THE RATIONAL BASIS OF SYNTAX AND SYNTACTIC PROCESSING

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ABSTRACT

Traditional linguistic models of syntax and language processing have assumed an error-free process of language transmission. But we know that this is not the case: people often make errors in both language production and comprehension. This prevalence of errors has important ramifications for models of language processing and language structure. I first summarize some results from our lab showing that language comprehension appears to function as a noisy channel process, in line with Shannon's communication theory. In particular, comprehenders rationally combine information about what messages are likely to be communicated and what errors are likely to occur. I then show (1) how a noisy channel model of sentence acceptability better predicts acceptability data across languages than other models; (2) how noisy channel processing can help explain several 'syntactic illusion' phenomena in English; and (3) how a rational model can explain the kinds of errors that people make in language production, when probed with a sentence-completion paradigm with syntactically complex materials across languages. Overall, the pattern of results suggests that thinking of language as primarily a tool for communication can explain many aspects of language processing and language structure, within and across languages.

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