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Zarrad, Rim, Narjes Doggaz, and Ezzedine Zagrouba. 2018. "Wikipedia HTML Structure Analysis for Ontology Construction." *Knowledge Organization* 45(1): 108-124. 43 references. DOI: 10.5771/0943-7444-2018-2-108.

Abstract: Previously, the main problem of information extraction was to gather enough data. Today, the challenge is not to collect data but to interpret and represent them in order to deduce information. Ontologies are considered suitable solutions for organizing information. The classic methods for ontology construction from textual documents rely on natural language analysis and are generally based on statistical or linguistic approaches. However, these approaches do not consider the document structure which provides additional knowledge. In fact, the structural organization of documents also conveys meaning. In this context, new approaches focus on document structure analysis to extract knowledge. This paper describes a methodology for ontology construction from web data and especially from Wikipedia articles. It focuses mainly on document structure in order to extract the main concepts and their relations. The proposed methods extract not only taxonomic and non-taxonomic relations but also give the labels describing non-taxonomic relations. The extraction of non-taxonomic relations is established by analyzing the titles hierarchy in each document. A pattern matching is also applied in order to extract known semantic relations. We propose also to apply a refinement to the extracted relations in order to keep only those that are relevant. The refinement process is performed by applying the transitive property, checking the nature of the relations and analyzing taxonomic relations having inverted arguments. Experiments have been performed on French Wikipedia articles related to the medical field. Ontology evaluation is performed by comparing it to gold standards.

Arboit, Aline Ellis. 2018. "Knowledge Organization: From Term to Concept, From Concept to Domain." *Knowledge Organization* 45(2): 125-136. 43 references. DOI:10.5771/0943-7444-2018-2-125.

Abstract: The study draws a diachronic trajectory (related to the study or understanding of a fact or set of facts in its evolution over time) as to the use of the term "knowledge organization," aiming to identify the various narratives that have constituted the area. We seek to understand the concept of the term, in addition to its establishment as a knowledge domain. Classification theorists and the "theory of concept" are referred to in order to verify how the relation among these theories determined the foundation of the domain of knowledge organization. We discuss the contribution of these theories to the emergence of new currents of thought in addition to new interpretations on the constitution and tendencies of the domain.

Lykke, Marianne, Sarai Løkkegaard, and Christian Jantzen. 2018. "Experience-Oriented Knowledge Organisation for the Transference of Scientific Knowledge from Universities to SMEs." *Knowledge Organization* 45(2): 137-151. 54 references. DOI: 10.5771/0943-7444-2018-2-137.

Abstract: Transferring scientific knowledge between universities and industry is known to be problematic, specifically for small and medium-sized enterprises (SMEs) that have limited resources and absorption capacity. A variety of channels is used for knowledge transfer. These include what is commonly referred to as generic pathways (e.g., scientific publications) and relational pathways (e.g., faculty consulting). The purpose of this research is to extend our knowledge about the design of knowledge organization for a generic pathway interface providing access to scientific knowledge in a research information management system. The analysis focuses on how to meet the characteristics of SMEs in the design and organisation of the subject terms and annotations in the navigation and searching system. The design is based on findings from a qualitative analysis of eight SMEs and on principles of experience design. Experience design was applied, because the classical KO design qualities seem not to be comprehensive goals for knowledge organisation for a generic pathway interface. The SMEs need guidance, encouragement, and inspiration. Experience designs are designs that have been created to provoke changes in a user's state and behaviour by engaging this user emotionally and cognitively. The paper provides examples and discusses the outcome of the experience dimensions.

Cleverley, Paul Hugh and Laura Joy Muir. 2018. "Using Knowledge Organization Systems to Automatically Detect Forward-looking Sentiment in Company Reports to Infer Social Phenomena." *Knowledge Organization* 45(1): 152-169. 91 references. DOI:10.5771/0943-7444-2018-2-152.

Abstract: We investigate whether existing knowledge organization systems (KOS) for strong and hesitant forward-looking sentiment could be improved to detect social phenomena. Five judges identified examples of strong/hesitant forward-looking sentiment that were used to compare the KOS developed in the study to existing models. The "composite" KOS was subsequently applied to annual company reports to generate word frequency and biologically inspired diversity ratios. Critical realism was used as a philosophy to interpret word patterns. Results indicate the composite KOS improved on existing models identified in the literature for strong forward-looking sentiment. In one company, a statistically significant association was found between increasing diversity of assertive forward-looking sentiment and subsequent declining relative business performance. This sup-

ported the Pollyanna effect: the social phenomena of over-positive business language in that company. Sharp increases in mentions of the “future” and “learnings” were discovered in another company which may be explained by an industrial disaster and subsequent crisis management rhetoric, supporting discourse of renewal theory. This study shows that improvements can be made to existing KOS used to detect forward-looking sentiment in reports. Adopting critical realism as a philosophy when analysing “big data” may lead to improved theory generation and the potential for differentiating insights.

Joo, Soohyung, Inkyung Choi, and Namjoo Choi. 2018. “Topic Analysis of the Research Domain in Knowledge Organization: A Latent Dirichlet Allocation Approach.” *Knowledge Organization* 45(2): 170-183. 43 references. DOI:10.5771/0943-7444-2018-2-170.

Abstract: Based on text mining, this study explored topics in the research domain of knowledge organization. A text corpus consisting of titles and abstracts was generated from 282 articles of the *Knowledge Organization* journal for the recent ten years from 2006 to 2015. Term frequency analysis and Latent Dirichlet allocation topic modeling were employed to analyze the collected corpus. Topic modeling uncovered twenty research topics prevailing in the knowledge organization field, including theories and epistemology, classification scheme, domain analysis and ontology, digital archiving, document indexing and retrieval, taxonomy and thesaurus system, metadata and controlled vocabulary, ethical issues, and others. In addition, topic trends over the ten years were examined to identify topics that attracted more discussion in the journal. The top two topics that received increased attention recently were “ethical issues in knowledge organiza-

tion” and “domain analysis and ontologies.” This study yields insight into a better understanding of the research domain of knowledge organization. Moreover, text mining approaches introduced in this study have methodological implications for domain analysis in knowledge organization.

Parrochia, Daniel. 2017. “Mathematical Theory of Classification.” *Knowledge Organization* 44(7): 184-201. 47 pages. 81 references. DOI:10.5771/0943-7444-2018-2-184.

Abstract: One of the main topics of scientific research, classification is the operation consisting of distributing objects in classes or groups which are, in general, less numerous than them. From Antiquity to the Classical Age, it has a long history where philosophers (Aristotle), and natural scientists (Linnaeus), took a great part. But from the nineteenth century (with the growth of chemistry and information science) and the twentieth century (with the arrival of mathematical models and computer science), mathematics (especially theory of orders and theory of graphs or hypergraphs) allows us to compute all the possible partitions, chains of partitions, covers, hypergraphs or systems of classes we can construct on a domain. In spite of these advances, most of classifications are still based on the evaluation of resemblances between objects that constitute the empirical data. However, all these classifications remain, for technical and epistemological reasons we detail below, very unstable ones. We lack a real algebra of classifications, which could explain their properties and the relations existing between them. Though the aim of a general theory of classifications is surely a wishful thought, some recent conjecture gives the hope that the existence of a metaclassification (or classification of all classification schemes) is possible.