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Abstract

Lexical variation and change is prevalent in the short history of New Zealand Sign Language (NZSL) and in the current context of globalized flows of communication we observe growing use of ASL-concordant variants that land in New Zealand via other signed languages, online deaf media, and international interaction. Results from a variant-pair preference task show no significant effect of demographic characteristics on variant use, suggesting their use is not socially marked. We observe effects of lexical borrowing at the levels of phonology (e.g., handshape types), morphology (e.g., classifier handshapes, modified verbs) and discourse markers. In parallel with studies of Americanization in New Zealand English, we find that ASL-concordant variants in established use tend to be perceived as

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local in origin, and that new/traditional variants are not always seen as exact synonyms or replacements, but may be ascribed pragmatic, semantic, and stylistic distinctions. In this way, global features serve to elaborate local NZSL repertoires rather than being experienced as Americanization.

Introduction

In a digitally interconnected world, “communicative travel” (Urry 2000) transcends geographical distance and allows fluid diffusion of language features between communities of speakers across diverse locations and identities (Vervotec 2004). Accordingly, sociolinguists have turned attention to understanding how the adoption of external language features that “float” through global cyber (and physical) space may contribute to linguistic homogenization, or rather varying manifestations that acquire local social meanings (Buchstaller 2008; Meyerhoff and Niedzielski 2003; Britain 2002). Globalization in the sense of supra-national flows of cultural capital is widely associated with Americanization and, linguistically, with the spread of American English lexicon and discourse features (such as quotative “be like”; Meyerhoff and Niedzielski 2003; Buchstaller 2008). In New Zealand English, for instance, lexical shift from traditional British to American terms began before WWII and increased subsequently with the expansion of US economic and media influence (Bayard 1989; Green and Bayard 2000; Meyerhoff 1993). Although American Sign Language (ASL) is historically and typologically unrelated to NZSL (i.e., at greater linguistic distance than American and New Zealand varieties of English), over the last decade or so we have observed an increase in the use of ASL-concordant vocabulary as a source of variation and change in NZSL.

We use the term “ASL-concordant” to refer to signs that are similar or identical to ASL signs, some of which may be directly borrowed from ASL, while others have likely entered NZSL via other sign languages that have already incorporated ASL vocabulary (and so these variants are not locally identified as “American”). Sources of secondary ASL loans into NZSL include Australian Sign Language (Auslan) (the major source of lexical borrowing into NZSL due to geographical and cultural proximity), International Sign (through travel and online exposure), South African and Filipino Sign Languages (brought by migrants to New Zealand), and possibly others. The variety of

possible transmission routes make it unfeasible to be certain whether variants that we identify as ASL signs were loaned directly from ASL. By using the term “ASL-concordant,” we also acknowledge that the integration of foreign vocabulary is not always a straight “adoption” of original form and meaning, which may be too simplistic to account for the “adaptations, appropriations and localizations that incoming innovations go through” (Sayers 2014, 204).

As a case study of how a smaller signed language may gravitate towards the linguistic resources of a more dominant one in globalizing times, this study investigates the growing presence of ASL lexical items in contemporary NZSL. In a previous article based on qualitative data from this study (McKee and McKee 2020), we explored community ideologies about borrowing in NZSL in relation to beliefs about the local identity and vitality of NZSL. In that article we reported low objective awareness of the origin of loans in NZSL, ambivalence between a desire to protect the local identity of NZSL, and a pragmatic embrace of vocabulary and styles from other signed languages to meet modern communicative demands. This article reports in more detail on quantitative findings about use of ASL-concordant variants, and considers how lexical borrowing may be contributing to changing features of phonology and morphology. Our findings support the general observation that internal change apparently occurs more rapidly in signed than spoken languages, due to factors such as their shorter histories and differing patterns of transmission (Abner et al. 2020).

Signed Language Contact and the Global Presence of ASL

Lexical borrowing is a typical outcome of language contact, motivated by the prestige of one language relative to the other, or lexical gaps across languages (Taylor and Grant 2015). In some languages, including English, up to half of the lexicon originates in loans (Taylor and Grant 2015). In New Zealand English, US English is an ongoing source of new variants: many American words have replaced, or alternate with, traditional British-origin variants, such as *mail* (for *post*), *movie* (for *pictures*), *sweater* (for *jumper*), *can* (for *tin*; Meyerhoff 1993). This process is likely accelerated in the era of online media saturation.

Sustained interaction between users of different signed languages can result in borrowing, code mixing (Quinto-Pozos and Adam

2015), and institutionalized language interventions (usually through schooling) that lead to code alternation and mixing or shift to a dominant signed language (Woodward 1996; Nyst 2015; Branson and Miller 2004). In the NZSL situation, neither intervention, regular interaction, nor bilingualism in two signed languages are common at community level, although lexical hybridity is evident.

Individual encounters between disparate signed language users result in improvised accommodation between interlocutors, best described as “cross-linguaging” (Zeshan 2015). A social orientation of DEAF-SAME, or expected commonality of experience and identity, facilitates successful communication in such encounters (Green 2015; Crasborn and Hiddinga 2015; Friedner and Kusters 2015).¹ Improvised interlanguage is part of a spectrum of semiotic strategies referred to as “International Sign” (IS). While common lexicon in particular instances of IS is negotiated according to the context and interlocutors (Rosenstock 2004), its most conventionalized form (e.g., as used by officials at World Federation of the Deaf or international sporting events) draws strongly upon ASL and British Sign Language (BSL) vocabulary (Whynot 2016). Experimental data shows that conference-style IS is understood best by deaf individuals who are conversant in one or more of ASL, BSL, and English, and who have higher education and international mobility (Whynot 2016). Exposure to IS at international events, and now online, used by individuals who are considered prestigious, is noted as a source of transmission of signs from the dominant signed languages that lexify IS (particularly ASL) into smaller ones (Hoyer, 2007; Ilkbaşaran, 2015).

Hiddinga and Crasborn (2011) conclude that there is no exact parallel among signed languages for the hierarchy of “centrality” among spoken languages (as per de Swaan 2001); nevertheless, ASL is widely perceived as a language of international mobility and prestige due to a large national population of users, association with a powerful English-speaking country, a history of use in higher education in the US, and wide dissemination through use in deaf education, international development work and deaf tourism in many regions of the world (Cooper 2015; Crasborn and Hiddinga 2015; Schmaling 2003). This status is ideologically contested and contextually nuanced; for example, see studies of attitudes towards ASL in multilingual contexts by Cooper (2015), Kusters (2020), and Parks (2014).

NZSL in Contact with Other Signed Languages

BSL, Auslan, and NZSL form an historical language family descended from BSL, known as BANZSL (Schembri et al. 2010). Signers of these languages who have been exposed to other varieties of the language family often consider them to be mutually intelligible, although this has not been empirically tested, to our knowledge. Lexicostatistical comparison twenty years ago found more similarity between NZSL and Auslan (which are geographically adjacent) than between NZSL and BSL (McKee and Kennedy 2000). That study also compared a randomized sample of NZSL and ASL lexicon, finding only 17.5 percent of signs to be identical and 33.5 percent to be either identical or cognates with a phonological difference. McKee and Kennedy concluded that although there is some overlap in vocabulary, ASL is lexically and historically distinct from the BANZSL group.

Recognition of NZSL following documentation from the 1980s (Collins-Ahlgren 1989; Levitt 1985; Kennedy et al. 1997) has expanded its domains of use, pushing demand for vocabulary in education and other settings, prompting prolific borrowing and associated variation. Abrupt diachronic change resulted from the adoption of Australasian Signed English in deaf education in 1979, which led to Auslan signs relexifying a substantial portion of core vocabulary into modern NZSL (McKee 2016; McKee and McKee 2011; McKee, McKee, and Major 2011).

Opportunities for contact between NZSL and other signed languages have changed greatly in the past half century. Until the mid-1960s, travel to and from New Zealand entailed lengthy sea voyages, and recordings of any signed language scarcely existed. Since the 1970s, contact with Auslan and BSL users increased with the growth of air travel, inward migration, and New Zealand participation in international deaf sporting and cultural events (Dugdale 2001). Contact and borrowing from Auslan and BSL during this period increased. For example, in the mid-1990s, an NZSL signer born in 1953 described her community's early encounters with Auslan, BSL, and, later, ASL from the late 1970s onwards:

In 1976 when I went to the Trans-Tasman Games for the Deaf in Brisbane with the first New Zealand team, I encountered fingerspelling. I knew a bit of fingerspelling through an Australian Deaf

flatmate: I'll never forget that experience . . . To communicate in Brisbane we had to use gestures and a bit of mime. The New Zealanders all had problems. The Australians all fingerspelled flat out, and they seemed to use fingerspelling as much as signs. We would keep having to ask them to slow down but they didn't really. In the end we gave up and just watched their facial expressions for clues and tried to laugh at the right places. It was too fast for us Kiwis . . . When we were coming out of the oral era in New Zealand, Deaf people were signing in NZSL but there weren't signs for many concepts, like "system" and "structure," so we borrowed signs from other countries that had them. We retained our basic language of NZSL, but there has been a lot of borrowing of signs for more sophisticated concepts . . . Children are allowed to sign in class now, and that's helping them learn. The younger ones are developing lots of new vocabulary in sign language. Being involved in the Deaf Association has helped me, because of having to read and use a lot of new words. There are also workshops and leadership training where ideas are picked up. Deaf people from overseas have also influenced NZSL. We see their signs and borrow them if we don't have our own—for example, the signs for "system," "programme" and "project" are all borrowed from overseas sign language. Ten years ago, most Deaf people in the community would never have known the meaning of "project." Now they know what it means and we have a sign for the concept. (Susan Hamilton, in McKee 2001, 93–94)

Susan's account highlights how lexical borrowing is socially motivated by increasing interaction with foreign signed language users in combination with new discourse demands that arise from changing social conditions (such as education policy and the formalization of deaf advocacy). The loans that Susan mentions are all from ASL, acquired during a period of emerging Deaf political consciousness which emanated largely from the United States. Ongoing status change and use of NZSL in new domains has continued to motivate borrowing and intergenerational variation, as seen in the revitalization of minority languages generally (Crowley 1997).

As referenced previously, contact with ASL and IS increased from the mid-1980s through various routes, including individuals going to the US for high school and university education and participation in international deaf events. Even one-off events have reportedly introduced foreign elements into local use; for example, in the mid-1980s, a Canadian-made documentary about Alexander Graham Bell

was filmed in a New Zealand School for the Deaf. The producers recruited young students as extras who were taught ASL signs and fingerspelling for their parts, some of which they reportedly retained in their personal sign repertoires.² Prior to the documentation and naming of NZSL in the mid-1980s, it seems that the New Zealand Deaf community were less discriminating about the national identity of their sign language, except in contrast to the speedy fingerspelling of American and Australian signers which was markedly “foreign.”

Being an island nation at the bottom of the globe, New Zealand is hardly in a situation of transnational signed language contact at an everyday community level; however, individual bilinguals can have a significant influence in a small language community. In this regard, a potential source of ASL vocabulary dissemination is a small number of NZSL–ASL bilinguals, which includes two of the authors and others who have varying proficiency in ASL via education in the US. Many of these individuals hold professional roles in which their discourse is likely to introduce new subject matter and genres, such as teaching (at school or university), managing deaf services, and producing translated NZSL texts for the community. It is almost inevitable that these bilinguals who are linguistically visible in the community have unconsciously introduced ASL variants in recent times, especially when filling lexical gaps or in cases where signs in the two languages are phonologically similar cognates and the ASL form is selected.

Study Method

Preliminary Linguistic Landscape Scan of ASL-concordant Variants in NZSL

Our investigation was prompted by our own observation and anecdotal reports from NZSL users noting increased prevalence of ASL-concordant signs in circulation or in use by at least some signers. To estimate these, we carried out a preliminary scan of the online linguistic landscape. Over approximately two years, we recorded observed instances of ASL-concordant signs used by deaf NZSL signers in texts posted on websites, deaf e-newsletters, and public Facebook groups. The sample of sources numbered approximately 70 and was opportunistic rather than planned. Text types included announcements, translations, explanations of public service or community

information, personal news, and some educational resources. In our online scan we identified 236 different ASL-concordant signs, in word classes of noun, verb, and adjective, as listed in Appendix A. In Appendix B, we provide an example of the intrasentential alternation observed between NZSL and ASL-concordant vocabulary, in this case in an announcement posted by the national Deaf Association. To determine whether these ASL-concordant signs were longstanding borrowings in NZSL, we checked how many of them are entered in the Online Dictionary of NZSL (McKee, McKee, Pivac Alexander, Vale, and Pivac 2011), which was last updated in 2017. Of these, 85 are recorded in the NZSL Dictionary, meaning they have been recognized as NZSL usage through community validation processes prior to 2017. We assume that the remaining 151 signs identified in the scan are relatively recent additions to the lexicon, or possibly of restricted or idiosyncratic use. It is likely that this opportunistic scan of the online linguistic landscape does not capture the full extent of ASL-concordant signs that may be in use, however, results indicated that further investigation was warranted. We therefore undertook a further two-pronged study, described as follows:

1. An online survey aimed at the deaf NZSL community collected data on their self-reported usage preference between 22 pairs of NZSL/ASL-concordant variants, and participants' awareness of sign origin. Further detail about survey design is given in the next section.
2. Sociolinguistic interviews with 28 deaf NZSL users explored their attitudes about loans from other signed languages in NZSL. Interview sessions included an elicitation task similar to the online survey (but using different lexical items)—first, selecting a preferred variant from sign pairs; second, commenting on the perceived origin and use of the variants; and third, producing signs in response to six glosses which were identified in the linguistic landscape scan as having both NZSL and loan variants in use.

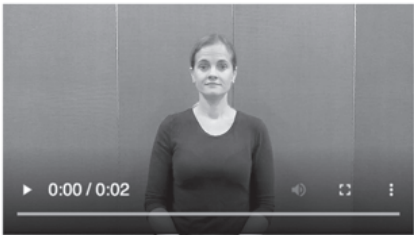
In this article, we focus on findings from the survey, supplemented by findings from interview elicitation tasks. Further analysis of qualitative findings from interviews regarding linguistic ideology is reported in McKee and McKee (2020).

Survey Design

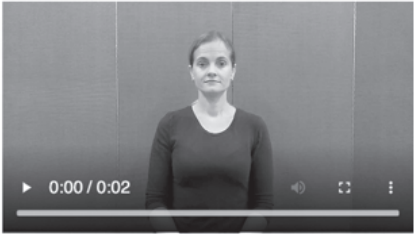
The online survey contained three sections:

1. Questions seeking demographic details of age, gender, ethnicity, hearing status, region, and social media use, as well as whether participants had previously spent significant time overseas or been in contact with other signed languages.
2. A series of 22 paired videos were presented showing an ASL-concordant variant and an NZSL variant. Studies of American word use in New Zealand English have similarly used surveys of approximately 20 target pairs, with participant samples ranging from 30 to 100 (Vine 1999). The target items in our survey (see figure 1) were selected from variant pairs identified during the preliminary scan of online texts, where an ASL-concordant variant was observed to be in use alongside an earlier NZSL form (although as previously mentioned, not necessarily borrowed into NZSL directly from that source). The survey items included different categories of signs, including lexicalized classifiers (such as CAR-PARK, VOMIT, SIT), signs that are cognates in ASL and NZSL but differentiated by a handshape or a movement feature (such as FEEL, HELLO, OPERATION, INTERVIEW), and one verb that is morphologically modified in the ASL form but not in the earlier NZSL form (WATCH-ME). Of the 22 lexical items in the survey, 21 are within the top 1,000 most frequent signs ranked in the Wellington Corpus of NZSL, and 10 are in the top 350 (McKee and Kennedy 2006). The high-frequency status of these concepts suggests that the more recent variants (loans) are not filling obvious lexical gaps in NZSL, such as terms for specialized concepts.
3. In the third section, participants were asked to select the variant they used most often (with an option to indicate if they used another sign—noted in subsequent figures as “Other preferred”), and to state what the sign meant, as shown in figure 1. Each participant was presented with a randomized selection of 10 out of the 22 pairs. In 15 pairs, the ASL-concordant form appeared first; in the remaining 7 pairs, the ASL-concordant form was presented second. The mean number of responses to each paired video question was 48 (range 42–56, SD = 3.39).

Sign 1



Sign 2



Which sign do you use more often?

☐ Sign 1

☐ Sign 2

☐ I use another sign

This sign means:

→ Next

FIGURE 1. Pairs survey question.

4. In the final survey section, participants were asked to identify whether they thought a sign originated in NZSL or from another signed language, with the choices of Total Communication (a local reference for Australasian Signed English), ASL, or BSL/Auslan (which are closely related). Each participant answered this question for 8 signs, randomly selected from a pool of 19 test videos. The majority of these test items were ASL-concordant, but two signs of NZSL origin and two of known Auslan origin were included as “controls.” The mean number of responses for each sign was 42 (range 36–50, $SD = 4.08$).

Survey Participant Characteristics

The survey was distributed in 2019 via deaf organizations, deaf clubs, and deaf social media groups. 117 responses were received, of which 99 were complete. Table 1 summarizes survey participants’ identity, gender, age, and ethnicity.

An online survey mode allows for interactive video elements (Napier et al. 2018), which was useful for the sign discrimination task in this study, but potentially limits participation by certain groups. Survey participants self-selected and, because the survey was distributed through social media, we assume that participants represent the more digitally connected section of the deaf community. However, since use of online media is itself a potential influence in NZSL, this participant characteristic does not necessarily detract from the validity of results about their use of novel sign variants.

With regard to hearing status, 68 percent of participants identified as Deaf/deaf, 10 percent hard of hearing/hearing impaired, 21 percent hearing ($N = 25$ participants, of whom 20 held a professional role with deaf people). Although our intention was to survey deaf NZSL users, it was not possible to exclude non-deaf people from responding to an online survey, and we have included their data since an initial analysis of the survey results showed no significant differences in mean responses between these identity categories, although Deaf/deaf participants were slightly more likely (by raw numbers) to prefer ASL-concordant variants.

Despite the online survey mode, age of participants was skewed towards older: only 15 percent were in the 16–29 years age group.

TABLE 1. Demographics of Survey Respondents

Identity	Gender			Age				Ethnicity					Other ethnic group
	Male	Female	Don't identify as male or female	16-29	30-49	50+	Pākehā / NZ European		Māori	Pacific Islander		Asian	
Deaf / deaf	79	67.5%	19	51	1	9	43	27	67	8	1	1	6
Hard of hearing / hearing impaired	12	10.3%	3	9	0	3	5	4	11	2	0	0	4
Hearing	25	21.4%	1	24	0	5	10	10	23	1	1	1	0
None of these	1	0.8%	0	1	0	1	0	0	1	0	0	0	0
Total ★	117		23	85	1	18	58	41	102	11	2	2	10
Total %	100.0%		21.1%	78.0%	0.9%	15.4%	49.6%	35.0%	87.2%	9.4%	1.7%	1.7%	8.5%

★ Totals may not add up to 117, since not all respondents indicated their gender, and multiple ethnicities could be selected

Gender was also skewed with 73 percent of participants identifying themselves as female. These sampling imbalances may reflect the networks in which the survey was disseminated; for example, NZSL teachers and deaf professionals, among whom women and people aged over 30 tend to predominate. Regarding participants' ethnicities, 87 percent identified themselves as Pākehā (white), while just 9.4 percent as Māori (cf. 22% in census data on NZSL users; Statistics New Zealand 2020), and a few individuals of other ethnicities, which may reflect under-representation of minority ethnic groups in digital participation and/or in text-literate domains.

Reflecting the residence patterns of NZSL users, the majority (69%) of participants came from the three largest urban areas, with 28 percent from other towns, two percent from rural areas, and one participant who was overseas. In relation to overseas experience, 15 percent had received some or all of their education in another country, 35 percent had lived overseas (83% of these for longer than one year), and 37 percent had learned another signed language overseas—15 percent of these had learned ASL and one mentioned having used IS.

In response to a question about regular use of online media, all participants said they used at least one forum. Ninety-four percent reportedly used Facebook and 58 percent used YouTube or Vimeo; whereas 39 percent used Instagram and 16 percent used Twitter.

Results

We will first report on results from the survey and interview elicitation tasks with regard to variant preference and the perceived origins of ASL-concordant loan signs. Statistical results are based on chi-square tests and t-tests on the survey data only. Due to limited sample size of the interview elicitation tasks, those data were not included in the overall statistical analysis. Following this section, we will make some observations from our scan of online NZSL texts about potential effects of ASL-concordant signs on NZSL phonology, morphology, and discourse.

Variant Preference

Across all items, the mean preference for the ASL-concordant variant was 52.39 percent compared to a mean of 42.36 percent preference

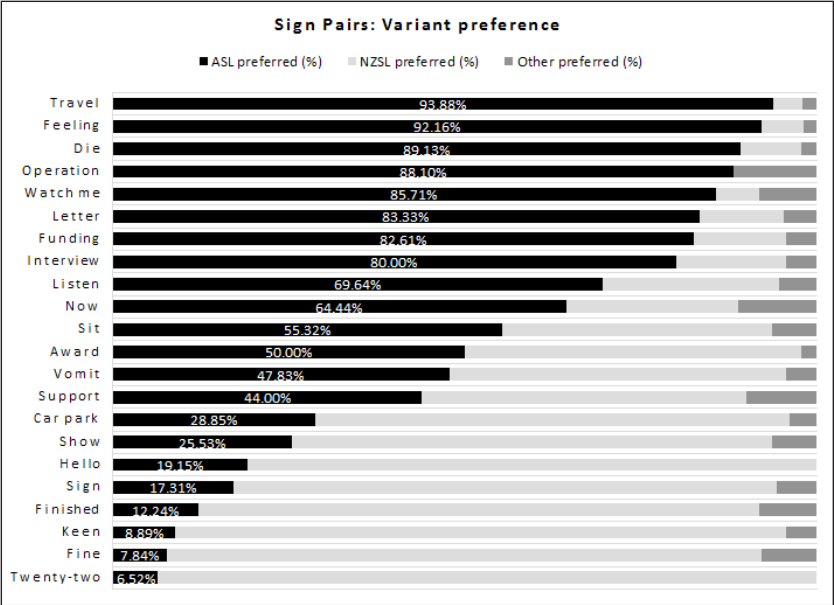


FIGURE 2. Sign pairs: Variant preference.

for the NZSL variant. These results confirm that ASL-concordant signs are prevalent in NZSL users’ repertoire. However, preference ratings for individual pairs varied widely, with a range of ASL-concordant variant preference (between 6.52%–93.88%).

This suggests that some ASL-concordant variants (i.e., items from AWARD upwards in figure 2) are progressively replacing earlier NZ signs. In other cases (i.e., from VOMIT downward), we see minority use of the ASL-concordant variant, but for all items both variants are in use, indicating the potential for shift towards these loans over time.

Contextual Reasons for Variant Choice. Survey participants were asked to indicate a binary “either/or” preference between variants, but in the open-ended response space where they were asked to write the meaning of each sign pair (designed to check whether they were identifying the signs as having the assumed equivalent meaning), participants often commented that they use both variants, and offered a semantic, pragmatic, or grammatical rationale for differing use of each

one. In a similar variant choice task conducted in interviews with 28 individuals (see #3 in the Survey Design section), the majority of participants (72.32%) indicated that they preferred ASL-concordant variants, or commented that they used both of the variants in different contexts. A variety of explanations emerged for alternation between variants; for example, for the items *AWARD*, *TRAVEL*, and *OPERATION* (surgery) participants suggested a noun-verb usage distinction between variants (all of which differ only by a handshape)—in all cases the ASL-concordant form was preferred as a verb. A pragmatic distinction for the use of *FINISH* variants (in different contexts) was suggested. Semantic differentiation between variants was offered in numerous cases: for instance, the NZSL variant of *KEEN* was identified as meaning “excited/interested,” while the ASL-concordant variant was associated with the sense “motivated/eager”—possibly filling a gap in traditional NZSL for this precise meaning. For *LISTEN*, one participant said that they use the NZSL variant to mean “to hear” and the ASL-concordant variant to mean “to listen” in a more active sense. For the concept *FUNDING*, one participant explained that they use the older NZSL form to mean “invest” and the ASL-concordant variant for general “fund(ing).” In the case of *SHOW*, two participants believed that the ASL-concordant variant specifically means “to show a document” (a literal interpretation of its depicting form *POINTING-TO-A-FLAT-SURFACE*), while the NZSL variant has a more general sense. NZSL and ASL-concordant variants of *SORRY* (presented in the interview task) were said by numerous participants to have different pragmatic effect—the NZSL sign being appropriate to express a trivial apology or regret (as in, “excuse me”), whereas the ASL-concordant form (on the chest) was described as more emotive and sincere—suitable for expressing sorrow, remorse, or compassion.³

Stylistic or genre-related reasons were also given for variant alternation. For the item *DIE*, one participant commented that they would use the NZSL variant in informal situations and the ASL-concordant variant in formal situations. The ASL-concordant form of *HELLO* (a firm salute from the forehead, in contrast to the softer handwave in NZSL) was described as more formal and more suitable for addressing a group, which aligns with our observation in online sources that its use is becoming common as a salutation in vlogs and public speaking



FIGURE 3. Traditional and ASL-concordant salutation styles.

genre. Figure 3 shows two signers making announcements in the same issue of an e-newsletter, opening with contrasting styles affected by their lexical variant choices. Mouthing is absent in the ASL-like style.

One person commented that the ASL-concordant variant of *VOMIT* has better dramatic effect in storytelling. These examples indicate that NZSL signers are using loan variants to develop and differentiate genre styles, as well as using them to expand (or replace) vocabulary with equivalent denotative meaning.

In sum, for most of the variant pairs presented in the survey (and in the variant preference task administered in interviews, as reported fully in McKee and McKee 2020), participants did not identify variants in relation to country/language origin or social characteristics of users, but were more inclined to suggest grammatical, semantic, and pragmatic usage distinctions between variants. This indicates that ASL-concordant variants (and likely other loans) are expanding the range of synonyms to specify semantic and stylistic differentiations in NZSL.

Occasional negative reference was made to ASL-concordant variants by participants who overtly identified certain signs as American; one such item was the ASL vehicle classifier handshape (now quite

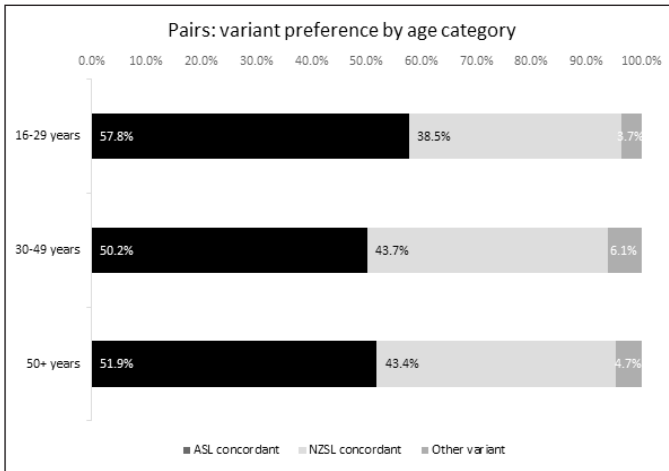


FIGURE 4. Variant preference by age category.

commonly used), which one participant said they disliked because it is from ASL. In the interview task, disapproving comments were also made about the ASL verb *SIGN-FLUENTLY* (fists opening in alternating outward movements), which was perceived as “not from NZSL,” and about the ASL variant of *NOW*, which one participant negatively attributed to interpreter influence. Studies on the perception of US loans in New Zealand English have reported similar findings: that American terms are likely to be negatively evaluated only by individuals who identify them as such, whereas, in most cases, speakers are not conscious of the identity of loan words and their use is not attitudinally marked (Bayard 1995; Vine 1999).

Preference by Age. Preferences for ASL-concordant or NZSL variants held across all age groups, as shown in figure 4. The preference for ASL-concordant forms was apparently higher in the younger (16–29) age group (57.8% ASL vs. 38.5% NZSL), while the middle age group (30–49 years) had a slightly higher proportion of “other” signs (6.1%). However, the difference between age groups was not found to be statistically significant.

Age group has been previously found to condition lexical variation in NZSL due to the introduction of a new lexicon into deaf education

at a distinct point in time (McKee and McKee 2011). Interview data collected in the present study revealed that the use of “marked” ASL-concordant loans (for instance one-handed fingerspelling) is anecdotally associated with young people (McKee and McKee 2020). However, these survey results do not show a significant age effect (in chi-square and t-tests) on preferences for ASL-concordant variants. Our age group samples were unbalanced, with only 18 younger participants versus 58 middle and 41 older (age 50 and above). Unfortunately, age group was only recorded as a categorical variable, preventing more detailed statistical analysis that may have revealed an age effect. However, we believe it is likely that diffusion and uptake of innovative variants are not necessarily tied to age, per se. As noted by McKee and McKee, “the fact that that a good proportion of middle-aged and older-generation signers also use modern variants demonstrates a lifelong accommodation to change within individual lexicons” (2011, 517). This was illustrated by one participant who described intra-generational change in their own lexicon saying: “I used to sign [NZSL variant] when growing up, but I changed to [ASL-concordant variant] due to society today.”

No statistically significant difference in variant preference was found between categories of signers according to other social characteristics, such as region, gender, hearing status, or professional role. Of any social factor, we expected that experience of overseas residence or schooling was the most likely to affect variant choice, but this was not reflected in the data. The proportions in figure 5 show a small,

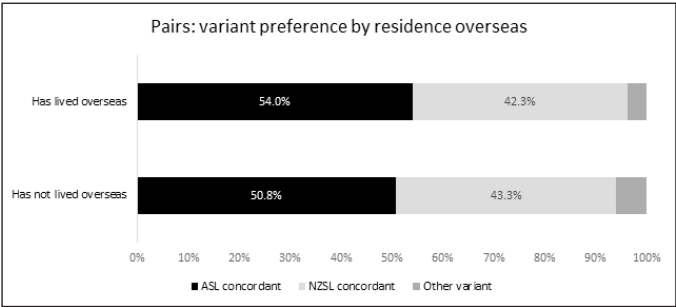


FIGURE 5. Variant preference by overseas residence.

but nonsignificant, difference in preference between those who have and have not lived overseas, and a fairly even split in both groups in their overall preference for ASL-concordant/NZSL variants.

Loan Origin Identification

Results of the second survey task show a low level of awareness of sign origins, with a mean response of “don’t know” of 26.5 percent (min. 13.3%, max. 47.5%) and a high proportion of incorrectly identified origins, both for ASL-concordant origin signs and for the four control items (two signs of NZSL origin and two established Auslan borrowings). A mean of 53 percent (min. 15.6%, max. 80%) of sign origins were incorrectly identified. Twelve out of the 19 signs were incorrectly identified by more than half of the participants. By contrast, the mean of correctly identified origins was only 20.5 percent (min. 5.4%, max. 51.1%). The only sign correctly identified by more than half of the participants was the NZSL verb *OBJECT-TO*, which originates from NZSL. Omitting the control items from further results shows that awareness of ASL-concordant sign origins was even lower. The mean of correct responses to ASL-concordant signs was 17.1 percent, while the mean of incorrect responses was 56.2 percent. Figure 6 shows responses to the individual ASL-concordant signs.

The sign *PROGRAMME* received the most correctly identifying responses (45%). All other signs were identified as being of ASL origin by less than 25 percent of participants. *PROGRAMME* has a one-handed fingerspelling P-handshape that is phonologically marked in NZSL, since the ASL manual alphabet is not part of NZSL. Nevertheless, one-handed fingerspelling handshapes were apparently not necessarily recognized as an indicator of a sign’s loan status; for instance, *LANGUAGE*, initialized with an L-handshape, was identified as ASL-origin by only 12.5 percent of participants. ASL-origin signs were most often judged to be from NZSL ($M = 42.3\%$ of responses), followed by correct identification as ASL origin ($M = 17.2\%$), other origins ($M = 13.8\%$), and “don’t know” (26.7%).

We found that recency of a loan affects how accurately it is identified. Six of the 15 ASL-concordant signs (*DOESN’T-MATTER*, *TEACH*, *LANGUAGE*, *SKILL*, *SET-UP*, *COMMUNITY*; $M = 11.3\%$) were already recorded in a dictionary of NZSL (Kennedy et al. 1997),

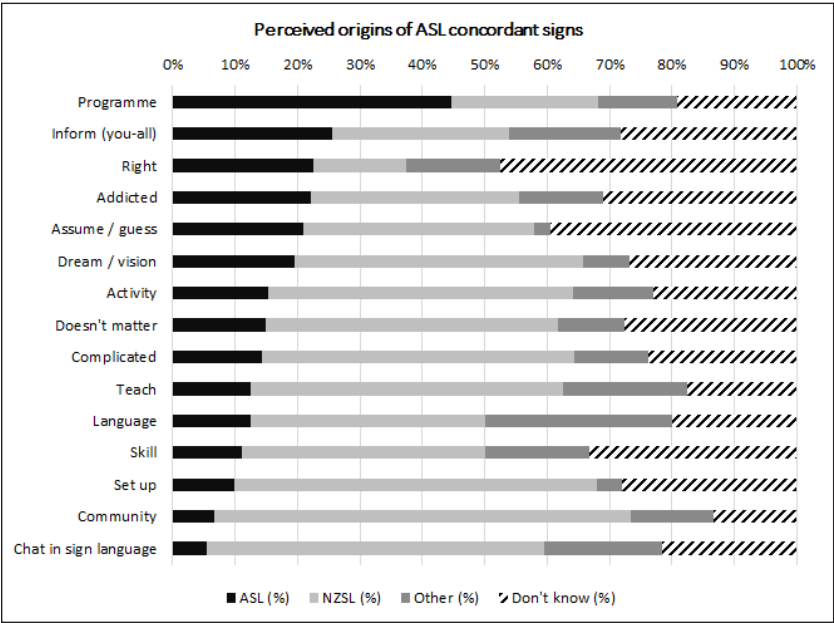









FIGURE 6. Perceived origins of ASL concordant signs.

and can therefore be assumed to have been in circulation for more than twenty years. These six signs were less likely to be identified as ASL-origin than the remaining, more recent loans ($M = 21.2\%$). The variants least recognized as ASL-origin were those that were present in the 1997 dictionary and were the only variant documented at that time. These loans (for example, *COMMUNITY*) filled lexical gaps at the time, became frequently used, and are now widely regarded as NZSL signs.

Observations about Phonological and Morphological Effects of Loans

Loanwords can become conduits for the transmission and integration of new phonemes or inflectional and derivational morphemes into a recipient language (Taylor and Grant 2015). Based on the 236 lexical items identified in the scan of online texts, we make some preliminary observations about novel phonological and morphological aspects. With respect to phonology, we first note that some of the signs we identify appear to have been phonologically modified in one

				
CONCEPT (HS modified)	CONSTITUTION (palm orientation modified)	DAD Australasian (per American?) Signed English. ASL 'D' initialized from ASL FATHER	DAD-2 (modified HS in common NZSL usage – less marked)	DAD-3 (further reduced HS, favoured by/with children)

BEAUTIFUL	
	
NZ traditional (also in Auslan. An older NZSL form exists)	ASL-concordant (different movement)


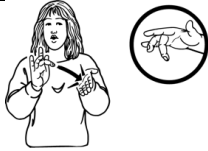
TOUCH	
	
NZ traditional	ASL-concordant (more marked HS and addition of base hand)

FIGURE 7. Phonologically modified ASL-concordant loans in NZSL.

or more features. Some (or many) of these likely entered NZSL via contact with Auslan. Examples shown in figure 7 are phonologically modified ASL loans that are established enough to appear in a NZSL dictionary. Modifications of this kind parallel nativized pronunciation of US-origin words in New Zealand English (e.g., “elevator,” which lacks the final rhotic /r/ that is typical of American pronunciation).

Phonological modification might be made to differentiate related senses. An example is the ASL sign pair *INFLUENCE* and *COUNSELING*, which are differentiated in ASL by a single versus double “opening/spreading” movement for the two signs, respectively. In NZSL, the two meanings are differentiated by a modified handshake/movement to *COUNSELING*, in which the dominant hand flicks opens twice from thumb-middle finger contact or from four bunched fingers on the thumb; whereas *INFLUENCE* retains its original ASL form (see figure 8). Anecdotally, the thumb-middle finger

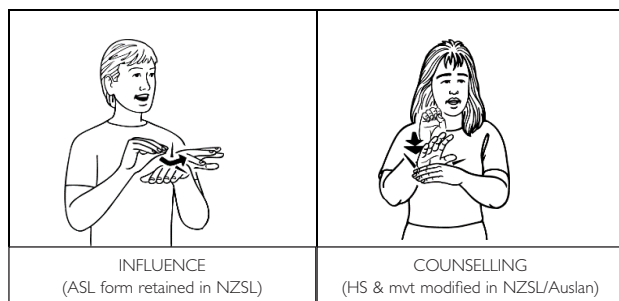


FIGURE 8. INFLUENCE and COUNSELLING, phonologically modified.

“flick” variant originated in Auslan, although it is not illustrated in either NZSL or Auslan dictionaries, suggesting it is a more recent modification of an earlier ASL borrowing into Auslan that was subsequently borrowed into NZSL when mental health became a topic of interest in the deaf community in the 1990s.

Second, we observe that some previously less frequent handshapes now have greater presence in the NZSL lexicon via loans, most obviously those associated with ASL-initialized signs that use handshapes from the ASL manual alphabet, such as ALGEBRA (A), KINDERGARTEN (K), CURRICULUM (C and M), CLASS (C), LICENSE (L), LAW (L), DATE (D), SYSTEM (S), and EUROPE (E). A few one-handed manual alphabet handshapes (mainly for the letters C, J, L, and O) have been integrated as semi-productive phonemes in local NZSL signs, mostly in a limited way, wherein the single letter handshape stands for a concept (specified by mouthing), rather than attaching to an existing morpheme as is seen in ASL initialized signs. Other handshapes that were traditionally uncommon in NZSL, such as the bent, extended middle finger, occur in various ASL-concordant loans (see examples in figure 9) and Auslan borrowings. With respect to movement, an “expansive” whole-hand-opening movement is seen more in ASL-concordant verbs than in traditional NZSL, including GROW, INSPIRE, INFORM, and VISUALIZE. Collectively, a changing distribution of formational features such as these may be altering the phonological character of NZSL.

Other evidence of phonological change through lexical borrowing is seen in the adoption of ASL-concordant variants that are very simi-










				
	DELETE/EMPTY	BLANK (MIND)	INTERNET	SENSITIVE (+ modified movement)

FIGURE 9. A marked handshape increasing its frequency through lexical borrowings.

lar to traditional NZSL signs, except for a handshape or movement feature, as seen in the examples in figure 10. In general, the ASL-concordant variant in these cognate pairs has a more marked handshape than the traditional NZSL sign, for example the Y-handshape in HIKE/TRAMP (we note that the alternate glosses for this sign reflect

FEEL		HIKE/TRAMP/CAMP	
			
NZ traditional	ASL-concordant (more marked HS)	NZ traditional	ASL-concordant (more marked HS)

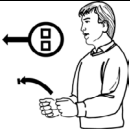



AWARD/TROPHY		MOVE	
			
NZ traditional	ASL-concordant (same movement, different HS, also used in Auslan) ¹	NZ traditional	ASL-concordant (closed HS) ²

FIGURE 10. NZSL and ASL cognates that contrast by handshape or movement. Notes. (1) Image from *The Auslan Signbank Dictionary*, <https://www.auslan.org.au/about/dictionary/>. (2) Image from: C. Valli, ed. 2005. *The Gallaudet Dictionary of American Sign Language*. Washington, DC: Gallaudet University Press. All other illustrations from *NZSL Online*, <https://www.nzsl.nz/>.

a parallel change in New Zealand English usage, with the traditional verb “tramp” now alternating with US “hike,” although their connotations differ).

Such minor shifts in a handshape or movement feature could be seen as parallel to US-influenced variants in New Zealand pronunciation, such as use of intervocalic alveolar flap /t/ in contexts such as “butter” or “sort of” (Holmes 1995), or a short initial vowel in words such as “vitamin” and “privacy” (Bayard 1989).

Certain morphological features appear to be piggy-backing on ASL-concordant loans. We did not set out to examine these systematically, but among the ASL-concordant signs identified in the scan of online NZSL texts we noted some innovative morphological material, including ASL lexicalized classifier handshapes (examples shown in figure 11). These variant pairs reflect a tendency for traditional NZSL classifiers to favor tracing and handling depiction strategies, while ASL equivalents tend to favor whole entity handshapes and instrument strategies (Padden et al. 2013; McKee, Safar, and Alexander 2021), which are evident in these frozen NZSL/ASL signs.

Productive use of an ASL-style “quantifying” classifier was observed in more than one context to depict a list of items, such as for a drop-down menu. In figure 12, the signer is explaining a website interface, using an ASL-concordant depiction of a list of options expanding and then collapsing. The use of this two-handed configuration, along with nonmanual “extent” adverbials and intensifying (dominant hand) finger wiggle, is characteristic of ASL productive morphology and explanatory discourse style, both of which appear to be emulated by some signers in NZSL texts of this type.

Also observed were inflected ASL-concordant verbs LOOK-AT, GO-TO, INFORM (see Appendix B), and TEACH, the frequency of which possibly transfers into wider use of this (existing) inflectional feature in NZSL. Nonmanual adverbial morphology is also observed as a potential stylistic change in NZSL. The images in figure 13, taken from the same community e-newsletter, illustrate contrast between an older (female) and younger (male) signer who are both inviting viewers to participate in events they are advertising. The younger signer uses a morphologically complex ASL-concordant verb phrase,



FIGURE 11. ASL-concordant lexicalized classifier variants.



“list of options-expanding and collapsing” (finger and tongue wiggle with closing-up movement)

FIGURE 12. Productive classifier and adverbial morphology.

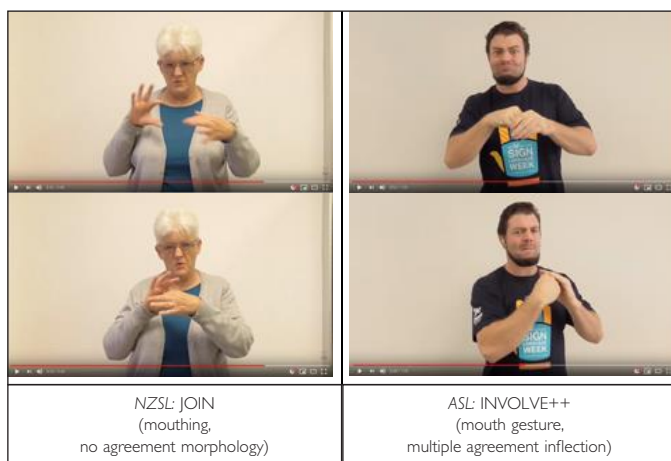


FIGURE 13. Morphologically complex ASL-concordant verb versus NZSL unmodified verb.

GET-INVOLVED, whereas the older signer uses a non-inflected NZSL verb JOIN. The younger signer spatially modifies the ASL-concordant verb to agree with multiple subjects and adds nonmanual intensifying adverbials, while the older signer mouths a corresponding English word simultaneously with the verb. Morphological features that are commonly seen in ASL rhetorical style appear to be finding their way into a relatively new genre of NZSL associated with online information sharing.

Lexicalized verb inflection is present in ASL-concordant loans that are glossed as MISCOMMUNICATE, LOSE-CONTACT, and NETWORK. We do not have evidence of how productive these morphological features might be, but we note their co-occurrence with lexical borrowing as a potential linguistic resource.

In online sources, we see the use of lexical discourse markers and referential strategies (e.g., list buoys) that are typical in ASL and presentation-style IS, but not in earlier NZSL styles. These signs are shown in figure 14; we include QUESTION-MARK as a potential discourse marker, also observed in its plural/amplified form with four fingers as used in ASL. These signs are present in the NZSL Online dictionary, which attests that they are widely considered to be part of the existing NZSL lexicon.






				
PUT-ASIDE (close topic)	NEXT-ITEM (new topic)	List buoys (anaphoric reference)	NOW (<i>HS modified from ASL 'Y'</i>)	QUESTION-MARK

FIGURE 14. ASL-concordant discourse markers.

Discussion

Research on historical variation and change in signed languages suggests that signed languages are prone to more rapid internal change than spoken languages, being typically younger and less stable in patterns of transmission and use (Abner et al. 2020). The results of our study suggest that NZSL is in a period of rapid absorption of new vocabulary, with a shift towards nontraditional linguistic resources, including ASL, evidenced by approximately 151 undocumented ASL-concordant variants identified in a scan of recent online NZSL texts. Although demographic details of signers in these texts cannot easily be analyzed, we assume that the use of ASL-concordant variants both reflects and contributes to language change in the community.

As per all globalized linguistic flows, it is impossible to precisely trace the route of ASL-concordant variants in NZSL. Being mediated by individual international and local interactions, in person and online, ASL-concordant variants are distributed over extended time and social networks, which are notoriously difficult to capture ethnographically (Milroy 2000).⁴ Furthermore, many of the loans we have identified are also found in neighboring Auslan, and possibly in other international and national signed languages and discourse genres to which NZSL users are exposed. Our interview data (McKee and McKee 2020) indicates that uptake of new variants is thought to be mediated more by face-to-face interaction in the local and global deaf communities than directly from consumption of online media (a point also demonstrated by Stuart-Smith et al. 2013; Meyerhoff and Niedzielski 2003; and Ilkbaşaran 2015). This complexity of diffusion

is typical of the contemporary context for variation and change in signed and spoken languages.

It should also be noted that due to the visual-manual production modality, unrelated signed languages generally have more lexical and phonological commonality than do spoken languages; this increases the possibility of parallel innovations, and also favors rapid integration of signs from other languages which can make it difficult to definitively identify borrowings, or at least the direction of borrowing (Quinto-Pozos and Adam 2015, 32). For this reason, we have described the variants under discussion as ASL-concordant, rather than as definitively of ASL origin, as noted at the outset of the study.

Our findings on self-reported variant preference indicate that use of novel variants is not restricted to signers with particular social characteristics. Qualitative data also show that participants do not always express a binary “either/or” preference for use of a traditional or a novel variant, but may instead explain their use of one or both variants in terms of semantic, pragmatic, or stylistic distinctions. Vine (1999) reported a similar result in testing preference for a set of US/NZ variants in New Zealand English, finding that participants did not invariably respond with a binary choice or regard variants as synonyms, but rather described them as having slightly distinct reference, connotation, or usage contexts. Vine argues that speakers’ differentiated use of US/NZ variants points more towards lexical borrowing (new words fulfilling different purposes) than to lexical shift (replacement), which is the most commonly described outcome of Americanization of vocabulary. In NZSL, both processes appear to be evident, with certain loans filling lexical gaps or creating new sense distinctions, while others are apparently displacing older forms, continuing a history of change in the NZSL lexicon.

The fact that ASL is identified with an English-speaking country increases its accessibility and utility as a lexical resource for NZSL users. Drawing on de Swaan’s (2001) model of world language hierarchies, Hiddinga and Crasborn (2011, 497) suggest that even in international deaf contexts English has a globalizing function as a super-central and mediating language among users of various national signed languages, including as an element in IS. Interview data in this study indicated that the association of ASL with English-motivated

concepts entering NZSL discourse (e.g., academic subjects, or the Covid-19 pandemic), and the association of ASL texts with print that supports their comprehensibility (e.g., captioning, online comments), along with the sheer volume and variety of ASL texts available online, contributes to NZSL users' motivation and capacity to engage with ASL as a linguistic resource,⁵ even though the languages are not mutually intelligible.

Although change at the level of words is usually the kind of change most noticeable to speakers (Trudgill 2014, 215), participants in our study frequently assumed that ASL-concordant variants were of local origin. Again, this echoes Vine's study of New Zealand English in which she observed speakers often being oblivious to the origin of words, concluding that "American terms are pervasive, accepted and frequently not recognized" (Vine 1999, 13). Similarly, in an earlier study of Australian English, Sussex (1989, 159) remarked that "the surest indicator of American influence is that fact that most Australians are not conscious of its presence," a statement that also seems to apply to contemporary NZSL. As Meyerhoff and Niedzielski (2003) argue, speakers' uptake of "global" variants does not necessarily signal an aspiration to identify with a more dominant language variety, but may serve as "a broadening of the vernacular base . . . to expand the forms that speakers have access to in their most vernacular, unself-conscious, and most importantly, their most local contexts" (550).

Conclusion

In highlighting the growing presence of ASL elements in NZSL, we do not intend to foretell a trajectory of convergence with ASL. The NZSL community has a history of extensive lexical borrowing in response to international contact and new demands upon the language; in that mix, ASL is apparently now a more accessible and attractive resource in relation to traditional BSL and Auslan sources. Features of externally motivated variation and change documented here reflect wider globalization processes in which American linguistic and cultural capital are diffused and recruited for local purposes in other languages and cultures (such as non-US varieties of English). Finding no clear evidence that preference for ASL-concordant variants accords with signers' social characteristics based on survey results,

we conclude that their use is fairly widespread, although fine-grained ethnographic analysis would undoubtedly tell us more about who are linguistic influencers.

In addition to increasing lexical variation and shift towards ASL-influenced signed languages, the adoption of ASL-concordant signs affects the phonological profile of NZSL by introducing or changing the frequency of certain production features. Conversely, borrowings may be phonologically integrated into NZSL (often via Auslan, we believe) by changes to their original features. Morphological and discourse features imported with ASL-concordant variants (and likely exposure to ASL and IS texts) are also observed. The use of these innovative features is being further investigated in a current study of genre variation in NZSL.

In relation to perceptions of lexical variation and change, our data show that the national origin of variants is not highly salient to users, indicating that loans are rapidly localized, as found in studies of Americanization in New Zealand and Australian varieties of English. The longer an ASL-concordant variant has been in use (for example, documented in a dictionary), the less likely it is to be perceived as a loan. Also, in parallel with spoken English studies, we found that signers often explain their use of old/new variants not as synonyms or replacements, but as having different semantic, pragmatic, or stylistic qualities, suggesting that loans are seen to diversify the lexicon and contribute to development of the language.

Notes

1. This generalization is readily observed among Deaf people, but may over-assume universality and downplay significant economic and cultural differences between deaf lives and worldviews in differing societies—as problematized by Friedner and Kusters (2015) and Kusters (2019).

2. Nirvana Graham (former film extra), personal communication, August 2020.

3. The ASL form of *SORRY* has been further lexically extended in NZSL—with a shift of location to the “heart”—as a fixed translation of the Māori term, “*aroha*,” which denotes a spectrum of emotion ranging from love to compassion to sympathy. Similarly, the ASL verb *SPEAK* has been adopted and modified as a neologism that refers to the “Māori language.”

4. Ilkbaşaran (2015) offers an insightful ethnographic account of how global elements (including ASL) are localized by particular social networks of a national sign language community.

5. McKee and McKee (2020) provides more discussion of NZSL users' motivation for consuming online media in a foreign signed language.

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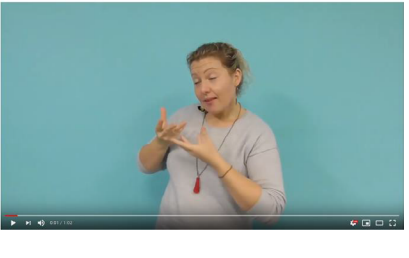

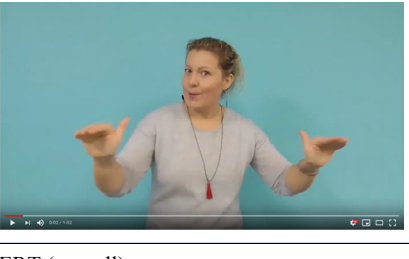
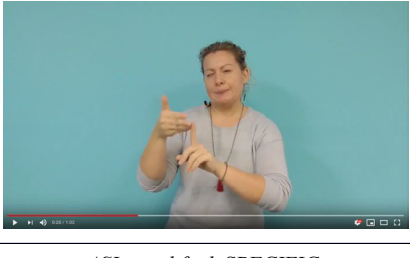
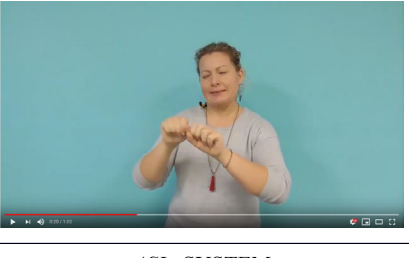
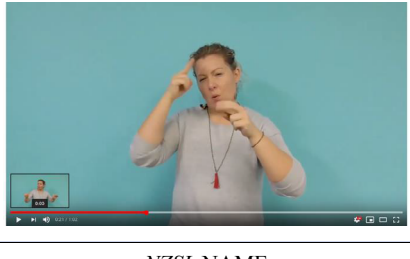
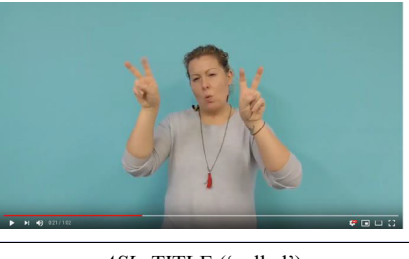
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Appendix A. ASL-Concordant Variants Identified in a Scan of Online NZSL Sources

ABOUT	COMPLICATED	EYEBALLS
ABOVE (AMOUNT)	CONCEPT	(CLASSIFIER)
ACCEPT	CONCLUSION	FED UP
ACTION	CONNECT/RELATE	FEEL
ACTION, ACTIVITY	CONTACT	FESTIVAL
ACTIVITY	CONTROL/MANAGE	FINE
ADD	COOPERATE	FINISH
ADDICTION	COORDINATE	FLEXIBLE
ADULT	COUNSELLING	FLUENT
ADVANCED	COURSE	FOCUS
ADVERTISE	CREATE	FREE
AGENTIVE AFFIX	CULTURE	FRUSTRATED
ALSO	CURIOUS	FUND
ALLOCATE MONEY	CURRICULUM	GAME
ANALYSE	CUTE	GENERAL
ANYWAY	DATE	GENETIC
APPLAUSE-DEAF	DEADLINE	GO-TO/ATTEND
APPROACH	DECIDE	GROW
APPROXIMATELY	DECISION	GUESS
ASSEMBLE	DEGREE	GUIDE
ASSUME	DIE	HAPPY
ATTACH	DIRECTOR	HELLO
AWARD	DISTRACTED-EYES CL	HUMAN RIGHT
AWKWARD	DO	IDENTITY
BACKUP	DOESN'T MATTER	ILLEGAL
BEAUTIFUL	DOLLAR	IMPACT
BELONG	DON'T KNOW	INFLUENCE
BENEFIT	DROP-DOWN LIST	INFORM
BIOLOGY	DRUG	INFORM-ME (INFL)
BUILD	EDIT	INFORM-ALL
BUT	EDUCATION (TEACH)	(INFL)
CALENDAR	ELABORATE	INTERNATIONAL
CANCEL	EMAIL	INTERPRETER
CAT	ENCOURAGE	INTERVIEW
CHAIR	ENEMIES	INTRODUCE
CHANGE	ENJOY	INVOLVED
CHANGE	ENROLL	I-PAD
CHAT	EQUALITY	ISSUE
CLASS	ESTABLISH	JOIN
CLEAN	EXPAND POINT	KEEP-IN-MIND
CODESWITCH	(FROM LIST BUOY)	KNOWLEDGEABLE
COGITATE	EXPENSIVE	LANGUAGE
COMMUNICATE	EXPLAIN	LAW
COMMUNITY	EXPOSURE	LEAD

LEGAL	PARENTS (S.ENG)	SLOW
LESSON	PART	SO-FS
LETTER	PAST-MY-EYES	SORRY
LIKE	PERCENT	SPEAK
LIMIT	PERSPECTIVE	(MĀORI LANGUAGE)
LINE	POOR	STRUGGLE
LIPREADING	PRIOR TO	SUMMARY
LIST BUOYS	PROBLEM	SUPERIOR TO
LISTEN	PROCESS	SUPPORT
LOVE	PROCRASTINATE	SURGERY
MACHINE	PROGRAMME	SYSTEM
MATCH	PROMOTE	TAKE-PHOTO
MATH	QUESTION (MARK)	TAKE (CLASS)
MAYBE	Q MARK MULTIPLE	TEACH
MEET	(4 FINGERS)	TECHNOLOGY
MEET (MULTIPLE)	REFLECT (EYES CL)	THROUGH
MINUTE	RELAXED EASY GOING	TIME
MISCOMMUNICATE	REQUIRE	TIRED
MOTIVATED	RESEARCH	TO-FACE
MOVE	RESOLVE, SOLVE	TOPIC
MOVIE	RESPONSIBLE	TOTAL
MY	RIGHTS	TOURISM
NEGATIVE	ROCKET	TRAVEL
NETWORK	ROMANTIC	UNIQUE
NEW	SAME	VIDEO
NEW YORK	SELECT	VIDEOPHONE
NOTHING	SENTENCE	VIEW
NOTE-DOWN	SEPARATE	VISA (CREDIT CARD)
NOW	SERVICE	VISUALIZE/VISION
OKAY	SET UP/	VOLUNTEER
OPEN-MINDED	COME INTO BEING	WASTE
OPERATION	SHARE	WATCH
(SURGERY)	SHOW	WAY
OPINION	SICK	WEEK
ORAL	SIGN (FISTS OPENING)	WOW
OTHER	SIT	WRONG
PAH	SKILL	YEAR

APPENDIX B. Intrasentential Alternation of ASL and NZSL Signs in a Public Announcement

	
<i>ASL: (they)-INFORM-(us)</i>	
	
<i>NZSL: (we) ALERT (you-all)</i>	
	
<i>ASL, modified: SPECIFIC:</i>	<i>ASL: SYSTEM</i>
	
<i>NZSL: NAME</i>	<i>ASL: TITLE ('called')</i>

(Deaf Aotearoa announcement June 12, 2019)