**Thursday, December 5th, 2019, 2pm ET**
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# Squeezing Information from Picture Naming Errors: A Cognitive Psychometric Approach

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Picture naming tests are frequently used in research and clinical settings to evaluate word-finding difficulty (anomia). In addition to overall accuracy, the frequency of different error types, such as semantic or phonological errors, are easy-to-calculate statistics that are typically used to measure symptom severity. These frequency statistics may be suboptimal proxy measures for the cognitive processes of interest, however. Simulation models offer metrics based on modifications to an information-processing network, but these have several drawbacks regarding measurement of target item influences, interpretation and generalization of network properties to new data, and a focus on identifying interesting cases that support or refute a theory rather than creating generalizable measurement tools. A cognitive psychometric approach, by contrast, measures the latent selection probabilities at different (presumed) stages of mental processing rather than the network properties that induce them. While the approach is compatible with cognitive interpretations derived from many types of simulation models, it offers a simpler mathematical formalism that can straightforwardly handle item and participant heterogeneity. Using large data sets, a cognitive psychometric model can yield independent metrics of participant abilities and item difficulties that respect the non-linear relationships induced by information-processing networks. Because these metrics are abstracted away from measuring mechanisms and toward measuring functionality, their interpretation benefits from a greater degree of independence than network properties, and can thus be expected to better generalize to new observations in a straightforward manner. I will discuss how these metrics improve over overt frequency statistics and network property metrics using specific examples, relating to patterns of picture naming response types, other lexical-semantic and speech production test scores, lexical property influences, structural and functional neuroimaging, and tracking the influence of speech therapy.

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This lecture will be delivered online, but broadcast live to the University of South Carolina:

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Date: Thursday, December 5th 2019, Time: **2pm – 3pm** ET

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