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 done 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
    - Adaptations into many other languages
- Bornstein 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 adapt
- Relevant language features
  - Lots of morphology
    - Same word can appear with multiple 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
- Also poverty and illiteracy
  - 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, Hamandani 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, Setswana, Sesotho
  - Related to each other and to languages of two previously-developed CDIs in East Africa (Alcock et al., 2015)
- South African English, Afrikaans
  - Related to each other and 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:
  - Afrikaans – toddler, online(interviews and independent parent completions)
  - SA English – toddler, online (interviews and independent parent completions)
  - Sesotho – infant and toddler, mainly interviews
  - Setswana – two Botswana samples, infant and toddler, mainly interviews
  - isiXhosa – toddler, mainly interviews

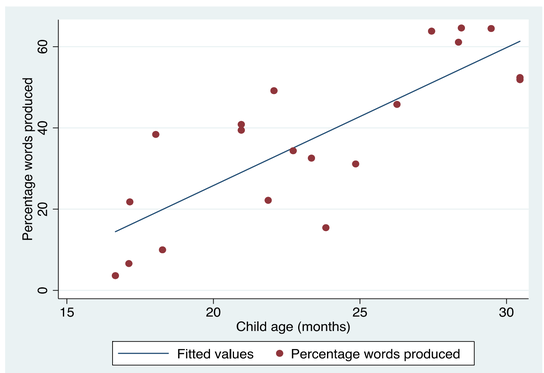
Word selection criteria – pilot infant data

- Using frequency, correlation with age, and correlation with scale
  - Correlation with age p <.05 – YES
  - Unless correlation with scale < .03 - MAYBE
  - High frequency > .8 - NO
  - Low frequency < .1 and correlation with age p > .05 - NO
  - But 2-3 high frequency words retained for the youngest infants
  - 3 data sets, had to meet criteria in one dataset

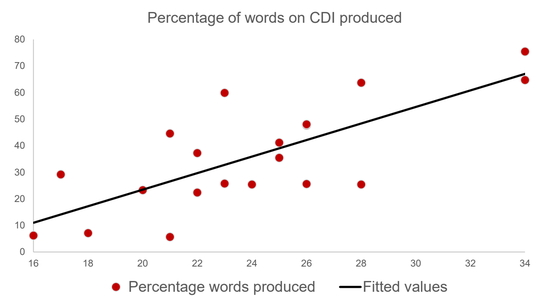
Word selection criteria – pilot toddler data

- Using frequency, correlation with age, and correlation with scale
  - In infant version – YES
  - Correlation with age p <.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



Results – Sesotho toddler data



Words included by these criteria on Infant version

Baa
Brr
Choo choo
Woof
Yum yum
Ant
Bee
Puppy
Snake
Aeroplane
Ambulance
Taxi
Apple
Jam
Mealie pap
Sugar
Eye
Face
Hand
Phone
Lady
Man
Wait
Bite
Know
Look
Open
All
Yes
Can

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
Picnic
Movies/Cinema

No ducks in dry country

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 vocabulary!
- 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-low SES UK parents find these questions confusing (interview/focus group study)

Original 2-choice	Adapted 3 or 4 choice
	My truck
That my truck	That my truck
That's my truck	That's my truck
	That's my big truck

Conclusions

- Very different cultural settings
  - Urban, rural impoverished differ
  - High and low SES differ
- But some commonalities in children's lives
  - Reflected in common vocabulary exclusions/inclusions
- Previous research showed that parents in these settings can accurately answer questions about their children's language development
  - Urban, high SES English speaking (Alcock et al., 2017; Fenson et al., 1994)
  - Rural, low SES Bantu language speaking (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

- Pilot 1 – infant pilots 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 or high and low SES
    - e.g. isiXhosa – urban and rural
    - e.g. Afrikaans – low SES Coloured urban, high SES White urban
- Balance vocabulary between less and more privileged/varied settings
  - Ensures scale is not biased towards higher SES or more varied settings.

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