## the 'goldilocks effect' in preschooler attention to spoken language Ruthe Foushee, Mahesh Srinivasan, & Fei Xu Word Learning Eyetracking Background AOI Gaze by Page & Speaker Areas of Interest (AOIs) • Infants preferentially attend to stimuli in an intermediate zone of complexity (Kidd, et al., Test 2012; 2014; Gerken et al., 2011) Selective attention to learnable stimuli is a lifelong learning skill ogling the frog they caught. The v oaled him from his chair • Present study extends "Goldilocks Effect" to rich, naturalistic domain of spoken language vhile the dog put his nose in the while the dog put his nose in frog's jar. Their attention amused frog's jar. The frog smiled up at Complexity defined in terms of familiarity and relative age of acquisition of content words Test Accuracy by Word Can preschoolers discriminate between different levels of speech Research and auiet. While they slept, th complexity? Questions conded to find his mom and dad. There was light from the mom and dad. He avoided Can they explicitly select among them? waking the unconscious pair. moon to find them outside. • Are their selections meaningfully related to their knowledge level? When they woke up, the frog nad run away. Where had he S 5 discovered the frog had fled. But / • • / gone? The boy and the dog where? The friends were Method vere flummoxed. Thev were flummoxed because the fro mmoxed because the from asn't where they put him. wasn't where they put him. (~~) he inside the boy's shoes or Had he merely crept in to some ( **`**• **\_**•` Inder his shirt or bed? 54 2.5-6.5-year-olds (25 females; M = 4.75, SD = 1.04 years; $\bigvee$ boots or truly disappeared? Participants SIMPLE Raw PPVT M = 106; SD = 26) The boy and the dog ran to the COMPLEX illustration simple window. They called for the frog 5.54, p<.05) tside. The dog's head was ck in a hvaline iar. Since it frog, where are you? by more many 1. Introduced to picture book Since it was hyaline he could Children learn 3/6 words above through it. But he still wanted t get out of it. see through it. But it restric **Conclusions & Future Directions** chance, regardless of speaker . Watch speakers alternate 'reading' 6 pages Greater accuracy with vocabulary size ( b=0.002, p<.01), age (b=0.06, e hiding in another animal • Young children learn partial meanings for -and generalize- novel words after only two exposures p<.01) a tree. He thought the frog . Select speaker in a story reading context erture. It was empty. 4. Answer listening looked more toward the referent of a rare word embedded in simpler speech comprehension questions Preservation of the narrative or difficulty of Simple speaker may have obscured contrast nbed a tor to see. He way 5. Test target gh up on the tor and calling • Greater contrast between levels of complexity (i.e., all familiar words versus many novel) erv loud. He thought the from word-learning frog could hear, then spied ould hear him and he saw Longer exposure to complexity differential before rare word presentation motion in the distance. some green animals away from • Alternative critical questions (e.g., "Was one of my friends easier to understand?") 6. PPVT eyetracking

- Simple speaker uses all words on the M-CDI (Fenson et al., 2007)
- Complex speaker uses later-acquired words (Kuperman et al., 2012)
- Both speaker introduce rare word in identical sentential context
- Speakers & speech otherwise matched

Children will be more likely to select the Complex speaker with greater Predictions vocabulary, age

























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## Speaker Selection

Who would you like to hear tell the end of the story?

- No significant relationship between speaker selection and vocabulary (right) or age
- Speech from both speakers may have been highly complex, given introduction of rare words







- While children did not make explicit selections systematically related to speech complexity, they

PPVT by Speaker Selection 150 75 -SIMPLE COMPLEX

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- Majority attention to illustration
- Longer net dwell time on referent of target novel word (i.e., aperture, above) for children who heard word presented by Simple speaker  $(X^2(1) =$

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