

Comprehenders Model the Nature of Noise in the Environment

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Abstract: Recent work suggests that language understanding is the result of rational inference over a noisy channel. Upon perceiving a sentence, listeners decode the speaker's intended sentence from the prior probability that a speaker would say that sentence and the probability that it would be corrupted to the perceived sentence by noise. Here we examine the listener's noise model. Readers were asked to correct sentences if they thought they contained an error. We manipulated context such that participants corrected exposure sentences containing either deletion, insertion, swap, mixed, or no errors (e.g., swap: A bystander was rescued by the fireman in the time of nick.). Test sentences were syntactically licensed but implausible (e.g., The bat swung the player). On test sentences, participants' corrections differed by exposure condition. This suggests participants track the type of errors that have a higher likelihood and make inferences about the intentions of the speaker accordingly.