

Nomenclature for Museum Cataloging†

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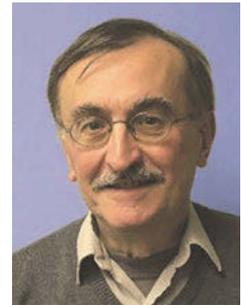
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Abstract: We present an overview of *Nomenclature's* history, characteristics, structure, use, management, development process, limitations, and future. *Nomenclature for Museum Cataloging* is a bilingual (English/French) structured and controlled list of object terms organized in a classification system to provide a basis for indexing and cataloging collections of human-made objects. It includes illustrations and bibliographic references as well as a user guide. It is used in the creation and management of object records in human history collections within museums and other organizations, and it focuses on objects relevant to North American history and culture. First published in 1978, *Nomenclature* is the most extensively used museum classification and controlled vocabulary for historical and ethnological collections in North America and represents thereby a *de facto* standard in the field. An online reference version of *Nomenclature* was made available in 2018, and it will be available under open license in 2020.¹

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1.0 Introduction

Nomenclature for Museum Cataloging (often called "*Nomenclature*") is a structured and controlled list of approximately 15,000 preferred object terms organized in a classification system to provide a basis for indexing and cataloging collections of human-made objects. It provides a standard for the creation and management of North American historical and cultural artefacts records by museums and other heritage organizations. As we point out, *Nomenclature* is structurally suited to multilingual development and cross-cultural data exchange. Its bilingual framework (English and French) includes illustrations and definitions that clarify the meaning of concepts. Its simple six-level monohierarchical classifica-

tion structure groups like objects together by their functional context, such as "Harvesting Equipment," "funerary objects," or "Medical Instruments." This standardized classification and controlled vocabulary facilitates the ability to search, use, and share museum collections data for research, collection management, exhibition development, and other museum processes and activities. *Nomenclature* is available within most commercial collections management systems available in North America. It is also provided as a searchable reference at www.nomenclature.info, and it will be released as linked open data in 2020.

Nomenclature is actively maintained by the Nomenclature Task Force, an international group of volunteers appointed by the American Association for State and Local

History (AASLH). Initially published in 1978 as a system for classifying “man-made objects” (Chenhall 1978) in history museums and historic sites, it has been continuously improved and expanded thanks to the input of the museum community it serves. As a result of this collaboration, *Nomenclature* contains concepts appropriate for cataloging a wide range of human history objects, and addresses the needs of heterogeneous, eclectic, and/or pluralistic collections that might include artworks, natural science specimens, and archaeological objects. One of *Nomenclature*'s distinctive characteristics is its intelligibility and user-friendliness, making it easy for catalogers with minimal training to comprehend and use efficiently. Although *Nomenclature* does not cover the specific needs of museums with highly specialized collections, it can be used as a flexible framework, which can be expanded as required to express distinctions between types of objects.

2.0 History and current status

In 1974, Robert Chenhall, then with the Strong Museum (now the Strong National Museum of Play), “and a group of history museum professionals began work on a lexicon to address the need for consistency in naming and classifying collection objects as museums moved toward the computerization of their catalog records” (Bourcier et al. 2015, vii). In 1978, the group published *Nomenclature for Museum Cataloging* (Chenhall 1978), the first widespread standard for object description in history museums. The classification system was organized primarily by functional context, an important aspect of *Nomenclature* that will be critically addressed later in this paper. Like the current *Nomenclature*, it consisted of a controlled vocabulary of terms organized into ten categories with sub-categories. However, there were only three hierarchical levels instead of the six that exist today, and both preferred and non-preferred terms of various levels of specificity were listed alphabetically. An inverted structure for object terms (still available as an option in today's *Nomenclature*) was adopted to collocate similar items in a printed alphabetical index. A bibliography was included to provide museums with further resources on specific types of objects.

By 1984, the first edition was out of print, and the decision was made to revise and expand the 1978 version instead of reprinting it. With the assistance of a committee from across North America, the staff at the Strong spearheaded the work on the second edition, published in 1988 and titled *Revised Nomenclature* (Blackaby et al. 1995). This new edition reflected the reorganization of some of the classifications from the first edition, and it expanded the content to 8,500 preferred terms (10,000 preferred and non-preferred terms in total).

In 1992, the Canadian Parks Service (CPS) selected terms from *The Revised Nomenclature* to develop its *Classification for Historical Collections* (Canadian Parks Service 1992). This system featured a subset of 6,500 keywords most relevant to the CPS collections, organized into the ten categories outlined by the *Revised Nomenclature*. The CPS standard also included terms not found in *Revised Nomenclature* but pertinent to the collection of the CPS. In 1997, CPS (renamed Parks Canada) updated and re-introduced their classification system in the form of a visual dictionary. The first volume of the *Descriptive and Visual Dictionary of Objects* (Bernard 1997) covered categories 1-3: structures, furnishings, and personal objects. Other volumes were intended to follow, covering categories 4-10, but the content was never published in book form. Although it contained fewer terms, the Parks Canada *Descriptive and Visual Dictionary of Objects* was an improvement on the *Revised Nomenclature* in some ways; not only was it bilingual (English-French), but it included definitions and illustrations for many object terms, as well as an updated bibliography. The content from the Parks Canada *Descriptive and Visual Dictionary of Objects* (categories 1-3) and the CPS Classification System for Historical Collections (categories 4-10) were made available online in 2005 as a searchable database.² The standard was maintained by Parks Canada, and the database and website were developed and hosted by the Canadian Heritage Information Network (CHIN). The electronic files were also made available on demand to Canadian museums and museum studies programs.

Nomenclature became one of the most-used object classification standards in Canada, but the Parks Canada System (besides being used by Parks Canada itself) was more practical for institutions that needed French or bilingual terminology. Some museums whose collections more closely corresponded with the Parks collections found that it met their needs well. A 2016 CHIN survey on collections management practices in Canadian museums (CHIN 2016) showed that over three quarters of museum respondents were using either the *Nomenclature* or Parks Canada classification systems, while 23% were using the *Info-Muse classification system for ethnology, history and historical archaeology museums*,³ which is also based on *Nomenclature*.

In the early 2000s, two decades after the publication of *The Revised Nomenclature*, AASLH convened a new task force of museum professionals to update its standard, resulting in the publication of *Nomenclature 3.0* (Bourcier et al. 2010). A substantial expansion and reorganization of the previous edition, it included 13,700 preferred terms (15,500 terms in total). Terms for new objects (such as digital cameras and modems) or objects that had been overlooked in previous editions (such as Christmas trees and cigarettes) were added, and some terms were relocated or changed. *Revised Nomenclature*'s hierarchy was expanded

with the addition of new sub-classes to make it easier to pinpoint terms within the functional classification. The original, alphabetical lists of object terms within classes and sub-classes were reorganized into three hierarchical levels to accommodate varying degrees of term specificity.

In addition to the new structure and content, new conventions were introduced in *Nomenclature 3.0*. Each object term was made unique (no homonyms), cross indexing (multiple terms used to describe singular objects) was encouraged for the first time, and non-preferred terms were relegated to the index. An extensive user guide was included in *Nomenclature 3.0* to help *Nomenclature* users understand the standard and its applications. The fundamental changes introduced in *Nomenclature 3.0* were not adopted by the Parks Canada system and the gulf between the two standards widened. *Nomenclature 3.0* was published in book format, but was also made available for the first time as an electronic file, available for licensing from the publisher, AltaMira Press. Shortly after *Nomenclature 3.0* was published, the Nomenclature Task Force developed an online community hub within AASLH's website that included a discussion forum (later replaced by blogs), a list of errata, and online forms for *Nomenclature* users to submit proposals for new terms or changes.⁴

In August 2013, the Nomenclature Task Force began working on an update with AltaMira's parent and successor company, Rowman & Littlefield. *Nomenclature 4.0* (Bourcier et al. 2015) introduced substantial changes to the "Water Transportation Equipment" class, following a review by maritime field experts. The "Exchange Media" class and "Religious Objects" sub-class underwent intensive review as well, and many new terms were added. Following consultation with other authoritative lexicons, such as the Getty's *Art & Architecture Thesaurus* (AAT) and the English Heritage *Archaeological Objects Thesaurus*, numerous terms for archaeological and ethnographic collections were included as well. Terms were added to several classes to accommodate digital objects. *Nomenclature 4.0* was released in early 2015 in book form, as an electronic file, and also in e-book format accessible on multiple devices. AASLH updated its website to support users of the new edition.

During the production of *Nomenclature 4.0*, the Nomenclature Task Force and AASLH were increasingly aware of the challenges of keeping a living, growing standard available in print. Greater numbers of *Nomenclature* users were seeking to integrate the standard in their collections management systems and online catalogs. The demands of the profession were no longer met by an outdated business model based on printed books. *Nomenclature* users and the Task Force could clearly see the benefits of moving *Nomenclature* into a digital format. At the same time Parks Canada had made the decision to discontinue maintenance of their own standard, the *Descriptive and Visual Dictionary of Objects*.

This was unfortunate news for many Canadian museums that relied on the Parks system, particularly those that needed French terminology. By this time, the AASLH Nomenclature Task Force had gained three Canadian members—two from Parks Canada and one from CHIN. The Parks Canada members had served on the editorial committee for the Parks Canada *Descriptive and Visual Dictionary of Objects*, and CHIN had comprehensive knowledge of existing vocabulary standards, as well as extensive experience with providing online access to heritage resources.

To respond to these challenges, CHIN approached Parks Canada, AASLH and the Nomenclature Task Force and offered to undertake:

- the harmonization of the Parks Canada *Descriptive and Visual Dictionary of Objects* with *Nomenclature 4.0*, to retain the strengths of both standards and (re)combine them into a single standard;
- the creation of a complete French version of the new harmonized *Nomenclature*;
- the creation of a new website to provide free reference access to *Nomenclature*.

These proposals were accepted and a partnership was formed, with AASLH, Parks Canada, and CHIN providing vocabulary standards and expertise and CHIN providing technological and financial support, website development, and translation. The publisher of *Nomenclature*, Rowman & Littlefield, kindly agreed to allow CHIN to create a free online version of *Nomenclature* for searching and browsing but not downloading.

CHIN took on the work of harmonizing the standards. *Nomenclature 4.0* was used as the "backbone" and Parks Canada terms, illustrations, definitions, codes, etc. were added into the existing *Nomenclature 4.0* whenever concepts correlated. CHIN also undertook the creation of a complete French version, with the assistance of a group of highly specialized terminologists within the Translation Bureau of the Government of Canada. All terms, categories, classes, sub-classes, definitions, and notes were provided with a French equivalent. Canadian linguistic or spelling variants were also added where warranted. More than 2,000 bibliographic references were included, combining references from early versions of *Nomenclature*, the Parks Canada system, and works more recently used by the Nomenclature Task Force. This work of harmonizing the two standards was completed in 2018 and resulted in a single, bilingual, illustrated, comprehensive standard for North American museums cataloging human history collections.

CHIN adopted the PoolParty Semantic Suite for the use of the Nomenclature Task Force editors as it has a number of validation tools and reports that help maintain and develop the terminology. CHIN also developed a public web-

site to allow museums to consult *Nomenclature* freely. The *Nomenclature* website, designed following WCAG (Web Content Accessibility Guidelines) to ensure that it is as accessible as possible for the visually impaired and for mobile device users, was launched in fall of 2018. It allows users to search for terms (see Figure 1), browse the hierarchy and see term details (Figure 2), and access a user guide and bibliography. The bibliography, which had been excluded from *Nomenclature 3.0* and *4.0*, is a key addition to the online version. While identifying objects and documenting museum collections, it is helpful to be able to find reference works containing illus-

trations, definitions, or written documentation on the origin, evolution, and uses of object types. The *Nomenclature* bibliography contains references that were consulted by the many contributors to *Nomenclature*. They are categorized following the *Nomenclature* hierarchical structure in order to help museums find further information on general or specific types of objects.

North American museums have used *Nomenclature* (and systems based on *Nomenclature*) for over forty years. It has long been used in paper-based cataloging systems and integrated with custom-built museum databases, and is avail-

The screenshot shows the 'Nomenclature for Museum Cataloging' website. At the top right, there are language options for 'Français' and 'English'. Below the title is a navigation menu with links for 'Home', 'About', 'Browse hierarchy', 'Search terms', 'Bibliography', 'User guide', and 'Updates'. The main heading is 'Search Terms'. Under this heading, there are two sections for preferences: 'Term order' with radio buttons for 'Inverted (e.g. Chair, Rocking)' and 'Natural (e.g. Rocking Chair)', and 'Linguistic variant' with radio buttons for 'International' and 'Canadian'. A 'Change preferences' button is located to the right of these options. Below the preferences is a 'Keywords' section with a search bar containing the word 'cabinet', a 'Search' button, and a 'Clear search' button. Below the search bar is a row of letters from A to Z. Underneath, it says 'You searched for cabinet in Preferred and Non-Preferred Terms'. At the bottom of the search section, it says 'Showing 1 to 48 of 48 entries | Show 50 entries Go'. Below this is a table with four columns: 'Preferred Term', 'Non-Preferred Term', 'Broader Concept', and 'Illustration'. The table contains five rows of search results for 'cabinet'.

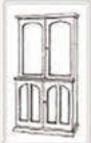
Preferred Term	Non-Preferred Term	Broader Concept	Illustration
Cabinet		Storage & Display Furniture	
Cabinet, Autoclave		Medical Accessories	
Cabinet, Barber's		Cabinet	
Cabinet, Card		Cabinet	
Cabinet, China		Cabinet	

Figure 1

The screenshot shows the 'Nomenclature for Museum Cataloging' website. At the top right, there are language options for 'Français' and 'English'. Below the title is a navigation menu with links for 'Home', 'About', 'Browse hierarchy', 'Search terms', 'Bibliography', 'User guide', and 'Updates'. The main heading is 'Browse hierarchy'. Below this, there are two sections for 'Term order' and 'Linguistic variant'. The 'Term order' section has two radio buttons: 'Inverted (e.g. Chair, Rocking)' and 'Natural (e.g. Rocking Chair)', with 'Natural' selected. The 'Linguistic variant' section has two radio buttons: 'International' and 'Canadian', with 'Canadian' selected. A 'Change preferences' button is located to the right of these options. On the left side, there is a sidebar with a tree view of categories: 'All categories', 'Category 02: Furnishings', 'Furniture', 'Storage & Display Furniture', and 'Chest of Drawers'. Under 'Chest of Drawers', there are several sub-items: 'Butler's Desk', 'Chest on Chest', 'Chest on Frame', 'Chiffonier', 'Chifforobe', 'Commode', 'Dresser', 'High Chest', 'Highboy', and 'Lowboy'. The main content area displays the details for the 'Chest of Drawers' term. It includes a 'Preferred Primary Term' section with an image of a chest of drawers. Below this is a 'Definition' section with a text description. Other sections include 'Definition Source', 'Non-Preferred Term', 'Preferred French Term', 'French Grammatical Gender', 'Date created', 'Date updated', 'Parks Canada Code', and 'Nomenclature ID Number'. The 'Date modified' is listed as 2018-09-01. At the bottom, there are three columns: 'Contact us' with a link to 'Questions or comments', 'Contribution and support' with a link to 'Nomenclature community', and a copyright notice.

Figure 2

able within most commercial collections management systems throughout North America. An internal data analysis conducted by the Canadian Heritage Information Network (CHIN) in 2018 found that approximately 70% of “object type” data contributed to Artefacts Canada (the national repository of collections records) by Canadian in-

stitutions correlated with the *Nomenclature* framework.⁵ At the time of the study, *Nomenclature* was not yet fully available in French and did not include Canadian variants so it can be argued that the correlation rate would now be higher. This indicates not only that, throughout *Nomenclature*'s long history, various museums have consistently used

this common standard to accomplish their cataloging tasks, but also that *Nomenclature* has had a positive impact on data quality, and has, thereby, improved the ability of museums to collaborate and share information.

Nomenclature has been used to provide online public access to collections for multiple reasons: it has a simple monohierarchical structure that is easy to understand; it covers North American collections extensively; its vocabulary is accessible and lends itself to the improvement of bilingual access to repositories. For example, the Canadian Heritage Information Network (CHIN) uses *Nomenclature* to facilitate bilingual search of online collections records from the Canadian national portal to museum collections, Artefacts Canada.

The most recent version of *Nomenclature for Museum Cataloging* is its online version, which is updated continuously. Until January 2020, *Nomenclature* terminology formatted in Excel or RDF files will be available for purchase from *Nomenclature's* publisher, Rowman & Littlefield. In January 2020, *Nomenclature* will be available under open license in multiple formats (tabular and linked data) from the *Nomenclature* website. These electronic formats are ideal for integration and use within museum collections management systems. *Nomenclature* will remain available online for browsing and searching as well. Previous versions of *Nomenclature* are also still available for purchase from Rowman & Littlefield as a paper book or e-publication.

3.0 Nomenclature structure

Nomenclature assists catalogers in finding the best term to describe an object by grouping like objects together based on their functional contexts. As noted in the introduction to *Nomenclature 4.0* (Bourcier et al. 2015, xiv), every human-made object “has discoverable functions, ways in which the object was intended to mediate between people and their environment. There are three ways that objects mediate:

1. they shelter us from the environment;
2. they act on the environment;
3. they comment on the environment”

This is the construct that led to *Nomenclature's* overarching categories, namely sheltering (categories 1-3), acting (categories 4-7), and commenting (categories 8-9):

1. Built Environment Objects
2. Furnishings
3. Personal Objects
4. Tools & Equipment for Materials
5. Tools & Equipment for Science & Technology
6. Tools & Equipment for Communication

7. Distribution & Transportation Objects
8. Communication Objects
9. Recreational Objects
10. Unclassifiable Objects

Most categories are divided into functional classes, and many classes are further divided into sub-classes. These top three hierarchical levels (category, class, sub-class) are larger groupings of objects rather than object names, and often appear in the plural form (e.g., “Ceremonial Objects” or “Household Accessories”). Indentation is used to display the hierarchical relationship (see Figure 3):

- Category
 - Class
 - Sub-Class

Figure 3

The next three hierarchical levels (primary term, secondary term, tertiary term) are names of objects and are generally expressed in the singular form (e.g., “Chalice,” “Cathedral,” “Photograph”). Again, indentation is used to show the relationship between broader and narrower terms (see Figure 4):

- Primary Term
 - ❖ Secondary Term
 - ✓ Tertiary Term

Figure 4

An example of the full classification structure, including all six levels, is shown in Figure 5.

The hierarchical arrangement of object terms within the classification structure helps catalogers determine the most appropriate term for the object they are describing. They can choose a general term or one that is very specific, depending on their knowledge of the object and their requirements for access.

In addition to facilitating the work of catalogers, the hierarchical arrangement of object terms also expedites data retrieval. Object searches can be narrowed or broadened to include, for example:

- all items of furniture, all seating furniture, only chairs or only some particular type of chair

- **Furnishings (Category)**
 - **Furniture (Class)**
 - **Storage & Display Furniture (Sub-class)**
 - **Cabinet (Primary Object Term)**
 - ❖ **Cabinet, Kitchen (Secondary Object Term)**
 - ✓ **Cabinet, Hoosier (Tertiary Object Term)**

Figure 5

- all musical instruments, all keyboard instruments, only pianos or only spinets
- all sports equipment, all hockey gear, only hockey sticks or only goalie sticks

For categories, classes and sub-classes, the general organizing principle of *Nomenclature* is functional context, with a dedicated category (unclassifiable objects) for artifacts that do not fit neatly within the confines of explicit object function groupings. Object terms are organized by functional context when possible as well. Functional context differs from function. As an example, a purely functional organizational strategy would group all cutting tools together—scissors, scalpels, razors, kitchen knives, and shingle cutters—regardless of the purposes of cutting. Context provides a more useful framework for intellectual access. Functionality as a conceptual framework has been found to work well, because it is adaptable and expandable to various concepts, domains, and cultures. For example, objects such as chopsticks function as a tool, no matter the culture, time period, or geographic origin. This makes *Nomenclature* a highly useful standard for the meaningful interchange of data.

It is sometimes “impossible or impractical to differentiate on the basis of functional context because the functional context is common to all objects of a specific type, or because objects are used for multiple or unknown functions” (Bourcier et al. 2015, xv). In these cases, other attributes (such as form, location, material, context of use, method of construction, method of operation, method of propulsion, or fuel source) are used to group similar concepts. For example, the “Watercraft” subclass is primarily arranged by function (e.g., “Pleasure Craft” or “Commercial Fishing Vessel,” but where necessary the concepts are

sub-divided by other attributes such as method of propulsion (e.g., “Sailboat”) or fuel source (e.g., “Steam Launch”). Another example is illustrated by the “Art” class of *Nomenclature*, which contains objects that were “originally created for the expression and communication of ideas, values, or attitudes through images, symbols, or abstractions.” These cannot be further sub-divided on the basis of function, so the groupings within the “Art” class are based on attributes such as medium (e.g., “Sculpture”).

4.0 *Nomenclature* cataloging conventions

The *Nomenclature User Guide* (available both printed and online) provides guidelines to make recording, searching, and sharing collection data easier and more consistent. For example, *Nomenclature* provides guidelines for:

- cataloging unknown objects
- adding terms to the *Nomenclature* system (e.g., regional or specialized terms)
- complex cataloging cases (e.g., toys and models; containers and their contents; object components and fragments; object sets) that many museums encounter

Multiple methods of dealing with specific cataloging problems are sometimes suggested, and museums can make choices based on their practical requirements and limitations. Institutions are advised to document their own in-house cataloging conventions so that consistent practices are established and followed.

Nomenclature is a monohierarchical classification system; each unique object term has only one position in the hierarchy and each term has only one immediate broader term (parent term). However, a single object can serve multiple

functions or be named with terms that describe its various characteristics. For this reason, catalogers are strongly encouraged to use more than one term to describe a singular object if doing so will improve access. Cross-indexing is one of the most important features of the *Nomenclature* system and is especially important for:

- objects with more than one function
- objects that comprise various components for which specific object terms exist
- objects that have had different functions over time
- certain documentary objects for which a distinction must be made between the media for recording information and the recorded information
- digital objects for which a distinction must be made between the physical media for recording digital information, the applications used to create the digital object, and the digital object itself

5.0 Relationship with other standards

In the years since it was first published in 1978, *Nomenclature* has been the basis for the development of many complementary and competing standards such as:

- the Parks Canada classification system and the *Parks Canada Descriptive and Visual Dictionary of Objects*
- the *Info-Muse classification system for ethnology, history, and historical archaeology museums*
- the “objects facet” of the *Getty Art & Architecture Thesaurus (AAT)*

The *Art & Architecture Thesaurus*,⁶ maintained by the J. Paul Getty Trust, is closely related to *Nomenclature*, with many of the terms in its “objects facet” originating from *Nomenclature*’s second edition. As the *AAT* has continued to grow and develop, the *Nomenclature* Task Force has regularly consulted the *AAT* during the development of *Nomenclature* terminology. As a result, there is significant overlap between *Nomenclature*’s content and the “objects facet” of the *AAT*. Nonetheless, approach, content, and structure differ significantly because the Getty’s conceptual methodology is fundamentally more complex; functional context is just one of many underlying organizing principles in the *AAT*’s “object facet.” The *AAT* lexicon has an intricate polyhierarchy and contains a large number of highly specialized concepts that are specific to the art and architecture domains, and institutions, specialists and academics focusing on these fields thus highly value the *AAT*. While the depth and complexity of the *AAT* is a strong incentive for art history professionals to use it, it might be a drawback for catalogers in small history museums who desire greater simplicity and relevance to the types of objects

they manage, especially certain types of tools and equipment. *Nomenclature* was developed to meet the needs of history museums and historic sites in North America, many of which rely on staff and volunteers with minimal cataloging training. The simplicity of *Nomenclature*’s structure, its practical approach to cataloging, its focus on terminology for North American cultural collections, and the relative generality of its terminology are valued by museums facing high staff turnover, low budgets, and limited time allotted to cataloging.

Nomenclature is sometimes used together with other standards for object naming and classification. Because it does not include every term needed by museums, especially those with highly specialized collections, *Nomenclature* can be used as a flexible framework and supplemented with more specific terminology as needed. For example, a museum with holdings exclusively relating to canoes would likely need to use specialized lexicons to further differentiate the several types of canoe that are already accounted for in *Nomenclature*. Since *Nomenclature* has inspired so many complementary specialized frameworks, it is easily compatible and allows institutions to adapt it to their needs. For example, history museums with diverse art collections may supplement the terminology in *Nomenclature*’s “Art” class with additional specialized terms from *AAT*.

Nomenclature is used for controlling units of information for the naming and classification of objects, and is not intended to be used for controlling terminology for subjects, materials, cultures, time periods, techniques, locations, personal and corporate names, etc. To control these other units of information, museums use compatible specialized controlled vocabularies, including the *Thesaurus for Graphic Materials*, *Library of Congress Subject Headings*, *Thesaurus of Geographic Names*,⁷ *Artists in Canada*, the *Union List of Artist Names*,⁸ as well as the “materials facet,” “styles and periods facet,” and “processes and techniques hierarchy” of the *AAT*, among many others.

In addition to controlled vocabulary standards such as *Nomenclature*, museums also use many other types of standards. For example, *SPECTRUM*⁹ (a procedural standard and metadata standard), *Cataloging Cultural Objects*¹⁰ (a data content standard), and the *CIDOC-CRM*¹¹ (a semantic reference model) could be used within a museum information system in combination with several lexicons such as *Nomenclature* and the *AAT*. The *Nomenclature* Task Force continues to develop the *Nomenclature* standard and routinely uses complementary standards to do so. There will be opportunities for closer collaboration in the future.

6.0 Limitations

A wide variety of museums have used *Nomenclature* successfully for many years, but it is not without limitations.

Its focus is on historical and ethnological collections, and although it does include a place in the hierarchy and some general terms for artworks, natural science specimens, and archaeological objects, it is not completely sufficient for museums with large and diverse collections of these types. Its focus on terminology for North American objects also means that it may not be sufficient for museums with large collections of object types that originate in other parts of the world. These limitations are extenuated by *Nomenclature's* easy extensibility and its compatibility with other complementary standards. The continuing effort to enhance *Nomenclature* through data exchange with *AAT* and other standards will also mitigate these limitations.

Some shortcomings in the content of *Nomenclature* have arisen out of the way that it has evolved. As noted in the "Introduction" to *Nomenclature 4.0* (Bourcier et al. 2015, xvi),

The Nomenclature system ... has come about through voluntary contributions of terms and hierarchical structures by those institutions and individual professionals having sufficient interest, inclination, and expertise to make meaningful contributions ... Predictably, some individuals and institutions have invested more effort and energy than others. Just as predictably, some of the terms suggested for inclusion in the lexicon may represent personal, institutional, or regional preferences that do not reflect as broad a consensus as might be desired. Some areas of the Nomenclature hierarchy contain very specific terminology, whereas others have been developed only to a very general level. As contributions from multiple independent sources are merged, some inconsistencies and even contradictions are apt to be stirred into the mix, despite the best efforts of the Nomenclature Task Force and editors.

As *Nomenclature* continues to grow and evolve, the Nomenclature Task Force is continually mindful of the need to include enough specificity to meet the needs of the majority of users with general collections while not including so many highly specific or regional terms as to overcomplicate the cataloging process. Occasionally, *Nomenclature* concepts are moved to a different position within the hierarchy or even deleted in order to rectify problems as they are identified, but, in general, the Task Force attempts to minimize changes to existing concepts.

Nomenclature is only available in English and French at present, and only includes definitions and illustrations for a small percentage of concepts. Availability is also currently somewhat limited: although it can be freely accessed online in a read-only format, users who wish to obtain the *Nomenclature* data for integration with their systems must purchase a license. These limitations will be rectified when *Nomenclature*

is released as linked open data in 2020, and the data has been enriched through co-referencing with other linked data sources.

A monohierarchical classification system is simpler than a polyhierarchical one, and one reason *Nomenclature* adopted a monohierarchy was a practical limitation of the book format it used until recently; a multihierarchy would necessitate the repetition of many terms within the hierarchy, and that would have added pages (and cost) to the production of a book. Another reason for the monohierarchy is that the lexicon framework of some collections software systems that use *Nomenclature* do not readily support polyhierarchical relationships. One drawback of a monohierarchical approach is the application of multiple terms in instances that may be counterintuitive. For example, a cataloger would need to name a wedding dress both "Dress" and "Dress, Wedding" to cross-index the object as both an article of outerwear and a ceremonial wedding object. However, *Nomenclature* provides helpful "may also use" instructions for catalogers interested in cross-indexing.

Nomenclature's primary organizational principle is the functional context of the object. There are other ways of grouping and organizing objects, however. For example, the *Social History and Industrial Classification*¹² (SHIC), which is used by many British museums with human history collections, organizes concepts by the interaction between the objects and the people who use them. Major divisions are "community life," "domestic and family life," "personal life," and "working life." Another departure from *Nomenclature's* functional approach is illustrated in the recent report, *Lexicon Usage and Indigenous Cultural Belongings*, by the American Alliance of Museums (AAM) Collections Stewardship Task Force, which noted (AAM 2018, 15) that some survey respondents using *Nomenclature* found it "difficult to incorporate additional terms, including terms supplied by Indigenous communities, since this classification system is organized around use, and not all cultures use objects in the same way." This concern may be mitigated by using the cross-indexing feature of *Nomenclature*; multiple ways of using an object can be represented by assigning multiple *Nomenclature* terms to it in order to represent the different ways that the object is used in different cultures. It can be argued that having to contend with objects from various cultures within North America, it was necessary for *Nomenclature's* creators to refine the categorization to account for diverse frames of reference and visions of the world. In this sense functional context is uniquely suitable as an organizing principle. However, the Nomenclature Task Force is aware that some adjustments may be necessary in order to incorporate Indigenous concepts, and discussions with representatives of Indigenous communities have been initiated. Such contributions will further strengthen *Nomenclature* by forcing the NTF to find cross-cultural categories that intrinsically rely

on the methodological function of the object rather than only considering its use within the context of a single culture or time period.

An important purpose of a controlled vocabulary like *Nomenclature* is to promote consistency in preferred terms and to ensure that catalogers assign the same term to similar objects. Catalogers sometimes perceive that the use of a common standardized lexicon diminishes the richness or precision of the data, discouraging the use of regional, ethnic, or specialist terms that their staff and visitors may find more meaningful. But this perceived limitation is actually a strength of controlled vocabularies: regional, ethnic, or highly specialized terminology can be added to the controlled vocabulary as non-preferred or narrower concepts in order to ensure that the standardized information will be broadly understood and easily shared, while the richness of local or specialized terminology is also retained.

As with any classification system, the “preferred” object names *Nomenclature* recommends are not preferred across all groups and cultures. Knowledge organization systems have always enabled people to identify and organize concepts in a way that is useful to them, using their own terminology. But semantic web technologies have made it much easier to connect equivalent concepts in different knowledge organization systems. Meaningful data interchange and knowledge sharing is enabled by such technologies and can contribute to overcome barriers such as disagreement on preferred terms, multiple languages, and different ways of organizing and understanding the world.

7.0 Future of nomenclature

Nomenclature continues to be developed and maintained by the Nomenclature Task Force (NTF), with updates performed directly within the vocabulary management system and immediately reflected on the public website. Individual or institutional users are welcome to propose additions or changes using the term submission forms found on the Nomenclature Community website. The Nomenclature Task Force also strives to collaborate with domain experts to develop and improve *Nomenclature* and coordinate its efforts with other standards organizations and committees that are responsible for terminology development.

CHIN and Rowman & Littlefield have reached an agreement that will allow CHIN to make *Nomenclature* available under an Open Data Commons (ODC-by) license as of Jan 1, 2020. CHIN plans to make the data freely available in various formats, including as linked open data (RDF). This will present new opportunities for data enhancement through collaboration and co-referencing with other standards. CHIN and AASLH have already provided the J. Paul Getty Trust’s Vocabulary Program with French terms to be added to the *Art & Architecture Thesaurus* (AAT). Reciprocally, the

Vocabulary Program will assist in co-referencing *AAT* and *Nomenclature* concepts in order to enrich *Nomenclature*’s data with definitions, multilingual terminology, and other valuable information from the *AAT*. Once *Nomenclature* is published as linked open data, such data sharing and exchange with other linked data sets will become much easier.

CHIN and the NTF will continue to look for opportunities to improve *Nomenclature*. In addition to publishing *Nomenclature* as linked open data, other features (such as visualization options, links to external linked data sources, and bibliography improvements) will be added to the *Nomenclature* website over time to support greater understanding of the standard and collaboration across institutions. The NTF is also considering the addition of other languages of interest to the museums that use *Nomenclature*. For example, Spanish terminology and Indigenous North American languages are being considered for addition.

8.0 Conclusion

Since 1978, *Nomenclature for Museum Cataloging* has provided North American museums with an easy-to-use standard specifically designed to provide access to their collections of human-made objects. *Nomenclature* was first developed by and for museums, and over the years it has been continually improved and expanded by inviting input from its users. It is used to standardize museum cataloging, and to enable the search and use of museum collections data for research, collection management, exhibition development, and other museum processes and activities. Now available as an online reference, illustrated and fully bilingual, *Nomenclature* is more accessible and easier-to-use than ever. It has been incorporated into most North American collections management systems and is also used as a tool to allow easy public access to online museum collections data. *Nomenclature* will be available under open license in 2020, and users will be able to browse and search *Nomenclature*, download it, and use it as linked open data. *Nomenclature*’s simple but expandable classification structure and its focus on controlled vocabulary for objects commonly found in North American historic and cultural collections make it highly valuable to both museums and the public. *Nomenclature* will continue to grow and develop to meet the needs of the museums that use it.

Notes

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 7. Getty Research Institute. 2017b. *Thesaurus of Geographic Names* (version 3.4). English. Getty Vocabularies. Los Angeles, CA: Getty Research Institute. <http://www.getty.edu/research/tools/vocabularies/tgn/index.html>.
 8. Getty Research Institute. 2017c. *Union List of Artist Names* (version 3.4). English. Getty Vocabularies. Los Angeles, CA: Getty Research Institute. <http://www.getty.edu/research/tools/vocabularies/ulan/index.html>.
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