Sociolinguistic Typology and Sign Languages

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Abstract

This paper sets out to examine the possible relationship between proposed social determinants of morphological 'complexity' and how this contributes to linguistic diversity, specifically via the typological nature of the sign languages of deaf communities. We sketch how the notion of morphological 'complexity' as defined by Trudgill (2011) applies to sign languages. Overall, using these criteria, it might be argued that most sign languages represent languages with relatively little inflection. However, this lack of complexity is predictable when considering how key social characteristics of communities may influence the typological nature of their languages. Although many deaf communities are relatively small and may involve dense social networks (both social characteristics that it is claimed may lend themselves to linguistic 'complexification'), the highly variable nature of the sign language acquisition process for most adults may be due to ongoing contact between native signers, hearing non-native signers, and those deaf individuals who only acquire sign languages in later childhood and early adulthood. These are all factors that may work against the emergence of linguistic 'complexification'. Therefore, when we consider the lack of complexity against these key social factors, we may have a better understanding of the nature of sign language grammar. This perspective stands in contrast to other reports where sign languages are presented as having complex morphology despite being young languages (e.g., Aronoff et al., 2005); frequently, in such reports, the social determinants of morphological complexity have not received much attention.
1 Introduction

In this paper, we examine the possible relationship between proposed social determinants of morphological complexity (Trudgill, 2011), the typological nature of the sign languages of deaf communities, and how this contributes to an understanding of linguistic diversity. We review the notion of morphological complexity as defined by Trudgill and how it applies to the grammar of sign languages, with a focus on British Sign Language (BSL), Australian Sign Language (Auslan) and American Sign Language (ASL). We then discuss the sociolinguistic situation of sign languages.

2 Sociolinguistic typology

Interest in social structures and linguistic diversity dates back at least a century (Perkin, 1992). Based on cross-linguistic evidence, a number of scholars have proposed that spoken languages which undergo extensive second language acquisition by adults appear to have relatively less inflectional complexity (Kusters, 2003; Dahl, 2004; McWhorter 2007; Wray & Grace, 2007; Miestamo, Sinnemaki & Karlsson, 2008; Sampson, Gil & Trudgill, 2009). This would suggest that the default state for human languages (i.e., those which lack a history of extensive second language acquisition by adults) is a high degree of morphological complexification, as appears to be true of languages such as the Athabaskan language Navajo (with its highly irregular verbal system) or Yimas (with its rich tense system) spoken in Papua New Guinea. As a result, the moderate degree of morphological complexity of languages like English and French might thus be viewed as a ‘sociohistorical anomaly’ (McWhorter, 2012), resulting from the particular sociolinguistic histories of these two major languages.

Peter Trudgill (2011) introduced the term sociolinguistic typology: a ‘sociolinguistically-informed’ approach to linguistic typology. This approach assumes that, despite a common set of cognitive abilities in all humans, different types of languages develop in different places and at different points in time partly as a result of the influence of varying sociolinguistic situations. In particular, this theory proposes that there are specific distinctive social characteristics of speech communities that mold the grammatical organization of their languages. Trudgill (2011) proposed the following factors: (1) population size, (2) social network density, (3) degree of communally shared information, (4) social stability, and (5) degree of language and dialect contact. Morphological complexification, Trudgill suggests, tends to be found in languages used by small communities, composed of dense social networks, with high degrees of communally shared information and social stability, and stable situations of language contact. Stable language contact situations refer here to multilingual communities in which one or more languages are learned as children, as opposed to language contact situations in which large numbers of adults learn a second or additional language, perhaps as the result of some significant social change (e.g., displacement caused by war).

3 Morphological complexity

What does Trudgill (2011) mean by morphological ‘complexification’? He proposes that it consists of the following factors: high degrees of (1) irregularity, (2) morphological opacity, (3) syntagmatic redundancy and (4) morphological marking of categories such as tense, gender, voice etc. Trudgill (2011) illustrates (1) by discussing the irregular system of noun declension in Faroese, with the paradigm for the noun dagur ‘day’ showing, for example, completely unrelated forms for accusative [dea], genitive [dags] and dative case [de:ji]. By (2), Trudgill (2011) is referring to notion that the relationship of form and meaning should be as transparent as possible (Kusters, 2003). In a dialect of
North Frisian, however, Trudgill reports that, depending on the syntactic context, the infinitive form of ‘do’ might surface as *douen, doue or dou*. Trudgill (2011) illustrates (3) with data from East Flemish dialects in which subject arguments involves triple-marking as in *we zulle-me wij dat doen* ‘we shall do that’ (literally ‘we shall-we we that do’). Lastly, with (4) he explores how the morphological marking in the demonstrative system in some dialects of Norwegian has evolved a three-way distinction between proximal demonstratives *denne/dette/desse* which are equivalent to ‘this’ in English, distal demonstratives *danna/data/dassa* which are similar to English ‘that’ but are used for something that the speaker can point to in contrast to a third type of demonstrative – i.e. the forms *den/dae/dei* which refer to something that is not visible but has been recently mentioned in the conversation.

These aspects of morphological complexity, Trudgill (2011) claims, predominate in smaller, dense, stable communities without large-scale adult second language contact. In fact, many of the examples he describes in Faroese, Frisian, Flemish and Norwegian have emerged in small dialect speaking communities, and represent complexifications in comparison to more standard varieties of each language. He suggests that, as all of these appear to be difficult for post-critical-period adult learners to master, this reflects that fact that one expects to see morphological simplification – i.e., the reduction in features (1) to (4) – in languages spoken by larger communities with looser social networks that have greater numbers of adult second language learners. Evidence supporting this hypothesis comes from a study showing that spoken languages with large numbers of adult second language learners tend to lose nominal case systems (Bentz & Winter, 2013).

4  Morphological complexity and sign languages

We would like to focus here on how Trudgill’s (2011) notion of sociolinguistic typology can inform, and can be informed by, the study of sign languages of deaf communities. To our knowledge, this notion has not been explored extensively with deaf sign languages in mind. Sign languages can be divided into two very broad subclasses: ‘macro-community’ sign languages which may be used across an entire national deaf community, such as BSL, Auslan, ASL, German Sign Language (DGS) and Taiwan Sign Language (TSL), and ‘micro-community’ sign languages which are used by smaller communities within a nation state, such as the so-called village sign languages, like Kata Kolok in Bali, Al Sayyid Bedouin Sign Language in Israel etc. (see Schembri, 2010 for a description of these two community types). These two types of sign language have developed in quite different social situations, so below we explore how they may provide an interesting test case for the proposal by Trudgill (2011), albeit with some important qualifications.

First, we consider how the notion of morphological complexity might apply to sign languages. Applying Trudgill’s (2011) theory to sign languages is controversial because there is little consensus on how some aspects of their structural organisation are best analysed. Sign languages are frequently described as morphologically complex languages (e.g., Supalla, 1982; Sandler, 2006; Sandler & Lillo-Martin, 2006) with some researchers declaring the fact that sign languages have complex morphology while being young languages a ‘paradox’ (e.g., Aronoff et al., 2005). Some linguists (e.g., Bergman & Dahl, 1994; Liddell, 2003) have described sign languages as inflectionless languages, but this view is not widely accepted. Here we will work through each of the main features of morphological complexity that Trudgill (2011) discusses, with a focus on BSL, Auslan and ASL (the sign languages with which the authors of this paper are most familiar). As we will see, it appears that Trudgill’s notion of complexity and the social determinants associated with these levels of complexity offer the simplest explanation for the structure of sign languages today (in other words, there is no ‘paradox’ to solve).
Firstly, none of these three sign languages (BSL, Auslan or ASL) exhibit high levels of morphological irregularity. There are a small number of irregular negative verb and modal forms in each sign language, including CAN and CANNOT in BSL, Auslan and in ASL; SHOULD and SHOULD- NOT in BSL, and HAVE and HAVE-NOT in Auslan. Some of the negative forms in BSL/Auslan, however, appear to involve a now unproductive negative suffix, as in AGREE and DISAGREE. This suffix appears to be related to the negative lexical item in BSL/Auslan which can mean ‘not have’, ‘did not’, ‘without’ etc. There are also irregular forms for PEOPLE in Auslan and BSL (unrelated to PERSON). Apart from these small number of examples, however, there are few other examples of irregularity. (See BSL SignBank and Auslan SignBank for examples of these signs: http://bslsignbank.ucl.ac.uk; http://www.auslan.org.au.)

There is only limited allomorphy in ASL, BSL and Auslan that cannot be predicted on the basis of morphophonemic processes. For example, in all three sign languages, there is a high degree of variation in the handshape in first person singular pronouns (more so than with non-first person pronouns), but empirical studies indicate that it is conditioned in part by the handshape of the preceding or following sign (Bayley et al., 2002; Fenlon et al., 2013). Some isolated examples of unpredictable allomorphy do occur in verbs. In one regional variety of Auslan, there are two forms of the non-first person to first person form of the sign GIVE. The form with the Y handshape, anecdotal reports suggest, cannot be modified for first to non-first person marking (see http://www.auslan.org.au/dictionary/words/give%20back-1.html). In ASL, there is a non-first person to first person marked form for CONVINCE that is directed towards a location on the neck, unlike other forms of the verb produced in the signing space in front of the signer’s chest. The first person object form has been argued to be an idiosyncratic form (Lillo-Martin & Meier, 2011). However, it could be argued that this form is actually similar to other first person object forms for other indicating verbs which are directed towards particular parts of the body but otherwise are predictable in form (e.g. ASL REMIND, LOOK-AT, etc.).

There is limited syntagmatic redundancy in ASL, BSL and Auslan, with plural marking of most nouns being optional, for example, even when the nominal occurs with a lexical quantifier or verb modified for number.

ASL, BSL and Auslan do not employ any morphological markers for gender, tense, or voice. Although some scholars claim that ASL does mark for tense and passive voice (Neidle et al., 1999; Janzen et al., 2001), the claims are based on syntactic, rather than morphological, phenomena. The marking of aspect is visually-motivated and does not appear highly grammaticalized in Auslan (Gray, 2013). The system is predictable: it involves the reduplication of punctual verbs marking habitual aspect, for example, whereas a similar modification for durative verbs represents durational aspect. In some sign languages, aspect marking has been considered ideophonic (Bergman & Dahl, 1994).

Genitive case is optionally marked on nouns in Auslan and some varieties of BSL: a possessive marker that is based on fingerspelled ‘-s’ (borrowed from English) is sometimes used, as in (1). ASL also has a possessive marker based on a modified form of fingerspelled ‘-s’ which is also optional (Pichler et al., 2008). This appears to be an example of morphological complexification as a result of language contact.

(1) MOTHER POSSESSIVE-S SISTER ‘mother’s sister’

There is, however, a subsystem of verbs which share some characteristics with person and number agreement in spoken languages (Sandler & Lillo-Martin, 2006; Johnston & Schembri, 2007). A
subset of verb signs, which we will refer to here as *indicating verbs*, may be directed towards locations associated with the referents of the verb arguments. This modification has been called ‘agreement’ because it was originally assumed that the form of the verb reflects aspects of the form or semantics of the subject or object noun phrase. In fact, these modifications, like pointing used by non-signers, actually most often reflect the location of a present referent, or the association between an absent referent and a location in the space around the signer’s body (Liddell, 2003; Fenlon et al., in press). This is actually quite different from what we see in spoken language agreement systems (Corbett, 2006), and there is considerable debate in the literature about whether it should be called an agreement system at all (e.g., Lillo-Martin & Meier, 2011, Liddell, 2011). Regardless of this debate, it is clear from studies of BSL and Auslan data that this modification is not obligatory (e.g. de Beuzeville et al., 2009; Fenlon et al., in press), as one would expect from a canonical agreement system (Corbett, 2006).

Indicating verb signs may also be modified for number. An optional alternation of location features and reduplication is used to represent number and distribution of object arguments, as shown in Figure 1. With two object arguments, the sign may reduplicate to different locations, or may use a two-handed construction (‘dual inflection’). With more than two, a sweeping movement may be added across the signing space (‘multiple inflection’). Multiple reduplications may signal marking for distribution (the ‘exhaustive inflection’). Again, these modifications are clearly iconically motivated, and do not appear to be obligatory for any sign language.

![Image](image.jpg)

**Figure 1.** ASL plural forms of indicating verb *GIVE*

Overall, it might be argued that BSL, Auslan and ASL are languages with relatively little obligatory inflection and low to moderate levels of morphological complexity (in contradistinction to Aronoff et al., 2005). Indeed, previous analyses have compared ASL, BSL and Auslan grammar to spoken language creoles (Fischer, 1978; Ladd & Edwards, 1982; Johnston, 1989). Aronoff et al. (2005) pose this similarity to creoles as a “young language puzzle”: i.e., why is it that sign languages are similar in some ways to spoken language creoles and yet they have complex morphology? Our response is that sign languages, by Trudgill (2011)’s definition, are not as morphologically complex as previously assumed.

### Social structure and sign language communities

So, what about the social factors at play in deaf communities? Sign language communities tend to be small, but not as small as many spoken languages. For example, Lupyan and Dale (2010) show that the median number of speakers of the 6,192 languages catalogued by Ethnologue is only 7000, although the mean is over 828,000. The total number of signers in North America, the UK and Australia numbers in the thousands (although this is likely to be in the hundreds of thousands in the
North American case), so all of these sign languages would have a lower number than the mean for all languages given in Ethnologue, with only Auslan possibly approaching the much lower median. In terms of the density of social networks, there has been relatively little research into the network densities of macro-community sign languages (the work of Morris, 2016, being the only example). A small number of deaf individuals are from deaf families, work with deaf people and have deaf partners, and this core of the deaf community might have dense social ties with other signers. Many, if not most, deaf people, however, are from hearing families and work with hearing people, and thus are likely have considerable contact with social networks that do not include people who can sign. It is not clear how to operationalize the variable related to the degree of communally shared information. This is likely to be high in terms of deaf community specific information, but access to information about the wider community is often limited and inconsistent, as the provision of sign language interpreting and captioning on broadcast video is patchy in deaf communities. With regards to social stability, deaf communities are undergoing a period of social change, with traditional centralized schools for deaf children closing, and deaf clubs having increasingly less importance. Both these factors are leading to changing patterns of language transmission. Only a minority of signers (the number is unknown, but possibly fewer than 5% of the adult deaf community) acquire ASL, BSL or Auslan as a first language from signing deaf parents (e.g., Fischer, 1978). Many deaf adults acquired these sign languages from other deaf children in primary or secondary school, or in early adulthood in deaf clubs. Some of these deaf adults may not have fully acquired English, and thus may have learnt these sign language varieties as delayed first languages (e.g., Emmorey, 2002). In fact, together with hearing adult second language learners of ASL, Auslan and BSL, non-native deaf signers constitute the overwhelming majority of the signing community. Together with extensive exposure to spoken and written English, native signers are in constant contact with delayed first language and second language learners. This leads to a sociolinguistic situation that is quite unique, although with some similarities to pidgin language contact situations in which nobody is a native speaker of the variety being used to communicate across language barriers (cf. Fischer, 1978).

6 Morphological complexity in village sign languages

One might predict that the relatively more dense, stable environments of some micro-community sign languages, such as Kata Kolok, might provide an environment in which complexification is more likely to emerge. There is not very much evidence to support this claim, but there are some possible hints in the literature. For example, we see some unpredictable allomorphy in the pronoun system in Kata Kolok. While pointing signs are used for present referents, list buoys (where signers point to fingers on their non-dominant hand, often used to refer to a list of items, cf. Liddell 2003) are reportedly used for absent referents (de Vos, 2012). Both pointing signs and list buoys exist in other sign languages, but studies appear to suggest the use of these systems is allocated different functions categorically in Kata Kolok. This may reflect Indonesian gestural practices involving the avoidance of pointing, however, so it may actually result from language contact. Another example is the emergence of a mouth gesture in Kata Kolok (closed mouth opening, resembling the syllable ‘pah’) which co-occurs with manual verbs to indicate perfective aspect (de Vos, 2012), a development which seems relatively morphologically opaque. This is unlike perfective aspect marking in ASL, BSL and Auslan, which has emerged from the grammaticalization of a manual lexical verb sign meaning ‘finish’ (e.g., Johnston et al., 2015). Therefore, it may be the case that micro-community sign languages provide more dense, stable environments compared to macro-community sign languages, and more research may uncover more evidence of complex morphological structures in these sign languages.
7 Conclusion and future directions

In this article, we have briefly explored the idea that socio-cultural and other non-linguistic factors can contribute to linguistic diversity using Trudgill’s (2011) framework of sociolinguistic typology, and we have discussed this proposal with regards to sign languages used by deaf communities for the first time. We have argued that the unique sociolinguistic situation and language transmission patterns of sign languages may contribute to an explanation for their relative lack of morphological complexification. This conclusion is controversial since sign languages are sometimes presented as morphologically complex languages that present a puzzle for linguistic theory when their youth is taken into consideration. However, when we apply Trudgill’s notion of linguistic complexity, as we have done here, a clearer picture of the nature of sign languages and their relationship to their sociolinguistic situation emerges. In future, more research needs to be carried out on the specific sociolinguistic situation of sign languages, particularly with regards to the relative impact of social network density on these languages, as well as their youth and propensity for highly iconic structures.

8 Conflict of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

9 Author Contributions

AS, JF, KC and TJ all made substantial contributions to the conception of the work, and the interpretation of data. AS, JF, KC and TJ all drafted and worked on revising it critically for intellectual content. AS, JF, KC and TJ all gave final approval of the version to be published, and agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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12 References


