

Of Taxonomies and Taxonomic Theories

TREO Talk Paper

Robert C. Nickerson
San Francisco State University
RNick@sfsu.edu

Upkar Varshney
Georgia State University
uvarshney@gsu.edu

Jan Muntermann
University of Goettingen
muntermann@wiwi.uni-goettingen.de

Abstract

Classifications, which include typologies, frameworks, and taxonomies, are widely used in information systems research. Although there are differences among the types of classifications, Nickerson et al. (2013) found that the most common term is taxonomy. By classifying objects of interest, taxonomies can help explain similarities and differences among objects. Classification is often used to help order knowledge and provide a structure to an area (Glass and Vessey 1995), which allows researchers to investigate the relationships among other concepts within an area (McKnight and Chervany 2002).

Classifications can also lead to basic theories that attempt to describe and allow us to analyze the objects that play roles in the phenomena. Doty and Glick (1994) support this view of improved understanding and modeling. Gregor (2006) calls these basic theories derived from taxonomies taxonomic theories.

In a previous paper (Nickerson et al., 2013) we present a method for taxonomy development and demonstrated its applicability in information systems. This method has been used by a number of authors to develop taxonomies in their research. The taxonomies that were developed in these papers, however, were not described as taxonomic theories.

This background suggests that there is a difference between a taxonomy and a taxonomic theory. It implies that some taxonomies are taxonomic theories and some are not. If this is the case, then what conditions are necessary for a taxonomy to be a taxonomic theory? Is there something in the method of taxonomy development that results in a taxonomic theory or does the determination of whether a taxonomy is a theory come after its development? Is a taxonomy by itself a theory or must it be extended in some way for it to be a theory? If a taxonomy only describes what the objects in a domain can be and not how the objects are distributed in the domain or why they are so distributed (Whetten 1999), can it be a taxonomic theory? If, on the other hand, all taxonomies are taxonomic theories, then developing a taxonomy can be thought of as a theory creation process. This presentation explores the relationship between taxonomies and taxonomic theories in order to address these and other questions.

References

- Doty D. H., and Glick, W. H. 1994. "Typologies as a Unique Form of Theory Building: Toward Improved Standing and Modeling," *Academy of Management Review* (19:2), pp. 230-251.
- Glass, R. L., and Vessey, I. 1995. "Contemporary Application-domain Taxonomies," *IEEE Software* (12: 4), pp. 63-76.
- Gregor, S. 2006. "The Nature of Theory in Information Systems," *MIS Quarterly* (30:3), pp. 611-642.
- McKnight, D. H., and Chervany, H. 2001. "What Trust Means in E-commerce Customer Relationships: An Interdisciplinary Conceptual Typology," *International Journal of Electronic Commerce* (6:2), pp. 35-59.
- Nickerson, R. C., Varshney, U., and Muntermann, J. 2013. "A Method for Taxonomy Development and its Application in Information Systems," *European Journal of Information Systems* (22:3), pp. 336-359.
- Whetten, D. A., 1989. "What Constitutes a Theoretical Contribution?," *Academy of Management Review* (14: 4), pp. 490-495.