Description of Multilingual Participants Who Stutter

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Introduction

-Research in the multilingual stuttering population is limited.

-A majority of the literature is restricted to case studies, and comparison of participants across studies is compromised by heterogeneous language profiles.

-The relationship between language and stuttering (Ntourou et al., 2010), and dominance-based theories of stuttering in bilinguals (Lim et al., 2008b) require greater specificity regarding language experiences among participants.

-Using Grosjean's (2004) guidelines and information gleaned from available language profiles questionnaires (see caption and references in green), an eight-factor framework was constructed to describe language abilities of multilingual participants who stutter.

Language Factor	***Definition***
1) History [ab]	when and how language skills were first acquired
2) Function [ab]	current environmental demands for language use
3) Proficiency [ab]	current degree of skill within each language modality
4) Stability [ab]	whether one or both languages are currently being acquired, or in some cases lost
5) Mode [ab]	whether interaction during task is with bilingual interlocutors or situations versus monolingual situations
6) Degree of accent [b]	"rough index" of L2 experience and preference
7) Language of covert speech [b]	language used during "mental speech" or "inner speech"
8) Affective factors [b]	overall comfort and willingness to speak in a given language, particularly a non-dominant language

Note. Factors extracted from Grosjean (2004) and the following language profile questionnaires: Dewaele (2010, pp. 224-230); Dunn & Fox Tree (2009); Gutiérrez-Clellen & Kreiter (2003); Li, Sepanski, & Zhao. (2006); Lim, Liow, Lincoln, Chan, & Onslow (2008b); Liow & Poon (1998); Marian, Blumenfeld, & Kaushanskaya (2007); Muñoz, Marquardt, & Copeland (1999); Paradis (1987, pp. 46-51); Roberts & Shenker (2007)

Purpose

Based on this eight-factor framework, the purpose of this study was twofold:

PURPOSE I: To determine breadth of description of multilingual participants in current stuttering literature.

- **frequency of language factors** reported across studies
- **consistency of language factors** reported within studies

PURPOSE II: To determine depth of description of multilingual participants in current stuttering literature.

- **frequency of different descriptors** reported for each factor within and across studies
- **consistency of descriptors reported** for each factor within and across studies

Method

Method: Systematic review of multilingual participant descriptions in stuttering literature.

Inclusionary criteria:
1)Participants described as persons with developmental stuttering
2)Participants had knowledge of more than one language
3) Provided original data
4) Peer-reviewed publication

Results: **23 data-based, refereed articles included in review**

Results

PURPOSE I: BREADTH OF DESCRIPTION

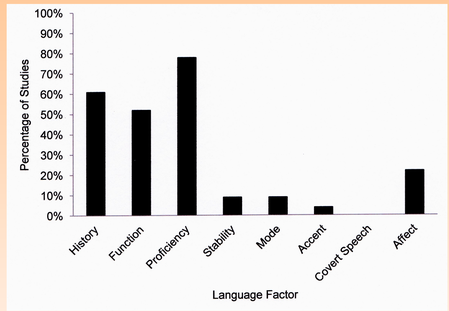
Main Finding: Of eight language factors, **limited and inconsistent** language factors were reported within and across studies.

Frequency of factors: Three factors were reported with relatively higher frequency.

History:	**61%**	**(14 / 23 studies)**
Function:	**52%**	**(12 / 23 studies)**
Proficiency:	**78%**	**(18 / 23 studies)**
Remaining factors:	0-22%	(0 to 5/23 studies)

Consistency factors: Three primary factors co-occurred in fewer than half of the qualifying studies.

3 factors:	**43%**	**(10/23 studies)**
2 factors:	22%	(5/23 studies)
1 factor:	17%	(4/23 studies)
0 factors:	17%	(4/23 studies)



PURPOSE II: DEPTH OF DESCRIPTION

Main Finding: Of the three primary language factors, **dissimilar and non-overlapping descriptors were reported** within and across studies.

Frequency of descriptors:

History: **29 different descriptors**
Function: **13 different descriptors**
Proficiency: **13 different descriptors**

Consistency of descriptors:

History: **9 were reported in >1 study (31%)**
Function: **6 were reported in >1 study (46%)**
Proficiency: **8 were reported in >1 study (62%)**

History	# of studies	Function	# of studies	Proficiency	# of studies
Qualitative		*Qualitative*		*Qualitative*	
Language spoken at home	8	General estimation by speaker	7	Judgment of speaker or examiner	9
Language of school	3	Language spoken at school/work	6	Self-ranked speaking proficiency	3
Formal education in L2	3	Language spoken at social events	4	Self-ranked comprehension	2
Language spoken by mother	2	Languages spoken at home	3	Self-ranked reading	2
Language spoken by father	2	Languages spoken with peers	2	Self-rank writing	2
Formal education in L1	2	Preferred language to read/write	2		
Language spoken by grandparent	2				
Quantitative		*Quantitative*		*Quantitative*	
Age of L2 exposure	6	N/A		Undefined composite score, L1	4
Order of acquisition	5			Grammar, L1/L2	3
				Vocabulary, L1/L2	2

Discussion

PURPOSE I: BEADTH OF DESCRIPTION

Discussion:
- Due to the prominence of language/motor-based theories of stuttering, as well as their combined role when establishing language dominance, proficiency, history, and function data should be considered primary factors in bilingual stuttering research.

- Although infrequently reported, remaining factors (i.e., stability, mode, accent, affect, and covert speech) may be of particular importance in the stuttering literature, given the influence and interaction of affective variables (e.g., Tran et al., 2011) , phonological/phonetic variables (e.g., Byrd et al., 2007), and differences in language organization (e.g., Coulter et al., 2009) on stuttered speech.

PURPOSE II: DEPTH OF DESCRIPTION

Discussion:
- Although history, function, and proficiency were frequently reported, each factor was determined with a wide range of descriptors which rarely overlapped across studies. Primary factors were described mostly in qualitative terms and often relied on general estimation examiner or self-report of participant.

- Global, qualitative measurements of proficiency do not reflect specific language skills. Both the quantity (e.g., Bedore et al., 2012; Bohman et al., 2010) and quality (e.g., Jia & Aaronson, 2003; Derwing et al., 2007; Hammer et al., 2009) of experiences can uniquely impact vocabulary, phonological, semantic, and morphosyntactic abilities in each language.

Future research should consider language history, function, and proficiency primary information to be provided across studies, with remaining factors considered using available questionnaires (see references in green).

References

Bedore, L. M., Peña, E. D., Summers, C. L., Boerger, K. M., Resendiz, M. D., Greene, K., Bohman, T. M., & Gillam, R. B. (2012). The measure matters: Language dominance profiles across measures in Spanish-English bilingual children. *Bilingualism: Language and Cognition*. Advance online publication.

Bohman, T. M., Bedore, L. M., Peña, E. D., Mendez-Perez, A., & Gillam, R. B. (2010). What you hear and what you say: Language performance in Spanish English bilinguals. *International Journal of Bilingual Education and Bilingualism, 13*, 325-344.

Byrd, C. T., Conture, E. G., & Ohde, R. N. (2007). Phonological priming in young children who stutter: Holistic versus incremental processing. *American Journal of Speech-Language Pathology, 16*, 43-52.

Coulter, C. E., Anderson, A. D., & Conture, E. G. (2009). Childhood stuttering and dissociations across linguistic domains: A replication and extension. *Journal of Fluency Disorders, 34*, 257-278.

[b] Dunn, A. L., & Fox Tree, J. E. (2009). A quick, gradient Bilingual Dominance Scale. *Bilingualism: Language and Cognition, 12*, 273-289.

Derwing, T. M., Munro, M. J., & Thomson, R. I. (2007). A longitudinal study of ESL learners' fluency and comprehensibility development. *Applied Psycholinguistics, 29*, 359-380.

[b] Dewaele, J-M. (2010). *Emotions in multiple languages* (pp. 224-230). New York, NY: Palgrave Macmillan.

[a]Grosjean, F. (2004). Studying bilinguals: Methodological and conceptual issues. In T. Bhatia & W. Ritchie (Eds.), *The handbook on bilingualism* (pp. 32-63). Oxford, UK: Blackwell Publishing Company.

[b] Gutiérrez-Clellen, V. F., & Kreiter, J. (2003). Understanding child bilingual acquisition using parent and teacher reports. *Applied Psycholinguistics, 24*, 267-288.

Hammer, C. S., Davison, M. D., Lawrence, F. R., & Miccio, A. W. (2009). The effect of maternal language on bilingual children's vocabulary and emergent literacy development during Head Start and kindergarten. *Scientific Studies of Reading, 13*, 99-121.

Jia, G., & Aaronson, D. (2003). A longitudinal study of Chinese children and adolescents learning English in the United States. *Applied Psycholinguistics, 24*, 131-161.

[b] Li, P., Sepanski, S., & Zhao, X. (2006). Language history questionnaire: A Web-based interface for bilingual research. *Behavior Research Methods, 38*, 202-210.

Lim, V. P. C., Lincoln, M., Chan, Y. H., & Onslow, M. (2008a). Stuttering in English-Mandarin bilingual speakers: The influence of language dominance of stuttering severity. *Journal of Speech, Language, and Hearing Research, 51*, 1522-1537.

[b] Lim, V. P., Liow, S. J. R., Lincoln, M., Chan, Y. H., & Onslow, M. (2008b). Determining language dominance in English-Mandarin bilinguals: Development of a self-report classification tool for clinical use. *Applied Psycholinguistics, 29*, 389-412.

[b] Liow, S. J. R., & Poon, K. K. L. (1998). Phonological awareness in multilingual Chinese children. *Applied Psycholinguistics, 19*, 339-362.

[b] Marian, V., Blumenfeld, H. K., & Kaushanskaya, M. (2007). The Language Experience and Proficiency Questionnaire (LEAP-Q): Assessing language profiles in bilinguals and multilinguals. *Journal of Speech, Language, and Hearing Research, 50*, 940-967.

[b] Muñoz, M. L., Marquardt, T. P., & Copeland, G. (1999). A comparison of the codeswitching patterns of aphasic and neurologically normal bilingual speakers of English and Spanish. *Brain and Language, 66*, 249-274.

[b] Paradis, M. (1987). *The assessment of bilingual aphasia* (pp. 46-51). Hillsdale, NJ: Lawrence Erlbaum Associates.

[b] Roberts, P. M., & Shenker, R. C. (2007). Assessment and treatment of stuttering in bilingual speakers. In E. Conture & R. Curlee (Eds.), *Stuttering and related disorders of fluency* (pp. 183-209). New York, NY: Thieme.

Tran, Y., Blumgart, E., & Craig, A. (2011). Subjective distress associated with chronic stuttering. *Journal of Fluency Disorders, 36*, 17-26.