



ASSESSING BILINGUAL CHILDREN WHO STUTTER

Rosalee C. Shenker, Ph.D., CCC-SLP

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INTRODUCTION

Quebec resident for 40 years

- Sparked my interest in bilingualism
- Bilingual-diverse caseload

My Bilingual proficiency

- L1 English dominant. French second language
- Exposure/Usage - French- 25% per week
- Proficiency [0-9]
 - Receptive: 6-7
 - Expressive: 5-6

LEARNING OBJECTIVES-OVERVIEW

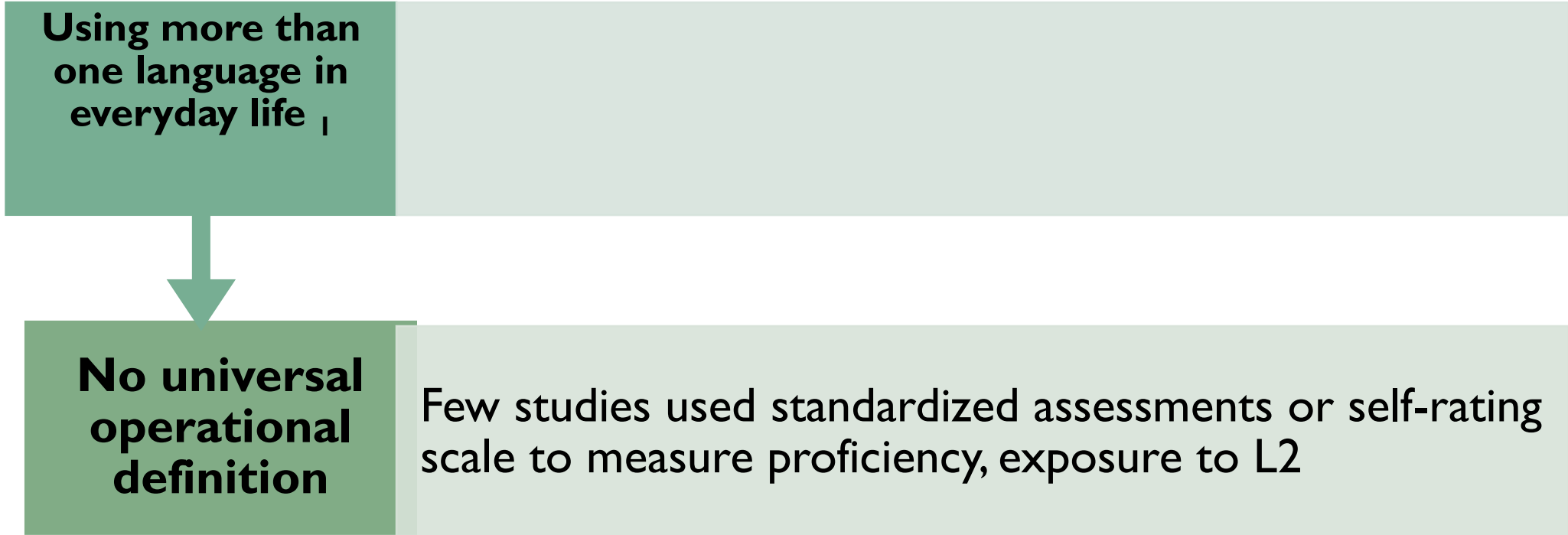
- Define bilingualism in children
- Review the evidence
- Assessment of multilingual/culturally diverse children
- Developing treatment goals
- Future needs

WHY IS BILINGUALISM IMPORTANT?

- The norm rather than exception
- More than half world population is bilingual
 - Bilingualism doubled in USA in last 40 years
 - 1 of 3 children speak a language other than English at home
 - In next 50 years, 1/3 of US residents will speak more than one language
 - Result of increasing immigration from Africa, Asia, China, India

DEFINING BILINGUALISM

**Using more than
one language in
everyday life**



**No universal
operational
definition**

Few studies used standardized assessments or self-rating scale to measure proficiency, exposure to L2

FACTORS TO CONSIDER IN DEFINITION

Bilingualism is on a continuum affected by:

- Proficiency and Exposure
- Usage- L1/L2 daily/weekly
- Formal/informal education in L2
- Social influence of majority/minority language

Critical factors for dominance

- **History**- age of L2 acquisition/ exposure
- Overall ability to speak and understand L1, L2
- **Frequency of use** of each language across settings/days

Types of bilingualism

- Early/late introduction
- 2 languages from birth

EXAMPLES

Lucca's mother always speaks to him in English, while his father always speaks to him in French; he attends a French daycare. He heard/spoke two languages from birth, but his mother says that he is more proficient in English

Lisa and her family immigrated to Canada 1 year ago. Lisa attends school in French, but she speaks Arabic at home. Her parents do not speak French and only a bit of English, so Lisa speaks Arabic in all situations except for school.

EVIDENCE-BASE- STUTTERING IN BILINGUALS

What does the research tell us?

- Two reviews
 - Van Borsal, Maes, & Foulon (2010)₂
 - Choo & Smith (2020)₃

Conclusion: Little change despite increasing bilingualism

FINDINGS ARE AMBIVALENT

- Few studies of **risk of stuttering** in bilinguals
- **Determinants of severity** in bilinguals is unclear
- Diagnosis challenging when SLP is unfamiliar with language spoken
- No clear guidelines for stuttering treatment in bilinguals
- No clear guidelines for language of treatment
- Effects/efficacy of treatment unknown
- Much information comes from monolinguals



COMMONLY ASKED QUESTIONS

DO BILINGUALS STUTTER MORE?

- No updated research
- Opinion yes, but insufficient data to support this₄

IS BILINGUALISM A RISK FACTOR FOR DEVELOPMENT OF STUTTERING?₅

- Early studies reported onset coincided with L2 acquisition
- Insufficient data to wait
 - Benefits of bilingualism outweigh merits of waiting to introduce L2
- Limited data to conclude bilingualism is a risk factor

DO BILINGUALS STUTTER IN ALL LANGUAGES THAT THEY SPEAK?

- Stuttering is a motor speech behavior requiring coordinated neural processing
- Imbalance in proficiency could lead to differences in disfluency between languages spoken
 - No 1-1 correspondence between proficiency in 2 languages
- Which language is more prone to stuttering
 - Mixed findings
 - May differ children/adults
 -

DOES TYPE/SEVERITY OF STUTTERING VARY ACROSS LANGUAGES SPOKEN?

- Differences across languages
 - Frequency may differ
 - Loci and type are often similar
 - Always individual differences

HOW DOES PROFICIENCY AFFECT FLUENCY?₆

1

Adults stutter more in more proficient language

But...

Not uncommon to find increased stuttering in less proficient language

2

Higher frequency NSDs in bilinguals

3

Children manifest differently

Dependent upon age, stage of language development

DOES LANGUAGE DOMINANCE INFLUENCE SEVERITY?₄

English/Mandarin Dominant adult males

- Higher stuttering frequency in less dominant language
- Balanced bilinguals were similar in both languages
- No differences noted in types of stutters across languages

Conclusion:

- Language dominance affects frequency but not type
- **Do we find the same relationship in children?**

EVIDENCE FROM CASE STUDIES

study	subjects	treatment	Pre-Tx Severity	Post-Tx severity	Length ofTX
Shenker et al. 1998	3-yr female Eng/French from birth	Lidcombe Program in E; added F at week 23	Eng: 13.5%SS Fre- 9.9%SS	Eng: 2.8%SS Fre: 4.4%SS	30 sessions
Rousseau et al. (2005)	7-yr boy L1: French L2: English at 5/6 yrs	Lidcombe Program in French	Eng: 2-6%SS Fre: 2.5-5.5%	Eng: <1% Fre: < 1%	41 sessions over 51 weeks
Humphrey et al. 2001	11 yr old identical twin girls L1:Arabic L2: English	Stuttering Modification/Fluency Shaping in Arabic, generalized to English for Reading	S1 Eng: 29% S1 Ara: 27% S2 Eng: 23% S2 Ara: 18%	S1: Eng: 3% S1 Ara:2% S2 Eng: 1% S2 Ara: 2%	21 sessions
Bakhtiar & Packman	8 yr 11 mo boy L1 Persian L2 Baluchi	LP provided in Persian in clinic ;Baluchi at home	Per: 12% Bal: SR=5	Per: 0% Bal: 0%	12 sessions to stage 2
Roberts & Shenker, 2007	3 year 11 mo boy, E/F from birth	LP: English for 1-6 sessions; French 7 session +	English/French 5.6-9.8 %	Eng: 0.6% Fre: 0.9%	15 sessions over 23 weeks

TYPICALLY DEVELOPING BILINGUAL CHILDREN WHO NEVER STUTTERED

Can provide
normative data

Future
guidelines for
assessment

Reduce
misdiagnosis

WHY IS THIS IMPORTANT?

Using monolingual criteria

- Bilingual children may be overidentified as stutterers

BCWNS

- **Higher rates of SLD** in LI Spanish compared to English
- Unusually high frequency of monosyllabic word, sound/syllable repetitions
- Higher than in monolingual speakers
- Few instances of prolongations/blocks_{6,7,8}

HOW COULD
MISDIAGNOSIS
OCCUR?

Typically developing children mislabeled
by teachers, others

Higher levels of
agreement for severity
of stuttering, but...

Bilingual SLPs can be
unreliable in
identification of SLDs



Need for better training to improve
identification, reliability

Need measurements
that have a higher
degree of reliability

Perceptual severity
ratings rather than
%SS

TENTATIVE CONCLUSIONS

- Severity can fluctuate across languages
- Bilinguals produce mazes (disruptions in forward flow of speech) at higher rate
- **Insufficient data that stuttering is more prevalent in bilinguals**
- **Convergent findings in mono/bilinguals₃**
 - Higher male to female ratio
 - Rates of recovery higher for females than males
 - Onset of stuttering earlier in bilingual girls
 - Majority of bilinguals report positive family history

TAKE AWAY MESSAGE

- Bilingual children who never stuttered may have increased stuttering/NSD
- Monolingual standards can result in misdiagnosis

ASSESSMENT OF BILINGUAL CHILDREN

- Overview
 - Case history
 - Samples
 - Cultural beliefs
 - Measures
 - Treatment recommendations

CASE HISTORY

- Language development and abilities are crucial to prognosis
- Influences of cross-linguistic beliefs
- Language spoken at home
- Parent description of stuttering/concerns
- Well-being of the child
 - These decisions may influence the emotional well-being of the child who may also be at risk for teasing bullying

Language Background Questionnaire

Language History

- Age or years since first exposure
- Order of acquisition
- Languages exposed to at home
- Languages taught at school
- Years of formal language instruction

Language Function

- Languages used in different environments
- % of language use in each language
- Languages spoken with different people

Language Proficiency

- Parent/Self-rating
 - Understanding
 - Speaking
 - Reading
 - Writing
- Objective Tests
 - Standardised
 - Dynamic Ax
 - Narratives

QUESTIONS FOR INTELLIGIBILITY

Never Always Usually Sometimes Rarely

- Do you understand your child?
- Do immediate family members understand your child?
- Do your child's friends understand your child?
- Do your child's teachers understand your child...

LANGUAGE DEVELOPMENT

Speaks	Very behind	A little behind	average	advanced	Very advanced
Understand	Very behind	A little behind	average	advanced	Very advanced

QUESTIONS FOR PROFICIENCY

- Have there been any recent changes to your child's language experience?
- Compared with other children of the same age, does your child have difficulty producing correct sentences? e.g. have appropriate vocabulary, correct grammar, long enough sentences to get the idea across
 - a) A lot of difficulty
 - b) Some difficulties
 - c) Same
 - d) No difficulties, maybe better
- Are you satisfied with how your child speaks your mother tongue?
 - a) Not satisfied at all
 - b) Maybe not satisfied
 - c) Satisfied
 - d) Completely satisfied

QUESTIONS FOR EXPOSURE

Person	LI of person	Language used with child	Amount of time spent with child on a weekday in hours	Amount of time spent with child on a weekend in hours
Mother				
Father				
Siblings				
caregiver				
Teacher				
Other people				

SAMPLING

- Multiple samples in each language that the child speaks
 - Single words
 - Simple automatic tasks
 - Repetition tasks
 - Reading
 - Spontaneous speech
 - Story retell
 - Vocabulary testing
- Parent can identify/confirm disfluent moments

SOME MEASUREMENTS

- Universal non-word repetition task
- Intelligibility in Context Scale (ICS)₁₆
- Open data repositories such as UCI Archives of stuttered speech (UCLASS), TalkBank, Fluency Bank
- Evaluation of mazes
 - Lexical, grammatical, phonological revision
 - Disfluencies
 - And (they) they were looking.
El buho (lo) lo persiguió.
- the Bilingual English Spanish Assessment (BESA; Peña, Gutierrez- Clellen, Iglesias, Goldstein, & Bedore, 2014),₁₅

MEASUREMENT

- Identify unambiguous moments of stuttering
- Compare unambiguous stutters from ambiguous/NSD
- Adjust materials for cultural diversity in language sample
- Existing measures may not be valid
- Severity Ratings easier than %SS
 - Define unambiguous/ambiguous for easier ratings
 - Is there stuttering?
 - Is it mild/moderate/severe?
 - Would a listener notice?
 - Does it impact communication?

VIDEO EXAMPLE OF SPANISH SPEAKING CHILD

- Can you identify unambiguous stutters
- What is most difficult?

IDENTIFY CULTURALLY APPROPRIATE - MUTUALLY MOTIVATING TX GOALS₁₁

- Build relationships with families & communities to understand family's goals
 - Stuttering may not be the priority
 - May not believe treatment should be done by SLPs
 - Goals may differ for each parent
 - Parental involvement may differ
 - Communities may play more important role (elders)

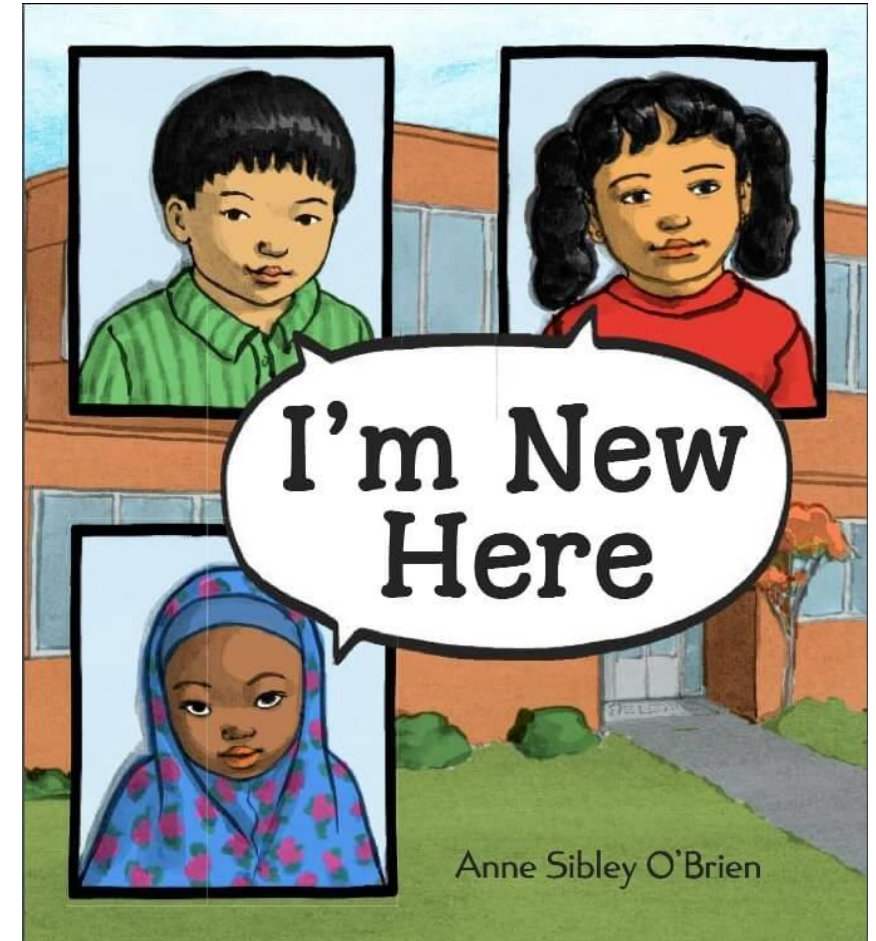
INCREASE YOUR CULTURAL COMPETENCY

- **Questions to ask**

- Beliefs for cause/usual treatment for stuttering
- Comfort with praise
- Taboo topics
- Immigration trauma
- Teasing/bullying
- Familiar topics
- Games/activities/toys played with

USE CULTURALLY APPROPRIATE RESOURCES

- Dynamic assessment and community-developed resources when available
- Describe competences in each language
- Collect conversational and/or narrative samples
 - event recall
 - personal narratives
 - recount ongoing events in child's life
 - story



INFLUENCE OF CULTURE ON ATTITUDES₁₁

- Displeasure with child for speaking ‘imperfect’ language
- Emphasis on fluency, [first born males, in some cultures] may increase the risk of stuttering
- Differences in societal expectations and values for males and females.
- Challenges for treatment:
 - Parents urged to speak only English when they cannot
 - Child may refuse to speak home language
 - Issues related to confusion/emotions of being in a new, strange place

DECISION TO TREAT

- 1 language or 2
- Individual needs of child/family
- Impact on Quality of Life
- Age of child

REMEMBER...
WHEN THE
CHILD IS
BILINGUAL

- Insufficient data to suggest stuttering is more frequent
- Increased monosyllabic word, sound/syllable repetitions in **typically fluent** bilingual children
- **Audible sound prolongations, cluster production, presence of atypical tension/rhythm in iterations may be more discriminating factor**
- **Parent concern** is a reliable indicator of need
- Stuttering of bilingual child likely **differs from that of a bilingual adult**
- Treatment guidelines differ for children and adults

RISK OF MISDIAGNOSIS

- **Challenge** – bilingualism and other concerns
 - Referral to resource, other speech-language intervention in addition/in place of stuttering Tx
- **Misdiagnosis results from...**
 - failure to identify language proficiency
 - developmental variability
 - cultural differences
 - limitations of traditional assessments normed for monolinguals

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EXAMPLES OF TREATMENT GOALS

- XXX will establish 30% decrease in severity in L1 by 6th session
- Parents will attend all sessions
- Parents will provide practice in natural conversations at home
- Stuttering severity will be monitored in both languages that the child speaks

FUTURE DIRECTIONS

- Current understanding of bilinguals who stutter is limited due to **Lack of normative data**
 - Findings do not provide consistent view of effects of bilingualism on fluency
 - Bilingual children are navigating more than one language system
 - Not surprising to see increased levels of disfluency
- Long-term impact of bilingualism on treatment outcome is unclear
- Importance of culture to bilingualism has not received much attention



NEED FOR LARGE SCALE LONGITUDINAL STUDIES

- International collaborations examining cultural/language specific factors in development and presentation of stuttering
 - Affect of bilingual language acquisition on fluency?
 - Compare operational definitions of bilingualism across languages
 - Efficacy of treating in one or both languages simultaneously/consecutively



- Bilingual is just a different kind of normal from monolingual

Paradis, 2012

THANK YOU!

rosalee.shenker@montrealfluency.com