerns about threats to SLs by hosting a conference on that theme.<sup>3</sup> Contributors from twenty-one countries reported trends in national SL communities that echoed Johnston's 2004 forecast, and others described the imminent demise of small-scale village SLs. The conference identified strategies for maintenance that communities could undertake outside the domain of education, such as attitude and status planning, as well as promoting the cognitive advantages of sign bilingualism.

Subsequently, the International Institute for Sign Languages and Deaf Studies (iSLanDS) at the University of Central Lancashire, led by Ulrike Zeshan, collaborated with the WFD and sign language experts to adapt the UNESCO (2003) Language Vitality and Endangerment (LVE) questionnaire to make it suitable for surveying and mapping the status of SLs worldwide, with the aim of raising awareness among Deaf communities, linguists, and policymakers of the need to protect SL diversity (UCLAN n.d.; Safar and Webster 2014). Between 2011 and 2013, the adapted LVE questionnaire<sup>4</sup> was completed for fifteen SLs. Based on the local assessments provided, a level on the UNESCO LVE scale (from 0 = extinct, to 5 = safe) for each language was determined by averaging the scores for clusters of questions addressing the following ten indicators:

the proportion of signers in the reference community; generational or age group language use; domains of language use; new domains; materials for language spread and education; governmental and institutional language attitudes and policies; use of the target sign language in deaf education; reference community members' attitudes towards their own sign language; the type and quality of documentation; and the status of language programmes. (Safar and Webster 2014, 4)

Of the fifteen SLs assessed, three were rated as level 1, "critically endangered"; four as level 2, "severely endangered"; four as level 3, "definitely endangered"; and four as level 4, "unsafe/vulnerable."

None were rated as level 5, “safe.” The reference populations that were assessed ranged from 34 signers (Yucatec Maya SL; level 1) to 70,000 (Ethiopian SL; level 3). The most imminently endangered were isolated village SLs that are threatened by a national sign language and/or a declining incidence of deafness as a result of exogamous marriage. But even national sign languages with strong institutional recognition (in Austria, Brazil, Denmark, and New Zealand, for example) were rated as “unsafe/vulnerable.”

*The EGIDS Scale Adapted for Assessing the Vitality of Signed Languages*

The Expanded Graded Intergenerational Disruption Scale, developed by Lewis and Simons (2010) from Fishman’s original 1991 GIDS, is a more differentiated thirteen-level scale that measures the development of language functions and vehicularity (its use for wider communication in society). As in the UNESCO LVE framework, intergenerational transmission is the key element in EGIDS, particularly in levels 6a–10, which describe levels of vitality below “vigorous” (i.e., normal) status. Even though the EGIDS offers finer distinctions than those of the UNESCO five-level classification, and its authors advise that a rating can be determined by answering five key questions (Lewis and Simons 2010), the scale descriptors do not require some forms of evidence sought in the UNESCO questionnaire, including absolute and relative speaker numbers, community attitudes, government policies, and existing documentation (Dwyer 2011, 11).

In order to make the EGIDS applicable to rating SL vitality for Ethnologue records,<sup>5</sup> Bickford, Lewis, and Simons (2015) adapted its definitions to reflect the nonspoken modality of SLs and the specific sociolinguistic circumstances of their use. Key modifications include the following: rephrasing reference to “oral communication” to “face-to-face” use and “speakers” to “users”; rewording assumptions of family-based intergenerational transmission to reflect the more usual pattern of transmission between deaf adults and unrelated children; broadening definitions of “literacy” and “standardization” to include institutionalized use of SL in formal education; redefining “literature” to include nonprint (film) texts and documentation of SLs and “wider communication” to include nonwritten use in mass media throughout a region. The rationale given by Bickford et al. (2015) for how the

descriptors were modified is an informative synthesis of the specific circumstances that affect the vitality of SLs; yet they posit that “the factors which strengthen or weaken both types of languages [signed and spoken] are comparable. Both have similar patterns of development and loss (and, presumably, revitalization). By using the same scale for both types, important similarities between signed and spoken languages are highlighted, and insights from the study of each illuminate understanding of the other” (ibid., 3). The current study demonstrates the application of this model to NZSL.

### The NZSL Vitality Project

A sociolinguistic survey of the NZSL community had not been undertaken since 1997, when Pat Dugdale, a deaf researcher, conducted an in-depth study of a sample of one hundred deaf people. Dugdale’s (2000) study described a range of life outcomes for these people before NZSL recognition, including barriers to education, communication, employment, and civil society. At that time, deaf community leaders were beginning to advocate for recognition of a cultural-linguistic status in the public policy space, especially regarding SL accessibility and the role of NZSL in education (Smith 2003). Documentation of NZSL had progressed from the mid-1980s, including a dictionary (Kennedy et al. 1997). In addition, university programs for interpreters and NZSL teachers were established in 1992 and 1997, respectively. Although schools for deaf students were downsized in the 1990s and deaf people were concerned about the isolation of deaf students in mainstream schools, it was assumed that the community would provide a fallback for the delayed enculturation of deaf youth. Concern about the long-term impact of mainstreaming on the sustainability of a signing community was not articulated, perhaps because deafness was considered a more fundamental basis of the community than the use of NZSL.

In the first decade of the new millennium, engagement with lawmakers advanced the institutional status of NZSL: It became a subject option in the school curriculum in 2006<sup>6</sup> and was made an official language that same year (without creating new instrumental rights). Awareness both of the need for resources and rights alongside recogni-



tion and of the implications of deaf children's limited access to NZSL was growing (McKee, Manning, and Noble 2010).

Observing that linguistic human rights for NZSL users remained problematic, the NZ Human Rights Commission (HRC) in 2012 undertook an inquiry into barriers for NZSL users in the public sector. Its report (Human Rights Commission 2013) highlighted three key areas requiring stronger practical measures: (1) first-language acquisition of NZSL and access to instruction in NZSL; (2) access to civil society via NZSL; and (3) promotion and maintenance of NZSL by a designated, funded body. In response, in 2014 the Ministry of Education embarked on work to improve the provision of NZSL to deaf preschoolers and students in schools (this initiative is currently ongoing). The Ministry of Social Development appointed an NZSL Advisory Board in June 2015<sup>7</sup> to advise government and to disburse an annual fund of approximately one million dollars for promotion and maintenance initiatives. Although the HRC report captures problems with the status of NZSL in government domains, this study provides a broader context for LPP by seeking evidence about community size, domains of use, intergenerational transmission, and the NZSL community's subjective perceptions of vitality.

## Method

Assessing vitality in relation to either the LVE or the EGIDS scale requires surveying a language community using mixed data-collection methods (Dwyer 2011, 11). The NZSL Vitality project<sup>8</sup> gathered data from sources such as the following: (1) statistics on the NZSL-using population (census, Deaf organizations, and educational sources), (2) an online and face-to-face survey of the NZSL/Deaf community (to investigate language profile, domains of use, and subjective views of vitality),<sup>9</sup> (3) an online survey of and interviews with parents of deaf children, (4) interviews with young adult L2 users of NZSL (to investigate their language choices and motives), and (5) a scan of public agency websites to ascertain the visibility of NZSL.

The reliability of vitality assessment is contingent on the researcher's access to various information sources and the researcher's direct knowledge of the community (Dwyer 2011). In the UNESCO

questionnaire, the Reliability Index (0–3) gives the criteria for adjudging the reliability of assessment with regard to each factor as based on “reliable sources,” “direct fieldwork and observation,” or “best guess” (Safar and Webster 2014). These descriptors indicate that assessment goes beyond empirical data and draws on the researcher’s personal knowledge of the language situation. Accordingly, I outline mine here. I am a hearing, L2 user of NZSL, and I am also a former L2 (school) student of Māori during the first wave of its revitalization (in the 1970s). I have worked with and socialized in the NZ Deaf community since my training as an NZSL interpreter in 1985, at the age of 20. Following four years of later study and work with the ASL community in the United States, I worked as an applied linguistics researcher, a Deaf studies lecturer in New Zealand universities, and an interpreter. In these capacities, I have been a participant–observer throughout a thirty-year period that has seen radical change to the status of NZSL and deaf consciousness of language identity, in parallel with a wider international paradigm shift. My assessment of vitality is thus informed by my own involvement in local developments and awareness of parallel trends elsewhere.

#### Number of Signers in the Reference Population

The total number of deaf people in a national population, and especially the subset of individuals who use SL, is notoriously difficult to ascertain according to many who have tried to do so (Gras i Ferrer 2004; Mitchell et al. 2006; Hyde and Power 1992; Hyde, Power, and Lloyd 2006). Schein (2001, 21) likens the quantifying of a deaf, signing population to finding “needles in haystacks” and criticizes estimates of “early deaf” populations (i.e., likely sign language users), which he sees as commonly inflated for political purposes. Schein notes that the rates of deafness in national populations vary greatly in different time periods (usually for medical reasons) and geographical locations (due to localized genetic and health factors). The number of deaf people likely to be sign language users is often extrapolated from the incidence of severe-to-profound deafness in infants, enrollments in deaf education (e.g., Johnston 2004; Mitchell et al. 2006), records of deaf organizations or service providers, and census data on hearing disability (Schein 2001). All of these are proxies for SL use

and are problematic in various ways (Hyde, Power, and Lloyd 2006). For example, there is no straightforward correspondence between an individual's audiological profile and that person's use or nonuse of SL; nor is there necessarily one between schooling and adult language use. Organizations and service agencies generally record deafness rather than SL use as a criterion of membership; conversely, not all SL users interact with such organizations.

Hyde and Power (1991) undertook a count of deaf sign language users in Australia using a snowballing social network survey method, combined with educational data on deaf children. This yielded a total of 15,400 Auslan users in a national population of 17.28 million (a proportion of 0.00089), which was between previous estimates. Applying this per-capita proportion to the New Zealand population of 4.5 million gives 4,005, which is lower than some estimates commonly used. For instance, a government information brief states that "From questions asked in the 2006 Census, some 7,000–9,000 New Zealand Sign Language users are estimated to be deaf people."<sup>10</sup> This estimate was calculated by correlating NZSL use with deaf/hearing-impaired (HI) status in a very small subsample of the population who declared a sensory disability in the census. The national deaf association website claims the larger of these figures, stating that "about 9,000 culturally deaf people [live] in New Zealand"<sup>11</sup> These estimates exceed the observed level of participation in local and national deaf community activities, as discussed later in this article.

The UNESCO LVE survey inquires about both the absolute number of speakers and the reference population who use the language. A *reference population* is defined as "all people who may be expected to use a particular language according to their ethnicity, heritage, culture, history, geography" (UCLAN n.d.). These criteria are not entirely apposite for a deaf community, and the SL-adapted UNESCO questionnaire defines the reference population for a signed language as including all deaf people of all ages (excluding those deafened later in adulthood); hearing family members; and hearing signers who use SL regularly (e.g., professionals, friends, associates of deaf people). The adapted questionnaire gives a rubric for calculating the ratio of non-deaf to deaf signers in order to calculate a reference population; however, this requires a baseline figure for the number of "all deaf people,"

which we lack in New Zealand. Moreover, although hearing SL users support vitality by increasing the overall number of users, expanding the domains of use, and heightening public visibility (de Quadros 2012; Wilcox, Krausneker, and Armstrong 2012), ultimately a critical mass of deaf people is required to ensure the maintenance of SL as a primary language (Johnston 2006; Bickford, Lewis, and Simons 2015).

The following sections report indicative, though disparate, findings about likely numbers of NZSL users from the census, deaf organizations, and deaf education.

### *Census Data*

The NZ census question on languages asks, “In which language(s) could you have a conversation about a lot of everyday things?” It does not distinguish between first, heritage, or second-language users. NZSL is one of four languages listed as main options under “other language(s).” Results from the last three censuses (see figure 1) show a drop from 27,285 NZSL users in 2001 (the first year in which NZSL was included) to 20,235 in 2013 (Statistics New Zealand 2013).

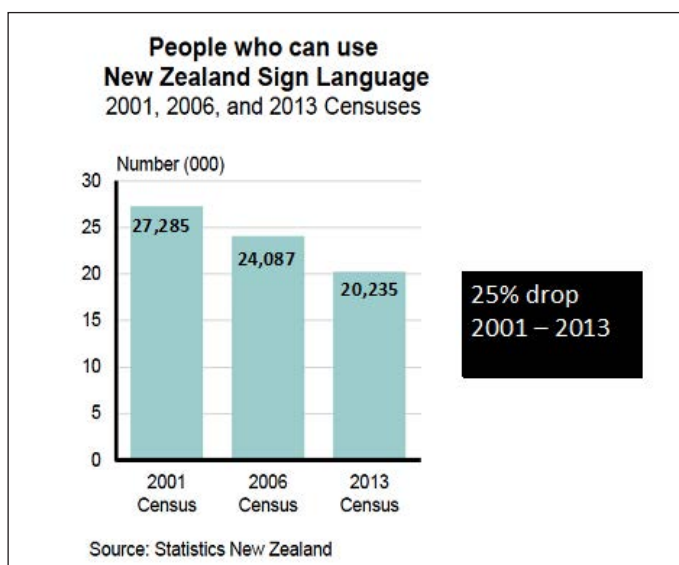


FIGURE 1. Census figures on NZSL in 2001, 2006, 2013.

Although census numbers do not represent the size of the NZSL deaf community, the decline of 25 percent between 2001 and 2013 is notable. Moreover, during that period the national population increased from approximately 3.8 to 4.5 million, making the decrease proportionally larger than 25 percent, effectively falling from a prevalence of seven NZSL users per thousand people (.0072) in the 2001 population to four per thousand (.0045) in 2013. Thus, the prevalence in 2013 was approximately 62.6 percent of that in 2001. This decline might reflect factors such as more discerning self-identification as an NZSL user (by hearing people), fewer L2 users as a result of major funding cuts to adult community education programs in 2008, increasing rates of CI in children with correspondingly less NZSL use by these children, their families, and school associates.

#### *Deaf Organization Membership*

Another measure of core community size was the membership of organizations whose members or clients are NZSL users. This included the ten regional Deaf clubs, the national deaf sports organization, the deaf association, and the national interpreting service provider. Membership data from these are shown in table 1.

Averaging the membership numbers of these four key deaf organizations (who share a common membership base) yields a figure of 1,296, ranging from 840 to 2,800.

Deaf club membership is a culturally important, though inexact, measure of how many individuals contribute to maintaining a local community. Deaf clubs still play a role in the social life of the NZSL

TABLE 1. Deaf Community Organization Members Numbers, 2013

National total of members of 10 local Deaf Clubs (including an unspecified number of hearing associate members)	843
Deaf Aotearoa NZ (national deaf association)—clients receiving services 2012–13, may include repeat users	2787
NZ Deaf Sports Federation members (membership is free)	155 ( <i>cf. 300 in 1999</i> )
iSign, national interpreting service—registered Deaf users	1400
Mean of membership figures	1296

community, in contrast to their decline in some other countries (Padden 2008), although their membership is generally trending downward. Interviews with presidents of the two largest metropolitan clubs, which own their premises, revealed a belief that members represent only a fraction of NZSL users in their area. One stated, “We have about 200 Deaf club members, but we think the actual number of deaf [people] in Christchurch is around 700.” The other estimated that “the 400 members are only about one-fifth of the deaf people in the larger Auckland area.” Taking their conservative estimates into account, if Deaf club membership represents approximately one-quarter of deaf NZSL users, multiplying the national membership total of 840 by four gives a population of 3,360 (of whom some are hearing).

Deaf sports are traditionally a key domain in which NZSL has been used in groups comprising a variety of ages and regions, providing a site of language socialization for young deaf people entering an adult community. The national deaf games, held annually, are the biggest event on the Deaf calendar. Deaf Sports Federation NZ (DSFNZ) records show a steady decline in participants in national and international sporting events between 1996 and 2014. In an interview, the president of DSFNZ stated that the games have recently moved to alternate years due to compromised organizing and funding capacity and that a declining number of deaf players and spectators has made fewer sporting codes viable. The next deaf games will allow hearing players for the first time. The president expressed concern about leadership succession, commenting that few younger members are interested in assuming organizational roles. The president (now in his thirties) described this as part of a trend among deaf organizations. He noted that, in previous generations, recreation depended on face-to-face interaction with other NZSL users, which motivated participation in Deaf clubs and sports, whereas nowadays social media and increased access to other forms of recreation offer alternative networks and activity choices. In his view, these options, combined with weak social connection between mainstreamed deaf students, are diminishing the sustainability of deaf sports and other core community activities. However, a downward trend in traditional deaf sports participation may parallel both a drop in traditional sports

club membership reported for the general population since 2007 and a corresponding increase in individual pursuits such as gym membership. In the general population, sports participation is decreasing, particularly in younger age cohorts, Māori, and lower socioeconomic groups (Sport New Zealand 2015). These characteristics overlap with those of younger deaf people, who are seen to be falling away from deaf sports.

In sum, numerical data obtained for this study do not allow a precise count of the deaf NZSL-using population but indicate that the community is certainly smaller than indicated by previous estimates, likely to be between 2,000 and 3,000. This is comparable in scale to a report of approximately 3,000 deaf SL users in Finland in a national population of 5.4 million (Takkinen, Jantunen, and Ahonen 2015).

#### *Nondeaf Signers*

Nondeaf signers support vitality by expanding networks and domains in which NZSL is used and may enrich the material and human capital available to the deaf community. However, initiatives to promote knowledge of NZSL among the general population since its recognition in 2006 do not show as gains in the census figures. Language-promotion initiatives include a curriculum resource for NZSL in mainstream primary schools, awareness campaigns by the deaf associations, and more NZSL courses offered in two universities. A recent survey (Rollason 2014) distributed to all 1,650 primary schools in the country, asking whether they had ever taught NZSL, elicited responses from 15.5 percent (257) of schools (likely skewed toward schools with awareness of NZSL). Of the responding schools (108), 42 percent had included NZSL to some extent in their curricula, but mostly as an occasional activity, and few on a regular basis. Schools reported that lack of program time, language expertise, and resources are obstacles to offering instruction in NZSL.

The NZSL reference population includes hearing offspring, parents and siblings of deaf NZSL users, interpreters, L2 learners, coworkers, and social associates of deaf people. These groups are difficult to quantify, and I could not find a reliable way to count L2 learners of NZSL or the proportion who participate in NZSL community networks.

The ratio in Sweden is estimated to be eight to ten hearing SL users per each signing deaf person (Svartholm 2014). If this is applied to the census figure of approximately 20,000 NZSL users, it would yield 2,000–2,500 deaf NZSL users.

It cannot be assumed that all children of deaf parents are conversant in SL, as deaf parents often codeswitch with their children and may rely on lipreading and other cues to understand their children's communication to them (Pizer 2013). In the survey of the NZSL community in this study, deaf participants with children (of whom 95 percent were reported to be hearing) were asked to rate how well their children were able to understand and express themselves in NZSL. Approximately half considered their children to have "strong" receptive and productive skills in NZSL, while the other half indicated "some" or "not much" NZSL proficiency. This information is only an approximation because (1) the question asks parents about children collectively, whereas children usually demonstrate variation in SL proficiency relating to birth order, gender, personality, and other factors (Singleton and Tittle 2000; Pizer 2013), and (2) responses may be affected by the age of the children (younger children have less developed language proficiency than do older children). Nevertheless, the survey results show parents' impressions of their children's knowledge of NZSL and its potential functionality for family communication.

### Generational Language Use

Factor 1 of the UNESCO (2003) LVE framework is intergenerational transmission since children's use of a language is the bottom line in future language vitality. This is complicated in SL communities by the indirect relationship between generations of deaf people, most of whom are reared in hearing families. Data on children's use of NZSL was obtained from four sources for this study: (1) census results, (2) educational sources, (3) an online survey of parents of deaf children, and (4) interviews with a cross-section of parents who use or do not use NZSL. Findings reported here draw mainly on the first three sources; qualitative findings from interviews are discussed in McKee and Smiler (2017).



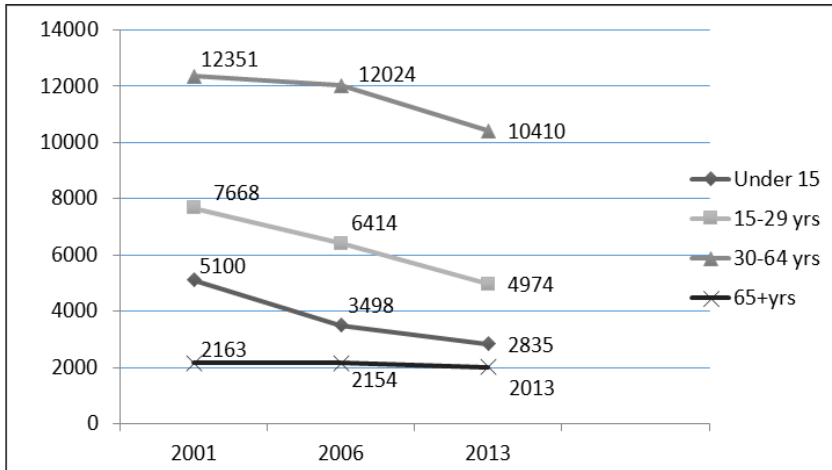


FIGURE 2. NZSL use by age group, 2001–2013 census data.

### *Census Data on Age-Related Use of NZSL*

Census results on NZSL use throughout the population by age (figure 2) shows that use in younger age groups has declined more steeply than in older groups.

Figure 2 shows the relative decline in four age groups during the twelve years from 2001 to 2013. In that period, the number of NZSL users under 15 years of age fell by 44 percent, in the 15–29 year-old group by 35 percent, in the 30–64 year-old group by 13 percent, and in the group of those over 64 by 6 percent. The 44 percent drop in the youngest group apparently reflects the increasing rates of CI use in this generation and the associated parental focus on spoken language as a primary mode of communication for these children and their families. Moreover, parents usually fill out the census forms for children of this age, thereby reflecting their own language aspirations.

Those who are 15–29 years old comprise a critical cohort for predicting future SL vitality since many young deaf individuals acquire SL later in adolescence when they seek out a deaf peer group (postmainstream schooling) and may explore language identity choices different from those initially presented to them by their parents (Carty

2006; Wheeler et al. 2009). Although census data are not limited to deaf users, figures show that NZSL use in this age group has fallen by 35 percent over the past twelve years, which would predict an ageing and shrinking population of NZSL users.

#### *Deaf Children Using NZSL in Schools*

In 2008 the Ministry of Education recorded 202 deaf school children as sign language users; of these, 48 percent (97) were considered to use NZSL, and the other half to combine signing with speaking; one-third had an impairment in addition to deafness (Fitzgerald 2010, 19–20). The 2010 report on NZSL users in schools that cites those figures calculates the number to be potentially 550 and notes that “There is debate among key stakeholders as to the correct number of children likely to use or benefit from NZSL, depending on their ideology and approach. There is, however, core agreement that current data on deaf students is [*sic*] probably not accurate as precise definitions are difficult to determine and have not been collected consistently” (ibid., 18). As this continues to be the case, it is currently being addressed by education authorities. The majority of children identified as NZSL users underachieve academically (McKee and Smith 2003; Fitzgerald 2010; Ministry of Education 2015).

*Deaf Children in Schools for Deaf Students.* Language vitality is affected not only by the absolute number but also by the concentration of speakers in regular interaction with one another (Kipp 2007). Schools for deaf children created concentrations of SL users that enabled transmission from older to younger signers, as well as from native to nonnative signers, and facilitated the natural development of the language over time. Three residential schools in New Zealand formed collectives of deaf children between 1880 and the 1980s, but today more than 90 percent of deaf children are individually enrolled in mainstream schools (Fitzgerald 2010; Powell and Hyde 2014). Since the 1990s, the two remaining Deaf education centers (DECs; formerly schools) have refocused on providing itinerant support services to students in mainstream schools rather than on on-site education. Each DEC offers a preschool program attended

by deaf and hearing children, manages some satellite classes for deaf students located in regular primary and secondary schools, and maintains a residential facility for high school students who participate in on-site or satellite programs. These DEC's do not host year 0–8 classes or residential students of this age, which means they are no longer sites of early socialization into NZSL, although they retain a key role in providing NZSL resources, advice, specialist teachers, and coordination of contact between mainstreamed deaf students.

Enrollments in schools for deaf children give a picture of the maximum size of groups of deaf children who might have daily interaction with other NZSL users (peers and teachers). Data provided by the DEC's in 2014 reveal that the largest grouping was 17 students in a DEC transition class (final year of high school) and 23 residential students. The other DEC hosted 13 residential students, giving a national total of only 36 students who were residing with deaf peers. Many of the residential and transition students at the DEC's reportedly acquire, or consolidate, NZSL in adolescence after transferring from mainstream schools where they were the sole deaf student.

Groupings of deaf children in satellite classes range from six to sixteen students. In total, the two DEC's serve 140 students, mostly in satellite classes. Anecdotally it is known that deaf parents of deaf children tend to choose mainstream school placement, partly in the absence of other local options and because they perceive educational advantages (despite compromised access) compared to the mixed age and ability cohorts of learners enrolled in schools for deaf children. This removes most native signing children from regular interaction with other deaf children at school. In sum, the number of deaf children being educated and socialized with an NZSL-using cohort is small, and exposure to fluent NZSL interlocutors within these contexts is likely to be limited.

*Deaf NZSL Users in Mainstream Schools.* The two DEC's supplied data for deaf children who use NZSL in specialist and mainstream provisions, with the caveats that categorization of language use may reflect judgments by teachers who are not proficient in NZSL

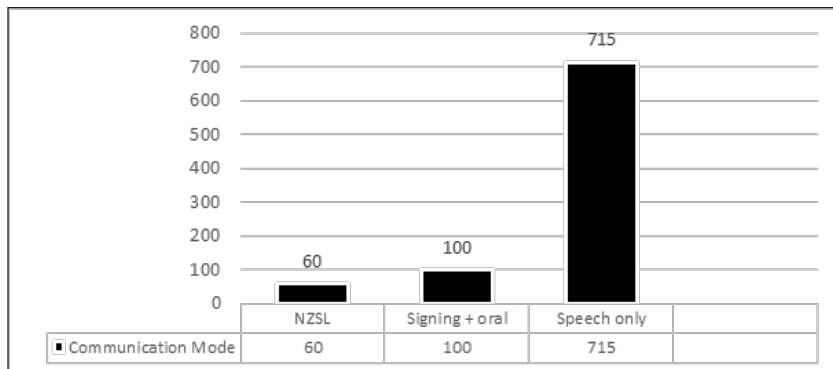


FIGURE 3. Language use by deaf children attending mainstream schools, 2014.

and that the figures may exclude some deaf children who are not receiving their specialist services. The figures shown here also exclude some children with an “indeterminate” dominant mode of communication. These limitations notwithstanding, the data are indicative of the number and proportion of deaf NZSL users in mainstream schools. Results are shown in figure 3, with student language profiles categorized as follows:

1. NZSL as the main language
2. Sign-supported English (potentially including NZSL) as the main mode
3. Spoken English as the main/only language

Approximately 60 children (7 percent of the total reported) were categorized as using NZSL as their primary language. A further 100 (11 percent) use a combination of speaking and signing (or sign-supported English) as their primary mode of communication. In addition, 715 children (82 percent) are reported to communicate only in spoken English. Thus, in 2014 the national total of deaf children in mainstream schools considered to be sign language users (in some form) was approximately 160, or 18 percent of deaf children served by the DECs. That same year, the government allocated \$11.4 million for a four-year period to raise the level of achievement for deaf NZSL users in mainstream schools (Ministry of Education 2015). Much of

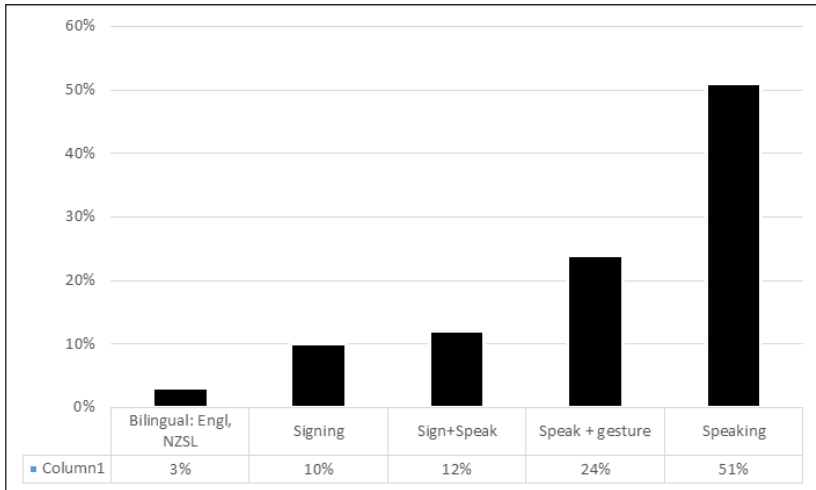


FIGURE 4. Deaf children's communication modes (parent survey,  $n = 112$ ).

this sum is allocated for paraprofessional services such as deaf NZSL tutors and hearing teachers' aides.

#### *Parental Report of Deaf Children's Use of Sign Language*

An online survey of parents of deaf children undertaken for this study sought data on children's communication mode and parents' motives for language choice. A total of 112 parents responded to the survey.<sup>12</sup> Of the respondents, 12 percent identified their children as deaf or HI, which is an overrepresentation of deaf people in this population and may correspond to the result that 13 percent described their children as "mainly using SL" or being "bilingual." Response options used descriptors such as "signing mainly without speech" or "speaking and signing" because many parents would not necessarily identify their child's signing as NZSL, and deaf children who use any form of signing can be considered potential adult NZSL users. Findings are shown in figure 4.

Survey results show that one-quarter (25 percent) of the children in this sample are reported to use signing in some form. This is less than the one-third reported in a 2003 survey of 124 parents of deaf children in mainstream schools, which found 32.8 percent using sign language in some form (McKee and Smith 2003). Whereas the earlier

survey was limited to parents of children in mainstream schools, the current survey was not and could therefore be expected to yield more children identified as signers since signers are less likely to attend mainstream schools. Within the 25 percent reported to sign, almost twice as many combine signing with speaking at school as those who did so at home, where signing alone is more common. This difference between home and school use reiterates the 2003 survey findings (*ibid.*). Less overt use of signing or more bimodal communication at school reflects a scarcity of signing interlocutors in mainstream schools, which creates functional and social motivation to assimilate to a speaking-hearing peer group.

Parents' motivation and ability to use NZSL are strongly influenced by institutional support mediated by professional advice, resources, instruction, and the availability of school placement options that enable NZSL to be used in education. While education policy designates NZSL as an option, parents report that support for families and children to acquire NZSL is insufficient and varies by locality and by individual professionals.

Survey results indicate that participating parents were commonly advised by professionals to discontinue the use of SL following CI surgery. This is consistent with other studies showing that uptake of CI is associated with decreased or nonuse of SL by parents (e.g., Wheeler et al. 2009; Bruin and Nevøy 2014). Given that deaf children under six years of age are eligible to receive free CI surgery (85 percent are bilateral, and this number is increasing),<sup>13</sup> a large proportion of deaf children in the future will experience a dominant focus on spoken language in interventions following CI. Potentially mitigating this trend is the recent establishment of an NZSL in-home teaching service for families of deaf children aged 0–5 years.<sup>14</sup>

A perceived decrease in vitality may influence parents not to choose a minority language for their children (Lewis and Simons 2010). Following the 2013 census results showing a drop in the number of NZSL users, a newspaper article interviewed the father of a 7-year-old deaf child. The father stated that NZSL is “probably not really a living language” and that he had no desire for his child to identify with a potentially dwindling deaf community.<sup>15</sup> Of course,

this family had decided against SL long before the census results, so the “dying language” motif was deployed to bolster their position, but such media coverage may negatively influence the perception of other parents and society with regard to the value of SL.

### *Deaf Youth as L2 NZSL Users*

Parental language choice does not preclude the possibility of children independently becoming SL users as young adults. In this study, ten members of a deaf youth group between 17 and 22 years of age were interviewed to explore both their motivations for joining the group and their attitudes toward NZSL. Seven of the young people had a CI (five as preschoolers and two in late adolescence). Three of the ten had acquired NZSL from deaf parents but attended mainstream schools where NZSL was little used, and they were proficient in spoken English and NZSL (one of the seven had a CI). Two of the “deaf of deaf” members were leaders of the group. Only one of the ten youth had attended deaf education venues with other NZSL users, and NZSL was her primary language. Six of the youth said they had used signs combined with speech in their preschool years (several had attended the same preschool group at a Deaf Education Center), but they stopped signing after getting a CI and entering a mainstream primary school at age five, where they had no regular contact with other deaf children. In some cases their parents had continued to use basic signs at home. One participant recounted her history of first using and then losing SL, which was typical of her peers in this group:

I used a bit [of signing] at preschool . . . Used quite a lot, just the simple sign language. And then I started talking, like, after that, I just started forgetting it. Just kind of faded away and I just talked instead. Just being around those hearing people just kind of made you feel like you kinda had to. If I were around deaf people more often, I think I'd use it a lot more.

The young people with hearing parents and mainstream schooling were reintroduced to SL as teenagers by reestablishing contact with former preschool friends and joining the deaf youth group where they sought self-same peers. Two of the youth had transferred to a residential Deaf Education Center during high school years, where

they acquired NZSL as a second language. All of the young interviewees expressed social motives for using or readopting NZSL and maintained that it is essential to developing a confident identity. Apparently these young L2, bilingual users of NZSL regard NZSL as a “key emblem of their own future” (Padden 1990/2001, 113). Some of them explained that having limited access to NZSL or learning it late has created a barrier between them and the deaf community. “Late learner” was recognized as an element of their particular deaf identity; one interviewee explained, “I communicate more easily with deaf people who have learned NZSL a little later in life, perhaps because they remember what learning NZSL is like.”

Two of the older interviewees (both of whom were in employment and communicate mainly orally) expressed the desire to keep SL separate from work and social domains with hearing people because of their concern that perceived reliance on SL would diminish other people’s impression of their capability. Moreover, they believed the use of SL could impose a burden of accessibility arrangements that might negatively affect their employment opportunities or distance them from coworkers. In other words, they regarded the use of SL as signaling a disability and impeding their ability to assimilate in the workplace.

In sum, findings about intergenerational transmission of NZSL show that a small, and apparently decreasing, proportion of deaf children use NZSL and that conditions for acquisition are constrained by attitudes, practices, and resources at home and in school. However, it is clear that some deaf children deemed not to be SL users will later identify with a sign language community, in keeping with historical patterns (Anglin-Jaffe 2013; Dugdale 2000; Carty 2006). It is interesting that 49 percent of parents in the survey agreed that their child is “likely to use NZSL later in life,” whereas only a quarter reported their child to be currently signing. This reveals parents’ awareness that SL is potentially relevant to their child’s adult identity and well-being, but, from the perspective of language maintenance, it also highlights a disjunction between the limited support available for children to acquire NZSL and the assumption that an adult NZSL collective will autonomously sustain itself as a cultural resource to be discovered later in life.



Answer		%
At Deaf club and Deaf community events		86%
Visiting people		64%
At home		60%
At work		53%
At a service place (e.g. hospital, doctor, WINZ interview, legal)		41%
VRS - phone relay calls		37%
At School / university / study		34%
Sports - playing, or watching		28%
To communicate with staff in shops, bars, restaurants etc.		24%
In church / religious activities		21%
At the marae		10%

FIGURE 5. Domains of everyday NZSL use.

## Language Use and Development

### *Domestic and Social Domains*

A survey of the Deaf/NZSL community asked respondents to indicate where they use NZSL in their everyday life, either directly or with an interpreter. Results from the 254 participants show that the most frequently identified domains are deaf community events and home (figure 5).

Greater use of NZSL in private, social domains and less frequent usage in public domains is historically consistent, but this fact highlights the threat posed by the reduction of collective spaces such as deaf schools, clubs, and large events such as deaf sports. We lack the historical data to measure change in NZSL use in public domains, but a study of Auslan users (Hyde and Power 1992) found that, at that time, only 20 percent of respondents reported using Auslan at work and 22 percent using it at school, in contrast to 53 percent and 34 percent, respectively, in the NZSL results two decades later. Although Australia and New Zealand differ in size, they have many societal characteristics in common, allowing us to surmise that the use of SL has progressed beyond private Deaf community domains during that time.

The role of information technology in the vitality of endangered languages can be double edged: Even though it affords new modes and motivations for the use of a language, it can also exacerbate barriers in communication between younger and older generations of the community, reflecting the “digital divide” (Holton 2011). Online video communication technology increases opportunities for interpersonal use of NZSL as an alternative to face-to-face communication or digital communication mediated by written English, and the survey finds that online video applications (such as Skype and FaceTime) are used by all age groups in the NZSL community and more commonly by younger people: At the time of the survey in 2013, 85 percent of 12–17-year-old participants used this mode, 75 percent of 18–50-year-olds, 67 percent of 51–70-year-olds, and 20 percent of those older than 70. The use of synchronous and asynchronous online communication in NZSL is a new mode rather than a new domain of SL use, assuming that most communication is social, although it may also widen domains of use by expanding NZSL communication within deaf-related workplaces and organizations and in transactions via video relay. A digital medium that transcends distance can support vitality by sustaining spatially dispersed networks and extending the vehicularity of NZSL (the “reach” of its use). Conversely, it may reduce motivation for face-to-face group activities that provide physical contexts for intergenerational socializing, where younger and/or SL learners can acquire NZSL and form relationships with peers and elders. This study did not collect direct evidence on the impact of online visual communication tools, but their role in deaf children’s language socialization and education deserves further research since these formative experiences will set interactional norms for NZSL users and their future construct of “community.”

The use of NZSL by deaf people in nondeaf social domains is apparently limited: 80 percent of survey respondents reported knowing fewer than ten hearing people capable of a decent conversation in NZSL, and many of these are interpreters. In the family domain, communication in NZSL is likely to be constrained: 34 percent reported that their partner is deaf, while 26 percent have a hearing partner (presumably most of these have some NZSL proficiency). A further

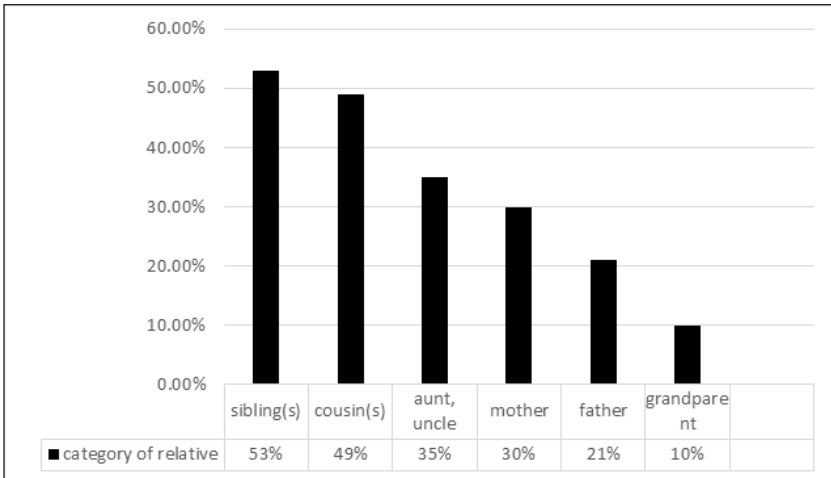


FIGURE 6. Categories of deaf relatives reported by 38% of survey sample.

36 percent reported no partner. Excluding deaf partners, 62 percent of survey participants have no deaf persons or persons with a hearing impairment in their own family, while 14 percent have one, and 24 percent have two or more deaf relatives. Of the 38 percent who have deaf relatives, more have collateral (as opposed to lineal) relatives (see figure 6), suggesting that NZSL transmission within families may be more typically horizontal than vertical.

Five percent of respondents reported having at least one deaf child, 2 percent had HI children, 50 percent had hearing children, and 45 percent did not have children. (The total exceeds 100 percent because some of the respondents have combinations of deaf, HI, and hearing children.)

*Documentation and Mass Media*

The adapted EGIDS criteria for wider use of a sign language in education and literacy (indicators of levels 4 and 5) take into account not only that SLs are not disseminated in written form but also that mass dissemination and standardization may occur through means such as “Published dictionaries and instructional materials (either video or in print with photos or line drawings); Dissemination of stories, poetry,

and other information (on DVD or in traveling public performances); Mass media, both traditional broadcast media and more informal means on the internet such as YouTube” (Bickford et al. 2015, 6).

Some of these factors are present for NZSL: Dictionaries (both print and online) and a reference grammar have been published, and more than 250 learning and teaching resources for NZSL exist in print, on DVD, and in online media.<sup>16</sup> Documentaries about the NZSL community exist, along with informational resources in NZSL produced by community agencies on topics such as family planning, the electoral system, mental health, sexual health, consumer rights, and emergency preparedness. An online archive of historical Deaf film material was created in 2012.<sup>17</sup> The Deaf Studies Research Unit at Victoria University has a corpus of NZSL, which is used for linguistic research and dictionary making. These resources all contribute to the documentation, dissemination, and standardization of NZSL.

In broadcasting, NZSL is only occasionally seen, usually as a glimpse of an interpreter present at a public event being reported on the news, or in promotional items during NZSL Week, or in a program on disability. Interpretation or content in NZSL is not available in regular programming. The state broadcaster holds that funding for NZSL interpretation is not available and that captioning provides wider access to more viewers.

The survey discussed here found that 59 percent of participants had seen public information in NZSL on websites. My examination of the websites of 32 central and local government agencies found that 28 included mention of NZSL (mostly a brief reference to the use of interpreters) and that 9 contained NZSL video clips of information. This signals some awareness of NZSL in the government sector, but only limited accessibility via NZSL at the user interface.

Vis-à-vis online presence, a YouTube video search for “NZSL” at the time of writing gives 6,500 hits, compared to 28,000 for the neighboring sign language, Auslan, and almost two million for ASL.

Evidence of institutional support and progress toward the standardization of NZSL via documentation, literature, and mass media could tentatively place NZSL at EGIDS level 5, “developing,” defined as “The language is in vigorous use with literature in a standardized form being used by some though this is not yet widespread or sustainable”

(Bickford et al. 2015, 4). However, in light of negligible media presence and the educational constraints discussed later, “in vigorous use” and “literature in a standardized form,” are not warranted.

### *Education*

The use and acquisition of NZSL are supported in education to an extent through policies and services in deaf education, the provision of interpreting in public higher education, and the teaching of NZSL at two universities that train interpreters and tutors of NZSL. In the school system, the status of NZSL as an optional curriculum subject and a potential medium of instruction for deaf learners is recognized by the Ministry of Education in policy,<sup>18</sup> although implementation is problematic (as discussed earlier).

The adapted EGIDS scale (Bickford et al. 2015, 7) specifies the following three qualifications for a sign language to be rated as “developed for educational functions” (level 4): (1) use of a natural SL (i.e., not an artificial sign system) as a primary medium of instruction, (2) use by all members of a learning community (i.e., not a lone signing student in a mainstream school), and (3) teachers who are fully fluent in the SL. Bickford et al. note that very few countries fulfill these criteria, and the NZSL situation likewise fails on criteria (2) and (3) since most deaf children are individually mainstreamed, and many professional and paraprofessional staff who work with them are less than fluent in NZSL (McKee and Smith 2003; Fitzgerald 2010; Powell and Hyde 2014; Ministry of Education 2015).<sup>19</sup>

### NZSL Users' Subjective Perceptions of Vitality

In addition to objective evidence of status, demographics, and institutional support, the assessment of ethnolinguistic vitality includes the speaker community's subjective perceptions of the vitality of the language and their language identity. Bourhis, Giles, and Rosenthal (1981) posited that positive perceptions can strengthen the vitality of a language community (i.e., protect it against language shift and loss); thus they devised a subjective ethnolinguistic vitality questionnaire (SEVQ) to measure in-group attitudes toward the language and inter-group relations. Subsequent applications of the SEVQ in a variety of

contexts have shown the association between subjective and objective vitality measures to be rather complex and not entirely predictive of vitality (Yagmur 2011). For example, group solidarity, which supports the use and vitality of the minority language, may be enhanced by heightened perceptions of discord and identity threat in relation to the majority language community (Ehala and Zabrodskaja 2011). Yagmur (2011) also notes the importance of community-based (as opposed to state) institutions in maintaining vitality, which is not measured in the ethnolinguistic vitality framework. Furthermore, minority group members may exaggerate or minimize the relative vitality of their language as a strategy either to advocate for rights and resources or to differentiate their identity from that of outgroup members.

Due to the challenges of adapting the questionnaire for use with a deaf population, this study did not employ the SEVQ to survey the NZSL community's subjective perceptions. However, the aforementioned online survey of the Deaf community probed subjective perceptions of vitality by including questions about the perceived impacts of institutional developments (e.g., the NZSL Act, cochlear implants, mainstream education of deaf children), threats to NZSL, and the future strength of the NZSL community.

#### *Impact of Legal Recognition of NZSL*

Around half of the 254 survey respondents believe the NZSL Act has made a difference: One-quarter believe it has improved attitudes only, and one-quarter maintain that it has improved both attitudes and access. The other half sees no change resulting from the official language status of NZSL; this echoes evidence elsewhere that SL recognition measures have so far had weak tangible effects (De Meulder 2015a, 2015b; Murray 2015).

#### *Perception of Children's Access to NZSL*

The bottom line in predicting vitality is whether children have opportunities to acquire the language in question from proficient speakers and to use it regularly in everyday contexts. For most deaf children (of hearing parents), both of these are contingent largely on the educational system. Accordingly, the survey asked participants the following question: "These days, most deaf children go to mainstream schools.

What do you think about deaf children’s access to NZSL in mainstream schools for learning and social communication?” The rating options were the following:

- Excellent: All deaf children have good support for using NZSL at school.
- Good: Most deaf children have good support for using NZSL at school.
- Fair: Some deaf children—but not enough—have support for using NZSL at school.
- Poor: Most deaf children do not have enough support for using NZSL at school.

Results show that respondents overall believe that NZSL access in mainstream schools is inadequate: 38 percent chose “poor”; 34 percent, “fair”; 16 percent, “good”; and 12 percent, “excellent.” Deaf perceptions align with data from the educational system and parents, which show a small proportion of deaf school children to be users of NZSL (see figures 3 and 4).

The survey asked deaf people for their opinion on whether children with a CI should have an opportunity to be bilingual/bimodal in NZSL and speech. Of 243 responses, 77 percent (187) said “yes,” 14 percent (34) were not sure, and 9 percent (22) said “no.” Responses to these two questions indicate a majority belief that sign bilingualism is important for deaf children, as well as a perception of inadequate institutional support for this outcome.

#### *Future Strength of NZSL Community*

The survey asked respondents to predict how strong the NZSL community will be in thirty years’ time; options were “stronger,” “weaker,” or “about the same as now.” Just over half (56 percent) said they feel it will be stronger, about a third (32 percent) feel it will remain the same, and 12 percent feel it will be weaker. These results suggest that the majority (88 percent) are optimistic about the vitality of NZSL in the immediate future despite their pessimism about children’s access to NZSL, the perceived lack of impact from language recognition, and a range of threats they identified (described in the next section).

*Perceived Threats to NZSL Vitality*

The survey invited response to an open-ended question that probed perceptions of vitality: “What is the biggest problem or threat facing the NZSL community now and in the future?” The 179 responses were diverse and often heartfelt. Most focused on the “problem” aspect of the question, describing current accessibility barriers at a personal, microlevel, while some comments described macro trends affecting the viability of the community. Responses are reported in more detail in McKee and Vale (2014b) and are summarized thematically here. Institutional and societal factors raised include the following: (1) negative attitudes toward and low visibility of NZSL; (2) insufficient deaf influence on institutional policy affecting NZSL users; (3) inadequate accessibility provisions; and (4) lack of state resources for NZSL maintenance and promotion. Survey responses confirm my earlier assessment that language recognition has not yet delivered on NZSL users’ aspirations (McKee 2011).

Specific threats to vitality were identified as follows: (1) prevalence of CI in young deaf children, followed by an exclusive focus on spoken language; (2) the loss of schools for deaf children, associated with limited exposure to NZSL and deaf identity; (3) apparently declining participation in deaf organizations, together with more diffuse social networks among younger generations of deaf people. These themes align with objective findings of the study and demonstrate the community’s awareness of current challenges for NZSL.

The size and strength of a minority community affect its capacity to protect the status of its language: “As Deaf communities shrink . . . they become more endangered, both with respect to their ability to maintain a critical mass of signers needed to maintain the language physically, and with respect to their abilities to maintain political influence” (Wilcox, Krausneker, and Armstrong 2012, 381). Survey findings, as well as my participant observation, reflect concern about constrained capacity in the NZSL community to undertake all of the work required for active language maintenance and promotion. Official recognition of NZSL has increased demands on community members to provide advice to policymakers in both central and local governments, to ensure that NZSL is taught to those who wish



to learn it, to participate in language documentation and educational resource development, to assume advocacy roles, and to run promotional activities (such as the national NZSL Week). Deaf community organizations struggle with insufficient capital and human resources to fulfill new levels of expectation regarding language promotion, while also meeting core responsibilities for social support and advocacy at the grassroots level of a disadvantaged community. As in many minority communities, a variety of roles and cascading responsibilities related to language promotion and community development tend to fall to a small set of capable individuals, for whom fatigue and succession of leadership are real concerns.

Taking a more positive view, the number of speakers is not the sole factor in language resilience. Optimism about the future of the NZSL community reflects a sense of validation resulting from institutional recognition and the deaf community's increasing engagement in activities that overtly support positive attitudes toward NZSL and Deaf identity. The status of those who use SL is also important, and middle-class SL users powerfully influence representations of the language both within the deaf community and to outsiders (Padden 1990/2001, 108). Recognition of NZSL, improved access to higher education, and better employment opportunities have enabled a small number of deaf people to assume professional roles (mainly in education) and a middle-class status. Their influence in promoting a discourse of linguistic rights is evident in community-led LPP actions and in the public policy space related to NZSL, all of which engender a sense of positivity about its vitality.

## Conclusion

In sum, objective evidence of the vitality NZSL fits the EGIDS criteria for “threatened” status (level 6b), defined as follows: “The language is used for face-to-face communication within all generations, but it is losing users” (Bickford et al. 2015, 4). This “threatened” status is also explained as “the level of oral use that is characterized by a downward trajectory,” and, in relation to subjective perceptions of vitality at this level, “There may only be barely discernible portents of language shift and few in the community may have any sense of impending danger. It is the first of the EGIDS levels that corresponds to an endangered

category in the UNESCO framework” (Lewis and Simons 2010, 112). Subjective perceptions of vitality found in this study include concern about language and identity shift motivated by cochlear implant use and inclusive education, as well as a perceived decline in the strength of traditional community organizations and activities. However, this awareness coexists with optimism about the future of an NZSL community, apparently supported by attitudinal change generated by institutional recognition.

The propensity of signed languages to survive in adverse conditions is attested in the deaf world (Padden 1990/2001). A fundamental reason is the perceptual advantage of a visual modality when compared to the ambiguity and effort that listening and speaking entail for deaf people. But the persistence of SLs is also culturally constructed. Moreover, resistance to minority language shift and loss are powerfully motivated by the fact that specific languages are related to specific cultures and identities “at the level of doing, at the level of knowing, and at the level of being” (Fishman 1991, 3). SLs uniquely encode shared ways of doing, knowing, and being that arise from the perceptual and social experience of being deaf. For instance, resistance to perennial threats to American Sign Language is nurtured by folk narratives that explain the central value of sign language to defining deaf identity and collective, cultural ways of being (Padden 1990/2001). Societal recognition of NZSL by the government has apparently validated this narrative in the NZSL community, reinforcing optimism about its vitality regardless of the known challenges.

Although macrolevel factors accelerating language shift apparently erode vitality, it is also true that a sense of “bounded solidarity” and proactive use of the minority language may be strengthened in response to perceived discordance with the majority group; consequently, vitality may be actually increased by external threats to linguistic identity (Karan 2011). Bounded solidarity and heightened language awareness help to explain the apparently conflicted views of the NZSL community in their awareness of external threats to their language, juxtaposed with positive predictions for the community’s future and a protective belief in the importance of NZSL identity for younger generations of deaf people.

The practical challenges of maintaining the vitality of NZSL parallel those for other minority languages. These are principally as follows: (1) enabling first-language acquisition by children (in which early intervention and schools play a prominent role); (2) expanding the domains in which NZSL can be used in society via interpreting/translation access, presence in the media, and the use of NZSL by nondeaf people in everyday contexts; (3) leveraging digital technology to support language acquisition and awareness and to enhance social networks which promote the kind of face-to-face interaction that sustains a living NZSL community. The empirical findings of this study can raise awareness of the need for language planning at the grassroots level and inform policy priorities at the institutional level. Furthermore, the study builds on previous work that exemplifies the relevance of LVE frameworks to empirical assessments of the vitality of SLs.

## Notes

1. In reference to sign languages, the term *urban* (or *macro*) refers to the languages of national populations of deaf people (Woll and Ladd 2003). In contrast, *village* (or *micro*) sign language communities develop in isolated locations that have a higher than average incidence of genetic deafness, leading to the development of a local sign language that is used for communication between deaf and hearing members of the community (Meier et al. 2010). Such languages are inherently vulnerable to language shift, as are regional SL varieties (e.g., Branson and Miller 1996; Woodward 1996). See Zeshan and de Vos (2012) for a discussion of the EuroBABEL village sign language project.

2. Dorian's (1980) term "semispeaker" may be an apt description of bimodal deaf individuals who are partially proficient in a natural SL and/or normally mix it with spoken language. Bimodal-bilingualism does not necessarily have this outcome if early exposure to native SL is available and domains in which to use it are consistently available.

3. <http://wfdeaf.org/news/conference-summary-sign-languages-as-endangered-languages>.

4. The SL-adapted UNESCO questionnaire is appended in Safar and Webster (2014).

5. Bickford, Lewis, and Simons (2015) note that their adapted scale is introduced in *Ethnologue 17* (Lewis, Simons, and Fennig 2014) and is used as a basis for the EGIDS estimates in that edition.

6. The curriculum is called “Thumbs Up”; <http://www.nzsl.tki.org.nz>.
7. See information about the NZSL board at <https://www.odi.govt.nz/new-zealand-sign-language-nzsl/nz-sign-language-2/>.
8. The project was funded by the Faculty of Humanities and Social Sciences, Victoria University of Wellington.
9. The survey was administered mainly online and was supplemented by face-to-face (in NZSL) and, in a few cases written, administration in order to include participants who were less digitally literate in the sample. A full report is available online; see McKee and Vale (2014b).
10. Office for Disability Issues: <https://www.odi.govt.nz/new-zealand-sign-language-nzsl/nzsl-tools-and-resources/publications/>.
11. Deaf Aotearoa: <http://deaf.org.nz/about-us/deaf-community>. Retrieved March 16, 2017.
12. The sample is likely to be skewed toward parents who are actively involved in parent networks, those who have digital access and sufficient time to complete a survey, and possibly those with more developed views on language choice. See the full report in McKee and Vale (2014a).
13. Source: <http://2ears2hear.kiwi.nz/2015/07/08/cochlear-implant-numbers-in-nz-2015/>. Retrieved July 31, 2015.
14. In 2015, after data were collected for this study, a new service, First Signs, was launched. Funded by the Ministry of Education and managed by Deaf Aotearoa NZ, First Signs offers early, home-based NZSL tuition to the families of deaf children. This initiative was in response to the HRC 2013 Enquiry into NZSL, which was critical of the lack of support for early acquisition of NZSL. It is too early to evaluate impacts of this service.
15. O’Neil (2014).
16. This number is approximate and is based on resources produced for educational and public use by Deaf education centers, Victoria University Deaf Studies Research Unit, NZSL Teachers Association, Ministry of Education, Deaf Aotearoa NZ, and libraries that have NZSL content, such as Deaf short films and documentaries about the Deaf community. It does not include research publications on NZSL in academic journals.
17. <http://www.signdna.org.nz>.
18. Ministry of Education, *The New Zealand Curriculum, Official Languages*. <http://nzcurriculum.tki.org.nz/The-New-Zealand-Curriculum>.
19. As of 2016 the Ministry of Education, together with the universities, is establishing NZSL proficiency standards for educational personnel and for deaf students.

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