1 Child Language Assessment across Different Multilingual Contexts

Insights and Challenges from South and North

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1 Introduction

It is well known that to obtain a fair representation of language skills in multilingual people, all their languages must be assessed (Bedore and Peña 2008). However, due to a lack of comparable tools across languages, this is not always possible. In many cases, assessment tools are only available in well-studied languages, often those with high social status or the languages of schooling. For pre-school children, being assessed only in the majority language may render misleading results if that language is not spoken in the child's home and the child has had little or no exposure to it. Regardless of whether appropriate assessment tools are available, language assessment may be important and necessary for many purposes – amongst others to allow identification of a possible language impairment or delay. In the case of multilingual children, multilingualism needs to be disentangled from language impairment, as the language of children who are multilingual may share characteristics with that of children with language impairment. For instance, similarly to children with language impairment, multilingual children might lag behind their monolingual peers – when only one of their languages is taken into account. Whereas one does not want to diagnose typically developing multilingual children as language impaired, under-diagnosing language impairment in multilingual populations, and thereby denying them access to whatever support may be available in their contexts, is detrimental to multilingual and monolingual children alike.

The lack of assessment tools for multilingual children was specifically addressed by a 2010–2013 European Union–funded network of child language researchers (COST Action IS0804, Bi-SLI, "Language Impairment in a Multilingual Society: Linguistic Patterns and the Road to Assessment," www.bi-sli.org), and their activities still continue. In this network, a collective, international effort was made to develop assessment tools for different

language domains across a wide range of languages, resulting in a battery of tools under the umbrella name LITMUS (Language Impairment Testing in Multilingual Settings; see, e.g. Armon-Lotem, de Jong, and Meir 2015). Here, we will focus on vocabulary, and take as our point of departure our experience with two different tools for assessing vocabulary in multilingual children, namely the MacArthur-Bates Communicative Development Inventory (CDI) and the LITMUS Cross-Linguistic Lexical Tasks (CLT). These tools are aimed at different age groups, and they were developed in very different ways, but they both exist in linguistically and culturally comparable versions across many different languages. As such, a basic assumption is that those versions can be used for assessing the different languages of a multilingual child, and that they will indicate strengths and weaknesses in the child's languages in an accurate manner. However, as we will show, our work across different populations of multilingual children indicates that however comparable our child language tools are meant to be, they need to be used with care, and their results need to be interpreted reflectively.

One of the reasons for treating the language assessment results of multilingual children with caution is that there is no such thing as The Multilingual Child. Multilingualism, also childhood multilingualism, can take many forms (see, e.g. Butler 2013; Lanza 2007; Wei 2013). A child could, for instance, be acquiring two or more languages simultaneously (from birth) or consecutively/successively (where exposure to languages other than the first language (L1) takes place after the age of 2 years); early (before the age of 6 or 7 years) or late; and additively or subtractively, where the latter refers to the child learning the second language (L2) to the detriment of the first, as is often the case when the L1 is a minority language. The relative exposure to each language may vary, as well as where and how each language is learnt. The child could comprehend and speak the L2 or could be a passive multilingual who is able to understand the L2 but does not speak it. All languages could be acquired in the child's home context, or some could be acquired through exposure at the childcare institution or in the community at large. There could be a lot of community support for the child's languages or little to no such support for one or more of the languages. Such heterogeneity amongst multilingual children calls for caution when interpreting research findings and assessment results across populations and contexts.

In Norway, albeit generally considered a monolingual country, most children grow up multilingually in the sense that they are exposed to Norwegian at home, in childcare, at school, and in all spheres of society; have access to books, television shows, and other educational and entertainment artefacts in Norwegian, but start acquiring English early on through activities on the internet such as games, YouTube videos, and pop music. Some children are introduced to English in kindergarten, and all are exposed to it at school, from the age of 6 years. More than one-fifth, and maybe up to one-third, of Norwegian children are exposed to other languages in the home, having one or more parents speaking one of the traditional languages in

Norway, such as Sámi or Kven, or more recent immigrant languages such as Polish, Somali, Swedish, or Turkish (Statistics Norway 2020a). Some of the languages have higher status in Norway than others, and the Norwegian community typically supports the acquisition of, for example, English and Swedish over Polish, Somali, and Turkish. Swedish, Danish, and Norwegian are also (near) mutually intelligible, providing a linguistic advantage to children acquiring a combination of these languages. Overall, more than 92% of children aged 1 to 5 years attend kindergarten (Statistics Norway 2020b). The age of kindergarten entry varies to some extent between cultural groups, but increasingly children start kindergarten already at the age of 1 year. The access to educational and entertainment artefacts in the various languages differ; children speaking Somali, for example, will find very little written or visual artefacts of their home language.

In South Africa, multilingualism is the norm, and childhood multilingualism takes many forms, which differ from the kinds of multilingual contexts in which Norwegian children grow up. Unlike Norway, South Africa does not have a country-wide dominant language in terms of the number of speakers. Of the country's 11 official languages, isiZulu (at 25%) has the largest percentage of home language speakers and isiNdebele (at 1.6%) the smallest. Although English is the *lingua franca* in South Africa, it is spoken as a L1 by only 8% of the population (Statistics South Africa 2018b). The majority of South African children do not receive sufficient exposure to English in their daily lives to allow them to enter school proficient in the language. Yet, English is the predominant and preferred language of education. Note that almost half of the children under the age of 6 years (47%) do not attend childcare institutions before school entry and thus receive the vast majority of their language input at home. Home childcare is, however, not always of high quality in terms of language interaction; for instance, just over half of South African children aged 0 to 6 years are frequently read to or told stories by members of their household, and about a third of this age group are not entered into conversation with by members of their household (Statistics South Africa 2018a), thereby reducing the quantity of input received in any of their languages. The majority of South Africans have an African language as their L1, and many children grow up with several African languages in their household and/or community. They often form part of sectors of South African society that have little access to print material in their homes and communities, be it in their home languages or in English. Contrastively, for children who grow up with English and Afrikaans as their only languages, there is in theory access to many high-quality children's books, television shows, and mainstream movies. However, provision of, and access to, such resources are related to SES. In terms of family income, South Africa is one of the most unequal countries in the world, and half of South African adults live below the upper-bound poverty line (Statistics South Africa 2019). Thus, access to language stimulation resources, rather than merely their existence, is at issue in many South African communities.

Given the variation in the number of languages and combination of languages, the age of first exposure and the quality and cumulative quantity of exposure to each language, amount of community support for each language, language-related expectation of the school system, and cultural and other contexts in which children acquire their language(s), the over-generalisation of research findings and assessment results should be avoided. One should also bear in mind that most of the published research findings on child multilingualism were generated in the North, in so-called WEIRD contexts (Western, Educated, Industrialised, Rich, and Democratic; see Henrich, Heine, and Norenzayan 2010). One should thus not assume that these findings will hold as is for childhood multilingualism in under-researched, majority world settings.

With these caveats in mind, we will discuss the two vocabulary assessment tools mentioned above, CDI and CLT, in light of our experiences based in Norway (an example of a WEIRD context) and South Africa (representing under-researched non-WEIRD contexts). We seek to illustrate the influence of different contexts on both their construction and their use for multilingual children, and how this offers insights, but also poses challenges to take into account.

2 Vocabulary Assessment through Parental Report: CDI

The MacArthur–Bates Communicative Development Inventory is a parental report tool originally developed for American English (see Fenson et al. 2007), but currently adapted into nearly 100 languages (https://mb-cdi.stanford.edu/) from a wide range of language families. It typically comes in two versions: an infant version, *Words and Gestures*, aimed at the age group 8 to 18 months (CDI I), and a toddler version, *Words and Sentences*, aimed at the age group 16 to 30/36 months (CDI II).[1]

Both CDI I and CDI II have a strong focus on vocabulary, presenting checklists of words from different semantic domains and word classes for parents to tick off. For CDI I, a list of approximately 400 words can be ticked off for both comprehension and production, whereas in CDI II a list of approximately 700 words can be ticked off, for production only. In addition to the vocabulary checklists, CDI I contains checklists for gestures, play routines, and actions, whereas CDI II has additional checklists focusing on grammar (morphology, word combinations, and sentence complexity). Here, we will focus on the vocabulary part of the assessment tool.

The numbers of words mentioned above are based on the original American English CDI – in the different adaptations, the actual number of words may differ, but care is taken to make the vocabulary sets as comparable as possible through matching the semantic domains and word classes. An important point, as also stated by the MB-CDI advisory board (see https://mb-cdi.stanford.edu/adaptations.html), is that an adaptation is not the same as a translation – and the adaptation must be not only linguistically

but also culturally appropriate. To meet the criterion of comparability, central aspects of the CDI structure must be retained – however, the larger the linguistic and cultural distance between the American English original and the new language version, the more challenging the adaptation process.

Consider, for example, the differences between the adaptation to a language like Norwegian, a well-described language closely related to English, spoken in a context that is to a large extent culturally comparable to the original, and the adaptations to languages spoken in South Africa. For Norwegian, the adaptation process was relatively straightforward (Kristoffersen et al. 2013; Simonsen et al. 2014). A first Norwegian version, which closely followed the American original, was evaluated and modified by an expert group consisting of linguists and psychologists, resulting in (amongst other changes) more words in a few categories, based on linguistic differences. For instance, due to systematic differences in prepositions and location/direction terms between English and Norwegian, 15 words were added to the existing 26 words in this category. Some terms for family members were also added, namely two additional words for grandmother (*bestemor*) and two words for grandfather (*bestefar*), indicating whether these relatives are on the mother's (*mormor/morfar*) or the father's (*farmor/farfar*) side, as these terms are used frequently, alongside the generic *bestemor/bestefar*. This version was piloted with a small group of 17 parents who, in addition to filling in the CDIs and a background questionnaire, were asked how long it took to fill them in, as well as to evaluate the instructions and variables, and to suggest possible new items to add. This resulted in a small-scale revision of the forms, e.g. adding words like *PC* and *pizza*. Before the actual norming study, a second round of revision took place to make the Norwegian CDI more similar to the Danish version. The aim was to facilitate cross-linguistic comparisons of early language development in children acquiring Norwegian and Danish – two languages which are very similar in grammar and vocabulary, but markedly different in phonology.

This final version was then normed in a population-based study with approximately 6500 children, where parents completed the CDI forms over the internet – the first CDI study to use this methodology. Norway is a country with high rates of internet access, making this a feasible method – and it turned out to be very efficient, in terms of both time and coding accuracy. As has been found for many other CDI studies (Fenson et al. 2007), the sample of respondents was skewed in the direction of higher parental education (and thus higher SES), but the method of data collection did not seem to add to this skewness: For example, compared to the paper-based Danish CDI study (Bleses et al. 2008a), both the response rate and the skewness were very similar (Kristoffersen et al. 2013). The vocabulary in the final version was then validated against an existing corpus of Norwegian child language (Simonsen 1990) as well as through comparison with the words used in the three longest sentences reported by the parents in the CDI II form, and the validity was found to be acceptable (Kristoffersen et al. 2013). Later studies

indicate that the parents' reports are valid down to the level of single items, as suggested by a strong correlation between age of acquisition based on the Norwegian CDI data and adults' ratings of subjective age of acquisition (Lind et al. 2015), strong correlation with frequency in child-directed speech (Hansen 2017), as well as good item-level agreement between children's responses in word recognition and parent reports on comprehension in the Norwegian CDI I (Lo et al. 2020).

In the South African context, where the languages at issue are spoken in cultural contexts far removed from the one for which the original American English CDI was developed, the adaptation was more complex for the multi-institutional, interdisciplinary, multilingual team involved therein[2] (see Southwood et al. 2021). The American English CDI was translated by three mother-tongue speakers per language, and the collated translations were presented to language practitioners and to at least two focus groups (consisting of professional child service providers and parents of young children) in order to obtain advice on which words to omit and which words or synonyms to add. For instance, the words for *matches* were added, because many South African households make use of candles or paraffin lamps for light, and cooking food on an open fire (lit by matches or a lighter) is a common activity across cultures represented in South Africa. Words for *moose* and *snowsuit*, for example, which are not associated with South African life, were removed. Hereafter, 30-minute samples of naturally occurring language were collected from six toddlers per language, and words that occurred in the samples but not yet on the list were added.

The preliminary versions of the CDI I and II of each language were piloted with 40 caregivers of 8- to 18-month-olds and 16- to 32-month-olds, respectively. For most languages, half of the children were situated in rural areas and the other half in urban or semi-urban areas. Typically, in South Africa, the rural/urban divide is also a lower/higher SES divide, so targeting across geographical locations enabled the inclusion of participants from a range of SES backgrounds. Only monolingual children were included in the pilot studies, but "monolingualism" was defined as receiving less than 4 hours per day of input in a language other than the L1, because including strictly monolingual children would have resulted in the pilot study participants not being representative of the general South African child population. Based on the results of this pilot, further words were removed or replaced before the second pilot study took place, this time with the caregivers of 100 infants and 100 toddlers per language, with the vast majority of these CDIs completed with the parent/caregivers by means of fieldworker interview (either face-to-face or telephonically where COVID-19 restrictions necessitated the latter), following Alcock et al. (2015) who did CDI interviews in rural Kenya. This was necessary given the low literacy levels of many participating caregivers. The same protocol was followed simultaneously for a number of languages, but the final number of words varied across languages, because some words are polysemous in one language but require several related words

in another. For example, porridge (a staple food for many South Africans) and cereal can both be called *pap* in Afrikaans, whereas porridge is referred to as amongst others *makleu*, *motoho*, *mabele*, or *motoho wa mabele* in Sesotho, and in Setswana, *motogo* refers to soft and *bogobe* to stiff sorghum porridge. Porridge made of maize meal is also common, referred to as *papa* and *phaletšhe* in Sesotho and Setswana, respectively. Kinship terms also differ amongst the languages. For instance, whereas English has one word for both male and female cousins, Afrikaans has two (*niggie* for a female and *neef/nefie* for a male cousin), with no collective term referring to either sex; and in Setswana, there are three words for sister (*ausi* "(big or small) sister," *nkgonne* "older sibling," and *nnake* "younger sibling," the latter two also used to refer to a brother). The number of semantic categories per language also varied across languages, because the CDIs for the two West Germanic languages contain pronouns and auxiliary and modal verbs, but the CDIs for the Bantu languages do not.[3]

As stated above, for Norwegian, there was a longitudinal child language corpus against which the Norwegian CDI could be validated. However, given the complete lack of child language corpora for most Southern African languages, the South African CDIs will be validated by means of language sample collection and language comprehension and production tasks, after which the validated CDIs will need to be normed. Given that multilingualism is the norm in South Africa, but also that the language combinations, and amount of exposure to, and proficiency in, each language vary widely even in the same community, the question arises as to what average length of daily exposure to languages other than the L1 should be targeted in the national norming study. Taking into account the sociocultural contexts in South Africa, the South African CDIs – unlike the Norwegian CDI – may need to be completed interview style during the norming study to enable representation of children whose caregivers have low levels of literacy and limited access to electronic devices and the internet.

Reliability and validity have been found to be good for the CDI tool (Fenson et al. 2007). However, it is worth remembering that due to variability in language development amongst young children, the tool should be used with care for the youngest age groups. Furthermore, for most of the norming studies, the samples are biased towards parents with higher education, resulting in those from lower SES being under-represented. During the development of the South African English CDIs, unlike the other South African CDIs, the sampling plan stipulated that half of the participants had to be from low SES backgrounds, regardless of their geographic location in terms of rural- or urban-situated. South African English is infrequently spoken as L1 in rural areas, but does vary according to SES (see Mesthrie 2002). For this reason, SES instead of geography was controlled for in the South African English sampling plan.

The fact that all CDIs are adapted from the same original has made them useful for cross-linguistic comparison, as exemplified in Bleses et al. (2008b),

who compared CDIs across 17 different languages and found similar trends in vocabulary production across languages, in spite of large variation in children's language development. CDI-based cross-linguistic comparison has been made even more accessible through the Wordbank project (Frank et al. 2019; Braginsky et al. 2019).

For assessing multilingual children, the CDI has also been found to be a useful tool. For some contexts with extensive societal bilingualism, bilingual versions of the CDI have been developed; see, e.g. Maltese (Gatt 2007) and Irish (O'Toole and Fletcher 2010). In cases where such bi/multilingual versions do not exist, one could use a combination of monolingual versions of the CDI, provided that comparable versions indeed exist across the child's languages (see, e.g. Core et al. 2013 for Spanish–English; Gonzalez-Barrero, Schott, and Byers-Heinlein 2020 for French–English).

In a comparative study on bilingual vocabulary acquisition in children from six different language pairs, O'Toole et al. (2017) evaluated this latter method with CDI II (*Words and Sentences*), with the specific aim of identifying bilingual children at risk for language impairment. Two hundred and fifty typically developing children aged 2 to 3 years were included in the study. In addition to CDIs in the different languages, O'Toole et al. (2017) used a language background questionnaire to obtain information about risk factors for language impairment, language exposure, and demographic variables such as parental level of education and occupation. They found, as expected for bilingual children, higher scores for the L1 than the L2, and total vocabularies that were larger than conceptual vocabularies. They also found a wide variation in vocabulary scores both within and across the language pairs. This could be attributed to age, but also to the mother's education status, parental concern about language development, and amount of exposure to the L2.

Whereas O'Toole et al. (2017) conclude that comparing across language adaptations of the CDI identified potential milestones for multilingual development and also potential indicators of language delay, they point out several limitations. In accordance with common practice in CDI studies, they only used one person to report from each language. While there is an advantage to letting parents report on their children's language abilities, in particular if the language at issue is not known to the investigator or therapist, ideally two or three persons should report on each language, as recommended by De Houwer, Bornstein, and Leach (2005; see also De Houwer 2019). O'Toole et al. also found that parents sometimes misinterpreted the questions on language exposure – an effect also found in other studies (Quay 2008). In addition, as pointed out by Lanza (1997), what parents *say* about their language interaction with their children does not always correspond to what they actually *do*. Thus, while language exposure patterns are indeed crucial for vocabulary acquisition, and need to be taken into account when seeking to establish multilingual norms (Gathercole, Thomas, and Hughes 2008), the complexity and variability in language interaction

patterns across multilingual communities call for careful interpretation of such measures – a point to which we will return below.

Furthermore, O'Toole et al. (2017) found that direct comparison across languages was difficult due to the very large differences in the number of words between different CDI adaptations – this is a fact that has to be taken into account when calculating vocabulary sizes for analysis and comparison. Finally, the authors mention that, in addition to the differences in checklist sizes, typological differences between languages may play a role in vocabulary acquisition. As pointed out by Thordardóttir and Weismer (1996), languages with complex inflectional systems may make it more difficult for children to identify lexical entities from the input. The phonetic structure of the language may have the same effect (Bleses et al. 2008b). Both inflectional systems and phonetic structure have been found to influence the acquisition of verbal morphology in Scandinavian children (Ragnarsdóttir, Simonsen, and Bleses 1998; Ragnarsdóttir, Simonsen, and Plunkett 1999), and it is likely that vocabulary acquisition will be affected in the same way, as suggested by Rescorla et al. (2017) in a comparison between Polish and English 2-year-olds. The above-mentioned factors – in addition to word frequencies in different languages and cultures – should be taken into account when evaluating vocabulary scores across languages in a multilingual child. This is especially important in contexts where limited research findings are available on language development norms. As will be expanded on further below, the extent to which local child-rearing practices include child-directed speech and the interrelatedness of sociocultural factors in the particular language community also need to be taken into consideration.

3 Vocabulary Assessment through a Lexical Assessment Task – CLT

Adaptation of parallel language versions of one single (monolingual) tool, as illustrated above in the case of the CDI, is one way to obtain a possible tool for multilingual language assessment. Whereas such adaptation of an existing tool is common (although less common than mere tool translation, which we strongly advise against), one can also construct a new multilingual assessment tool from scratch, which is what was done in the case of the LITMUS CLT.

CLT assesses production and comprehension of nouns and verbs through a picture-based test, targeting multilingual pre-school children (age range 3 to 6 years). Within the Bi-SLI COST network mentioned above, CLT was developed simultaneously for a multitude of languages, with target word selection being based on the same underlying criteria in order to obtain linguistic and cultural equivalence. Thus, each language version has its unique composition of target words with corresponding pictures, so that the words are not the *same* across languages, but they are meant to be *equivalent* across languages in terms of word complexity and age of acquisition.

More language versions of CLT can also be added if the developers follow the established procedure for construction. Below follows a short overview of the construction procedure for CLT; a thorough description thereof and the rationale behind CLT can be found in Haman, Łuniewska, and Pomiechowska (2015). A selection of studies carried out with CLT in different languages can be found in Potgieter and Southwood (2016) and in a special issue of *Clinical Linguistics and Phonetics* (2017).

Given that CLT is a picture-based task, the first step was for 1000 pictures (depicting objects and actions) from various sources to be named and evaluated for linguistic and cultural appropriateness by competent adult judges across 34 languages. The result was a set of 299 pictures that each evoked a single word with the same English translation in a reliable way in each of the languages, and these pictures were then redrawn in a unified style and rated for cultural equivalence. In the next step, the words associated with the 299 pictures were rated for subjective age of acquisition: At least 20 raters in each language were asked how old they thought they were when they acquired each of these words (see Łuniewska et al. 2016 for a description of this study). Finally, a composite complexity index was created for each word, based on phonological, morphological, and etymological features, as well as children's exposure to that word, rated by competent L1 judges of each language (see Haman et al. 2015, for details about the complexity index). Based on age of acquisition and complexity index values for the words in each language, four tasks were constructed, assessing production and comprehension of nouns and verbs, respectively, with 32 target words in each task. In the production tasks, the child is shown one picture per page and is requested to name the depicted object or action. In the comprehension tasks, the child is shown four pictures per page (one for the target word and three distractors with similar complexity indexes and ages of acquisition) and is asked to choose the picture that corresponds to the target object or action.

Although the CLT has not yet been normed for any language or language combination, several studies have shown its usefulness for different purposes, such as measuring the language proficiency of multilinguals (e.g. Altman, Goldstein, and Armon-Lotem 2017; Van Wonderen and Unsworth 2020), investigating the interaction between vocabulary size and other factors in multilinguals (Hansen et al. 2017; Altman, Goldstein, and Armon-Lotem 2018), comparing different assessment tools for multilingual children (Abbot-Smith et al. 2018; Hansen et al. 2019); determining the comparative vocabulary size in the languages of young typically developing multilingual children (e.g. Potgieter and Southwood 2016; Lindgren and Bohnacker 2020); and differentiating between children (multilingual or monolingual) with and without language impairment (Khoury Auoad Saliby et al. 2017; Kapalková and Slančová 2017).

To investigate the comparability of the CLTs across languages, Haman et al. (2017) conducted a large-scale comparison between monolingual

children's performance on the CLT across 17 languages from eight different language families: Baltic (Lithuanian); Bantu (isiXhosa); Finnic (Finnish); Germanic (Afrikaans, British English, South African English, German, Luxembourgish, Norwegian, Swedish); Romance (Catalan, Italian); Semitic (Hebrew); Slavic (Polish, Serbian, Slovak); and Turkic (Turkish). Six hundred and thirty-nine typically developing children were included, with an age range of 3 to 6 years. SES data were available for participants from 11 of the languages; most of them came from a mid-to-high SES background. The exception was the participants from South Africa (speaking Afrikaans, isiXhosa, and/or South African English), where detailed SES information was collected as part of another study (Potgieter and Southwood 2016). Here, half of the participants speaking Afrikaans and South African English, and all the participants speaking isiXhosa, had a low SES background. For the six languages where no SES data were available, recruitment information suggested a mid-to-high SES environment.

Overall results showed similar trends across the languages: A stable word class effect (nouns easier than verbs) and language mode effect (comprehension easier than production), as well as a general age effect (vocabulary size growth with age), indicating cross-linguistic comparability. However, concerning vocabulary size, while there were only small differences between 16 of the languages, isiXhosa-speaking children obtained significantly lower scores than participants from the other languages. The reason for this result is not clear. It may be due to the small sample size (10) of the isiXhosa-speaking children and/or because they were among the younger participants in the study. However, that may not be the full answer.

A first hypothesis could be that isiXhosa-speaking pre-schoolers indeed have small vocabularies compared to those of the child speakers of the other languages included in the study, possibly because of their low SES. Note that when comparing the vocabulary sizes as measured by the CDI in the data of Southwood et al. (2021), isiXhosa-speaking toddlers are shown to have statistically significantly smaller total vocabularies than toddlers who speak Afrikaans, South African English, or Xitsonga. This finding requires further investigation because it is not clear why isiXhosa-speaking children specifically would have smaller vocabularies than, for instance, Xitsonga children who grow up in comparable ecological settings and in households with comparable SES. There could be sociocultural reasons that influence parent reporting in the two isiXhosa-speaking communities that took part in the second South African CDI pilot study. It could also be that language socialisation practices in isiXhosa-speaking communities do not offer opportunities for rapid vocabulary acquisition early on in a child's life, but that these change over time (as the child becomes a more proficient conversational partner), allowing isiXhosa-speaking pre-schoolers to catch up before school entry with their peers who have other home languages. For instance, among the Black African population in South Africa (which includes almost all home language speakers of isiXhosa), two-thirds of children aged 0 to

6 years rarely or never receive an explanation from their household members when they point to objects and ask for an explanation (Statistics South Africa 2018a). Whereas the frequent absence of such explanations in the Black African population cannot account for the difference in vocabulary size between the isiXhosa and Xitsonga CDI data sets, it does show that more careful investigation of language socialisation practices amongst smaller age bands of children is needed, preferably obtained by means of cross-sectional studies with large participant numbers, or longitudinal studies.

A second hypothesis for why the isiXhosa-speaking pre-schoolers had low CLT scores could pertain to the task, namely that the type of adult–child interaction around pictures was culturally unfamiliar to the pre-schoolers. Indeed, 48% of South African children never read a book with a parent or guardian (Statistics South Africa 2018a), resulting in infrequent adult–child engagement around meaningful pictures. In fact, South African households typically have very few books, with 58% of South Africans over the age of 15 living in households in which there are no books (South African Book Development Council 2016). Furthermore, naming appears not to be modelled frequently: According to Statistics South Africa (2018b), 54% of South African parents do not name objects while interacting with their children of 3 years and younger. The reason for the comparatively small isiXhosa vocabulary as assessed by the CLT could have to do with the ecological validity of the task for the pre-schoolers rather than with linguistic limitations on the part of the isiXhosa-speaking pre-schoolers. Interestingly, subjective age of acquisition for a set of 299 words (as reported by adult speakers) was found to be significantly later for isiXhosa than for 24 other languages (Łuniewska et al. 2016). This, together with the finding of a smaller vocabulary of isiXhosa-speaking pre-schoolers, warrants further investigation. It could be that cross-linguistic comparison with other, still to be studied South African languages would yield some insights in this regard.

4 Insights and Challenges

Our work on child language assessment across different multilingual contexts, and specifically in the construction of assessment tools with different language versions, has given us some important insights. While we acknowledge the importance of and necessity for linguistically and culturally comparable assessment tools for cross-linguistic comparison (within and across language families), it is not the case that as long as an assessment tool has comparable language versions, these can necessarily be used with any multilingual child to indicate linguistic strengths and weaknesses accurately (see also Van Wonderen and Unsworth 2020). As stated above, one of the purposes of multilingual language assessment is to identify children with language delay or language impairment. Whereas linguistically comparable assessment tools go a long way towards enabling such identification of language delay or impairment in multilingual children, our experiences

in various contexts have shown that linguistic comparability alone is insufficient – one also needs, at least, norms for the multilingual population at issue as well as a thorough knowledge of local language socialisation practices.

As shown in the case of isiXhosa above, it could be that one language population has a smaller vocabulary size than others at a particular age. Without language development norms, a child might well be misdiagnosed with a language delay or language impairment despite possessing typical language skills for his/her age according to his/her language community. Doing so in the name of linguistically comparable language versions would render an incorrect representation of the child's linguistic skills, and instruments that identify the majority of child members of a multilingual community as presenting with a language delay or impairment are not useful, regardless of how linguistically comparable these tools are.

Knowledge exists on language socialisation as practised in the North, but our knowledge of how children are socialised linguistically in the South is still very limited. That naming of objects when interacting with children is not common in South Africa is significant for developers of child language assessment tools, as many of these tools are based on naming pictures or objects, and requiring a child to name objects when such naming is not frequently modelled to him/her may directly affect the child's language test score, regardless of the level of linguistic comparability between different language versions of the tool. Also, the fact that about half of South African children are not used to joint book-reading with adults could place them at a disadvantage in terms of required CLT responses compared to children who are used to looking at pictures with adults, pointing to and discussing such pictures, or answering questions about them. Indeed, not only the content of an instrument but also the manner in which it is administered can affect children's test scores, and it is not in all instances possible to ensure that culturally comparable administration methods are used.

Our work has convinced us that tool adaptation without sufficient regard for local contexts cannot lead to valid assessment tools. A lot of research has been done (almost exclusively in the North) on the influence of SES and the quality, quantity, and age of onset of language exposure on monolingual and multilingual children's language development. This is of course both necessary and important, but more than knowledge of SES and language exposure is needed in order to develop valid and reliable assessment tools and to interpret assessment results; we also need insight into the different *manners* in which children are exposed to and interact in their languages, both within and outside their homes. This means taking language socialisation practices in the community into account – as pointed out more than 30 years ago by Ochs and Schieffelin: both "*socialisation through the use of language* and *socialisation to use language*" (Schieffelin and Ochs 1986, 163). In a Northern context, Lanza (1997) took this perspective in her groundbreaking analysis of language mixing in infant multilingualism.

From the early literature on child-directed speech (Snow and Ferguson 1977; Gleitman, Newport, and Gleitman 1984), we can recognise characteristic patterns for adults speaking to children in a Western middle-class culture: Both in form and content, adults adapt their language to the child's level and situation, and often they "give" the child the words through naming the objects around them. However, such patterns of child-centred adaptation are not universal, but culture-dependent, as has been shown early on across different cultures. Language communities that do not show this pattern include Luo in Kenya (Blount 1971); Kaluli in Papua New Guinea (Ochs and Schieffelin 1982); an African-American working-class community in rural Carolina, USA (Heath 1983); Inuit communities in Canada (Crago, Annahatak, and Ningiuruvik 1993); and Western Samoa (Ochs 1984, 1988; Simonsen 1990). More recently, similar findings have been documented in a village in the north-east of Botswana (Geiger and Alant 2005) and for Tsimane in Bolivia (Cristia et al. 2019). The reasons for not using such child-centred adaptation may vary across cultures. For example, in Botswana, the mothers reported not conversing with young children because the children could not speak yet and were therefore not considered conversation partners. In Western Samoa, a strictly hierarchical society, this was part of the reason for not conversing frequently with young children, but children also had a low social status in the community, and cultural norms entailed that those of higher social status do not assist those of lower status. Engaging in child-centred speech would entail such assistance, and therefore children were required to express themselves clearly, without adult assistance, before adults engaged with them in conversation. This way, the Samoan children were socialised into the hierarchical structure of their society, linguistically and otherwise (Ochs 1988; Simonsen 1990).

However, even though differences in child-centredness have been reported, it is not the case that all non-WEIRD communities are similar. For instance, Rabain-Jamin (1998) found that Wolof-speaking mothers' speech to infants and toddlers in rural Senegal contained frequent prompting and reported speech, and mothers also adapted their speech to the linguistic maturity of their child. The prompting reportedly occurred because mothers felt it necessary to verify that their toddler's expressive language capacity was intact – in Wolof culture, remaining quiet for too long could be socially unacceptable, and mothers do not want their child to be labelled a person who withdraws from social exchange. According to Rabain-Jamin (1998), both prompts and reported speech in polyadic contexts relate to a system of speech mediations and information exchange and serve to assist the child to internalise the (complex) cultural system of social regulation. Likewise, Demuth (1986) found that Sesotho-speaking children are frequently taught linguistic and social routines, and that adults differed in their views on how useful verbal interactions with children are. One view was that speaking to infants is helpful, and that learning to speak well was a valued part of learning the Sesotho language. These examples show that not only can findings

from WEIRD contexts not be applied directly to non-WEIRD contexts, but there is no such thing as a universal non-WEIRD context as regards language socialisation. (And there is probably no universal WEIRD context either.)

5 Conclusion

Comparable language versions of a tool are indeed needed for use with multilingual children (in the absence of multilingual tools, that is), and much progress has been made in this regard. Linguistic and cultural adaptations of language assessment tools for use with monolingual and multilingual children now exist, and some adaptations do take into account the influence of SES and language exposure patterns. However, we are not aware of any child language assessment tools that take into account language socialisation practices in different language communities. This could be one of the reasons for comparable language versions not always rendering directly comparable results. We do not yet have answers to the question as to how one should assess language socialisation practices, nor to how one would integrate knowledge on language socialisation practices with knowledge gained through the use of assessment tools, whether those used in direct assessment such as CLT or those that are parents' reports such as CDIs. However, a first step towards finding such answers would be to acknowledge that fair and valid assessment tools can hardly be developed without taking them into account.

There is a long and productive tradition of child language research in the North. The South can learn lessons from the North and should increase the extent to which it generates its own research findings on the assessment of language skills in its multilingual children. However, there might also be lessons for the North to learn from the South where the variability and complexity of childhood multilingualism highlight the need for mindfulness when constructing, using and interpreting child language assessment tools.

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Notes

1 For some languages, a CDI III has also been developed, aimed at children above 36 months, but it is less widely adapted and used, and will not be discussed here.
2 The team consists of Frenette Southwood, Helena Oosthuizen, and Nina Brink for Afrikaans; Tessa Dowling, Emma Whitelaw, Martin Mössmer, and Sefela Yalala for isiXhosa; Michelle Pascoe and Olebeng Mahura for Setswana; Heather Brookes and Sefela Yalala for Sesotho; Frenette Southwood, Helena Oosthuizen, and Michelle White for South African English; Mikateko Ndhambi for Xitsonga; and Katie Alcock as consultant based on the work on Kiswahili and Kigiriama versions of the CDI in Kenya. Collaborators, also for other language versions, are being added to the team as they are identified.
3 Pronouns do occur in the Bantu languages, but they are used, for instance, for emphatic statements, and their construction is very varied as they also use agreement. Pronouns did not form a part of the vocabulary of the children in our pilot studies who spoke Bantu languages, and were thus not included in later versions of the CDI in those languages.

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