

Gesturing in Monolingual and Bilingual Children

Lauren Daley, Eugenia Gokhman, Christina Pechey, Dr. Elena Nicoladis
University of Alberta

Abstract

There is currently no consensus regarding the frequency and purpose of gesture use in monolingual and bilingual children. The present study analyzes the gesture use of English monolingual, Mandarin-English bilingual, and French-English bilingual children as they retell a story from a silent Pink Panther cartoon. Our aim is to compare the rates and purpose of their gestures and determine the factors that may be contributing to variable results in previous research.

Background and Hypotheses

- 1. Bilingual children will gesture more than monolingual children.** At the least, French-English bilinguals will gesture more than monolingual English children.
 - Studies have found that bilinguals gesture more than monolinguals of the corresponding languages (Pika et al. 2006; Nicoladis et al. 2009).
 - Smitson et. al. (2011) found that French-English bilingual children used significantly more gestures than Mandarin-English bilinguals.
- 2. Bilingual children will use more complementary gestures** to support their inability to access target words, whereas *monolingual children will use more supplementary gestures* to add additional meaning to their utterances.
 - Bilingual children can have more difficulty with word recall, and complementary gestures are helpful for finding basic words (Nicoladis et al. 2009; Ünsal et al. 2017).
- 3. Another cognitive variable**, perhaps an individual child's verbal working memory skills, **will have a significant impact on gesturing behaviours.**
 - Previous studies suggest that "individual differences in verbal working memory, rather than lexical access difficulty, may be a more important determinant of the tendency to spontaneously gesture during relatively naturalistic description tasks" (Gillespie et al. 2014)

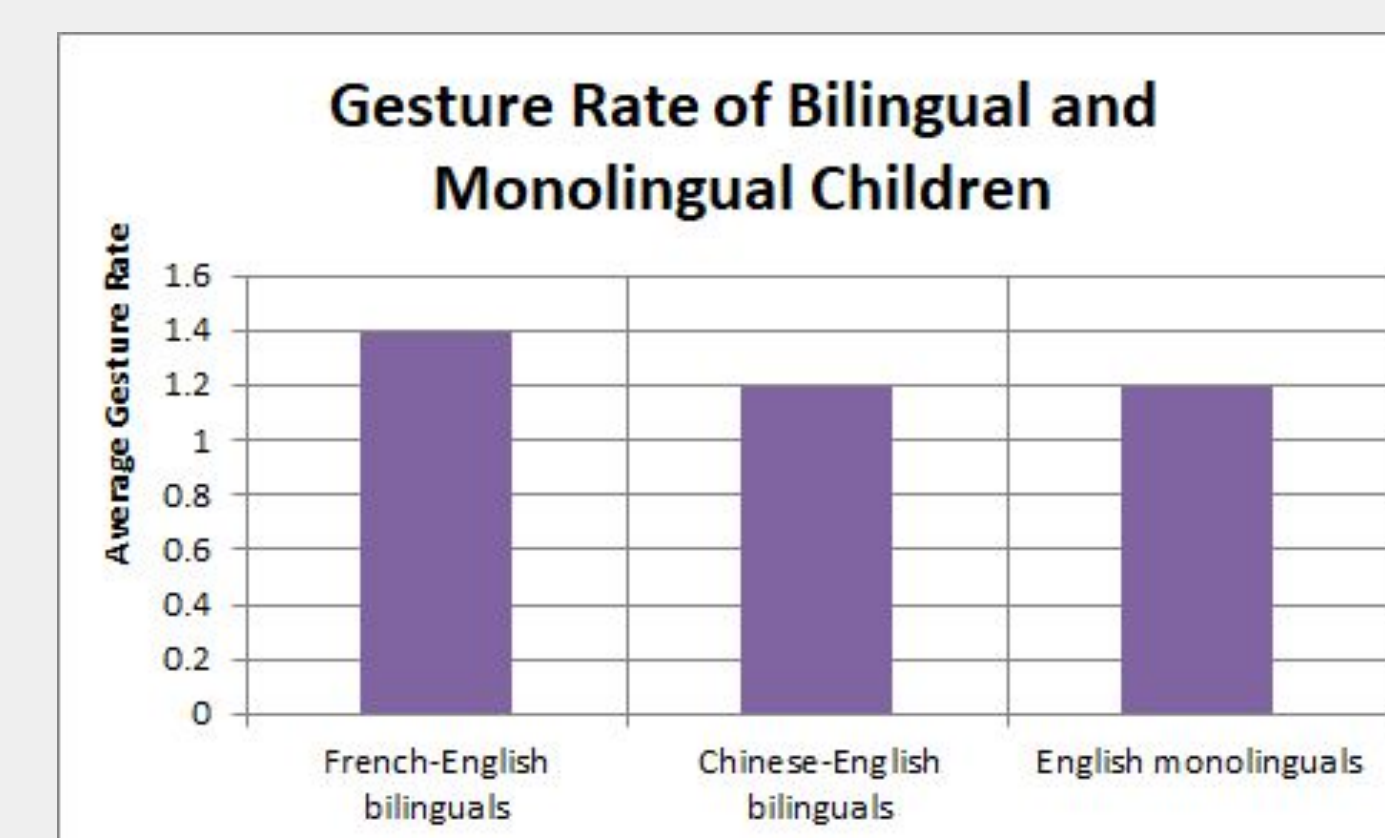
Acknowledgements

Special thanks to Dr. Elena Nicoladis for her mentorship and direction. Thanks also to previous CSD 900 students who took the time to transcribe the data for our study, as well as to original participants and their families for their participation.

Results

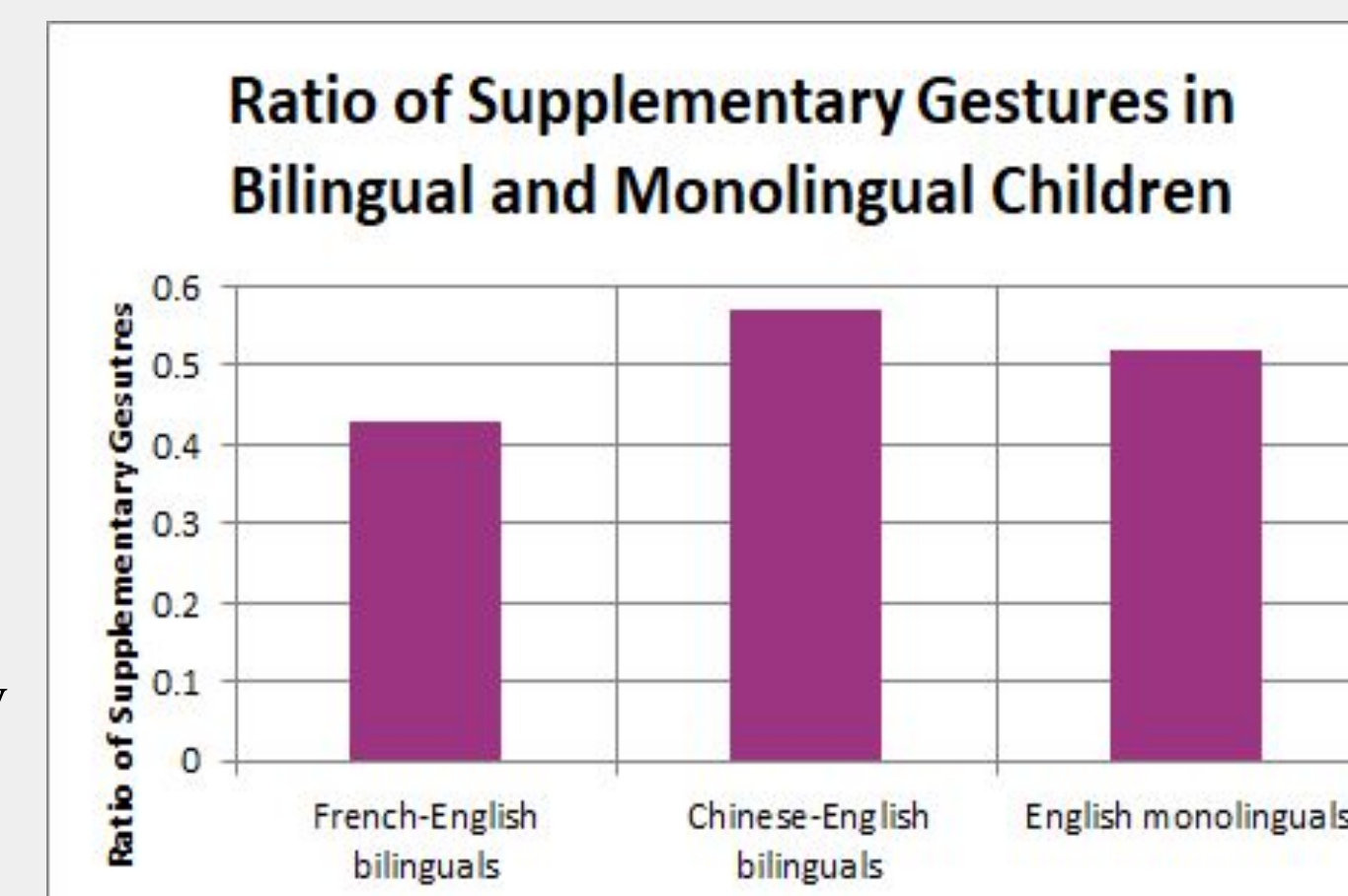
Hypothesis #1: Not Supported

- Bilingual children did not produce significantly more gestures than the monolingual children.



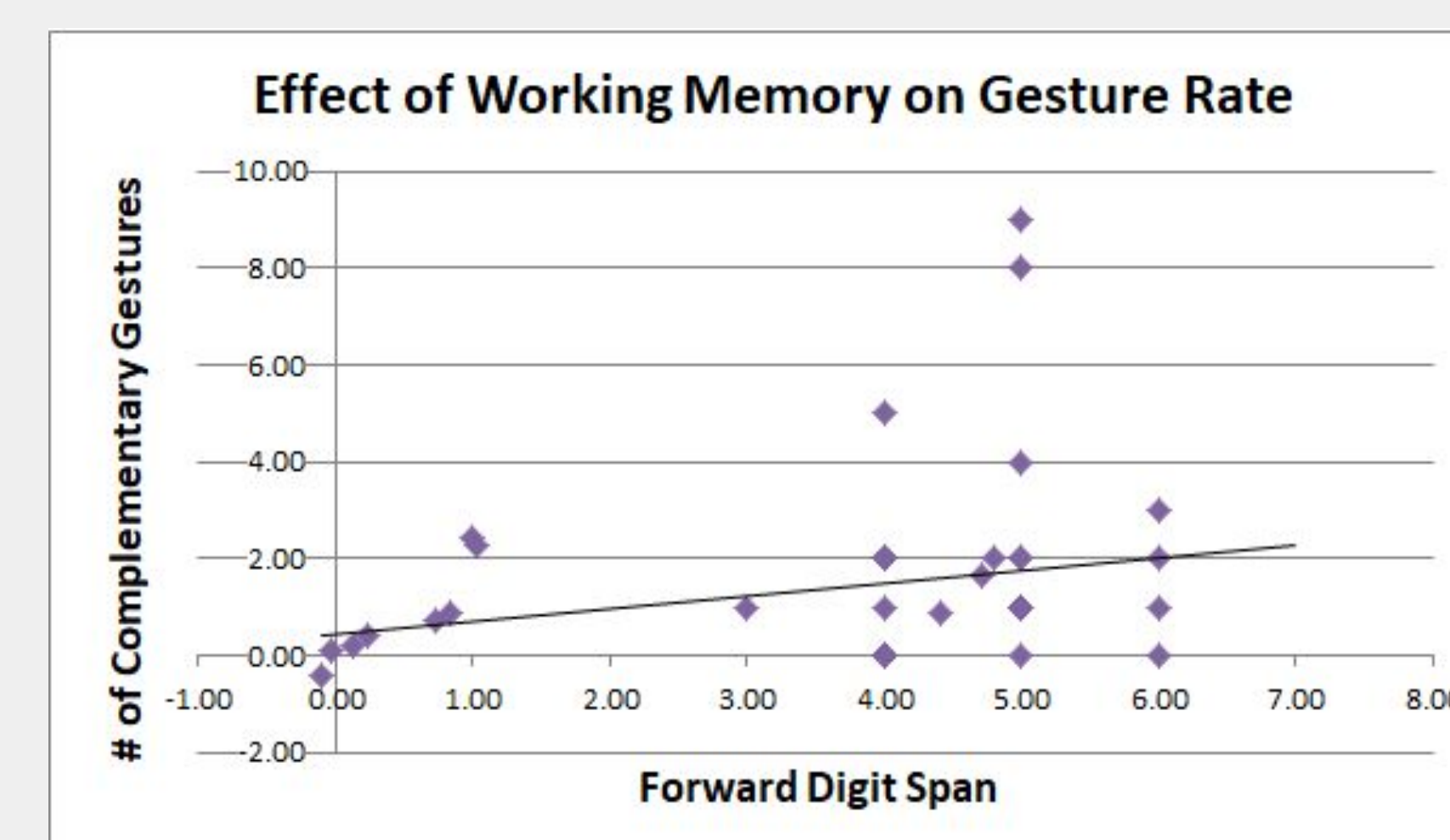
Hypothesis #2: Not Supported

- No significant differences were found between the use of complementary and supplementary gestures.



Hypothesis #3: Supported

- Children with greater verbal working memory use more complementary gestures.



Methods

Participants: (T= 81)

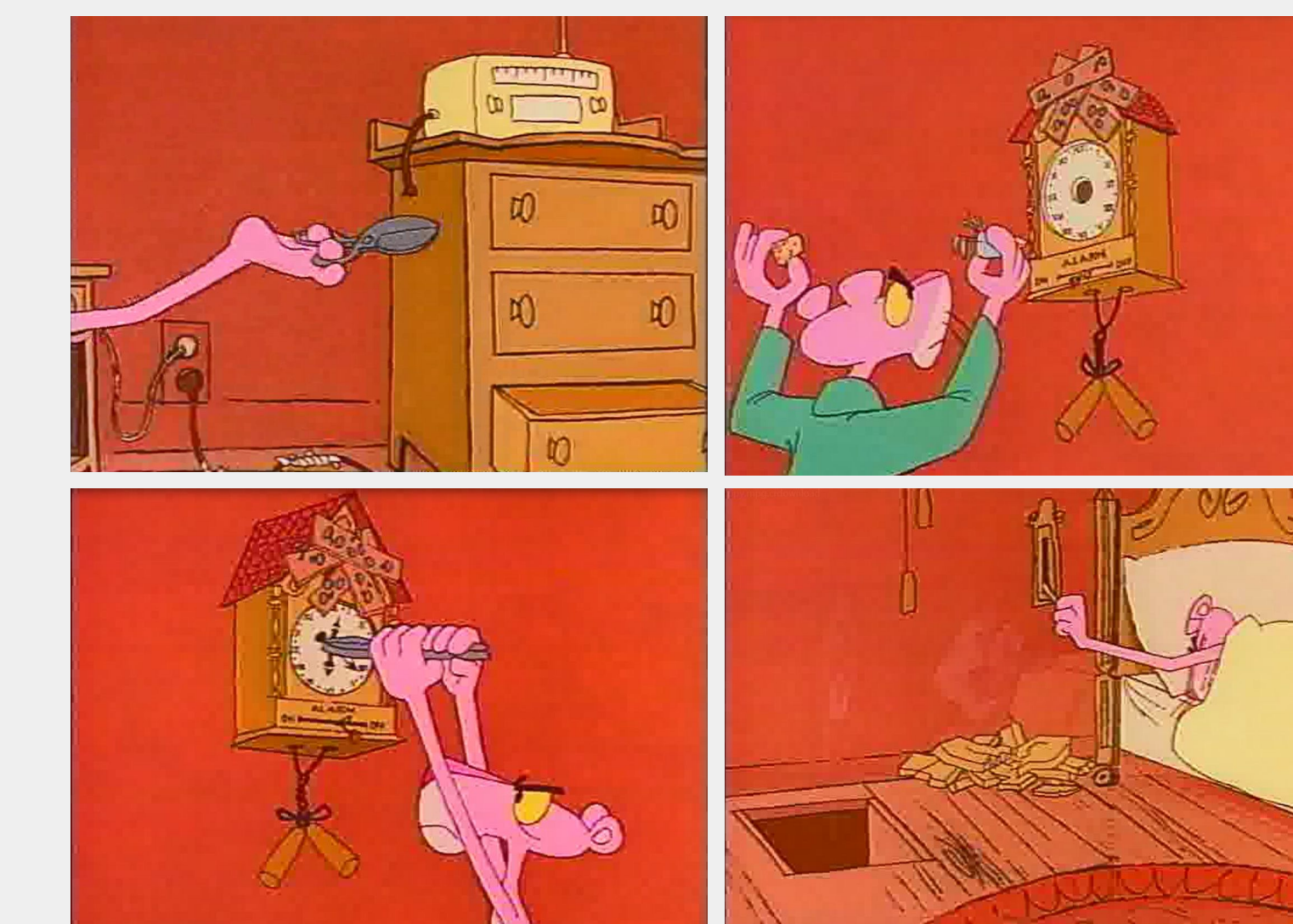
- 27 Chinese-English bilinguals (10 girls), with an average age of 66.3 months (SD = 9.4)
- 27 French-English bilinguals (14 girls), an average age of 65.4 months (SD = 9.7)
- 27 English monolinguals (15 girls), with an average age of 64.5 months (SD = 8.3)

Procedure:

1. Participants watched the clips on a computer with headphones.
2. Children were then asked to retell the story to a facilitator. Bilingual children were asked to tell the story in both languages, though only stories told in English were analyzed.
3. The story retells were recorded, transcribed and then coded for gestures.

Future Research

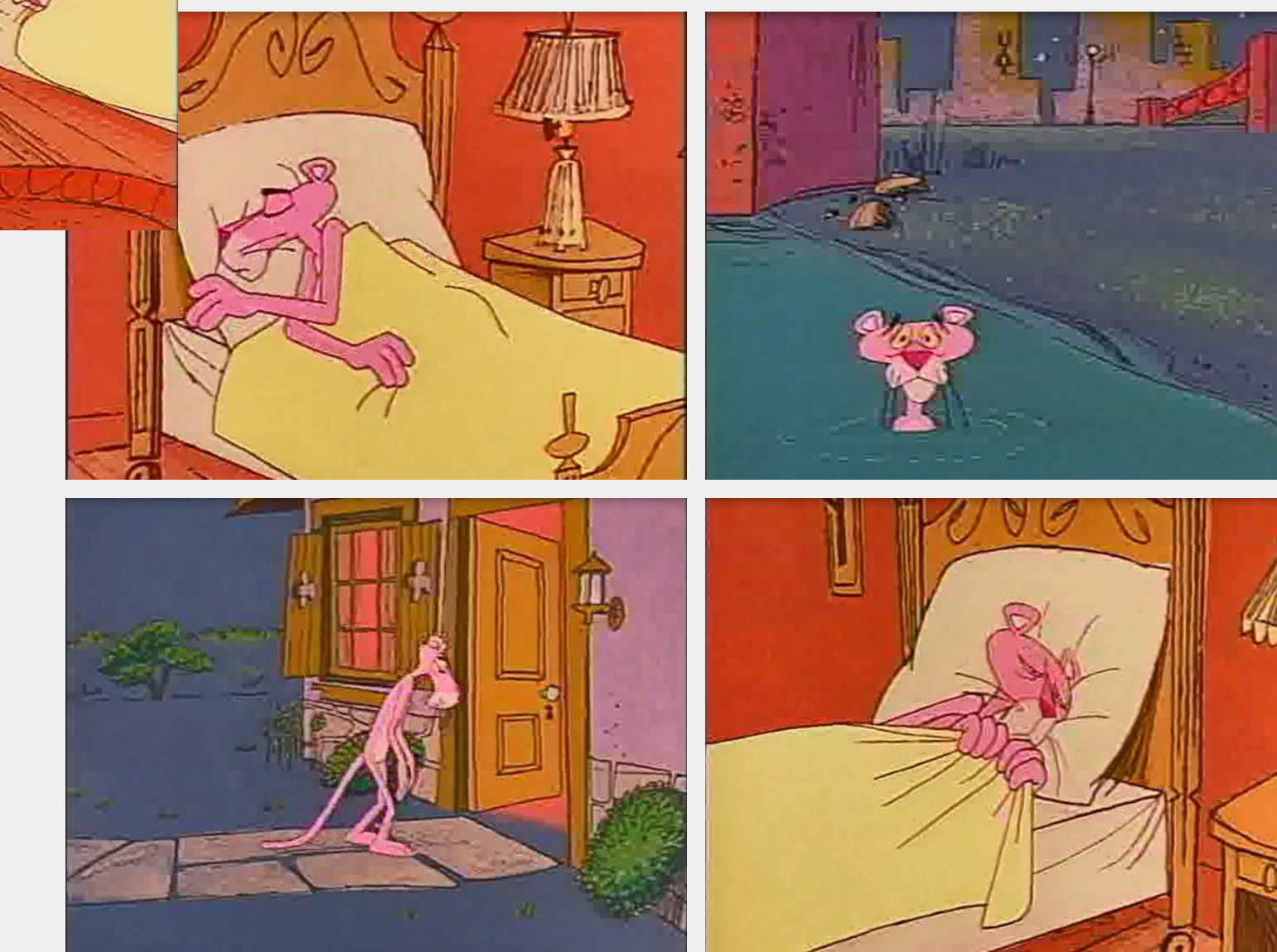
High Elicitation of Gestures



Control for Confounding Factors:

- Verbal Working Memory
- Elicitation Techniques
- Types of Verbs

Low Elicitation of Gestures



Implications for Treatment

Assessment:

- Elicitation materials to encourage gesture use in narrative retell tasks
- Broad assessment protocol to look at language use and intent in young children
- Screen for beginning narrative skills regardless of language abilities

Treatment:

- Pair gestures with language to help teach vocabulary to children
- Total communication approach to language learning for all

References

- Smithson, L. (2011). Bilingual children's gesture use. *Gesture*, 11(3), 330-347.
- So, W. C. (2010). Cross-cultural transfer in gesture frequency in Chinese-English bilinguals. *Language and Cognitive Processes*, 25-10, 1335-1353. doi: 10.1080/01690961003694268
- Nicoladis, E., Pika, S., & Marentette, P. (2009). Do French-English Bilingual Children Gesture More than Monolingual Children? *Journal of Psycholinguistic Research*, 38(6), 573-585.
- Ünsal, Z., Jakoson, B., Wickman, P., & Molander, B. (2017). Gesticulating science: Emergent bilingual students use of gestures. *Journal of Research in Science Teaching*. doi: 10.1002/tea.21415
- Gillespie, M., James, A., Federmeier, K. and Watson, D. (2014). Verbal working memory predicts co-speech gesture: Evidence from individual differences. *Cognition*, 132(2), pp.174-180. <http://assets.stckpng.com/thumbs/58b8351e1548273a5cab2f6e.png>