Examining the Notion of the Boundary Object in Information Systems: The Transdisciplinary Oeuvre of Cognitive Science

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ABSTRACT

This work examines the complex nature of the transdisciplinary area of cognitive science. It synthesizes theoretical underpinnings from philosophy of science and knowledge organization with more technical methods and approaches from informetrics and data science into a mixed- and multi-method study starting with a dataset drawn from the Web of Science® database (WoS®). The theoretical notion of the boundary object (BO) is used to frame identifiable shared notions in information systems, as BOs are entities of interest to and acted upon by multiple social worlds that transcend boundaries (Star & Griesemer, 1989). In this case, boundaries are classificatory scaffolding imposed by the WoS® and the National Science Foundation (NSF) classification system. Data were compiled using a seed and expand approach surrounding journal names containing the string "cogni*" between 2006 and 2017. From this, title noun phrases within each distinct classificatory space of the top level of the NSF taxonomy were analyzed, then reanalyzed against citation data. This examination provides insight into what makes an area of research interdisciplinary by identifying and examining boundary objects within cognitive science. Findings indicate that diseases, their measures, and methods of study are BOs. Implications from this work include methods to triangulate topics of interest to multiple communities of practice and identify changes in trends in published research in an increasingly rich information ecology. Work done here presents the development of methodology to pinpoint the proverbial unknown needle (or needles) in a haystack of big data.

TOPICS

altmetrics; classification; natural language processing; sociology of information; scholarly communication