

CCO Overview and Description

Patricia Harpring, Getty Research Institute

CCO in Context

Cataloging Cultural Objects: A Guide to Describing Cultural Works and Their Images (CCO) was designed for use in conjunction with various other sets of rules and metadata element sets. CCO provides guidelines for selecting, ordering, and formatting data used to populate catalog records based on the core categories in the *Categories for the Description of Works of Art* (CDWA) and the VRA Core Categories, although it may be used with other metadata element sets as well. CCO users may refer to the Metadata Standards Crosswalk on the Getty Web site for a concordance of the CCO elements to CDWA, CDWA Lite, VRA Core 4, MARC/AACR, MODS, Dublin Core, EAD, and other metadata standards and sets of rules.¹ Two of these standards, explicitly intended for visual works, the CDWA Lite XML schema² and the VRA Core 4.0 XML schema, are discussed elsewhere in this issue; a third standard merits a brief description here: *Categories for the Description of Works of Art* (CDWA).

CCO, CDWA Lite, and VRA Core 4.0 ultimately evolved from CDWA, which was first published in 1996 and has been revised several times thereafter. CDWA resulted from the discussions of the Art Information Task Force (AITF), a group of art historians, museum curators, registrars, visual resources professionals, art librarians, information managers, and technical specialists, sponsored by the Getty and the College Art Association (CAA).

CDWA describes the content of art databases by articulating a conceptual framework for describing and accessing information about works of art, architecture, other works of material culture, groups and collections of works, and related images. The CDWA comprises 512 categories and subcategories, as well as brief rules and guidelines for each subcategory. A small subset of the CDWA subcategories are considered *core* in that they represent the minimum information necessary to identify and describe a work; these core categories are represented in CCO.

CDWA is a superset of categories and brief cataloging rules, whereas CCO includes more detailed rules for only the *core* descriptive categories. It is important to note that the CCO rules focus on *descriptive data* for works and images. For rules and elements to record administrative information, CCO refers readers to CDWA. CDWA contains information about supplemental fields for elements that are discussed in CCO. For example, CCO discusses titles of works, but CDWA discusses titles as well as languages and dates for titles. CDWA also discusses certain elements or fields that are outside the scope of CCO. For example, CDWA includes subcategories for recording broader contexts and associative relationships between works, copyright of the work and its images, ownership histories (provenance), event-related context of the work, archaeological context (who found it, when, and where), facture (how it was made), intended orientation/arrangement, condition of the work, conservation treatments, critical responses to the work, exhibition and loan histories of the work, fields for citations (related textual references), cataloging history of the work record, and other categories that are outside the scope of CCO.

Organization of CCO

CCO is organized in three parts. Part 1 contains general guidelines, including the parameters of a minimal description and required data elements; cataloging issues of specificity and exhaustivity; indexing differences inherent between cataloging and retrieval of data; a brief discussion of related works and issues having to do with archival groups and collections, series, architectural works and other works with components; differences between works and images; database structure; and brief advice about authorities (which are discussed in more detail in Part 3) and controlled vocabularies in general.

Part 2 contains the cataloging rules for work and image elements. Part 2 is divided into nine chapters, each of which discusses one or more metadata elements. In addition to the cataloging rules, each chapter includes a general introduction to the issues, a definition of each element, its uses, examples, and information such as whether an element is controlled, repeatable, and required.

Part 3 includes discussions of four authorities, including recommended elements and rules for the elements in each authority.

In order to give readers a taste for the depth and richness of advice available in the manual, a selection of the issues covered in CCO is briefly discussed below.

Minimal Descriptions

CCO outlines the core elements that are required or highly recommended for the description portion of every work record, noting that these may vary slightly depending upon whether the cataloging institution is a museum or a visual resources repository.

In addition, CCO discusses the issues surrounding *specificity* and *exhaustivity* in cataloging, covering the precision and quantity of terms or other data applied in the record. *Specificity* refers to the degree of precision or granularity used in

Figure 1: Abbreviated Table of Contents of CCO.

Introduction
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III. Works and Images
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Part 2: Elements
Chapter 1: Object Naming: Work Type / Title
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Chapter 3: Physical Characteristics: Measurements / Materials and Techniques / State and Edition/ Additional Physical Characteristics
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Chapter 5: Location and Geography: Current Location / Creation Location / Discovery Location/ Former Location
Chapter 6: Subject
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Part 3: Authorities
Authority 1: Personal and Corporate Name Authority
Authority 2: Geographic Place Authority
Authority 3: Concept Authority
Authority 4: Subject Authority
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description and indexing. For example, the cataloger would ideally choose the most specific term to describe an architectural work, such as *campanile* rather than the more general term *tower*. *Exhaustivity* refers to the degree of depth and breadth that the cataloger uses in description, including the use of a large number of indexing terms or a relatively detailed description for a single element. It also refers to the use of a larger number of supplemental elements rather than only including the core elements. In general, the greater the level of specificity and exhaustivity in catalog records, the more valuable the records will be for researchers. However, practical considerations often limit the ability of cataloging institutions to meet this goal. CCO recommends that cataloging institutions establish local practice based on the following factors: size and requirements of the collection, expertise of the catalogers, availability of information, expertise of users, and technical capabilities of the information system.

Determining What is Being Cataloged

CCO recommends making a clear distinction between the work and the image at the outset of cataloging. Given that many of the same types of data elements used to document the work are also used to document the image, if the two sets of elements are not clearly separated, retrieval will be confused. This is typically an issue more relevant to catalogers of visual resources than to museum catalogers.

A *work* in CCO is a creative product, including *built works*, *visual arts* such as paintings, drawings, graphic arts, sculpture, decorative arts, photographs that are considered to be art, and other *cultural artifacts*. A work may be a single item or it may be made up of many physical parts. It is a distinct intellectual or artistic creation limited primarily to objects and structures made by humans (it is generally a physical object, not analogous to a work in the FRBR model).³ *Built works* in CCO are architecture, other structures, or a man-made environment, typically large enough for humans to enter, usually serving a practical purpose, being relatively permanent and stable, and usually considered to have aesthetic value. *Visual arts* are physical objects that are meant to be perceived primarily through the sense of sight, were created by the use of skill and imagination, and possess an aesthetic that is valued and of a quality and type that would be collected by museums and private collectors. Performance art is included as a form of *visual art*, but the performing arts and literature are not. *Cultural artifacts* are physical objects produced or shaped by human craft, especially tools, weapons, ornaments, or other items that inherently give cultural clues about the person(s) and/or culture that made or used them; they are further characterized by being of archaeological or historical interest and of the type collected by museums or other memory institutions, or private collectors.

An *image* in CCO is a visual representation of a *work*. It typically exists in photomechanical, photographic, or digital format. In a typical visual resources collection, an *image* takes the form of a slide, photograph, or digital file. A visual resources collection may include several *images* of a given *work*. Images do not include three-dimensional physical models, drawings, paintings, or sculptures, which are considered to be works in their own right, even if their subject is a depiction of another work.

Relationships between Works

Beyond the difference between works and images, CCO also recommends that the cataloger clearly establish whether he or she is cataloging one work, a part of a work, or multiple works in a single record. For example, sometimes it is necessary to describe a part of a single work in a dedicated record, separately from the record for the full work (as when the part has a separate artist, date of creation, etc.). In other situations multiple works may be cataloged in a single record, as with a collection, set, or series of works; in such cases, the cataloger may refrain from separately cataloging each item in the collection, set, or series, or he or she may create additional separate records for some or all of the individual works. When separate records are created for the whole and its parts, CCO recommends linking the records through whole/part relationships in the cataloging system.

CCO also recommends linking other works that have a direct relationship to the work of art or architecture being cataloged, particularly when the relationship may not otherwise be apparent. For example, works that are by the same artist or have the same subject need not be listed as Related works unless there is a more direct relationship; however, when one of these works is preparatory for another, this special relationship should be recorded, if possible. For a fuller discussion and recommended fields for related works, CCO refers the reader to CDWA.

Database Design

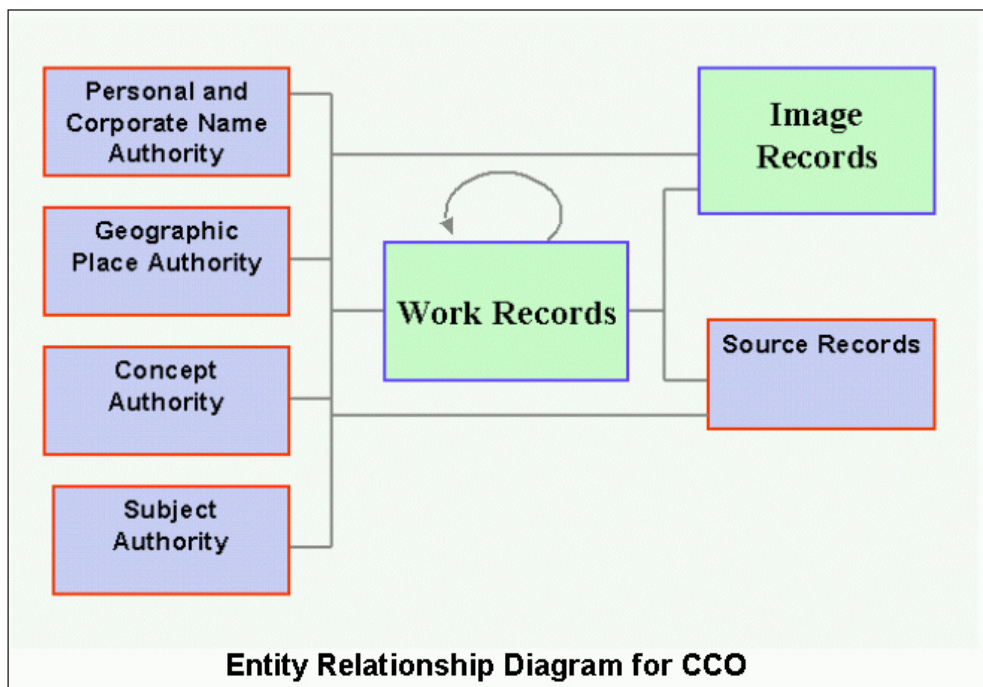
CCO was crafted to be used in a variety of database settings and designs. The scope of CCO is generally limited to descriptive data about cultural objects and images of those objects. CCO does not discuss administrative and technical metadata, although clearly these must also be accommodated in a well-designed cataloging system.

Although various types of information systems can be used for cataloging, CCO prefers a relational database because this design generally deals best with the complexity of cultural information and authority records and the interrelationships among those entities. A relational database makes possible a logical organization of interrelated information, such as data about works and images and authority files, all managed and stored in a single information system. The data structure should provide a means of relating works to each other, works to images, and works and images to authorities. When records of the same type are related, they have a reciprocal relationship. Hierarchical relationships between records of the same type should also be possible. Referencing unique numeric identifiers is a common way to express relationships in an information system. But in the end, the specifics of how records are linked and related is a local database design issue (whether in a relational model or otherwise), not explicitly dictated by CCO.

CCO recommends that certain fields be *repeatable*, meaning that some categories of information may require multiple data values. For example, in order to index multiple media used to create a work, each medium should be recorded in a separate instance of the appropriate field and related by multiple links to the authority file that controls the terminology for media. In some cases, as with display and indexing fields, related fields may be designated to repeat together as a set.

A simple entity relationship diagram appears in Figure 2, showing how works may be related to other works (in either hierarchical whole/part or associative relationships), and how works may be related to images, sources, and authorities. Note that a given authority file may be used to control terminology in multiple metadata elements; for example, the Concept Authority should be used to control data values in the Work Type, Materials, Style, and other elements. Also, a given element may use controlled terms from multiple authorities; for example, the Subject element in a work record may use terms from several different authorities.

Figure 2: Simple Diagram of a Data Model for CCO.



Display and Indexing

Throughout the manual, CCO distinguishes between categories of information intended for *display* and those intended for *indexing*. *Display* refers to how the data looks to the end user in the database, on a Web site, on a wall or slide label, or in a publication. Information for display should be expressed in language that is easily read and understood by end users. In the context of CCO, *indexing* refers to the choice of indexing terms that are assigned to a particular element, how the information is sorted, and how it is retrieved. CCO advises that the assignment of indexing terms should be a conscious activity performed by knowledgeable catalogers who consider the retrieval implications of the terms, and not by an automated method that simply parses every word in a free-text field into indexes.

Display and indexing information can exist in free-text and controlled fields. *Free-text fields* can be used to communicate nuance, uncertainty, and ambiguity to end users, and thus are often used for display. In order to provide efficient retrieval, display fields may be linked to controlled fields for the same information. *Controlled fields* contain either indexing terms drawn from standard vocabularies and local terminology, or data that is otherwise formatted in a standard way to allow for successful retrieval, such as the appropriate formatting for the numbers of units in a measurement. In some cases, data from controlled fields may be concatenated in an easily legible sequence for display to end users.

Elements in CCO

Work Type: The identification of the Work Type (Chapter 1) establishes the logical focus of the catalog record. Establishing the Work Type is one of the first critical steps in creating a catalog record. The Work Type element identifies the kind of work or works being described. Work Type typically refers to a work's physical form, function, or medium, such as *sculpture*, *altarpiece*, *cathedral*, *storage jar*, *painting*, or *etching*. CCO is applicable to fine art and architecture, but may also be used to catalog other cultural works, such as film, photographs, manuscripts, and other textual works.

CCO advises readers to choose the most appropriate specific Work Type term, keeping in mind the focus and size of the collection and the intended users. Many institutions need to accommodate disparate audiences, including both expert users, who expect to see specialized terminology, and non-expert users (including the general public), who may not know the meaning of specialized terms.

For this element and all others, CCO lays out rules for capitalization of terms, use of singular or plural, language, and authoritative sources for terms.

The Work Type element is often displayed with the Class element (Chapter 7). Work Type terms are intended to identify the work that is the focus of the catalog record, whereas Class refers to broad categories or a classification scheme that groups works together on the basis of shared characteristics, including materials, form, shape, function, region of origin, cultural context, or historical or stylistic period.

Title: The Title element (Chapter 1) records the titles, identifying phrases, or names given to a work of art, architecture, or material culture. It may be used for various kinds of titles or names, including standard titles that are assigned by the repository. Standard titles are often descriptive phrases that refer to the iconographical subject or theme of an art work, such as *Adoration of the Magi* or *Portrait of Thomas Jefferson*. But the Title element may also record the identifying phrases or names given to works that do not have a title *per se*. Such names may repeat information recorded elsewhere in the record, such as the Work Type of the work (e.g., *Ceramic Bowl*) or the dedication or name of a building (e.g., *Saint Paul's Cathedral*).

CCO notes that there may be multiple titles for any work, and that recording variant titles along with their title type is important; title types could include values such as *former*, *repository*, *artist's*, *translated*, etc. Catalogers must determine which title is the preferred title for the work, which should be a concise descriptive title in the language of the catalog record (English in the United States). The preferred title should be a recent title provided by the owning institution, a concise inscribed title, or a title provided by the artist, if known and if it is sufficiently descriptive. When no title is available from the repository or another authoritative source, catalogers must construct titles. Unlike published works of a textual or musical nature, works of art, architecture, and material culture generally do not have inscribed titles; when there is an inscription, CCO advises that catalogers distinguish between an inscribed title and an inscription that is not intended to be a title. Inscriptions may be recorded separately in the Inscription element (Chapter 3). This is an area where CCO differs significantly from AACR, and for good reasons; because of the nature of the types of works dealt with in CCO, the AACR "title from item" rule often does not make sense, nor would the AACR approach necessarily help users understand what a work is if they saw such an "inscribed title" (which in many cases, as in prints or other visual works, is simply an inscription that was never intended as the title of the work) in a results list, for example.

Creator: The Creator elements in CCO (Chapter 2) accommodate the varied circumstances and uncertainty frequently associated with attributions to creators of art and architecture. CCO recommends the inclusion of a display area to explain the ambiguity or nuance that may be associated with the creators of a work, along with elements to index the role of the creator and the name of the creator (ideally linked to the Personal and Corporate Name Authority).

CCO discusses how to ascertain and record information about the creator of the work and the role played by the creator in the making of the work. For works of art and architecture, it is not always true that the creator is a single individual whose name and biography are well established. The creator may also be anonymous, meaning that the name is not known, but the hand or *oeuvre* is established; thus an appellation such as *Achilles Painter* serves as a name and a surmised biography is recorded.

CCO also describes how to deal with a situation where one creator is responsible for designing the work, and another is responsible for actually making it, such as with a printmaker or an architect. In addition, CCO recognizes that a work may be created by a group of people; this is called a *corporate body* in CCO, referring to an organized group of individuals who work collectively, such as an architectural firm or a printmaking atelier.

In addition to the Creator and Role elements, other elements could include a qualification of the attribution (e.g., *attributed to Raphael*) or an indication regarding which part (*extent*) of a work was completed by a particular creator when there are multiple creators (e.g., *figures painted by Peter Paul Rubens, with landscape by Jan Breughel the Elder*) and/or multiple components (e.g., *sculpted by Gian Lorenzo Bernini, with base by Vincenzo Pacetti*).

In many cases, the creator of a work may be unknown, meaning no *oeuvre* is established for that particular hand and thus an appellation referring to a single individual has not been assigned by repositories or scholars. In such cases, creation responsibility is traditionally assigned to a cultural group, as with *unknown Aztec*. CCO discusses various ways to record and control terminology for unknown creators.

CCO also lays out the circumstances under which individuals or groups who are not creators should be recorded in the creation elements, including patrons, clients (of an architectural firm), and publishers (for prints).

Dates: The Date element (Chapter 4) records the date or range of dates associated with the creation, design, production, presentation, performance, construction, or alteration of the work or its components. CCO notes that the creation date may simply be a single year (e.g., *1915*), or there may be complex creation dates (e.g., *designed in the 1470s, constructed 1584-1627*). Architectural structures may have been created over a period of decades, manuscripts may have been illuminated in one century and bound in another century, or a photographic negative and the prints made from it may be separated by a significant span of time. Other issues associated with dates have to do with dates of ephemeral street art, performance art, and installations that may have very specific and finite ranges of dates associated with their existence.

Figure 3: Sample Record for a Painting Cataloged According to CCO.

Class	Paintings European art	<i>controlled list</i>
Work Type	painting	<i>link to authority</i>
Title	Portrait of a Halberdier (Francesco Guardi?)	<i>free text</i>
Title Type	repository	<i>controlled list</i>
Title	Portrait of Cosimo I de' Medici	<i>free text</i>
Title Type	former	<i>controlled list</i>
Creator Display	Pontormo (Italian painter, 1494-1557)	<i>free text</i>
Role	painter	<i>link to authority</i>
Creator	Pontormo	<i>link to authority</i>
Date	ca. 1528/1530	<i>free text</i>
Earliest Date	1523	<i>controlled format</i>
Latest Date	1535	<i>controlled format</i>
Subject	portrait halberdier nobleman Francesco Guardi (Italian nobleman, born 1514) Cosimo I de' Medici (Grand duke of Tuscany and patron of the arts, 1519-1574)	<i>links to authorities</i>
Style	Mannerist	<i>link to authority</i>
Current Location	J. Paul Getty Museum (Los Angeles, California, United States)	<i>link to authority</i>
ID	89.PA.49	<i>free text</i>
Measurements	123 x 161 cm (36 1/4 x 28 3/8 inches)	<i>free text</i>
Type	height	<i>controlled list</i>
Value	123	<i>controlled format</i>
Unit	cm	<i>controlled list</i>
Type	width	<i>controlled list</i>
Value	161	<i>controlled format</i>
Unit	cm	<i>controlled list</i>
Materials and Techniques	oil (or oil and tempera) on panel transferred to canvas	<i>free text</i>
Material	oil paint tempera wood panel canvas	<i>link to authority</i>
Technique	painting transferring	<i>link to authority</i>
Description	Pontormo's elongated, oval forms and refined play of color are characteristic of Mannerist portraiture. The sitter's identity is uncertain. The Florentine painter Giorgio Vasari noted that during the siege of Florence in about 1528 Pontormo painted a "most beautiful work," a portrait of the young nobleman Francesco Guardi in the guise of a soldier. Francesco's birth date of 1514 would make him about the age of Pontormo's teenage sitter. Based on a Florentine inventory, Cosimo de' Medici has also been suggested as the painting's subject.	<i>free text</i>
Description Source	J. Paul Getty Museum, <i>Handbook of the Collections</i> (2001)	<i>link to authority</i>
Page	99	<i>free text</i>

When dealing with art and architecture, uncertainty will often be a factor in recording a creation date. Dates for art, architecture, and cultural artifacts are often uncertain or approximate, such as *probably 1511* or *ca. 430 BCE*. Sometimes the date is known only to the specificity of a decade or a century, such as *between 1880 and 1890* or *17th century*. Dates of creation may be estimated by their relationship to a known, dated event that provides a *terminus ante quem* or a *terminus post quem*, such as *before 1492* or *after 1776*.

It is necessary to display date information in a way that accurately expresses nuance and ambiguity and is easily intelligible to the end user; at the same time, date information must be formatted consistently to allow for accurate retrieval. CCO recommends using a display field to record the nuance and uncertainty, in combination with specific values in Earliest Date and Latest Date fields that define the estimated span of time represented in the Display Date field. For example, the cataloger may record the date of creation as *Display Date: late 14th century*, and estimate Earliest and Latest Dates for retrieval as *Earliest: 1375* and *Latest: 1399*. Earliest and Latest Dates employ a controlled format to ensure the consistent recording and retrieval based on years, using negative numbers for dates BCE. CCO lays out guidelines for expressing display dates and estimating dates for retrieval.

Style and Culture: The Style and Culture elements (Chapter 4) record the named, defined style, historical or artistic period, movement, group, or school whose characteristics are represented in the work being cataloged, and the name of the culture, people, or nationality from which the work originated.

Measurements: The Measurements elements (Chapter 3) record the dimensions, size, or scale of the work. CCO notes that recording measurements may require the use of different criteria depending upon the type of work being measured. Measurements may vary depending upon whether the work is, for example, a two-dimensional painting or a three-dimensional statue, whether the work is framed, mounted, or installed, and whether the work has characteristics that require estimated or special measurements, such as architecture, costume, and time-based or moving-image media. CCO recommends that a display element be used to allow the expression of nuance and uncertainty of measurements, while the numbers and units of measurements should also be recorded in controlled fields to enable efficient retrieval. For example, the display elements *Measurement display: length of pectoral, excluding necklace: 8.3 cm (3 1/4 inches)* could correspond to the controlled fields *Extent: pectoral, Value: 8.3, Unit: cm, and Type: length*.

Materials and Techniques: The Materials and Techniques elements (Chapter 3) record the substances or materials used in the creation of a work, as well as any production or manufacturing techniques, processes, or methods incorporated in its fabrication. This information includes a display allowing for expression of nuance relating to the technique, media, and support, as well as controlled fields to allow the indexing and efficient retrieval of the information. CCO advises that controlled terminology for these elements be managed in a Concept Authority. For example, the display *Materials and Techniques: sarsen stone and bluestone, post-and-beam construction, with an earthwork* could be indexed in the following controlled fields, in which repeating instances of terms are allowed: *Material: ·sarsen ·bluestone ·earthwork Technique: post-and-beam*.

State and Edition: CCO discusses State and Edition (Chapter 3), referring primarily to works produced in multiples. State describes the relationship of a work to other stages of the same work (e.g., the third state of five total states, *3rd of 5 states*). State is most often used with prints, which may be pulled from a plate that has been altered repeatedly. The Edition element may identify a specific print or other work in the context of a limited number of identical or very similar works made or issued at the same time and from the same matrix. For prints, the number of the impression at hand is often juxtaposed with the total number of prints in a run (e.g., *2/32*). In addition to the numbered edition, a few other impressions may be printed (e.g., *artist's proofs, hors de commerce*). Edition may also be used in another sense, to describe an issuance of a work in relation to previous and subsequent editions; this use of edition often refers to books (e.g., *2nd edition*).

Subject: The Subject element (Chapter 6) deals with the subject matter of a work, sometimes referred to as its *content*. This is what is depicted in and by a work of art, and includes the narrative, iconic, or non-objective meaning conveyed by a figurative or an abstract composition. It also covers the function of an object or architecture that otherwise has no narrative content *per se*.

Subjects comprise a long list of possible topics: things, people, places, activities, abstract shapes, and decorations; stories and events from literature, mythology, religion, or history; and philosophical, theoretical, symbolic, and allegorical themes and concepts. Subjects of representational (figurative) works may be narrative, meaning they tell a story or represent an episode in a story; or they may be non-narrative, representing people, animals, plants, buildings, or objects depicted in portraits, still lifes, landscapes, genre scenes, architectural drawings, allegories, and so on.

Subjects should be recorded for all works in order to expand access. Non-representational works also have subject matter, which may include a reference to abstract content, decoration, function, or implied themes or attributes. For abstract works, architecture, decorative arts, furniture, and other works with no narrative or figurative subject matter, their "content" may be the function of the works and important aspects of their form or composition.

The Subject element records the answers to the question: What is the work "of" or "about"? Traditionally, what the work is about (sometimes referred to as *about-ness*) is defined as its iconographical, narrative, thematic, or symbolic meaning; what the work is of (*of-ness*) is defined as what would be seen in the work by an objective, non-expert, unknowledgeable viewer. Consideration of all these aspects of subject matter is important for retrieval. A methodical approach to subject analysis is recommended. Determining the subject of a work may be approached by posing the questions Who?, What?, When?, and Where?

The Subject element should ideally record a description, identification, and interpretation of what is depicted in and by a work. *Description* refers to the generic elements depicted in or by the work (e.g., *man*); *identification* refers to the specific subject, including named mythological, fictional, religious, or historical subjects (e.g., *George Washington*); *interpretation* refers to the meaning or themes represented by the subjects and includes a conceptual analysis of what the work is about (e.g., *political power*). This top-down approach examines various levels of specificity based loosely on theories of human perception and recognition of meaning in images described by Erwin Panofsky.⁴

CCO advises the assignment of a general term for the subject, such as *still life*, *portrait*, *landscape*, *nonrepresentational art*, or *history and legend*, as well as more specific terms. For example, the following terms could be applied to a battle scene, in repeating instances of the Subject element: *·history and legend ·men ·horses ·Battle of Little Big Horn (Indian Wars) ·United States Army 7th Cavalry ·George Armstrong Custer (American cavalry officer, 1839-1876) ·Sitting Bull (Sioux leader, ca. 1831-1890) ·Cheyenne ·Sioux ·war ·death*. CCO deals with questions of specificity, exhaustivity, ambiguity, and uncertainty related to the determination of the subject of a work. It also notes which authorities may be applicable for controlling subject terminology.

Location: CCO discusses Location elements (Chapter 5) such as Creation Location, Current Location, and Discovery Location. The location applicable to a work may be a geographic place (e.g., *Florence (Italy)*), but it may also refer to a named repository or building (e.g., *Gallerie degli Uffizi*, which is in Florence).

CCO discusses how to formulate names for locations, and which authorities should be used to control the various types of geographic, corporate, and building names. Geographic places include administrative entities, such as a city or nation (e.g., *Tokyo (Japan)*) or physical features (e.g. *Lascaux Cave (Dordogne, Aquitaine, France)*). Deserted settlements (e.g., *Machu Picchu (Peru)*) and former nations or empires (e.g., *Flanders*) may be included. Location may also refer to a repository, which is the institution or organization that owns or has physical curatorial control of the object. The name of the repository (a corporate body) should be displayed with its geographic location (e.g., *National Gallery of Art (London, England, United Kingdom)*). A third possibility is that the location may be the building in which the work is located, but not a museum or other repository *per se* (e.g., the church of *Santa Croce (Florence, Italy)*), which is not necessarily the same as the name of the institution that has control of the work; for example, for works in Santa Croce, *Soprintendenza ai Beni artistici e storici per le province di Firenze, Prato e Pistoia* controls the art works. The issues are further complicated by the fact that buildings may be cataloged as works in their own right. Adding to the confusion, a building may have the same name as a corporate body that inhabits it (e.g., *National Gallery of Art*).

View Description: CCO discusses four elements that deal with descriptive information regarding the view or image: View Description, View Type, View Subject, and View Date. Administrative elements for View are not included in CCO, although they are covered in CDWA and VRA Core.

Authority Files

CCO discusses why authority control is critical to ensure both consistency in cataloging and efficient retrieval. Authority control is a system of procedures that ensures the consistent use and maintenance of information in database records, including the recording and validation of terminology using controlled vocabulary and authority files. There is no single solution that will serve all institutions regarding how authorities are constructed and how they interact with each other and with work and image records; CCO discusses various issues and solutions.

CCO recommends using authority files for selected metadata elements because it is more efficient to record names and other information about certain entities in separate authority files rather than in individual work or image records. The advantage of storing such frequently repeated information in an authority file is that the terms, synonyms, relationships, and other information need be recorded only once, and may then be linked to all appropriate records rather than being repeated in each pertinent work or image record. In a database with full authority control capability and functional links between records, another

advantage is that changing or correcting a preferred name or “heading” in the authority record will automatically update the name or heading in the associated work and image records.

CCO includes chapters detailing the elements and cataloging rules for four authorities: Personal and Corporate Name Authority, Geographic Place Authority, Concept Authority, and the Subject Authority. The authority chapters discuss sources of terminology and include editorial rules for building authorities. CCO advises that local authorities be populated with terms and names from published vocabularies, such as the Getty vocabularies and the Library of Congress authorities, supplemented with local terminology as needed.

Personal Names: The Personal and Corporate Name Authority contains names and biographical information about single individuals (persons) or two or more people working together (corporate bodies), including artists, architects, studios, architectural firms, patrons, and repositories. This authority may be populated with names from the ULAN (*Union List of Artist Names*), the Library of Congress Name Authority File (LCNAF), and other appropriate published sources. It may be used to control the creator name, as well as subject names and repository names.

Geographic Names: The Geographic Place Authority contains names and other information about named geographic places, including both administrative entities (e.g., cities, nations) and physical features (e.g., valleys, rivers). This authority may be populated by names from the TGN (*Getty Thesaurus of Geographic Names*), Library of Congress Subject Authority, published atlases and gazetteers, various U.S. government Web sites, and other sources. It may be used for the Current Location, Creation Location, Discovery Location, and other fields in a work record, as well as for the Subject element as appropriate, and to control locations in the other authorities, such as the location of repositories in the Personal and Corporate Name Authority.

Generic Concept Terms: The Concept Authority includes terms and information about *generic concepts* (as opposed to proper nouns or names). It may be populated with terms from the AAT (*Art & Architecture Thesaurus*) and other sources, as well as local and non-expert terminology. It is used as an authority for metadata elements/database fields relating to work type, materials and techniques, style, and subject. CCO discusses various ways in which compound terms may be constructed in the work record or in local authorities. In the illustrations on the following page (Figure 4), the material *red silk* is required for indexing a work.

Iconographic Subject Terminology: The Subject Authority contains iconographical terminology, including proper names of literary, mythological, or religious characters or themes, and historical events and themes. It may also contain brief subject records for built works or for works depicted in other works. In addition to inclusion in the Subject Authority, CCO discusses how works that are depicted in other works may also be linked to each other as related works. For example, if a photograph depicts the Eiffel Tower, *Eiffel Tower* may be included in a subject authority record, but a full record for the architectural work, complete with architect, dates of construction, materials, etc., may be created and linked to the photograph of the Eiffel Tower as a related work.

The Subject element in the work record may be linked to this authority as well as to others as needed. For example, a sculpture may be indexed with terms from the Subject authority as well as terms from the Personal and Corporate Name and Concept authorities, as in the following example:

Subjects:

[links to Subject Authority]: Nekhbet (Egyptian deity) · Udjo (Egyptian deity) · Heh (Egyptian deity)

[links to Concept Authority]: · religion and mythology · human figures · falcons · cobras · ankh · life

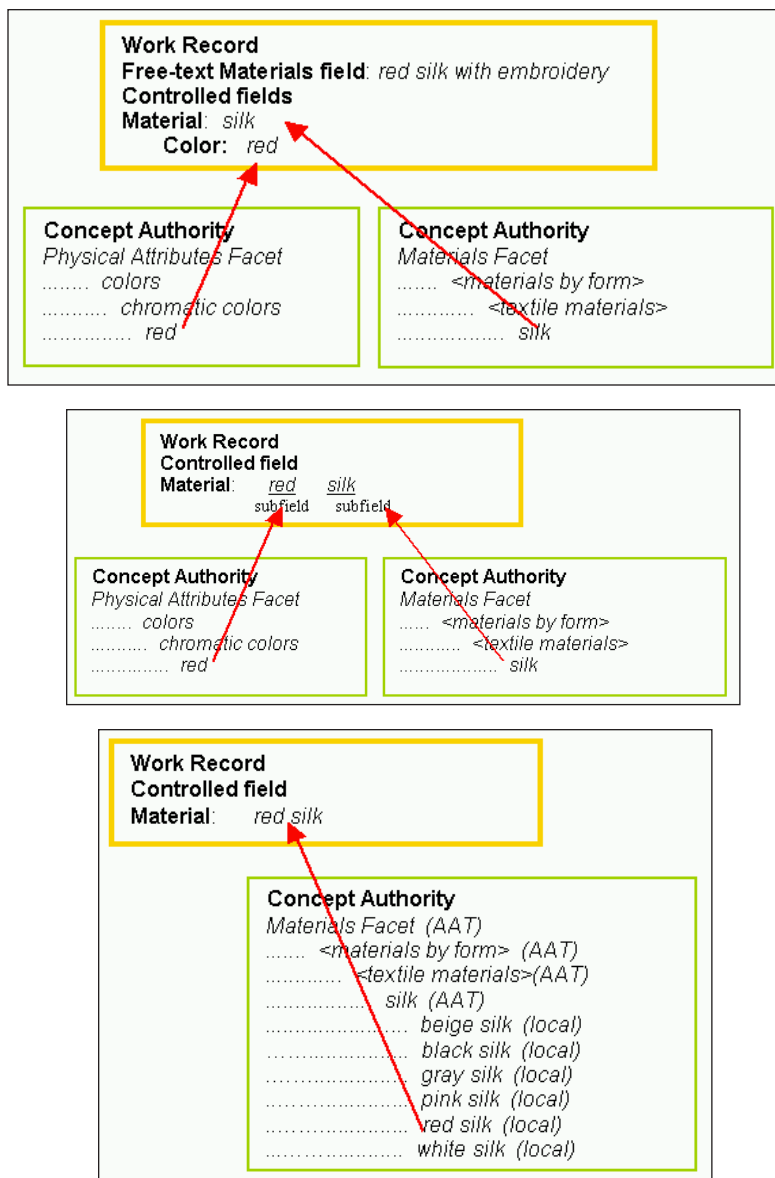
[link to Personal/Corp. Name Authority]: · Senwosret II (Egyptian king, 12th Dynasty, ruled 1836-1818 BCE) · Sit-hathor-yunet (Egyptian princess, 12th Dynasty, 19th century BCE)

More on Vocabulary Control

Vocabulary control is one of the primary tenets of good cataloging emphasized in CCO. *Controlled vocabulary* is a broader concept than *authority file*, encompassing authority files as well as other controlled lists of terminology. A *controlled vocabulary* is an organized arrangement of words and phrases that are used to index content and/or to retrieve content through browsing or searching. It typically includes preferred and variant terms and has a limited scope or describes a specific domain, but it may also take the form of a simple alphabetical list of terms or names.

CCO advises which metadata elements need controlled vocabularies, and possible methodologies for creating them. The four primary authority files described in CCO are ideally structured as thesauri; however, CCO discusses various other types of controlled vocabularies. It notes which elements should be controlled by thesauri, controlled lists, or a controlled format. For example, for some elements or fields in the database, a simple controlled list (rather than a full authority file) may be sufficient

Figure 4, top to bottom: In the Concept Authority, the color term is recorded in a separate dedicated field, and is combined with the material term in linked sub-fields; or the color term and material term may be pre-coordinated in a local authority.



to control terminology, particularly where the terminology for that field is limited and unlikely to have synonyms or ancillary information.

Controlled vocabularies should be customized so that they work well with the specific situation and the specific collection(s) at hand. CCO discusses issues to be considered as each institution develops a strategy for creating controlled vocabularies customized for its specific collection(s). CCO also notes that if the collection is being queried in a consortial or “federated” environment or union catalog, controlled vocabularies should be customized for retrieval across different collections; the requirements will be different and the terminology will be broader or narrower in scope depending upon the particular situation.

CCO is a data content standard—a set of rules and guidelines for entering data values into data structures. Because data structure, data value, and data content standards must be used together to create consistent cataloging records that adequately describe and provide access to cultural objects, the manual also of course deals with data structures or sets of

metadata elements, and with controlled vocabularies and authorities—the data values used to populate data structures according to standard rules and guidelines. It also acknowledges other data content, structure, and value standards that have been developed to describe other types of materials, especially bibliographic and archival materials, which have a longstanding tradition of cataloging according to community-developed standards. Like the emerging *Resource Description and Access* (RDA),⁵ CCO does not recommend slavish adherence to a single standard or set of standards—not even to CCO itself; rather, it advises information professionals to make well-informed decisions in selecting and combining the various standards that are best suited to the particular materials being described, and that will best serve the users who wish to identify and access those materials. ♻

Notes

1. The crosswalk is found at http://www.getty.edu/research/conducting_research/standards/intrometadata/3_crosswalks/index.html.

2. The data dictionary and schema for CDWA Lite can be found at http://www.getty.edu/research/conducting_research/standards/cdwa/cdwalite.html.

3. FRBR (Functional Requirements for Bibliographic Records) is a conceptual framework for bibliographic materials developed by a committee of the International Federation of Library Associations (IFLA) and published in 1998 (<http://www.ifla.org/VII/s13/frbr/frbr.pdf>). The *work* in CCO is usually a physical object, while the *work* in FRBR is an abstraction or intellectual entity, such as a literary work or a musical composition.

4. Panofsky, Erwin. *Studies in Iconology: Humanistic Themes in the Art of the Renaissance*. New York: Oxford University Press, 1939.

5. The prospectus and working documents relating to RDA can be found at <http://www.collectionscanada.ca/jsc/rda.html>.