# Informativity effects can be probability effects in disguise

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**Abstract**

Several studies found that word duration is predicted by its informativity (average past predictability) above and beyond predictability in the current context, suggesting retrieval of phonetically-specific tokens from memory. We show that a significant effect of informativity can emerge from noise in predictability estimates. We generate durations from a model in which 38% of log duration is predicted by log probability, as in our actual data, but the rest is normally-distributed noise. Estimated probability for each word in each context is then generated from a binomial distribution with success probability from the real sample and size matching context frequency. We compute informativity and fit the regression model we fit to the real data. Informativity is significant in 100% of simulations, even though probability is the only true predictor, although the effect of informativity is smaller in simulation ($0.7 < b < 0.10$) than in the actual corpus ($b = 0.12$).



In L. K. Samuelson, S. L. Frank, M. Toneva, A. Mackey, & E. Hazeltine (Eds.), *Proceedings of the 46th Annual Conference of the Cognitive Science Society.* 