Cross-Linguistic Relations Among Bilingual and Biliterate Learners: Interdisciplinary Perspectives and Convergences

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Cross-linguistics as a theoretical phenomenon

- **Bilingualism as inherently additive** (Grosjean, 2012; Snow, 1992)
- **Cummins’ L1 – L2 linguistic interdependence**
  - Common underlying proficiency
  - Thresholds of both L1 and L2
- **Script Dependence** (Bialystok, Luk, & Kwan, 2005; Geva & Siegel, 2000)
- **Structural Sensitivity Theory** (Kuo & Anderson, 2010)
- **Interdependence Continuum** (Proctor, August, Snow, & Barr, 2010)
- **Task-Dependent Bidirectional Transfer Hypothesis** (Prevoo, Malda, Mesman, and van Ijzendoorn, 2015)
Cross-linguistics as an empirical challenge

- The bilingual as two monolinguals (Grosjean)
  - Assessment paradigms bifurcate (Proctor & Silverman, 2011)
- Notion of “transfer” is problematic
  - Causal implication for primarily correlational work
  - Problems for instructional implications
- Degrees of literacy across languages is problematic
  - Instructional program models
- The role of SES
  - Cross-national comparisons are difficult
Agenda for today

- A “state-of-the-art” literature review (Genesee et al., 2006; Proctor & Zhang-Wu, forthcoming)
  - Insights from the process
  - Some initial findings
- Personal empirical frustrations
  - Quantitative derivations
  - Some emerging qualitative findings
- Conclusions and recommendations
Review of cross-linguistic literature

**Process**

1. Search of multiple aggregated databases: studies in the 21st century
   1. “bilingual*” = 33,580 hits
   2. Multiple language pairings (with English): Chichewa, Chinese, Farsi, French, Greek, Italian, Korean, Malay, Nahuatl, Oriya, Russian, Spanish, Tamil, Urdu, and Zulu
   3. Narrowed to Chinese, French, Korean, & Spanish
2. Additional literacy-based search terms
   1. Vocabulary, reading, word reading, phonology, language, literacy
   3. Matched with “cross-linguistic” or “transfer”
4. Final sample of 41 studies
Some broad findings

Primarily quantitative studies

- Traditions of applied linguistics, second language acquisition, psychology, educational psychology converge here
  - Some of these disciplines have limited application to applied learning contexts, i.e.:
    - Constructs
    - Measures
    - Methods

**Limited qualitative studies**

- Gort (2006) on emergent bilingual writing

- Quant studies rely on large human samples and limited language corpus
  - Language pairings are relatively broad

- Qual studies rely on limited human samples and large language corpus
  - Language pairings (currently) are relatively constrained

- Advantages and disadvantages of both
Some specific findings

- **Phonological/phonemic awareness & word reading**
  - Robust findings across all 4 language pairs

- **Morphological awareness**
  - Relatively well-developed, positive relations in studies across different language pairs (Hu, 2013; Pasquarella et al., 2011; Ramirez, Chen, & Pasquarella, 2013; Wang, Cheng, & Chen, 2006; Wang, Ko, & Choi, 2009)

- **Vocabulary knowledge**
  - Evidence that Spanish vocabulary predicts
    - English cognate vocabulary (Ramirez, Chen, & Pasquarella, 2013)
    - Reading comprehension (Nakamoto, Lindsey, & Manis, 2008; Proctor, August, Carlo, & Snow, 2006)
    - Word reading (Zhao, Dixon, Quiroz, & Chen, 2015)
    - Phonemic (Atwill et al., 2007) and phonological (Anthony et al., 2009) awareness
Findings, cont’d

• Reading Comprehension
  ○ Consistent with Genesee et al. (2006), consistent across languages irrespective of orthography
  ○ Predicted more often cross-linguistically by more constrained cross language skills (phonological/phonemic awareness) (Feinauer et al., 2013)

• Directionality
  ○ Increasing studies address this with variable results
    ▫ L1 English MA <- L2 Chinese vocabulary (Pasquarella et al., 2011)
    ▫ L2 → L1 (EFL English-Chinese) morphological awareness (Wang et al., 2006)
    ▫ L1 → L2 unidirectionality for vocabulary and grammatical knowledge (Gottardo et al., 2014)
    ▫ Early English MA -> French Reading; Later French MA -> English reading (Deacon, Wade-Wooley, & Kirby, 2007)
A challenging field
Data exemplar from Spanish-English Longitudinal Work

- IES-funded Exploration grant (Silverman, Proctor, Harring, 2009)
- N = 156 L1 Spanish, L2 English speakers in grades 2 – 5
- 3 schools in the Northeast, 3 in the mid-Atlantic
- Cohort sequential design
  - 2 years of data collection, 4-year modeling

![Cohort-sequential design for 2-year data collection routine](chart.png)
Measures

English (modeled over time)
- Reading comprehension
  - Woodcock-Muñoz
  - TOSREC
  - Gates-MacGinitie
- Word reading
  - Woodcock-Muñoz
- Vocabulary
  - Woodcock-Muñoz
- Semantics
  - CELF word associations
- Morphology
  - Extract the base
- Syntax
  - CELF formulated sentences

Spanish (one time)
- Word reading
  - Woodcock-Muñoz
- Vocabulary
  - Woodcock-Muñoz
- Syntax
  - Formulated Sentences
Do Spanish indicators predict 5th grade reading, 5th grade reading growth from 2nd – 5th grade?

- Alone
- Net English predictors
Initially exciting
Spanish syntax predicts English reading

Unstandardized Parameter Estimates (Standard Error)

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<th>Parameters</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
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Note. * p < .05. FARMS = Free and reduced price meals
Ultimately saddening
English word reading overrules all

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Spanish predicts English, but not uniquely (Kieffer, 2012)
Controlled studies obfuscate

- **IES-funded Development grant** (Proctor, Silverman, & Harring, 2014)
- **Language-based English reading curriculum**
  - Developed with and for emergent Spanish-English bilinguals
- **Currently under development/testing as a translanguage curriculum** (Ossa Parra, in preparation)
  - Small-group work, n = 5 students in 4th grade
  - Vocabulary, semantics and syntax in reading
Initial findings: Different evidence cross-linguistic associations

**Cross-linguistic morphological awareness**

M = Teacher

- M: (Showing ppt.) Morfología, acuerdénse. The study of words. El estudio de las palabras.
- J: The study of words
- R: Morfología es cuando dos palabras están juntas pero en inglés comienza con una palabra y en español termina con la palabra que comenzó en inglés (Morphology is when two words are together but in English it begins with a word and in Spanish it ends with a word that began in English)
- M: Okay. Entonces no es la palabra completa, sino partes de palabras, cierto. (So it’s not the full word, but rather parts of words, right) Entonces aquí habíamos aprendido (so, here we have learned) full of power, full - lleno. Powerful – poderoso, powerful – poderoso. ¿Ven todos? (Do you see?)
- S: Poderoso (Powerful)
- M: ¿Qué significa ful? (what does –ful mean)
- J & S: Lleno
- M: Lleno, lleno de poder (full of power)
- J: Lleno de energía (full of energy)
- M: Ajá, powerful, full of something, lleno de algo
- J: (Reading ppt.) The suffix ful means full of something
- M: Entonces es una parte que se llama (so that is a part called) suffix, suffix porque va al final de la palabra, cierto (because it goes at the end of a word, right)?
- R: Yeah
- M: ¿Dime Valentina?
- V: O maybe poderoso puede ser que uno tiene mucho, mucho poder? (or maybe powerful could be that one has a lot of power)
- M: Exacto. Mucho poder, lleno de poder, muy bien Valentina. (exactly a lot of power, full of power, very good)
Cross-linguistic syntax

- M: (Showing a ppt.) Los adjetivos son palabras para describir las cosas, las personas, los sentimientos. Por ejemplo acá (adjectives are word that describe things, people, feelings. For example, here): plastic bottle. Estamos describiendo la botella. La botella es plastica (we are describing the bottle. The bottle is plastic), right? Botella plástica. Plastic
- D: So its an adjective
- M: Plastic toy, jugueté plástico. It’s an adjective, right? We are describing the bottle.
- J: (pointing at the ppt.) Dan vuelta, porque aquí dice plastic y aquí plástica (turn around, because here it says plastic and here plástica)
- S: (stood up to show the difference in adjective placement)
- F: Eso era lo que yo le iba a mostrar. (That was what I was going to show)
- M: Ustedes analizaron eso. En español el orden de los adjetivos, en español los adjetivos se ponen al final, después de la palabra que están describiendo, y en inglés se ponen antes (You all analyzed that. In Spanish the order of adjectives, in Spanish the adjectives go at the end, after the word they are describing, and in English they come after).
- R: Es como decir “plástica botella” en inglés
- M: Plastic, so plastic es el adjetivo que está describiendo la botella. En español se pone antes y en inglés se pone después. (so plastic is the adjective that is describing the bottle. In Spanish is comes before and in English it comes after)
Concluding thoughts

- **Good influx of cross-linguistic studies in 21st century**
  - I don’t think we need more x-lg studies of phonological/phonemic awareness
  - Few qualitative studies in x-lg literacy (Gort, 2006)
  - Where are the mixed methods studies??

- **Rigor AND artificiality characterize quantitative studies**
  - Do intralinguistic controls mean associations don’t exist (see, e.g., Kieffer, 2012)?
  - Shelf effect of non-significant findings?

- **Translanguaged discourse / pedagogy crosslinguistics align with some of the quant work**
  - Teaching for transfer: “planned and systematic use of two languages for teaching and learning inside the same lesson” (Lewis, Jones, & Baker, 2012, p. 643, in Palmer, 2014)

- **Translanguaging as ruminating on the full linguistic repertoire links up with the structural sensitivity hypothesis** (Kuo & Anderson, 2010)
¡Gracias!

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