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Exploring the Structure and Grounding of Concrete and Abstract Categories

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Abstract

Category production tasks (aka semantic fluency) typically concentrate on concrete categories, meaning little is known about abstract categories and potential differences in their structure. Using a category production task for 67 concrete (e.g., animals, tools) and 50 abstract (e.g., science, emotion) categories, we investigated differences in produced member concepts. Abstract categories were smaller than concrete categories, their member concepts were generated more slowly, and had longer and more phonologically-distinct names. Abstract category members were grounded in sensorimotor experience (i.e., with high sensorimotor strength), though overall to a lesser extent than concrete category members. Several ostensibly abstract categories appeared amongst the highest-rated in sensorimotor strength (e.g., sport) while some ostensibly concrete categories were amongst the lowest-rated (e.g., chemical element). The data highlight linguistic and semantic differences in concrete and abstract category structure, but also that they share a common sensorimotor grounding.