FROM MOTHER TONGUE TO OTHER TONGUE: EVIDENCE SYNTHESIS ON LANGUAGE IN EDUCATION

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Research Problem

• Global learning crisis (WDR, 2018)

• Role of language in the learning crisis
  – Language inextricably linked to basic literacy, numeracy, SEL skills, and later academic success (Ball, 2011)
  – Language of Instruction (LOI) policies are made arbitrarily and priorities keep shifting (Alidou et al., 2006)
  – Evidence for benefits to teaching in the familiar language first (August & Shanahan, 2006; Ball, 2011)
  – Also, evidence for linkage between post-colonial language and socioeconomic mobility (Azam, Chin, Prakash, 2013)
How we propose to address the problem

• Conduct a systematic review of the role of LOI policies on literacy outcomes in multilingual contexts

• Examine role of language transition, language match/mismatch, and simultaneous instruction in more than one language on literacy outcomes

• Mixed methods and multi-disciplinary approach

• Target audience: decision makers and researchers to understand and effectively use the evidence, with a specific focus on Ethiopia
Research Context

• Children across LMIC’s learn in multilingual contexts

• Children cannot learn to read with comprehension in a language they do not understand well; although they may acquire some skills
  – Second language reading and learning is qualitatively different from first language reading and learning – and thus, monolingual models may not be applicable
  – Dual language impact and transfer (thresholds)
Research to Policy Uptake

• Key component clusters of research to policy uptake (Brown et al., 2018; Castello, 2017):
  – Deep understanding of science and policy landscape, focus on Ethiopia (but across LMICs)
  – Communicating scientific findings through variety of audience-tailored means
Research Questions

1. What is the quality of the available evidence on the role of LOI policies on literacy outcomes?

2. What are the short- and long-term impacts of LOI policy on literacy outcomes in the MT/local language and on later acquired language?

3. What is the role of the family and community in determining LOI policy?

4. Is there a cognitive or linguistic threshold point at which a child is ready to transfer his or her reading skills from one language to another? And if so, what is the threshold?

5. What are the evidence gaps about implementing successful LOI policies in bilingual and multilingual educational contexts in LMICs?
Results from Ethiopia: Afaan Oromo-English

Number of observations: 829
Estimated break in decoding MT: 30
Null hypothesis (Ho): No structural break
Test statistic (supremum Wald): 306.2
p-value: 0.00
Results from Ethiopia: Amharic-English

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of observations</td>
<td>1,063</td>
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<tr>
<td>Estimated break in decoding MT</td>
<td>49</td>
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<tr>
<td>Null hypothesis (Ho)</td>
<td>No structural break</td>
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<td>Test statistic (supremum Wald)</td>
<td>293.7</td>
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<td>p-value</td>
<td>0.00</td>
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Research method

• Inclusion criteria (PICO):
  – Official LOI transition policy in grades 1-6
  – Literacy outcomes (pre-literacy skills to grade 6 appropriate reading comprehension skills)
  – Studies made available between 2009 and 2019
Proposed Analysis

- Narrative evidence synthesis through a “learning science” lens
- Meta-analysis
  - If possible, individual person meta-analysis
  - If possible, sub-group analysis
Innovative approaches

• Different kinds of evidence that apply different fields of research
  – Example, applying “learning science” lens to impact results
  – Example, testing for non-linearity of relationships between local language and postcolonial language reading to make policy recommendations LOI transition timings
  – Focusing on a topic that is central to learning, but rarely a focus of the study
Results from India

Is there a threshold for L1- L2 transfer?
## Results from India: L1-L2 Threshold regressions

<table>
<thead>
<tr>
<th></th>
<th>Round 1 Score, English, Below Threshold</th>
<th>Round 1 Score, English, Above Threshold</th>
<th>Round 3 Score, English, Below Threshold</th>
<th>Round 3 Score, English, Above Threshold</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Language Decoding Score, Round 1</td>
<td>0.138** (0.0450)</td>
<td>0.733*** (0.147)</td>
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<tr>
<td>Local Language Decoding Score, Round 3</td>
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<td>-0.00688 (0.0382)</td>
<td>0.847*** (0.135)</td>
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<td>Constant</td>
<td>0.298** (0.0934)</td>
<td>0.00555 (0.311)</td>
<td>-0.0356 (0.0709)</td>
<td>-0.205 (0.230)</td>
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<tr>
<td>Control Variables</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Observations</td>
<td>174</td>
<td>162</td>
<td>181</td>
<td>240</td>
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<tr>
<td>R²</td>
<td>0.357</td>
<td>0.595</td>
<td>0.376</td>
<td>0.575</td>
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<tr>
<td>Adjusted R²</td>
<td>0.278</td>
<td>0.540</td>
<td>0.302</td>
<td>0.539</td>
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</tbody>
</table>

*Note.* Standard errors are presented in parentheses. Observations are below threshold if the local language score is < 0.6. Controlled for age, gender, school, grade, urbanacity, and state. 
* p < .05. ** p < .01. *** p < .001.
Results – Grade levels and Thresholds