

Representing Conceptual Knowledge: A Network Analysis

Takashi Yamauchi

Texas A&M University

Ricardo Gutierrez-Osuna

Texas A&M University

James Caverlee

Texas A&M University

Abstract: We adopted social network analysis and investigated how concepts related to living things (e.g., organic objects such as dogs, cats, and trees) and artifacts (e.g., desks, tables, and cars) are organized. Our analysis shows that there is a basic division between the two types of concepts (living things and artifacts), and that the division emerges partly from the fact that living things are highly interconnected as compared to artifact concepts in their attributes. Three network measures, density, clustering coefficients, and complete triplets, indicate that organic concepts are heavily clustered by their attributes as compared to non-organic artifacts.