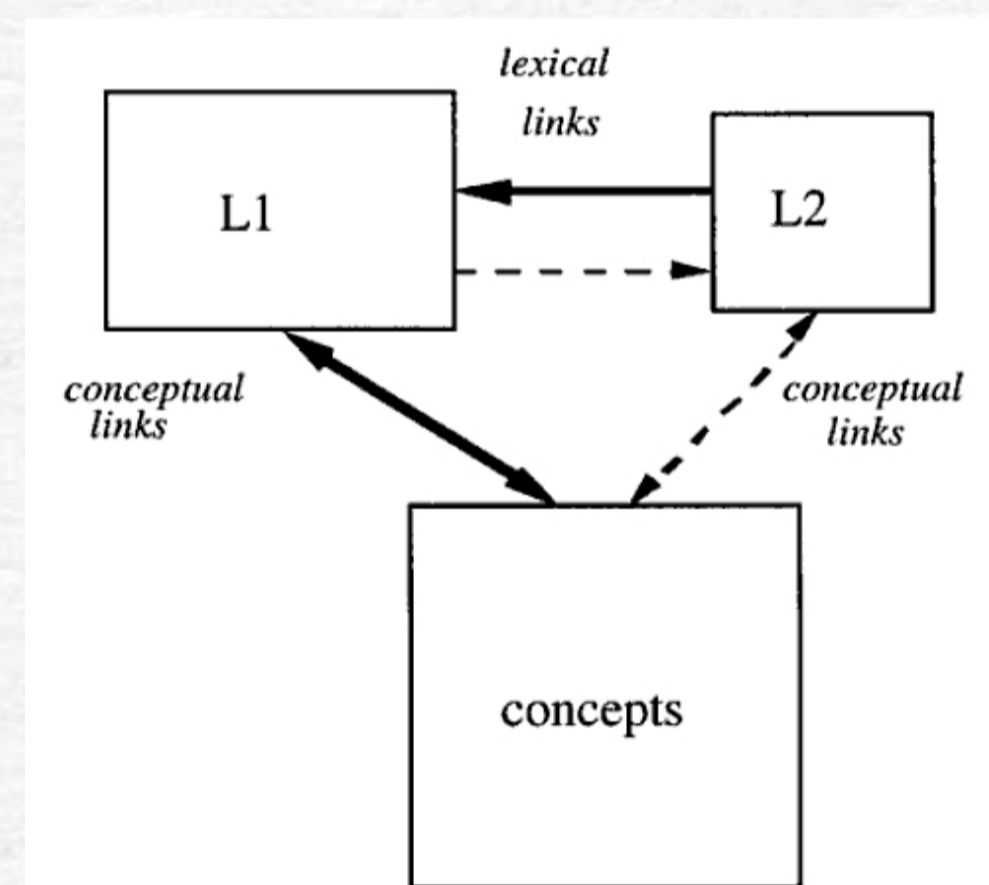


Bilingualism research indicates that the two languages of bilingual speakers interact. Influences of the other language appear while speaking or processing one language, suggesting that bilinguals are unable to turn off one of their languages (Kroll et al., 2015., Wu & Thierry, 2010)

However, the way in which linguistic information is processed in one language, and the way in which the meanings and units of form are connected is not anchored in a clear model

The Revised hierarchal model (Kroll & Stewart, 1994) suggests asymmetric mappings of words to concepts in bilingual memory representations in favor of the first language.



The current study

Asymmetry in form to meaning mapping will influence meta-phonological abilities. The study looks at bilingualism as a key to a deeper understanding of language processing and the mapping of form to meaning.

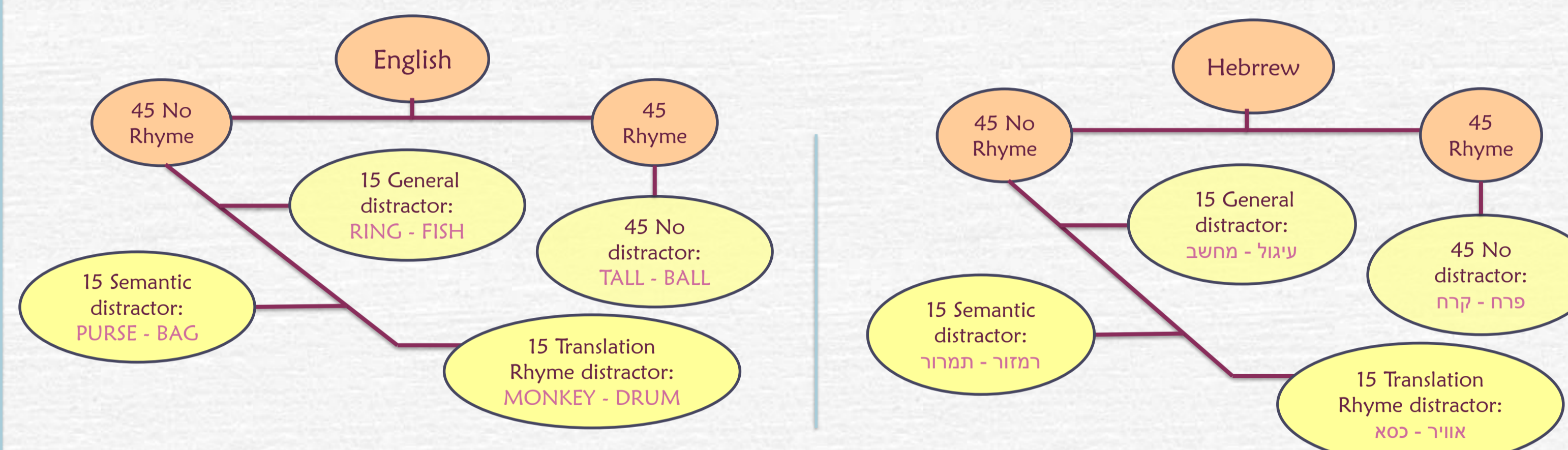
Is meta-phonological processing influenced by the strength of associated lexical representations?

Based on the Revised Hierarchical Model (Kroll & Stewart, 1994) and the frequency of use of each language (Gollan et al., 2005) we assume that there are stronger lexical representation in L1 relative to L2 relative to a pseudo-language.

We test how a **rhyme-judgment task** is influenced by the strength of these lexical representations.

Method

- Participants:** 30 adult bilingual speakers: native Hebrew speakers who are English “late- learners”
- Stimuli:** 270 pairs of auditory strings were recorded. Of these, 90 were pairs of Hebrew (L1) words; 90 were pairs of English (L2) words, and 90 were pseudo-words which do not belong to either the L1 or the L2.
- In each language, half of the pairs required a yes response.
- No responses were manipulated as follows in English and Hebrew:



Procedure:
An auditory Rhyme judgment task :

does this pair rhyme?

Both RT and Accuracy were recorded

A semantic fluency task in English and Hebrew
A self-reported language proficiency and experience questionnaire (Marian, Blumenfeld & Kaushanskaya, 2007).

Expected outcomes:

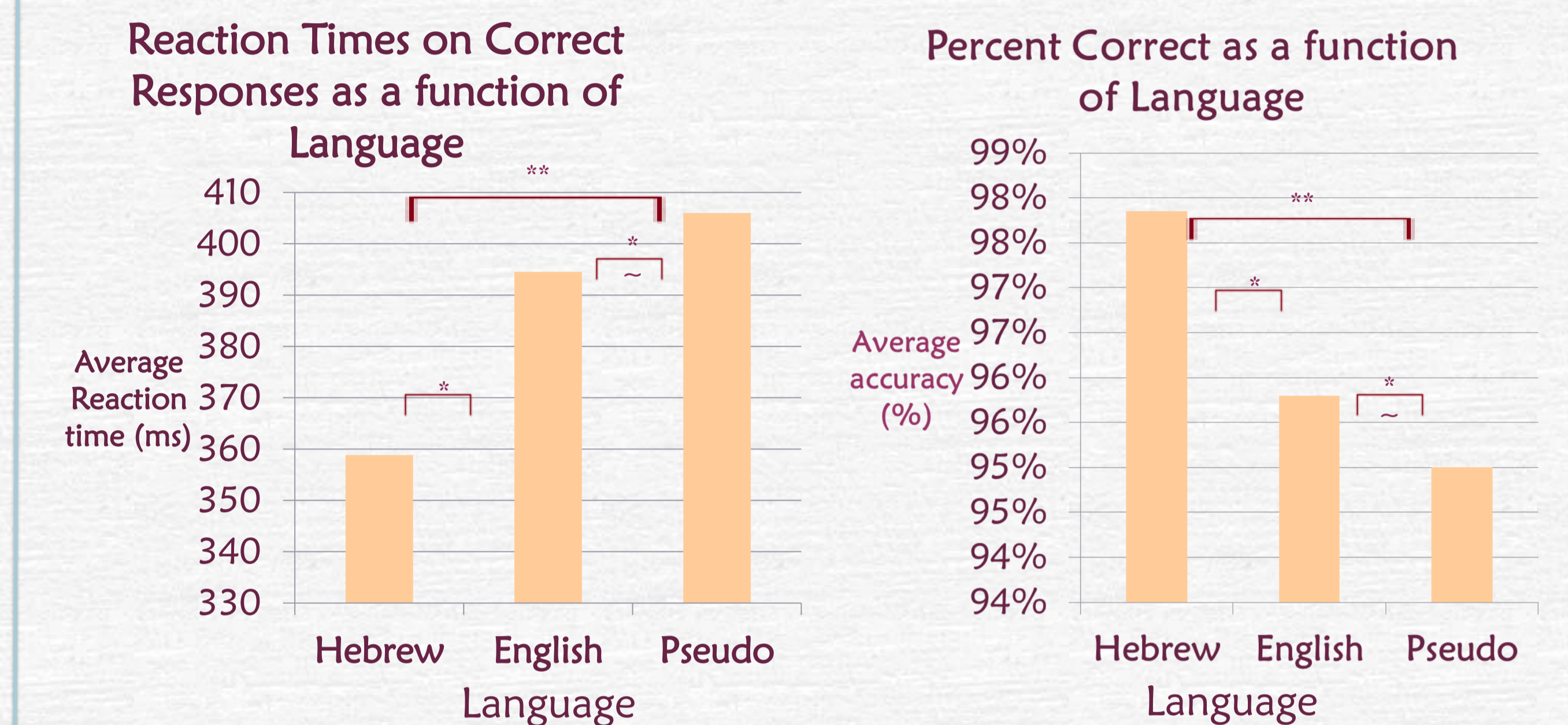
Under the assumption that meta-phonological processing receives feedback from lexical/semantic processing – performance in the 3 language conditions should differ.

L1 ≠ L2 ≠ Lpseudo

- If lexical representations **support** phonological representations we expect the best performance in L1.
- Alternatively, if it is easier to perform a superficial form task when there is no strong lexical arousal, we expect best performance in Lpseudo.

Results

A significant main effect of language was found in both Accuracy and RT



- Performance in the rhyme judgment task was significantly better on Hebrew (L1) words. The difference between English (L2) and pseudo-words was marginal.
- No significant difference was observed between the different No distractor conditions in either language.

Summary & Discussion

- As predicted, the strong connections between form and meaning in the first language has an impact on decisions at the level of form.
- The marginal difference between English and Pseudo words may be related to participants' proficiency in English – English words that may not have been sufficiently familiar effectively functioned semantically as pseudo-words.
- Further research could examine modulations by L2 proficiency.
- The findings suggest that even form-based tasks, aimed at evaluating basic abilities, are influenced by long-term experience with the materials.
- Assessment of meta-phonological and rhyming abilities should consider speakers proficiency and experience with the tested materials.

References:

- Kroll, J. F., & Stewart, E. (1994). Category interference in translation and picture naming: Evidence for asymmetric connections between bilingual memory representations. *Journal of memory and language*, 33(2), 149-174.
- Kroll, J. F., Gullifer, J. W., McClain, R., Rossi, E., & Martin, M. C. (2015). Selection and control in bilingual comprehension and production. *Cambridge Handbook of Bilingualism*. New York: Cambridge University Press doi, 10
- Wu, Y. J., & Thierry, G. (2010). Chinese-English bilinguals reading English hear Chinese. *Journal of Neuroscience*, 30(22), 7646-7651.
- 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(4), 940-967.
- Gollan, T. H., Montoya, R. I., Fennema-Notestine, C., & Morris, S. K. (2005). Bilingualism affects picture naming but not picture classification. *Memory & Cognition*, 33, 1220-1234.