Knowledge Organization within the Museum Domain: Introduction

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Abstract: This special issue is concerned with knowledge organization in the museum domain, exploring the standards and processes for structuring and managing museum knowledge. Museums, like libraries and archives, are memory institutions for recording, preserving, and disseminating the history of material culture. Museums and their collections are exceedingly heterogeneous, reflecting the fields of art history, natural history, anthropology, and the sciences. The diverse range of museum objects necessitates complex and specialized KOSs to describe their materiality and context. Museum knowledge organization is object- and context-specific, sensitive to the unique instantiation of an object and its temporal, geospatial, and cultural relationships. This timely special issue on museum knowledge organization reflects contemporaneous challenges and, more broadly, an adoption of information science methodologies and practices within the museum sphere.

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1.0 Museums and knowledge organization

This special issue is concerned with knowledge organization in the museum domain, exploring the standards and processes for structuring and managing museum knowledge. Museums, like libraries and archives, are memory institutions for recording, preserving, and disseminating the history of material culture. Museums have public trust to enact rightful ownership, care, documentation, accessibility, and disposal of their collections (American Alliance of Museums 2000). With the widespread adoption of Web 2.0 information technologies in the early twenty-first century, museum visitors increasingly assume they'll have comprehensive, instantaneous, and interactive access to museum collections. In turn, this builds an expectation that museums function as knowledge spaces equivalent to libraries. Museums, however, have a different framework for knowledge organization (KO) than do their library and archival counterparts, because they historically have not privileged public knowledge dissemination. Museum KO is additionally affected by the confluence of social, political, and technological factors that have shaped the museum from its nascent origins in the eighteenth century to its modern instantiation today.

Museums and their collections are exceedingly heterogeneous, reflecting the fields of art history, natural history, anthropology, and the sciences. The American Alliance of Museums Code of Ethics (American Alliance of Museums 2000) further clarifies that the museum domain is composed of governmental and private museums of anthropology, art history and natural history, aquariums, arboreta, art centers, botanical gardens, children's museums, historic sites, nature centers, planetariums, science and technology centers, and zoos. Therefore, the types of objects collected and exhibited by museums are diverse: organic and inorganic, cultural and natural, ancient and contemporary. Museums have even turned natural organisms and their environmental matter into cultural artifacts through collection and description (Buckland 1997). What binds these objects together is the practice of collecting, or the assemblage and arrangement of objects, which dictates their descriptive attributes and imposes an order that in many cases decontextualizes the object from its original context.

The diverse range of museum objects necessitates complex and specialized KOSs to describe their materiality and context. Museum holdings range from encyclopedic collections that attempt to represent sometimes disparate cultures and time periods harmoniously to incredibly specialized collections that narrowly focus on a single time period, culture, or type of object. Even specialized institutions, such as the Museum of Modern Art, with its precise collecting scope of visual arts from the late nineteenth century to the present, acquire a wide breadth of objects. An analysis (Museum of Modern Art 2017) of the museum's collections dataset illustrates twenty-six unique classifications across 131,536 objects, including works on paper, film, software, painting, and architecture. As has been noted in existing literature (Zorich 1991; Bearman 2008) traditional bibliographic access points such as title, creator, and publisher, do not align with cultural and natural object description. The privileging of these fields often reflects Eurocentric and contemporary biases in KOSs.

Unlike library materials, information about museum objects is infrequently found on the objects themselves and therefore requires research of peripheral sources and the documentation of these processes. Because of this, museum objects are not self-describing and knowledge creation practices are based on attribution rather than transcription (Bearman 2008). Moreover, museums document information about an object as it changes over time, both within and outside of the institution's custody. This information entails descriptive, administrative, technical, and preservation metadata. The activities affiliated with an object, its creation, acquisition, exhibition, conservation, and deaccession, are captured and preserved. Museum labels, didactic text, and publications produce additional interpretive knowledge about objects. Because it changes often, retention of this information is key; as well, it demands additive, instead of reductive, information gathering. For example, an object record for nineteenth century French artist Éduoard Manet's painting *Portrait of Madame Brunet* owned by the J. Paul Getty Museum privileges all known titles by publishing the alternative title *Young Woman in 1860* in addition to the abbreviated published title *Portrait of Mme Brunet*. The object's interpretive and dynamic information record, an accumulation and retention of past and present knowledge, is crucial for an object's successful stewardship and interpretation.

Museum knowledge organization is object- and context-specific, sensitive to the unique instantiation of an object and its temporal, geospatial, and cultural relationships. Even instances of multiplicity, such as an edition of lithograph prints dispersed across institutions or the several monarch butterfly specimens collected from different field expeditions, are treated as unique entities with individuating characteristics. Unlike copy-cataloging in the library domain, each institution is viewed as the authoritative source for the objects in its collection and is tasked with creating information records for each object. This tenet of individuality has historically inhibited data-sharing between institutions, resulting in local schemas, as well as control lists, name authorities, and thesauri to describe collections.

In addition to the characteristics of objects that comprise these institutions' collections, museum KO is affected by infrastructure for storing and disseminating information, processes for information creation and collection, and intended uses for the information, which presuppose the audiences for whom that information is created. Antecedents for museum metadata include collection or estate inventories, shipping logs and field notebooks, which gave way to museum record keeping in the form of physical card catalogs and vertical files and later relational database systems (Bearman 2008). The data produced and maintained in these systems served foremost to support institutional stewardship of collections. The jurisdiction of museum KOSs has expanded in recent years beyond resource management to resource discovery and engagement. Open content initiatives—like those taken on by the Metropolitan Museum of Art and the J. Paul Getty Museum—and social tagging initiatives for collections illustrate a movement towards public-focused use and engagement with museum knowledge. The World Wide Web has enabled far greater resource discovery than was possible with local card catalogs; however, discoverability is contingent on interoperability across data sets and requires standards (Baca et al. 108). The heterogeneous, dynamic, idiosyncratic, and sometimes subjective nature of museum metadata behooves a non-standardized approach to knowledge organization. Over the latter half of the twentieth and into the twenty-first century, however, efforts have been made to standardize museum data within and across domains for description, management, and exchange, such as: ICONCLASS (first published 1973), the Chenhall *Nomenclature* system for classifying cultural objects (first published 1978), the Getty *Art and Architecture Thesaurus* (first published 1990), "Categories for the Description of Works of Art" (first published 1996), VRA Core (first published 1996), the CIDOC-CRM (International Council of Museums, International Committee for Documentation-Conceptual Reference Model) (1999), *Cataloging Cultural Objects* (2006), Darwin Core (first published 2009), Lightweight Information Describing Objects (2010), and SPECTRUM. With a growing emphasis to expose collections online and the larger LAM (libraries, archives, and museum) community's movement towards adopting semantic web technologies, museums are thinking strategi-

cally about how to widely publish interoperable data as part of a wider network of cultural heritage knowledge. The American Art Collaborative, a consortium of fourteen institutions in the United States, is paving the way through its community-driven work to produce shared knowledge organization systems, supporting tools, and best practices for museum data and the semantic web.

2.0 Contemporaneous challenges in this special issue

This timely special issue on museum knowledge organization reflects contemporaneous challenges and, more broadly, an adoption of information science methodologies and practices within the museum sphere. Museums are tasked with both remediating and repurposing knowledge from the past, as well as with strategizing new approaches for creating, organizing, and enriching collections metadata for a future filled with diverse perspectives. The papers in this special issue address the fields of visual arts, natural history, and anthropology and feature a wide range of topics: historiographical and critical assessments of museum KOSs; new public participatory processes for museum knowledge creation; metadata typologies and schemas for standardizing specialized and aggregated collections; alignment of existing metadata schemas; and new forms of subject classification based on broader user needs. As museums transition into the twenty-first century, they will need to grapple with pivotal questions of how to effectively handle the individuating and historical circumstances of their collections and knowledge organization systems, while simultaneously contributing to an ecosystem of shared cultural knowledge.

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