Appendix 1

Summary of previous studies on comprehension of gestures in children

Author(s) and publication year	Age groups of participants	Compariton to adults	Gesture type used	Way of presenting the stimuli	Stimulus modalities: Used all three conditions (speech-only, gesture-only, and speech-gesture combination)?	Integration of speech and gesture required: Do speech and gesture mutually constrain each other's meaning?	Results regarding speech-gesture integration
Morford & Goldin-Meadow (1992)	14-28 month	No	Iconic, Pointing	Live	Yes	Yes (However, this study cannot exclude the possiblity that the better performance in the speech-plus-gesture condition was obtained from the advantage of redundancy between the speech and gesture modalities)	Children could integrate pointing gestures and speech by an adult speaker to select the correct object, but could not integrate iconic gestures and speech.
Namy, Cambell & Tomasello (2004)	18, 26 month, and 4 year-olds	No	Iconic, Arbitrary	Live	No (speech-gesture combination)	No (Participants were required to associate a gesture with an object. Speech does not covey information about the object. Speech and gesture do not constrain each other's meaning)	
Tomasello, Striano, & Rochat (1999)	18 month, 2, and 3-year-olds	No	Iconic	Live	No (speech-gesture combination)	No (Same as above)	
Kelly & Church (1998)	10-year-olds and adults	Yes	Iconic, Pointing	Video	No (speech-only, speech-gesture combination)	No (Participants were required to describe information conveyed by children either with speech or gesture. Information in speech and in gesture are equivalent or non-equivalent. Speech and gesture do not constrain each other's meaning)	
Church, Kelly & Lynch (2000)	8-, and 10-year-olds, and adults	Yes	Iconic, Pointing	Video	No (speech-only, speech-gesture combination)	No (Participants were required to recognize information conveyed by children either with speech or gesture. Information in speech and in gesture are equivalent or non-equivalent. Speech and gesture do not constrain each other's meaning)	
Broaders & Goldin-Meadow (2010)	6-year-olds	No	Iconic	Live	No (speech-only, speech-gesture combination)	No (Participants were required to answer the question, about a person who they had seen, by an interviwer producing speech and gesture. Information in speech and in gesture are equivalent or non-equivalent. Speech does not constrain gesture's meaning)	
McGregor, Rohlfing, Bean, & Marschner (2009)	20-24 month	No	Iconic	Live	No (speech-gesture combination)	No (Participants were required to use gesture to infer the meaning of the word, "under". After training, information in speech and in gesture are equivalent. Speech does not constrain gesture)	
Goodrich & Hudson-Kam (2009)	2-, 3-, and 4-year-olds, and adults	Yes	Iconic, Interactive	Live	No (gesture-only, speech-gesture combination)	No (Participants were required to use information in gestures to assign the meaning to a novel verb. After training, information in speech and in gesture are equivalent. Speech does not constrain gesture)	
McNeil, Alibali, & Evans (2001)	4- and 5-year-olds, 5- and 6-year-olds	No	Iconic, Pointing	Video	No (speech-only, speech-gesture combination)	No (Participants were required to select a block according to the instructions given by a speaker with gesture and speech. Information in speech and gesture are either equivalent or non-equivalent. Gesture affects speech in the non-equivalent condition, but speech does not constrain gesture)	
Mumford & Kita (in press)	3-year-olds	No	Iconic	Live	No (speech-only, speech-gesture combination)	No (Participants were required to use gesture to infer the meaning of the word, "under". After training, information in speech and in gesture are equivalent. Speech does not constrain gesture)	
Kelly (2001)	3- and 4-year-olds, 4- and 5-year-olds	No	Pointing	Video (Ex 1), Live (Ex 2)	Yes	Yes (However, this study cannot exclude the possiblity that the better performance in the speech-plus-gesture condition was obtained from the advantage of redundancy between the speech and gesture modalities)	Children could integrate pointing gestures and speech by an adults speaker to understand an actor's or the speaker's indirect request.
Current study	3-, 5-year-olds, and adults	Yes	Iconic	Video (Ex 1), Live (Ex 2)	Yes	Yes	Children could integrate iconic gestures and speech by an adult speaker to select the picture depicting the correct action.