The role of variability in the property listing task

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It is generally believed that concepts can be characterized by their properties (or features). When investigating concepts encoded in language, researchers often ask subjects to produce lists of properties that describe them (i.e., the Property Listing Task, PLT). These lists are accumulated to produce Conceptual Property Norms (CPNs). CPNs contain frequency distributions of properties for individual concepts. It is widely believed that these distributions represent the underlying semantic structure of those concepts. Here, instead of focusing on the underlying semantic structure, we aim at characterizing the PLT. An often disregarded aspect of the PLT is that individuals show intersubject variability (i.e., they produce only partially overlapping lists). In our study we use a mathematical analysis of this intersubject variability to guide our inquiry. To this end, we resort to a set of publicly available norms that contain information about the specific properties that were informed at the individual subject level. Our results suggest that when an individual is performing the PLT, he or she generates a list of properties that is a mixture of general and distinctive properties, such that there is a non-linear tendency to produce more general than distinctive properties. Furthermore, the low generality properties are precisely those that tend not to be repeated across lists, accounting in this manner for part of the intersubject variability. In consequence, any manipulation that may affect the mixture of general and distinctive properties in lists is bound to change intersubject variability. We discuss why these results are important for researchers using the PLT. © 2017, Psychonomic Society, Inc.

Conceptual agreement theory

Conceptual property norms

Inter-subject variability

Property listing task

chemical binding

human

mathematical analysis

scientist

individuality

language

psychologic test

psychological model

Humans

Individuality

Language

Models, Psychological

Psychological Tests