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Ejei, Fatemeh, Molouk Sadat Hosseini Beheshti, Taghi Rajabi and Zeinab Ejei. 2017. Enriching Semantic Relations of Basic Sciences Ontology. *Knowledge Organization* 44(5): 318-325. 22 references.

ABSTRACT: Ontology is the tool for representing knowledge in the fields of knowledge organization and artificial intelligence, and in the past decade, has gained attention in the semantic web as well. The main necessity in developing an ontology is generating a hierarchical structure of the concepts and the next requirement is creating and determining the type of the semantic relations among concepts. The present article introduces a semi-automated method for enriching semantic relations in the basic sciences ontology, which was developed based on domain-specific thesauri. In the proposed method, first the hierarchical relations in the ontology are reviewed and refined in order to distinguish their different types. In the next step, the concepts in the ontology are classified and the semantic relations among the concepts, based on the associative relationships in the thesaurus and semantic relation patterns extracted from a top-level ontology, are distinguished and added to the ontology. Using this method, semantic relations in the area of chemistry in the basic sciences ontology were refined and enriched. Almost seventy percent of the associative relationships were directly converted to semantic relations in the ontology. The remaining thirty percent are the inter-concept relations that can be concluded from other relations if the other associative relationships are correctly converted to semantic relations.

Zhao, Rongying and Xuqiu Wei. 2017. Collaboration of Chinese Scholars in International Articles: A Case Study of Knowledge Organization. *Knowledge Organization* 44(5): 326-334. 25 references.

Abstract: With the development of Chinese education, more and more Chinese scholars pay attention to inter-departmental, inter-regional and even international collaboration, and publish more high quality articles. Exploring the collaborative situation of Chinese scholars in international articles will help Chinese scholars to understand the international collaborative situation. This paper selected international articles published by Chinese scholars in knowledge organization from WOSTM as research object, then from three aspects, seven angles, analyzed the collaborative situation of Chinese scholars. And it finds that both the accumulative number of articles and the accumulative number of co-published articles show exponential growth trend, and the collaborative rate of Chinese scholars rises from 50% in 1992 to 92.53% in 2016. Besides, the collaborative size is 2-5 authors. More importantly, higher collaborative size appears with time. Those further indicate the importance of scientific collaboration.

Chinese scholars co-publish articles with more and more nations or regions, however 20% top nations or regions have more than 78% co-published research articles with Chinese scholars. It not only reflects that the capacity of Chinese scholars' academic collaboration and academic exchange is growing over the years, but also reflects that the collaborative nations or regions with Chinese scholar are concentrated.

Zhao, Rongyin, Mingkun Wei and Wei Quan. 2017. "Evolution of Think Tanks Studies in View of a Scientometrics Perspective." *Knowledge Organization* 44(5): 335-348. 40 references.

Abstract: The paper presents a scientometrics analysis of research work done on the emerging area of think tanks, which are regarded as a domain of information science. Research on think tanks started during the last century and in recent years has gained tremendous momentum. It is considered one of the most important emerging domains of research in information science. We have analyzed the research output data on think tanks during 2006-2016 indexed in the Web of Knowledge™ and Scopus®. Our study objectively explores the document co-citation clusters of 1,450 bibliographic records to identify the origin of think tanks and hot research specialties of the domain. CiteSpace was used to visualize the perspective of the think tanks domain. Pivotal articles, prominent authors, active disciplines and institutions have been identified by network analysis. This article describes the latest development of a generic approach to detect and visualize emerging trends and transient patterns in think tanks.

Kleineberg, Michael. 2017. "Integrative Levels." *Knowledge Organization* 44(5): 349-379. 199 references.

Abstract: This article provides a historical overview and conceptual clarification of the idea of integrative levels as an organizing principle. It will be demonstrated that this concept has found different articulations (e.g., levels of integration, levels of organization, levels of complexity, levels of granularity, nested hierarchy, specification hierarchy, hierarchical integration, progressive integration, holarchy, superformation, self-organization cycles) and widespread applications based on various, often unrelated theoretical and disciplinary backgrounds. In order to determine its role in the field of knowledge organization, some common misconceptions and major criticisms will be reconsidered in light of a broader multidisciplinary context. In particular, it will be shown how this organizing principle has been fruitfully applied to human-related research areas such as psychology, social sciences, or humanities in terms of integrative levels of knowing.