Paediatric speech disorders Group

“Working with multilingual children with speech sound disorder”
The challenge prompting our clinical question...
Clinical question

In children with SSD who are bi/multilingual, does SSD intervention in one language lead to changes in the targeted language only or all the languages spoken by a child?
Intervention

4 papers identified (to date...)

Covered:

- Intervention for bilingual/multilingual pre-schoolers using the following approaches:
  - articulation therapy;
  - phonology therapy;
  - core vocabulary intervention;

- The type and severity of errors varied across the participants in the studies.

- Most of the papers outlined twice weekly therapy over a period of 8 weeks. 1 paper had twice weekly therapy for 20 weeks and 1 had 8 weekly sessions.
Intervention

**Study 1**
Holm and Dodd (1997) – Rx 5 yr boy bilingual Cantonese-English.

- **Articulation therapy** for /s/ production in English only.
  - Improvement in accuracy of consonants during the therapy period. These were maintained over the four week break.
  - The improvement was evident in both languages and were observed only for the phonemes targeted in therapy.

- **Phonology therapy** (minimal pairs) for cluster reduction and gliding. Therapy in English only.
  - English consonant accuracy improved following the phonological therapy.
  - No notable change in Cantonese consonant accuracy....improvement was NOT evident in both languages.
Intervention

**Study 2**
Holm and Dodd (1999) Rx 4;6yr boy bilingual Punjabi-English

- **Core Vocabulary therapy in English only.**
  - During therapy, consistency of treatment words and untreated probe words increased.
  - Consistency was maintained 2 weeks post therapy.
  - Increase in consistency of the production of Punjabi words. However, greater consistency achieved in English.
  - Client moved from diagnosis of ‘inconsistent speech disorder’ to ‘delayed phonological development.’
  - Improvement was evident in both languages, despite targeting one language.
Intervention

**Study 3**

Holm and Dodd (2001) – Rx 5 yr boy bilingual Cantonese-English and 4yr boy bilingual Punjabi-English

- Article reporting on results of previous 2 studies.
Study 4
Ray (2002) Rx 5yr boy multilingual Hindi-Gujurati- English

- **Phonology therapy** (minimal pairs and auditory bombardment)
  - Therapy in English only

  - 3 weeks post intervention: Increase in percent consonants correct across all 3 languages.

  - 3 weeks post intervention: Increase in speech intelligibility across all 3 languages

  - Improvement was evident in both languages, despite targeting one language.
So, what’s the answer to our clinical question?

In children with SSD who are bi/multilingual, does SSD intervention in one language lead to changes in the targeted language only or all the languages spoken by a child?
Intervention – challenges

• Although limited, current evidence suggests that response generalization between languages spoken by a child, depends on the type of SSD, specifically:
  - children presenting with articulation and inconsistency errors across languages, MAY benefit from therapy in only one language in order to make progress in both languages.
  - Due to the linguistic nature of a phonological impairment, it is unlikely that intervention targeting the phonological constraints of one language will generalize to improvements in a child’s untreated language.

• Therefore it is important to IDENTIFY THE CHILD’S TYPE OF SSD: articulation? Inconsistency speech disorder? Phonological?

• If phonological, multiple issues to consider (e.g., gather insight into child’s exposure to and use of each language spoken; determine the frequency and type of phonological errors in each language; determine whether errors are similar or different across the languages spoken by the child; the impact of the errors on a child’s intelligibility)
Assessment

4 papers

- 4 chapters, McLeod & Goldstein, “Multilingual Aspects of Speech Sound Disorders in Children.”
- Covered:
  - multilingual speech assessment;
  - dynamic assessment;
  - creating sampling tools for Ax;
  - transcription of speech for multilingual children with errors.
Assessment - Issues

• Very few multilingual SPs
• Lack of multilingual assessments
• Validity of tests: most not normed using bilingual children.
• Differential diagnosis: how can we tell the difference?
• If we do not AX children accurately, we run risk of over diagnosing children who do not required SP and under-diagnosing children who do.
• Type of assessment
• Pre-assessment information is important
• Transcription issues
Assessment - Transcription

• Same symbol does not equal same sound
• Difficulty hearing sounds not in native phonology
Assessment - Creating Sampling Tools

- May be necessary when:
  - No Ax tool available for that language (eg emerging nation)
  - Ax tools hard to access (eg require formal training)
  - Ax’s available are not appropriate (eg for age or dialect)

- Consider transcription, scoring, recording and analysis. Need to transcribe acceptable pronunciations as targets.

- Check there isn’t already a test available.

- Helpful tips in McLeod (2012)
Assessment

**Study 1**

- Ax for intelligibility in both languages by native speakers.
- Subject had misarticulations on fricatives, affricates, voicing, approximant errors.
- Not all errors in English characteristic of SSD since patterns may represent transfer from Japanese (eg substitution of flap for liquids, alveolar fricative for interdentals, and epenthesis in clusters) but other errors were incorrect in both languages.
- Evidence for motor component suggested residual SSD.
- Need for SPs to have understanding of sound sets for different languages.
Assessment

**Study 2**

- Hack et al 2012 – Bilingual speech development and SP’s judgements of accent and developmental level in relation to standardised assessments of English phonology.
- 18 boys (11 Cantonese, 7 Mandarin) and 11 girls (5 Cantonese, 6 Mandarin) subjects plus 25 monolingual English control group, aged 5;6 – 9;8yrs.
- Assessed for single word speech production, sentence repetition.
- Bilingual children had both common & uncommon error patterns. Bilinguals had more error types than monolinguals but many of these considered due to language interaction btw L1 & L2, not impairment.
- SP’s asked to rate for accent & developmental level.
- Accent scores not sig. correlation with GFTA-2 but were with developmental level.
Assessment

Study 3

• Bi/multilingual children assessed using DAPPLE. Test-teach-test format to examine ability to learn vocab, sentence structure and phonology.
• 12 children caseload gp; 14 children control gp, aged 3-5.
• Dynamic phonology Ax – name 10 pics, child asked to imitate clinician’s model for any error sounds, child name pics again.
• DAPPLE discriminated 2 gps for all 3 aspects of language studied.
• Phonology – both gps improved but caseload gp made bigger changes in post-test measure (PPC). Atypical error patterns present in majority of caseload children.
• Possibility of early indicator to discriminate difference from disorder?
Implications for clinical practice

• Visit Prof. Sharynne McLeod’s helpful website on multilingual children’s speech

http://www.csu.edu.au/research/multilingual-speech
Implications for clinical practice

- Multilingual position paper

ASSESSMENT

- Assessment tools in languages other than English
- Speech intelligibility in context scale (ICS)
  (in numerous languages)
Implications for clinical practice

- Learn about consonants and phonological systems of other languages
  - The speech accent archive [http://accent.gmu.edu/](http://accent.gmu.edu/)
  
  - Learn speech sounds on the IPA chart [http://www.yorku.ca/earmstro/ipa/index.html](http://www.yorku.ca/earmstro/ipa/index.html)
  
Future Directions

• Group looking at development of parent questionnaires evaluating child’s exposure to and proficiency in both /multi languages.

• SPs need to maintain proficiency with phonetics.

• Group investigating available assessment materials for prominent local languages.

• Development of sets of minimal pairs in different languages, targeting common phonological processes
Recommended reading

References