

### **Adaptations, Not Translations**

The CDI board is often approached by individuals who wish to create CDIs in a new language by translating an existing CDI instrument. Given the validity and cost-effectiveness of CDI-type instruments for research and application, including comparative, cross-linguistic research, the desire to develop new versions in a timely and relatively inexpensive way is understandable. There is another common situation which calls for new versions. This is applied or clinical research, such as evaluations of nutritional or other interventions, which will include children from multiple languages, when language development is an outcome of interest. For example, it might be desirable to include both Spanish-speaking and English-speaking children in an intervention study, combining their data. A translation may be appealing, because it is common in cross-cultural research conducted in multiple language communities to translate assessment instruments in the interest of having ‘the same instrument’ available for each site, thus facilitating data integration.

The CDI board does not authorize translations, and more generally, we strongly discourage translations of the CDI (or any other language assessment instrument). This is because the concept of equivalency does not have the same meaning for measuring language development as it does for other content areas. In other domains, such as the assessment of temperament in young children, the goal is to convey the same meaning to the parent or other person filling out the questionnaire, using the new language. For example, “How excited does your baby become when people play/ talk to him?” can be translated and will make sense to parents across languages. Thus translation of the questions is a plausible first approach, holding the content constant. Even here there are

limitations, because the perception and labeling of the relevant behavior may also vary, e.g., for temperament, the meanings of ‘play’ and ‘excited’. It is always possible that words or phrases translated from one language to another take on different meanings or can be interpreted in unintended ways by parents. This can happen for questions as important and apparently straightforward as “Do you have any concerns about your child’s development?” which may receive different interpretations in other languages and cultures. This calls for careful development of questions, including pilot testing which includes probing to determine how the questions are interpreted.

As significant as the issues are in other areas, the problem of developing comparable instruments in new settings is much greater when the issue is measuring language, because here the fundamental content itself must change, due to differences in both language and culture. It is simply not possible to construct ‘the same instrument’ through translation. One problem is that most words may translate but many will not be relevant for young children in the new language as they are later-acquired there, e.g., ‘cheese’ in Japanese, or ‘snow’ in Arabic; conversely, new words may be needed in the new language which were not in the source language, e. g., ‘tortilla’ in Mexican Spanish. In addition to cultural and contextual differences, it is important in constructing the vocabulary portion of a new CDI to have an equivalent proportion of words that appear earlier and later in normal development, as well as a similar proportion of nouns, verbs, adjectives, and so on. That is, the CDI in the new language should mirror the structure of the reference language as much as possible.

Even more important are cases in which there are no direct translation equivalents. This is most likely in the case of the function words, for example, ‘to’, ‘of’,

'the' and 'is'. Slavic languages do not have articles, Mandarin does not have function words in general; some languages have linking verbs similar to English 'is', but many do not; and many more examples could be found. As these examples suggest, there are even larger differences between languages with respect to grammar, and translations of the sentence pairs used on the English CDI would be entirely inappropriate in other languages. Consider the pairs 'baby cry/baby is crying' which assesses whether 'is' used as an auxiliary verb, and 'more cookie/more cookies' which assesses the plural. Numerous languages do not have auxiliary verbs or do not have a word ending for the plural. Thus the concept of 'same instrument' in language assessment does not mean identity or translation, but an instrument which bears the same relationship to the overall language as the original CDI does to American English.

To develop such an instrument is a substantial task of linguistic and cultural adaptation, and one which will take time as well as linguistic and cultural expertise. A translation is likely to be quite inaccurate for all the purposes discussed above.

A related question for multiple-site research of the type discussed in the first paragraph is how the data can be aggregated across languages. From a statistical point of view, it might seem simplest just to combine the data from each the individual subjects directly into a single dataset, and then analyze, with language possibly as a covariate. This might be possible for, say, temperament, where the content is largely the same across languages, but it is less appropriate for language, where the instruments are more diverse across languages. For language, a more appropriate strategy is to use the best available measures in both languages, hopefully as similar as possible but not identical (i.e., adaptations), and then compute the effect size within each language, and finally

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combine effect sizes across languages. This strategy requires the development of valid norms which can be used to estimate variances as well as means.

These conclusions may be frustrating, because there are so many languages for which there are no well-developed, normed adaptations. But there is no short-cut possible which is rigorous and credible.