Multilingual construction of Communicative Development Inventories in Southern Africa

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Introduction

Assessing vocabulary and grammatical development - Possible approaches

• ‘Clinical’ testing
  - e.g. Picture vocabulary tests, TROG, elicited speech
  - This has been in a developing country setting (Carter et al., 2012) but is time-consuming and difficult
• Laboratory testing e.g. preferential looking
  - impractical in this setting
• Spontaneous speech samples
• Parent-completed checklists
  - Fenson et al. (1994) - MacArthur-Bates CDI
  - Maropula into many other languages
• Bonaiste et al. (2004)
  - Crosslinguistic investigation
  - Very interesting theoretically
  - Much more powerful than many other methods because of volume of data that can be collected

South African setting

South African languages

• 11 official languages
  - 9 Bantu languages, 2 West Germanic languages
• Very little language acquisition research
• CDI construction relatively easy in understudied languages
• Can use vocabulary checklists from similar settings
• Pilot and adopt
• Relevant language features
  - Lots of morphology
  - Same word can appear with many prefixes or suffixes - could have huge number of vocabulary items
  - Large number of noun classes (like grammatical gender)
  - When children have learned e.g. an adjective in one form - they may still have a lot of other forms of the word to learn
  - or they may learn to assemble new words
• Worsed poverty and literacy
  - So need to use interview method instead of independent questionnaire completion by parents

Other settings with CDIs

• Other African languages
  - Kenyan, Malawian, and Mozambican (Alcock et al., 2015; Prado et al., 2018; Vogt et al., 2015)
• Other settings with poverty
  - Indonesia, Bangladesh (Prado et al., 2010; Hamadani et al., 2010)
  - Very useful for investigating the effects of poverty and health
  - HIV (Alcock et al., 2016)
  - Nutrition (Prado et al., 2010, Hamadani et al., 2010)

Plan of the project

• Develop CDIs for 6+ South African languages
• Adapt, pilot, validate and finalise
• Collect data from 200+ families per language
• isiXhosa, Xitsonga, Seiswana, Sesotho
  - Related to each other and to languages of two previously-developed CDIs in East Africa (Alcock et al., 2015)
• South African English
  - Related to each other and to languages of two previously-developed CDIs exist for English (Fenson et al., 1994, Alcock et al., 2017)
• Importantly the CDIs will be developed in parallel
• Both infant (8-18mo) and toddler (16-30mo)

Methods

• Joint list of words
  - Taken from other CDIs – English, other languages
  - Translation in collaboration with professional translators or language teachers
• Parent assessment of face validity of words
• Focus groups
  - Early years professionals including teachers, childcare workers, nurses
  - Parents of children of the same target age range or slightly older
  - Add in words, remove egregious violations
• Pilot data from populations:
  - Afrikans – toddler, online interviews and independent parent completions
  - SA English – toddler, online (interviews and independent parent completions)

Changes and challenges

• Language teachers – secondary school teachers with firm ideas on correct vocabulary
• Often unwilling to introduce borrowed words
  - But these form a large proportion of children’s vocabularies
• Grammar
  - Dozens of function words
• Some of these fall into default categories
• Hope to exclude those that are learned after 30 months
• From Alcock et al. (2015) we found we mainly included default category function words
• Grammar complexity concept - try to establish MLU
  - Give parents more alternatives as may be confusing questions
  - Even mid-SES UK parents find these questions confusing

References


Next steps

• Pilot 1 – infant plots in SA English, Afrikaans, isiXhosa
  - Combine and re-analyse data from all infant datasets
  - select common vocabulary that will be on all inventories
• Next – Pilot 2
  - 200 infants/toddlers per language
  - 100 Words and Gestures
  - 100 Words and Sentences
• Mainly divided into urban and rural and low and high SES
  - e.g. isiXhosa – urban and rural
  - e.g. Afrikaans – low SES
• High and low SES differ
  - Urban, rural impoverished differ
• High and low SES differ
  - But very low correlation with scale (< .3) – MAYBE
• Balance vocabulary between less and more privileged/varied settings
  - Ensures scale is not biased towards higher SES or more varied settings

Word selection criteria – pilot infant data

• Using frequency, correlation with age, and correlation with scale
  - Correlation with age p < 0.05 – YES
  - Unless correlation with scale < .03 - MAYBE
  - High frequency > 5 - NO
  - Low frequency < .1 correlation with age p > .05 - NO
  - But 2-3 high frequency words retained for the youngest infants
• Data sets, had to meet criteria in one dataset

Word selection criteria – pilot toddler data

• Using frequency, correlation with age, and correlation with scale
  - In infant version – YES
  - Correlation with age p < 0.05 – YES
  - But very low correlation with scale (< .3) – MAYBE
  - Frequency > 9 and not on infant scale – NO
  - Frequency < 1 - NO

Results – isiXhosa toddler data

<table>
<thead>
<tr>
<th>Word</th>
<th>Percentage of Words on CDI produced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Man</td>
<td></td>
</tr>
<tr>
<td>Wolf</td>
<td></td>
</tr>
<tr>
<td>Nut</td>
<td></td>
</tr>
<tr>
<td>Eye</td>
<td></td>
</tr>
</tbody>
</table>

Words included by these criteria on Infant version

Baa  
Brir  
Choochoo  
Wolfoo
Yumyum  
Ant  
Bee  
Puppy  
Snake  
Aeroplane  
Taxi  
Apple  
Jam  
Mealie pap  
Sugar  
Eye  
Face  
Hand  
Phone  
Lady

Results – Sesotho toddler data

<table>
<thead>
<tr>
<th>Word</th>
<th>Percentage of Words on CDI produced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Man</td>
<td></td>
</tr>
<tr>
<td>Wait</td>
<td></td>
</tr>
<tr>
<td>Baa</td>
<td></td>
</tr>
<tr>
<td>Brir</td>
<td></td>
</tr>
</tbody>
</table>

Words excluded by these criteria on toddler version

Quack  
Owl  
Zebra  
Turtle  
Wolf  
Puzzle  
Avocado  
Jelly  
Nut  
DVD  
Fan  
Heater  
Pavement  
Helicopter  
Fire engine  
Zoo  
Polic  
Movies/Cinema

No ducks in dry country

Conclusion

• Very different cultural settings
  - Urban, rural impoverished differ
  - High and low SES differ
• But some commonalities in children’s lives
  - Reflected in common vocabulary
• Previous research showed that parents in these settings can accurately answer questions about their child’s language development
  - Urban, high SES English speaking (Alcock et al., 2017; Fenson et al., 1994)
  - Rural, low SES Bantu speaking language (Alcock et al., 2015; Vogt et al., 2015)
• Able to look at grammatical development in two related language groups
  - One morphologically complex
  - One morphologically simple

Next steps