Rating the vitality of sign languages

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1. Introduction

Since Krauss (1992) first called attention to the accelerating pace of worldwide language loss, linguists have devoted increasing attention to language endangerment. The Expanded Graded Intergenerational Disruption Scale (EGIDS) was developed by Lewis and Simons (2010) in order to rate all languages of the world as to their ‘vitality’ – their level of development or endangerment – where “development” is understood as adding or preserving functions and “endangerment” as loss of function. Lewis and Simons originally developed EGIDS with spoken languages in mind, but we demonstrate in this paper that it is also applicable to sign languages, with a few adjustments. These adjustments have other benefits: they highlight important similarities and differences between the two types of languages and even help clarify how EGIDS should apply to spoken languages.

EGIDS is an expansion of Fishman’s (1991) GIDS. It incorporates more finely-grained divisions for endangered languages used in UNESCO’s online Atlas of the World’s Languages in Danger (UNESCO 2013), which is in turn based on UNESCO’s language endangerment framework (UNESCO Ad Hoc Expert Group on Endangered Languages 2003). It also adds new categories at both strong and weak ends, based in part on the vitality categories in the 16th edition of Ethnologue (Lewis 2009). The result is a scale which is applicable to every known language and which makes it possible to assess patterns of development and endangerment in the world overall and in different regions (Simons and Lewis 2013a, 2013b). An estimate of EGIDS levels for all languages of the world is included in Ethnologue 17 (Lewis, Simons, and Fennig 2014).

EGIDS contains 13 levels, numbered to align with Fishman’s original GIDS. As seen in Table 1 (next page), each level has a brief description and a mnemonic label. Level 6a (Vigorous) is the ‘normal’ state of a language. It is assumed as default when there is lack of information to indicate some other level. Higher levels (level 0–5) indicate progressively greater vitality, as indicated by increased development, institutional support, and extent of use. Lower levels (level 6b–10) indicate progressively lesser vitality, as indicated by the degree to which users and uses have been lost as intergenerational transmission is disrupted.
Table 1. Original EGIDS (Lewis and Simons 2010)

<table>
<thead>
<tr>
<th>LEVEL</th>
<th>LABEL</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>International</td>
<td>The language is used internationally for a broad range of functions.</td>
</tr>
<tr>
<td>1</td>
<td>National</td>
<td>The language is used in education, work, mass media, government at the nationwide level.</td>
</tr>
<tr>
<td>2</td>
<td>Regional</td>
<td>The language is used for local and regional mass media and governmental services.</td>
</tr>
<tr>
<td>3</td>
<td>Trade</td>
<td>The language is used for local and regional work by both insiders and outsiders.</td>
</tr>
<tr>
<td>4</td>
<td>Educational</td>
<td>Literacy in the language is being transmitted through a system of public education.</td>
</tr>
<tr>
<td>5</td>
<td>Written</td>
<td>The language is used orally by all generations and is effectively used in written form in parts of the community.</td>
</tr>
<tr>
<td>6a</td>
<td>Vigorous</td>
<td>The language is used orally by all generations and is being learned by children as their first language.</td>
</tr>
<tr>
<td>6b</td>
<td>Threatened</td>
<td>The language is used orally by all generations but only some of the child-bearing generation are transmitting it to their children.</td>
</tr>
<tr>
<td>7</td>
<td>Shifting</td>
<td>The child-bearing generation knows the language well enough to use it among themselves but none are transmitting it to their children.</td>
</tr>
<tr>
<td>8a</td>
<td>Moribund</td>
<td>The only remaining active speakers of the language are members of the grandparent generation.</td>
</tr>
<tr>
<td>8b</td>
<td>Nearly Extinct</td>
<td>The only remaining speakers of the language are members of the grandparent generation or older who have little opportunity to use the language.</td>
</tr>
<tr>
<td>9</td>
<td>Dormant</td>
<td>The language serves as a reminder of heritage identity for an ethnic community. No one has more than symbolic proficiency.</td>
</tr>
<tr>
<td>10</td>
<td>Extinct</td>
<td>No one retains a sense of ethnic identity associated with the language, even for symbolic purposes.</td>
</tr>
</tbody>
</table>

EGIDS suffers from the difficulties that all such scales have. It is a summary assessment of many different sociolinguistic variables; hence it lacks detail. The levels have fuzzy boundaries due to the complexity of the sociolinguistic variables involved. It is sometimes hard to decide which of two adjacent levels best characterizes a language’s situation. Clarifications for some problem cases have been given in various publications and presentations (Lewis and Simons 2011, 2013, Simons and Lewis 2013a, 2013b). Despite such problems, EGIDS provides a clearer picture of a language’s vitality, and by extension the vitality of the world’s languages as a whole, than would be possible if no such rating scale were available, and as indicated above, is more comprehensive than the scales that precede it.

As mentioned before, the reason for developing EGIDS was to provide estimates of vitality for all natural languages, so as to develop a comprehensive picture of language development and endangerment worldwide. In attempting this, however, a practical problem arose. The ISO 639-3 code set (ISO 2007), which forms the backbone of Ethnologue, currently lists 137 sign languages, and there are presumably many more. (This exact number is widely-recognized as being inadequate on a number of counts, a point that we do not disagree with and are working to correct. Our point here is simply that sign languages must be considered seriously in any analysis of world language vitality.) However, since EGIDS (like the earlier scales on which it is based) was formulated with only spoken languages in mind, when we tried to apply it to sign languages, we found the task was not always straightforward. The original EGIDS (Table 1) contained wording that was inappropriate or inaccurate for sign languages. As a simple example, levels 5, 6a and 6b talk about a language being used ‘orally’, wording that is awkward at best when applied to sign languages. In some cases, it was not clear how to apply the original EGIDS to sign languages at all. Levels 4 and 5 were particularly problematic with their strong emphasis on literacy, since many deaf schools worldwide provide institutional support for some sign language in ways that are comparable to
education in spoken languages at levels 4 and 5, but very few deaf schools teach literacy in a sign language (favoring, instead, literacy in some spoken language).

Therefore, modifications to EGIDS were necessary to make it apply readily to sign languages also. This paper presents a new version of EGIDS which applies equally well to both types of languages. The new version is introduced in Ethnologue 17 (Lewis, Simons, and Fennig 2014) and is used as a basis for the EGIDS estimates in that edition.

This revision is related to discussion about modality differences between signed and spoken languages (Meier, Cormier, and Quinto-Pozos 2002). In this case, however, sociolinguistic differences are in focus, whereas most prior work on modality differences has examined structural characteristics. *A priori*, it might have been the case that the sociolinguistic factors affecting the vitality of signed versus spoken languages are so different that rating them on the same scale would have been impractical or unrevealing. In fact, however, we have found that by adjusting the definitions of several EGIDS levels in appropriate ways, it can be seen that the factors which strengthen or weaken both types of languages 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. In particular, consideration of sign languages will allow for deepening our understanding of how to apply EGIDS to spoken languages. Rating both types together on the same scale also allows us to ask questions about the relative robustness or fragility of both types of languages.

### 2. Applying EGIDS to sign languages

Ignoring for the moment the wording problems in the original EGIDS, it was obvious what EGIDS level should be assigned for some sign languages. For example, some can reasonably be ranked at level 6a (Vigorous), since this is the default level for all languages. North American Indian Sign Language [psd] (also known as Plains Indian Sign Language, Davis 2010; three-letter codes in brackets are ISO 693-3 identifiers, ISO 2007) was widely used as a lingua franca in North America between many different indigenous communities during the 1800s, and so should be regarded as being at level 3 (Wider Communication) at that time. Currently, however, there are very few signers left, and it would be reasonable to rate it at level 8a (Moribund) or possibly 8b (Nearly Extinct). Similarly, Hawai‘i Sign Language [hps] (also known as Hawai‘i Pidgin Sign Language) is clearly at level 8b (Earth, Lambrecht, and Woodward 2013). Martha’s Vineyard Sign Language [mre] (Groce 1985) is at level 10 (Extinct).

In other cases, matters were not so straightforward. By analogy to spoken languages in similar situations, it was possible to ignore wording problems in the original EGIDS and identify an appropriate EGIDS level. Once appropriate levels were identified intuitively, this suggested ways to revise the wording. The changes between the original and current EGIDS are presented in Table 2 (next page), most of which were made in order to accommodate sign languages. The rest of this paper discusses the specific reasons for changes and justifies the particular wording chosen.
Table 2. Changes required in EGIDS to accommodate sign languages

<table>
<thead>
<tr>
<th>LEVEL</th>
<th>LABEL</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-2</td>
<td></td>
<td>(no changes needed for sign languages)</td>
</tr>
<tr>
<td>3</td>
<td>Trade Wider Communication</td>
<td>The language is used for local and regional work by both insiders and outsiders in work and mass media without official status to transcend language differences across a region.</td>
</tr>
<tr>
<td>4</td>
<td>Educational</td>
<td>Literacy in. The language is being transmitted through a system of public in vigorous use, with standardization and literature being sustained through a widespread system of institutionally supported education.</td>
</tr>
<tr>
<td>5</td>
<td>Written Developing</td>
<td>The language is used orally by all generations and is effectively used in written form in parts of the community in vigorous use with literature in a standardized form being used by some though this is not yet widespread or sustainable.</td>
</tr>
<tr>
<td>6a</td>
<td>Vigorous</td>
<td>The language is used orally for face-to-face communication by all generations and is being learned by children as their first language the situation is sustainable.</td>
</tr>
<tr>
<td>6b</td>
<td>Threatened</td>
<td>The language is used orally for face-to-face communication by within all generations, but only some of the child-bearing generation are transmitting it to their children it is losing users.</td>
</tr>
<tr>
<td>7</td>
<td>Shifting</td>
<td>The child-bearing generation knows the language well enough to can use it the language among themselves but none are transmitting it it is not being transmitted to their children.</td>
</tr>
<tr>
<td>8a</td>
<td>Moribund</td>
<td>The only remaining active speakers users of the language are members of the grandparent generation and older.</td>
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<td>The only remaining speakers users of the language are members of the grandparent generation or older who have little opportunity to use the language.</td>
</tr>
<tr>
<td>9-10</td>
<td></td>
<td>(no changes needed for sign languages)</td>
</tr>
</tbody>
</table>

3. Removing speech-specific wording

First, we consider some relatively straightforward wording changes that were made to avoid awkwardness when applying EGIDS to sign languages. Without these changes, EGIDS was giving the impression that it could be applied only to spoken languages.

For example, levels 8a and 8b referred to people as ‘speakers’ of a language. Granted, it is common, especially among nonlinguists, to talk about people ‘speaking’ a sign language (see, for example, the title ‘Everyone Here Spoke Sign Language’, Groce 1985). However, linguists generally avoid use of ‘speak(er)’ with sign languages, preferring instead to make the modality explicit by using ‘sign(er)’. A generic expression encompassing both types of languages was needed. Fortunately, the original EGIDS already had one in levels 5–7 (e.g. ‘the language is used’), so we simply extended that to levels 8a and 8b, saying ‘users’ instead of ‘speakers’. This also follows usage by other linguists, including Mitchell, Young, Bachleda and Karchmer’s (2006:326) recommendation to substitute “use” for “speak” on census forms in the USA.

Similarly, some of the original wording mentioned using a language ‘orally’. This was intended to characterize use of a language in the normal way, without writing, to distinguish level 5 (Developing) from level 6a (Vigorous). Again, though, the etymology of ‘orally’ presupposes a spoken language, and it still has that as a primary sense. For example, in linguistic literature, ‘oral’ is often used to distinguish the two modalities of language, as in ‘visual/gestural’ vs. ‘oral/aural’. Also, in the context of sign languages, ‘oral’ education refers to a system which emphasizes speech and lipreading over signing. So, there was a potential for ambiguity here (particularly for the general public who may be unfamiliar with the technical use of the term).
Ben Bahan (2006) offers a straightforward solution to this issue, by distinguishing ‘face-to-face’ vs. ‘written’ use of a language. (It may also be useful to recognize a third, intermediate use of a language: recorded, as in audio or video recordings. Like written use of a language, recordings are fixed and do not adapt to the individual addressee, but like face-to-face use, the addressee does not need to know a written code. We use “face-to-face” to mean ‘neither recorded nor written’.) This works well in the descriptions of levels 6a and 6b. It does not work as well in level 5, however, since the key characteristic that distinguishes level 5 from level 6a is precisely that the language is used in ways that are not face-to-face. So, we replaced ‘is used orally’ with ‘is in vigorous use’, a direct reference to level 6a.

This reference to level 6a is helpful for clarity, since one principle behind EGIDS (and GIDS) is that a language that is used only in written form, but is not being transmitted naturally from one generation to another, is weaker than level 6a, not stronger. The use of a writing system, by itself, does not qualify a language to be ranked at level 5; it must also meet all the requirements for level 6a. (We return to the matter of literacy in sign languages shortly.)

This, then, brings us to more substantive issues that distinguish signed and spoken languages. These are discussed in the next three sections.

4. Intergenerational transmission

A key concept behind EGIDS is intergenerational transmission, particularly in distinguishing levels 6a–10. Sign languages have a different and more complex process of intergenerational transmission than do spoken languages. Deaf children do not typically learn sign languages from their parents at home, like hearing children do. At least 90% of deaf children have two hearing parents (Schein 1989), perhaps as many as 95% in the USA (Mitchell and Karchmer 2004), and the vast majority of those parents do not sign and thus cannot serve as language models. James Woodward (personal communication) observes that in southeast Asia, it is very rare to find Deaf people with Deaf parents. Only in that minority of cases where a deaf child has at least one signing (usually Deaf) parent is the language transmitted from parent to child in the home. Rather, sign languages are usually learned from peers in deaf schools (inside and outside the classroom), in Deaf associations and other places where Deaf people gather.

Thus, wording such as in levels 6b and 7 – ‘…(parents) transmitting it to their children’ – is problematic, as is any mention of language use in the home. We reworded level 7 as ‘(the language) is not being transmitted to children’. This focuses on intergenerational transmission itself, without indicating who the children are learning it from or where they are learning it. Although we would still expect that for intergenerational transmission to be effective, it must proceed naturally from fluent signers to children at a relatively early age, the key point is that children do not need to learn the language from their parents at home. Alternate social settings may serve this purpose. As a result, societal changes that erode those social settings, such as closure of residential deaf schools, can have a profound impact on intergenerational transmission.

As for level 6b, we explain the wording we chose in section 6.

5. Literacy and education

Levels 4 and 5 were previously defined explicitly in terms of literacy:

- Level 4 (Educational): ‘Literacy in the language…’
- Level 5 (Developing): ‘…used in written form in parts of the community’

Widespread literacy does not currently exist in any sign language. Writing systems have, in fact, been developed for sign languages; the best-known systems are Stokoe notation (Stokoe 1960), SignWriting (Thiessen 2011), and HamNoSys (Hanke 2004). However, none are widely used in any signing community. Instead, when Deaf people become literate, they learn to read a spoken language, typically the national language of their country. If literacy were the primary defining factor for levels above the default level 6a (Vigorous), then no sign language would be rated higher than 6a.
However, there clearly is a difference in vitality between sign languages with strong support from formal educational systems and those which have no such support. For example, Bagga-Gupta (1999) and Svartholm (2010) describe the educational system in Sweden, where Swedish Sign Language [swl] is taught explicitly alongside written Swedish, with the goal of developing competence in both languages, even in those many cases where deaf children receive cochlear implants. In other words, the Swedish government, through its school system, has assumed responsibility for transmitting Swedish Sign Language to each new generation of Deaf children. Similarly, through establishment of Gallaudet University in Washington DC, the United States government has taken responsibility for promoting and sustaining use of American Sign Language [ase] (ASL). As such, it is clear that institutional support is a key factor in determining a language’s level of development.

There are, in addition, two other factors that are important in language development, which can exist without use of writing. One is widespread dissemination of what, for lack of a better term, we will call ‘literature’. There are, of course, forms of literature that exist in face-to-face societies, passed from one generation to another through retelling. Here, though, we refer to mass distribution of instances of the language in relatively fixed forms. In sign languages, these may include:

- 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

Existence of such materials supports language vitality by providing broader opportunities for acquiring the language, as well as increasing the language’s prestige and providing motivation for learning and using it.

The other factor is standardization, in the sense used by Ferguson (1968:31): “the process of one variety of a language becoming widely accepted throughout the speech community as a supradialectal norm—the ‘best’ form of the language—rated above regional and social dialects.” We do not assume that standardization is consciously planned. As a language is used for more functions among larger groups of people, standard forms become established and more widely known; the existence of standardization is thus evidence for this widening of function, especially the function of transcending dialect differences. Dissemination of literature, of course, contributes to standardization, as people become familiar with the varieties represented in the literature. Schools, likewise, tend to promote a standard variety over other varieties. By schools, we mean not just deaf schools, but also interpreter training programs and the textbooks used in them (such as Humphries and Padden 2003 and Mikos, Smith, and Lentz 1988 for ASL). That is, we assume that the language variety learned and used by interpreters will tend to spread through the Deaf community, if for no other reason than that Deaf people have to learn how to understand the interpreters. Another factor that can promote standardization is existence of Deaf associations that bring Deaf people together from different geographic regions, such as for sporting events.

For spoken languages, writing is of course intimately involved with all these factors, and we do not mean that literacy is unimportant in strengthening a language’s vitality. Clearly, use of a language in writing is an expansion of function, and thus part of language development. However, sign languages show that it is not literacy per se that provides a language with increased vitality, but rather support from educational institutions, dissemination of literature, and standardization. Literacy, though commonly important, is not essential and therefore should not be used in the definitions of levels 4 and 5. We revised them to place the focus on these broader factors rather than narrowly on literacy. Even in spoken languages, of course, these factors promote language development in oral use, so the change in focus makes it clearer how EGIDS is to be applied to spoken as well as signed languages.

Level 4 (Educational) is meant to characterize full support from these factors. It now reads ‘The language is in vigorous use, with standardization and literature being sustained through a widespread system of institutionally-supported education’. Level 5 (Developing) represents an intermediate, transitional level between levels 6a and 4. At level 5, some elements characteristic of level 4 are present, but not all, or they are not widespread. It is now 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.’

Deaf schools vary widely in terms of educational philosophy, language policy, and quality of education. Just because there may be a system of education for deaf children does not mean that the system is effective in supporting use of a sign language. To take an extreme case, schools with an oral educational philosophy often actively discourage signing. Because of this, we have avoided rating a sign language at level 4 unless most or all deaf education in a country has the following characteristics:
• the schools use a standardized natural sign language (not a signed code for a spoken language)
• it is a primary language in the classroom, used regularly by all teachers and students
• the teachers are fluent in it

The first criterion eliminates schools that use manual codes such as Signing Exact English (Gustason and Zawolkow 1993). It also eliminates schools that use Total Communication – simultaneous use of speech and sign (Lowenbraun, Appelman, and Callahan 1980) – which is often strongly biased toward the grammar of the spoken language. In other words, it is not sufficient for the school to ‘use signs’; it is important to determine what type of signing is used. Further underlining this point, James Woodward (personal communication) has observed that in some countries, there is an educational policy that favors local sign languages over national sign languages, in a deliberate attempt to promote local varieties and thus avoid standardization. In order to determine an accurate EGIDS rating, it is thus important to know which sign language is used in which schools, to determine which sign languages are receiving the benefits of institutional support, and whether they are promoting standardization and widespread dissemination of literature.

The second criterion eliminates ‘mainstreaming’, in which deaf children are placed in otherwise hearing classrooms with an interpreter. Winston (1994) discusses the inadequacies of such an approach both for language acquisition and for education, and Johnston (2006) details the negative impact of mainstreaming on acquisition of Auslan [asl] in Australia. Note that this criterion does not, however, require the classroom to be monolingual in sign; it allows for bilingual programs that teach reading and writing in some spoken language in addition to a sign language.

The third criterion eliminates schools which may claim to use a sign language as the means of instruction, but in which teachers are not fluent and do not provide effective language models. Ideally, to be good language models, teachers should be either Deaf themselves or hearing people who are native signers (i.e. having learned the language in early childhood from a Deaf parent or other relative). For the sake of assigning EGIDS ratings, however, it seems reasonable to only require fluency.

Lacking clear indication that these three characteristics are present and widespread in a country, we’ve avoided rating the sign language at level 4. Where deaf schools are reported to exist and to ‘use signs’, we generally assign an EGIDS rating of level 5, particularly if there is also evidence of disseminated literature and standardization in the language community.

It is clear from the descriptions by Bagga-Gupta (1999) and Svartholm (2010) that Swedish deaf education meets these criteria, and so Swedish Sign Language is a clear example of EGIDS level 4. Most other sign languages don’t have this level of institutional support. ASL in the United States, for example, is best considered to be at level 5, not 4. There are a variety of educational philosophies in deaf schools, and although some schools meet the criteria presented above, there is also widespread mainstreaming, some schools that are oralist, and schools that use Total Communication or other hybrid signing varieties rather than strongly supporting ASL. At the same time, ASL clearly should be rated higher than level 6a. There is considerable literature available (e.g. on DVD) and many dictionaries (e.g. ASLPro.com n.d.; Costello 2008; Sternberg 1994; Tennant and Brown 1998, to name just four). There is considerable standardization; for example, Lucas, Bayley and Valli (2001:185) note that despite lexical variation by region, there is a core of vocabulary that is understood and used throughout the country. And, as we noted, there is institutional support in some places.

As a side note, we suggest that these same three criteria can be easily adapted to spoken languages, for example, to determine the extent to which ‘bilingual education’ programs are providing effective support for a minority spoken language, or in creole situations, for evaluating the extent to which the educational system is supporting the basilectal varieties of the creole. Thus, they can be helpful not just for defining EGIDS levels for sign languages but also for spoken languages.

6. Population decline

For spoken languages, language shift due to a break in intergenerational transmission is the primary reason that languages become extinct. Although the language may die out, the community lives on. For sign languages, in contrast, languages may disappear because the community itself disappears.
The native host community for a sign language is deaf people. Although hearing people may know the sign language too (even natively if they have deaf parents), full natural sign languages develop only where there are significant numbers of deaf people. Without deaf people to provide a motive for maintaining them, they generally fall into disuse. For example, Martha’s Vineyard Sign Language [mre] (MVSL) flourished on Martha’s Vineyard island off the coast of Massachusetts for over a century, due to an unusually high percentage of hereditary deafness (as high as 4% in one village) that was maintained due to a closed gene pool. When this gene pool opened up due to immigration from the mainland, the incidence of hereditary deafness fell dramatically, and eventually the language became extinct (Groce 1985).

Sometimes a sign language may become endangered through an active eugenics policy aimed at eliminating hereditary deafness in a community. Kusters (2012) describes one such situation in Adamorobe Sign Language [ads] (AdaSL, Ghana). In this village, the incidence of deafness was reported to have been as high as 11% in 1961, and there is a robust sign language used both by deaf people and their hearing family and friends. However, in 1975 the local chief proclaimed a law that deaf people could only marry hearing people, since he had noticed that deaf-deaf marriages always produced deaf children. Since then, the incidence of deafness has dropped to 1.1% in 2012.

In a somewhat different situation, Braithwaite and Ferreira (2013) note how the incidence of congenital deafness has fluctuated dramatically in Trinidad and Tobago due to rubella, which often causes deafness in a child when contracted by the mother during pregnancy. As vaccination against rubella has become more effective, the incidence of rubella-caused deafness has also dropped, thus making fewer deaf children available to learn Trinidad and Tobago Sign Language [lst] (TTSL).

There are also concerns about the widespread practice of providing deaf children with cochlear implants in some countries, as to whether this practice will reduce the number of deaf children who learn a sign language. The implants, in and of themselves, do not necessarily eliminate the need to learn a sign language, as outcomes vary widely (Peterson, Pisoni, and Miyamoto 2010). The Swedish educational system (Svartholm 2010), at least in the past, has recognized this, and has actively promoted acquisition of Swedish Sign Language alongside spoken Swedish for children with cochlear implants. However, if the use of implants is combined with monolingual, ‘oralist’ practices that encourage only acquisition of a spoken language, there is the possibility that the number of children who learn to sign may be radically diminished. It remains to be seen what effect this will have on sign languages in different countries.

Johnston (2006) documents that all these factors and more (such as the widespread use of mainstreaming in education and genetic screening) are at work in Australia, resulting in a decline of the Auslan [asl] signing population. He projects the possibility that numbers may decrease to the point that a viable language community cannot be maintained. Although not all commentators on his paper agree on the seriousness of the situation (Hyde, Power, and Lloyd 2006; Mitchell 2006), there is general agreement that powerful forces are pressuring sign language use in Australia.

Clearly, when its host deaf population is disappearing and this trend is projected to continue, a sign language should be considered at EGIDS level 6b (or lower). Yet, the original wording of level 6b was inadequate to describe the situation. It referred to ‘only some… children’, yet in cases such as Adamorobe all deaf children are still learning the language. The problem is thus not always language shift in the classic sense, but that the number of deaf children available to learn and maintain the language may be trending toward zero.

For this reason, the description of EGIDS level 6b has been changed to simply say ‘it is losing users’. Wording things this way is also useful in some spoken language situations, where the population of a community may be diminishing (or may have diminished drastically) due to disease, warfare, or natural disaster, thus threatening the survival of the community’s language. Such situations were not adequately covered by the original EGIDS wording.

In addition, language shift in sign languages also manifests different patterns. Small, localized sign languages can also lose population due to language shift much more rapidly than usually occurs in spoken languages. Algerian Jewish Sign Language (no ISO code, AJSL) has largely been abandoned by deaf Algerian Jews who moved to Israel in the 1960s in favor of Israeli Sign Language [istr] (ISL). They still use AJSL with hearing family members who have not learned ISL, but when the present generation of hearing people who know AJSL die off, the language will effectively be gone (Lanesman and Meir 2012). Nonaka (2012) describes a similar situation in Ban Khor, Thailand, where Ban Khor Sign Language [bfs] (BKSL) is being rapidly replaced by Thai Sign Language [tsql] (TSL), with substantial changes having occurred in just one decade. In these cases, language shift is accelerated because existing
adult users are abandoning use of the language among themselves. Not only is intergenerational transmission disrupted, so is its use among generations that have already acquired it.

There are thus many ways a language can ‘lose users’:

- Classic language shift, in which children learn some other language rather than the heritage language of a community.
- Reduction in the population of children who are available to learn a language, e.g. due to efforts to eliminate deafness through eugenics or surgery.
- Adult language shift, in which adults abandon use of a language in favour of another.
- Reduction in adult population of those who already know the language, due to disease, warfare, or natural disaster.

The new wording of EGIDS level 6b (“it is losing users”) is meant to encompass all of these situations.

7. Application guidelines

In applying EGIDS to sign languages, we have also found it necessary to clarify the interpretation of the upper-level EGIDS descriptions in two ways, concerning the role of interpreters and the meaning of ‘wider communication’.

As noted in the discussion of level 4 above, availability of professional interpreters, even if mandated by law, does not satisfy the requirements for institutional educational support of a sign language. Similarly, legally mandated use of interpreters for functions characteristic of levels 1 (National) and 2 (Provincial) is not the same as normal language use at those levels. Typically, for example, national law may require sign language interpreters for courtroom proceedings involving Deaf people, or in some situations in government offices. This, however, is a far cry from using the language as a matter of course for debate in the national legislature or other routine government business, publishing laws in the language, or making it possible for a Deaf person to walk into a government office unannounced and expect to be able to use a sign language. Thus, legally mandated interpreting does not “count” for determining whether a language is at level 1 or 2. Indeed, interpreters may be mandated for all languages in a country, spoken and signed, but that does not make them all national languages as far as EGIDS is concerned. (Indeed, the Ethnologue 17 page on “Language status” distinguishes 14 kinds of official recognition within a country or provincial region; not all of these justify rating a language at EGIDS level 1 or 2.)

On the other hand, legal mandates to provide interpreters is one environmental condition that should be considered when deciding whether to rate a language (signed or spoken) at level 5 (Developing) rather than 6a (Vigorous). As discussed above, interpreters can be one mechanism by which standardization develops.

The description of level 3 (Wider communication) was revised primarily for reasons independent of sign languages, to clarify how it applies to spoken languages of wider communication. Two general principles are important in applying level 3:

- EGIDS levels are defined with respect to a particular geographic region. A language may be rated at one EGIDS level in one region, and some other level in another (different/larger/smaller) region.
- Level 3 is specifically an exception to the general principle in EGIDS that each level presupposes the level below it; it is not necessary for a language to meet the criteria for level 4 in order to be considered at level 3 over some region.

Thus, for example, a language may function as a language of wider communication over some region even though it does not have a writing system.

Sign languages highlight another interpretive challenge for level 3. It speaks of use of a language to ‘transcend language differences’. What is meant here is not simply bilingualism – that one person in a conversation knows the other’s language, as might happen between Deaf people and Hearing signers. Rather it speaks of communication situations among people from different local languages, who use a widely known language (the ‘language of wider communication’), one that is not the primary language of any participants.

In this regard, we offer two paradigm cases that can be used for evaluating whether a given sign language is widely-enough used to be considered at level 3 for some region. As noted earlier, North American Indian Sign Language [psd] (NAISL) was used throughout the Great Plains region of North America during at least the 19th
century as a lingua franca among hearing people, and presumably also between deaf and hearing people (Davis 2010). Similarly, on the international level, American Sign Language [ase] (ASL) is often used as one option for communication between Deaf people from different countries who do not know each other’s native sign language. Internationally, then, ASL is at level 3, even though we have rated it at level 5 within the USA.

In contrast, two common situations do not represent wide enough use for a sign language to be considered a language of wider communication:

• when the language is used by a relatively small number of hearing people who are in close association with Deaf people, but is not known and used widely among hearing people
• in a village sign language, which, although it may be used by many hearing people in the village, is not used outside the village

Both of these cases involve simple bilingualism, not a language of wider communication. In other words, for level 3 to be applied in a useful way, use of a sign language (whether by hearing or deaf) to ‘transcend language differences’ needs to be comparable to what we find in spoken languages of wider communication.

8. Robustness of sign languages

There are indications that the robustness of sign languages, i.e. their ability to resist encroachment from another language, is rather different from that of spoken languages. When faced with possible replacement by spoken languages, sign languages have demonstrated remarkable resilience. For example, practices in deaf schools in the USA during much of the twentieth century were similar to those in schools for native Americans: removal of children from their home environment to residential schools, exclusive use of English in the classroom, and active discouragement of other languages enforced by corporal punishment. Yet, ASL has survived and even thrived despite such conditions, while most Native American languages are threatened or even severely endangered.

Padden (2001), commenting on the robustness of ASL, points to several factors that have helped preserve it. There is of course, a natural resistance to spoken English, in that Deaf people have difficulty with that modality, but ASL has also resisted encroachment from visual alternatives, such as various forms of Signed English. Rather, she attributes its survival to ongoing folk explanations, through themes of ‘regeneration, preservation and transmission’ that recur in stories and anecdotes and remind users of the language’s central importance in everyday life.

In contrast, sign languages appear to be much more likely to shift when in contact with other sign languages. As noted in section 6, small, localized sign languages are particularly fragile when in contact with national sign languages. This is probably due to the ease by which deaf people acquire other sign languages, which in turn is due to the high levels of iconicity in sign language lexicons and grammars and the degree of similarity between even unrelated sign languages, which is comparable to what one typically finds within families of spoken languages. Given these factors, it may be that all village sign languages, even those currently at level 6a (‘Vigorous’), should be considered in some sense endangered, in that their users may easily shift to using national sign languages within the next 100 years.

Clearly, this matter deserves further research, as part of the larger question of what factors favor or disfavor language shift.

9. Conclusions

In summary, despite differences between signed and spoken languages, the fundamental sociolinguistic factors that affect language vitality are substantially similar in the two modalities. It is possible to rate their vitality on the same scale, given the right assumptions and definitions. We have presented revised definitions of the EGIDS levels that make possible meaningful comparisons between the sociolinguistic situations of signed and spoken languages.

In the process, insights gained from the study of signed languages have illuminated our understanding of spoken languages in several ways, highlighting issues that were overlooked in the original formulation of EGIDS.

• The fact of intergenerational transmission is what is most important in rating vitality; although parent-to-child transmission is most common, there are other means by which it can be accomplished.
• Literacy per se is not what is important for language development, but rather institutional support, standardization, and dissemination of literature that goes beyond face-to-face use of the language.
• In order to provide good institutional support for a language, schools must use that language in its normal form (not a form distorted for educational purposes), as a primary language of the classroom used by all participants, and must provide good language models in its teachers.
• Although classic language shift is the primary reason that languages are threatened, there are other factors such as genocide, disease, or natural disaster, which can lead to decline in the number of its users.
• Provision of interpreters, by itself, is not sufficient to rate a language at levels 4 and above.

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