

Can short term exposure to L2 affect L2 fluency?

- Previous studies focused on how **long-term** exposure (immersion) **positively** affects second-language (L2) **fluency** (e.g., Mora & Valls-Ferrer, 2012)
- Past research demonstrated that brief **short-term** exposure to one language can **negatively** influence bilinguals' **lexical retrieval** performance in the other language (Kreiner & Degani, 2015).
- The current study thus set out to examine:
 - Whether short-exposure can carry positive influences on the same language?
 - Can fluency be influenced by brief short-term manipulations?

How is fluency perceived and how can it be measured?

- Whereas non-temporal factors (such as pronunciation and grammar) had some influence on the perception of L2 fluency, it was the temporal factors which had the greatest impact (Rossiter, 2009)
- Of these temporal factors, **Speech Rate** is one of the most salient measures (Wood, 2009).

The Current Study

- Will a brief L2 exposure lead to a significant change in L2 activation level, reflected by changes in fluency?
- Based on the *zooming-in theory* (Elston-Güttler et al., 2005), brief exposure should lead to an elevated activation level of L2 (while L1 is inhibited) and thus should improve L2 performance.
 - Hypothesis: brief L2 exposure will increase L2 speech rate, whereas brief L1 exposure will decrease L2 speech rate.

Participants

- 39 participants (31 females), native Hebrew speakers who were not exposed to another language during childhood, prior to the age of six. All participants had English as an L2.

Table 1

Means (and standard deviations) of participants' characteristics.

	ENG Exposure Grp.	HEB Exposure Grp.
Age (years)	25.94 (2.71)	27.71 (6.81)
English Acquisition age (years)	8.33 (1.53)	8.67 (1.79)
ENG years learned	9.89 (2.30)	9.38 (2.36)
Number of Languages acquired	2.83 (0.71)	2.48 (0.75)
ENG Semantic Fluency scores	13.03 (3.96)	10.38 (4.84)
HEB Semantic Fluency scores	19.28 (4.00)	18.67 (4.58)
Self-rated Average Hebrew Proficiency (scale 1 to 10)	9.4 (0.7)	9.5 (0.6)
Self-rated Average Hebrew Use (scale 1 to 10)	7.5 (1.7)	7.7 (1.5)
Self-rated Average English Proficiency (scale 1 to 10)	6.8 (1.3)	6.9 (1.5)
Self-rated Average English Use (scale 1 to 10)	6.4 (1.7)	6.1 (2.0)

** No differences were found between ENG and HEB groups in any of the measurements

Stimuli

- Ten sentences, constructed specifically for the procedure, were created.
- Each sentence included 5-9 high frequency words.
- Number of syllables in each sentence ranged between 7 to 10 each
- Sounds that are difficult to pronounce by native Hebrew speakers were identified by ESL teachers and were distributed evenly across sentences.
- Sentences were divided into two sets of 5 sentences each, one to be presented pre-exposure and the other post-exposure. Sets were matched on word frequency, number of syllables, and number of difficult to produce sounds.
- Order of set presentation was counterbalanced across participants.

A	No. of syllables	B	No. of syllables
The cold weather gave her a bad tooth ache.	10	Planet earth has other names.	7
My father ate a healthy snack.	8	I think the black cat is hungry.	8
I wore a leather hat on my birthday.	10	My brother had to leave to take a bath.	10
Nothing sounds better than her laugh.	8	The last house is bigger than the third one.	10
He ran with special workout clothes.	8	My chicken has thick and long feathers.	9
Total of syllables	44	Total of syllables	44

Procedure

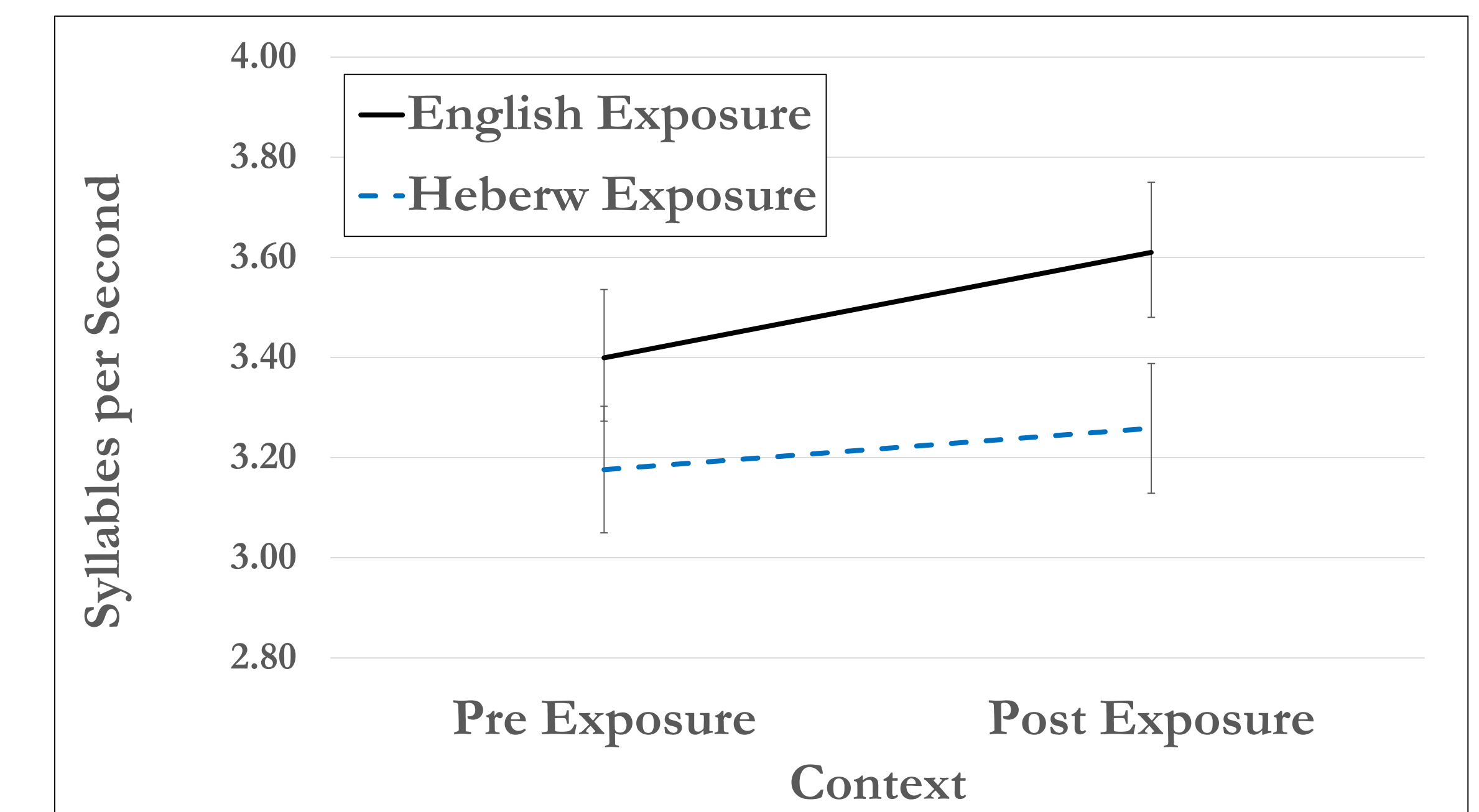
- Sentence Production:** All participants performed L2 production tasks in two different contexts: **pre-movie** and **post-movie**
- Each sentence was presented on a computer screen, one at a time, and the participant was instructed to read the sentence silently before reading it out loud.
- Exposure:** All participants viewed a 10-min clip from the animated movie "Finding Nemo" in one of two languages: **English** (L2) or **Hebrew** (L1)
- All participants also completed a story narration task in L2, a language history questionnaire, and a semantic fluency task in English and in Hebrew.



Results

- Utterances length was measured using the Audacity program
- Speech rate, defined as syllables-per-second (SPS), was computed as the length of production divided by the number of syllables per sentence
- An average SPS rate was then calculated for the five sentences produced pre-exposure and the five sentences produced post-exposure

Speech Rate before and after watching a movie as a function of exposure group



- A significant difference was found in the speech rate average between pre exposure and post exposure in the group exposed to the English movie
- No significant difference was found in the speech rate average between pre exposure and post exposure in the group exposed to the Hebrew movie
- No significant correlation was observed between speech rate improvement and individual differences in age, gender, age of L2 acquisition or proficiency and use measures from the questionnaire.

Discussion

- Improvement in L2 speech rate was modulated by the language of exposure
- The slight (non-significant) improvement in speech rate following exposure to Hebrew is attributed to task repetition effect
- Future analysis will examine speech rate modulations in the L2 story narration task.
- In addition, future studies would test the duration of the effect (how long does the improvement in L2 fluency remains), and whether an accumulation of several short exposures will have a lasting effect
- Implications for foreign-language teaching: repeated short exposures intertwined in class curriculum may improve L2 fluency.

References

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