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Abstract

Artifacts of historic clothing are found in museums, archives, and even libraries all over the world, along with fashion illustrations, photographs, and other related materials. Where collection managers follow existing standards, they often interpret them in different ways, and need specific guidelines for greater cross-collection consistency. To better represent significant aspects of historic clothing, catalogers must collect additional metadata. Defining and populating granular fields will allow records to be sorted and filtered in ways specific to the needs of costume history researchers and can even enable the use of visual search tools. Experiments along these lines have led to the development of Costume Core: an application profile to provide guidance for using existing metadata schemas and controlled vocabularies to fill in the gaps with added metadata elements and vocabulary terms. Costume Core can be used not only in the development of new digital collections, but also to remediate existing datasets. This project initially grew out of work to develop a digital collection of the artifacts in the Vassar College Costume Collection. An inter-institutional project called Historic Dress, at HistoricDress.org, has fostered further testing. To make this project's workflow more convenient and efficient across a wider range of institutions with holdings of historic clothing, a visual cataloging tool and thesaurus are being developed at DressDiscover.org.

Keywords

costume history, historic clothing, fashion history, material culture, metadata schema, metadata standards, artifact analysis, controlled vocabularies, linked data, data remediation, digital collections, visual thesaurus

Author Bio & Acknowledgements

Biography:

Arden Kirkland is an independent digital librarian, providing services for digital collections and online learning. She is an Adjunct Instructor for the iSchool at Syracuse University. As Project Coordinator for the IMLS-funded Design for Learning program, she led the development of a series of online modules about online teaching, released as Open Educational Resources (OER). Her years of work in higher education, especially at Vassar College, have included a focus on college students' active participation in the construction of multimedia digital collections. Other recent projects include web development in Omeka for HistoricDress.org, ArtOneida.org, and the Hudson Valley Visual Arts Collections Consortium (HVVACC.org). She holds an MSLIS from the iSchool at Syracuse University, along with an MFA in Costume Design from Rutgers University.

Introduction

Artifacts of historic clothing are found in museums, archives, and even libraries all over the world, along with fashion illustrations, photographs, and other related materials. These objects present complex challenges for the cataloging process, especially when a cataloger uses standards and systems that have been designed for other kinds of artifacts, like books or photographs. Consequently, many such items are not represented properly in online catalogs.

The standardization required for wide-scale online access to artifacts has been a double-edged sword: while it allows unprecedented transparency about some collections, it also requires that details about complex objects be reduced to those which fit neatly into systems developed primarily for two-dimensional works. Where collection managers follow existing standards, they interpret these in different ways, and need specific guidelines for greater cross-collection consistency. To better represent significant aspects of historic clothing, catalogers must collect additional metadata. Defining and populating granular fields will allow records to be sorted and filtered in ways specific to the needs of costume history researchers and can even enable the use of visual search tools.

Experiments along these lines have led to the development of Costume Core (http://ardenkirkland.com/costumecore/), an application profile to provide guidance for using existing metadata schemas and controlled vocabularies to fill in the gaps with added metadata elements and vocabulary terms. Costume Core can be used not only in the development of new digital collections, but also to remediate existing datasets. This project initially grew out of work to develop a digital collection of the artifacts in the Vassar College Costume Collection (http://vcomeka.com/vccc/). An inter-institutional project called Historic Dress (http://HistoricDress.org) has fostered further testing. To make this project's workflow more convenient and efficient across a wider range of institutions with holdings of historic clothing, a visual cataloging tool and thesaurus are being developed at http://DressDiscover.org.

Why a Costume Core?

Periodic discussions among members of the Costume Society of America have shown a shared frustration with the inconsistency in catalog records for artifacts of historic clothing. Some struggle to get support for the expense of robust digital collection management systems or the time and expertise needed to enter detailed descriptive metadata. Others express concern that it can be difficult to enter certain details about costume artifacts into standardized metadata elements. As a result, standards can be interpreted very differently from one institution to the next. These inconsistencies can lead to further issues with maintenance and even obsolescence. Datasets that are aligned with acknowledged standards are more easily migrated and shared.

An early part of the development of Costume Core consisted of collecting and comparing data from online databases of historic clothing from a variety of institutions, ranging from large museum collections to small collections in universities and historical societies. When comparing schemas, systems, and vocabularies already in use, many common threads were evident. However, there was also a great deal of inconsistency in what fields were included, what they were called, and how their values were formatted. Fields for dates, materials, and measurements are particularly inconsistent, as shown in **Figure 1** and on the Costume Core website.

Researchers also express frustration with the online search process. While individual collections may have public access websites, they are often easier to browse than to search. Searching by date, one of the most useful features for costume historians, is not always available as a useful search filter for costume collection websites. Searching by a designer's or manufacturer's name may work better, but this is only effective from the late 19th century to the present; prior to that, most designers and makers are unidentified on the object itself.

Searching by visual or structural details is currently very difficult. The presentation "Tagging and User-contributed Metadata" by Eileen Fry and Jennifer Riley provides insight into the way that user-contributed metadata, in the form of tags, might help to fill in subject terms for details of images related to costume history and help to improve discovery in user searches.[1] However, including all of this information in a single subject or tag field limits the ability to both parse and combine by different kinds of details. Such search refinements also depend on consistent use of terminology. For example, if a researcher is looking for dresses similar to a known example and searching for a feature like a "leg-of-mutton sleeve," the query typically relies on a keyword search. While a record may have a free-text description that includes a "gigot sleeve" (a synonym), most systems have little internal recognition of costume history synonyms, and the record will not appear in the search results.

Dates	Materials	Measurements	Creator Names
1902	silk (fiber), satin, crepe, cord (fiber product), beads (pierced objects), sequins (spangles), rhinestone	Chest: (38 in); Waist: (23.5 in); Waist: (25 in); Hip: (44 in); Length: (12.5 in); Length: (39 in); Length: (58 in); Other: (143 in); Other: (10 in)	Worth, Charles Frédérick, 1825-1895; House of Worth (Firm)
1700-1735			Schlesinger & Mayer
Circa 1900			
late 17th century	printed cotton	W. 85 1/4 in. (215.9 cm), L. 109 1/2 in. (278.1 cm)	René Jules Lalique (French, b.1860, d.1945), designer
ca. 1920	Woven; Silk; Additional fabric, buttons, and lace trims	H. 5 3/4 in. (14.6 cm), W. 1 1/8 in. (2.9 cm)	Unknown
Fall 2002-2003			Jeanne Lanvin
c. 1900			
|n 1934; |b 9999/99/99 |c 9999/99/99 |d 1934-00-00 |e 1934-00-00	Red, ochre, and brown wool	Height: 55 in. (139.7 cm)	Pingat, Emile; 1820-1901; male
	Brown silk faille used on bodice and skirt Green silk brocade used on skirt panels and peplum lining Polished cotton lining in skirt and a brown woolen facing at hem. Linen lining in bodice and cotton twill lining in sleeves (Natural dye box is checked)	Length at CB: 42 in. (106.7 cm)	Unidentified Artist (American)
1851-1855 (made)		With fringe: 72 x 77 in. (182.9 x 195.6 cm)	Liberty and Co.
			Girl Scouts of the United States of America
early 19th century (made)		Bodice: Chest 34, waist 26.5, CF length 26.5. CB length 18 Skirt: full waist 26.5, CF length 42.5, CB length 51, Waistband: length 31 or 29, width 2.5	Veronica Etro

Figure 1. Four lists of examples from the Comparing Costume Fields Crosswalk on the Costume Core website (listed under Version 0.2) showing the inconsistency in formatting for the Date, Materials, Measurements, and Creator Name fields across several online collections of historic costume.

Many useful resources exist for looking up definitions of costume history terms and for finding preferred vocabulary terms. However, these resources are not usually helpful for discovering new terms, since they are organized either alphabetically or in hierarchies that include so many terms unrelated to costume that it can be difficult for a novice to drill down from the top. Among controlled vocabularies for costume history terms, three contenders continually rise to the top: the Art and Architecture Thesaurus (AAT)[2] from the Getty

vocabularies, the Library of Congress Subject Headings (LCSH),[3] and Nomenclature for Museum Cataloging (NMC).[4] The choice among these three often aligns to the type of institution, with the AAT most commonly used in art history settings, LCSH most commonly used in libraries and archives, and Nomenclature (NMC) most commonly used by history museums and smaller historical societies. Costume catalogers in all types of collections expressed frustration at having to consult multiple different controlled vocabularies in order to access all the relevant terms that they would like to use in catalog records. This is an even greater problem for those working with systems that limit them to a single controlled vocabulary. Additional guidance, such as the guide to relevant LCSH terms provided by Carolyn J. McCallum, is needed for users to identify terms within these larger vocabularies that are relevant to costume history.[5]

Attempts to search across multiple collections, or to discover new collections, present further frustrations. Search engines like Google reward popularity in their search algorithms, making it more difficult to discover hidden treasures in smaller institutions. Without time or money to market a website or provide Search Engine Optimization for it, a collection may be online but unknown and unused. Social media platforms like Pinterest can both help and hinder this search. An image "pinned" to a user's board in Pinterest may be tagged with helpful terms to make it rise to the top in search results but may not have proper attribution or links to easily trace back to the original source for further research.

The aim of this Costume Core has been to help collection managers at a variety of holding institutions improve this situation. The first draft of Costume Core was shared online in 2013 as an application profile, to build on existing standards and vocabularies. The goal was to provide convenient and specific guidance for catalogers of digital collections of historic clothing. It was designed not only for new projects, or data remediation, but also with the goal of improving cross-collection searching for existing resources.

What Does Costume Core Include?

Costume Core provides supplementary support specific to the field of costume history for the following kinds of metadata standards:

1. structural standards
    a. mapping to existing structural metadata standards
    b. adding new structural metadata specific to costume history
    c. using a paper worksheet to structure analog note-taking prior to data entry
2. content standards
    a. providing specific guidelines for interpreting Cataloguing Cultural Objects (CCO) as a content standard
3. value standards
    a. re-interpreting the hierarchies of existing value standards in a way that makes it easier to browse for preferred terms.
    b. adding new vocabulary terms specific to costume history

Crosswalk

The data comparison exercise mentioned above helped to bring common features together, and to map them to existing structural standards like VRA Core,[6] Dublin Core,[7] and Categories for the Description of Works of Art (CDWA).[8] The most recent crosswalk is available on the Costume Core website, under the section for Version 0.2, with version 0.3 in progress. This mapping built upon Marcia Lei Zeng's influential "Metadata Elements for Object Description and Representation: A Case Report from a Digitized Historical Fashion Collection Project,"[9] which set out to compare the suitability of three different metadata schemas for effectively describing costume artifacts, working with examples from the museum collection at Kent State University. From Zeng's work, it was clear the VRA Core metadata schema provided the best fit for costume artifacts, given its complex visual nature in comparison to MARC and Dublin Core. Kathi Martin, along with Abby A. Goodrum, also provided an introduction to the metadata schemas and vocabularies that were influential for their project at Drexel University, in their article "Bringing Fashion Out of the Closet: Classification Structure for the Drexel Historic Costume Collection."[10]

While Dublin Core is valued for its simplicity, it can be problematic in that multiple specific fields are mapped either to the Description or Subject fields, losing their functionality for sorting or search filtering. For known object searches, keyword searches across large free-text fields as found in catch-all Dublin Core fields may suffice. However, when trying to find something "new," the ability to use granular fields to gradually refine a search by different characteristics is extremely valuable.

The 2017 article "Linked Data Metadata for Digital Clothing Collections" by Maura Valentino[11] highlights the usage of a combination of metadata schemas to catalog the Oregon State University's College of Business Design Programs' Historical and Cultural Textile and Apparel Collection. However, the usage of elements in that case was based more on compatibility with Oregon's institutional repository than with any future goals of contribution to an aggregated costume resource. Still, the Oregon collection provides a useful example for encoding objects, metadata elements, and terms chosen from controlled vocabularies as Uniform Resource Identifiers (URIs) to provide Linked Open Data (LOD). Here the "Linked" part of

LOD is significant, with the potential to increase discoverability as LOD becomes a factor in search engine optimization.
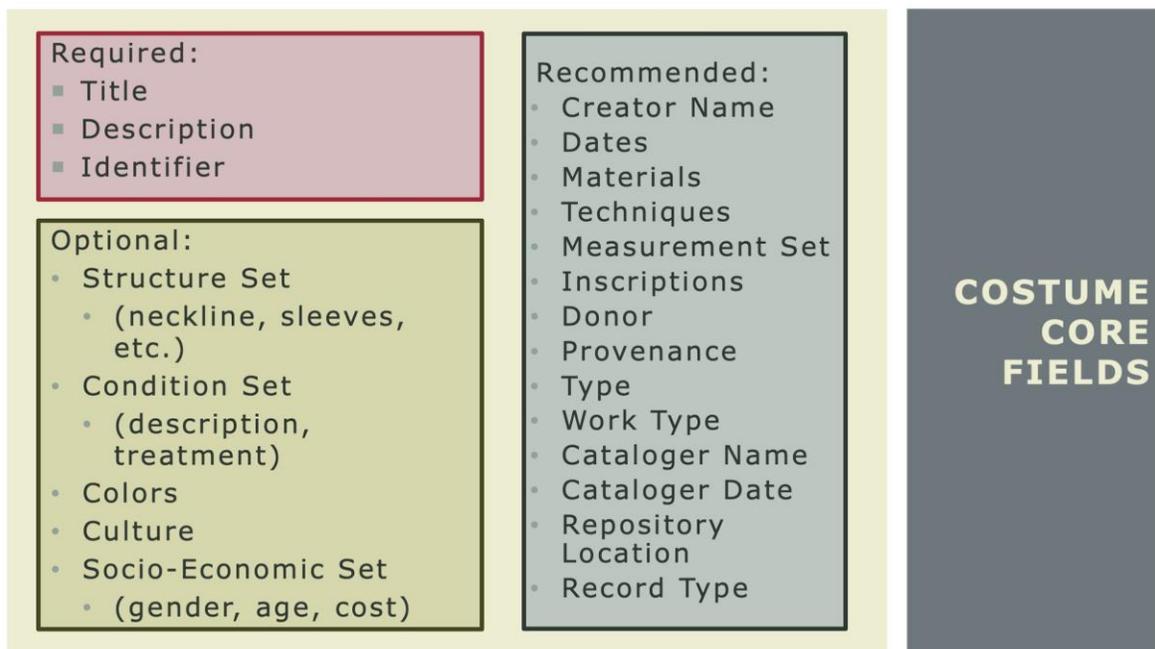
Added Metadata Elements

Figure 2. The metadata element set for Costume Core, from the full Outline of Elements on the Costume Core website (listed under Version 0.1) with required and recommended elements that map to existing standards, along with added optional elements specific to costume artifacts.

Where Costume Core incorporates a new level of refinement is in the addition of a set of optional elements that are specific to costume (**Figure 2**). Traditionally this information has only been contained in a narrative description field, but when parsed in discrete fields, sorting and searching are greatly enhanced. These functions can be very useful for research to date an undated garment, for example. For new data entry, these fields can be entered first, and then a free text description can more easily be composed to tie them all together and add any additional details. For serious researchers visiting a physical collection, this more targeted search within the catalog reduces unnecessary handling of fragile garments. Of course, for this system to coexist with the wealth of legacy data that has already been created, the only fields that can really be required are a title, description, and unique identifier. The next set includes recommended fields that are already frequently used in existing standards, and many of these are already included in existing records. Examples of these fields expressed in eXtensible Markup Language (XML) can be seen on the Costume Core website, under the section for Version 0.1.

Worksheet

Figure 3. A section from the worksheet provided for cataloging, from the Costume Core website (listed under Version 0.2)

   One of the system-agnostic elements within Costume Core has been the development of a paper worksheet to be filled out by hand while observing a costume artifact (**Figure 3**). While direct data entry into a database might seem to be more efficient, in some settings it is not convenient to have a computer or other device near the artifact being studied. Also, in an educational setting, there can be a benefit to a more careful, methodical approach to drafting metadata before entering it.

   Key works from the canon of material cultural studies guided the development of this worksheet. Models for artifact study by both Jules David Prown ("Mind in Matter: An

Introduction to Material Culture Theory and Method")[12] and E. McClung Fleming ("Artifact Study: A Proposed Model")[13] influenced not only the aspects of object description included, but the order in which they are considered. The Costume Core worksheet begins with details that are based on close observation and do not require advanced knowledge of costume history. Such observation based on the object itself aligns with Prown's first stage of "Description" and Fleming's first stage of "Identification." These metadata fields are followed later in the worksheet by others that do require either specialized knowledge or further research, aligning with parts of Prown's stages of "Deduction and Speculation" and parts of Fleming's stages of "Evaluation, Cultural Analysis, and Interpretation."

Content Guidelines

The content standard Cataloging Cultural Objects (CCO)[14] has been a tremendous asset to this project, providing comprehensive practical guidelines for cataloging a variety of cultural heritage artifacts, including historic costume. However, many costume collection managers are not aware of this standard, or don't take the time to familiarize themselves with it in detail. Costume Core provides more specific guidance, with examples, of how to apply the principles of CCO to costume collections. These examples are provided in the Element Definitions on the Costume Core website (under version 0.1) and in the examples as applied to the Vassar Collection (under version 0.2). Another influential set of guidelines came from the materials developed for contributors to the Australian Dress Register.[15] In order to get quality contributions to this crowd-sourced database of items representing the history of Australian dress, it was necessary for the project to develop a thorough handbook to guide contributors in describing their objects.

Vocabulary Subsets

The vocabulary terms used by Costume Core are grouped in ways that make them accessible to catalogers with a range of expertise. Smaller groupings of terms make it easier for novices to do a close reading of a costume object, or even an image of a costume, by working through specific structural details and choosing from a short list of controlled terms for each feature (**Figure 4**). For example, the list of colors in the current draft of Costume Core has only 26 choices, as opposed to the 993 color terms in the AAT. In this case, the narrowing down of terms was already done by the team that developed the Quilt Index.[16] While the nuance of very specific color terms can be helpful in a free text description field, less specific color terms make it easier for catalogers to be consistent and for researchers to have better recall within search results.

color	technique	closure	neckline	collar	sleeve type
beige	applique	buckle	boat neck	ascot	batwing
black	beading	buttons	crew	band (collar)	bishop sleeve
blue	braiding	frogs	halter	bertha	cowl sleeve
brown	burn-out	hooks and eyes	henley	bow	dolman sleeve
burgundy	crocheting	lacing	inset	Chelsea collar	Juliet
coral	dart	metal eyelets	jewel	convertible	kimono sleeve

cream	drawloom	snaps	keyhole	collar	lantern sleeve
fuchsia	embossing	thread eyelets	off the shoulder	cowl neck	leg-of-mutton sleeve
gold	embroidery	ties	round neckline	funnel neck	petal
gray	flocking	toggles	scoop neck	jabot	puff
green	gathering	velcro	square neckline	Mandarin collar	raglan
lavender	glazing	zipper	strapless	Napoleon	roll-up sleeves
				peaked lapel	

Figure 4. A selection of terms from the 5th draft of controlled vocabulary lists for Costume Core (the 4th draft is on the website, listed under Version 0.2)

During the earlier stages of this project, the only widely available vocabulary designed specifically for costume history was the one created by the International Council of Museums (ICOM).[17] However, from 2012-2015 the Europeana Fashion Thesaurus (EFT) was developed,[18] building upon terms already in the AAT to provide a much more focused and thorough approach to terms in the field of costume history. Ykje Wildenborg's talk about Europeana at the 2016 meeting of the ICOM Costume Committee[19] presents a thorough introduction to the ways that linked data can help to provide consistency and understanding across museum collections, including transcending language barriers by identifying both translated and synonymous terms. Her description of the process to develop the Europeana Fashion Thesaurus and identify (and contribute) terms missing from the AAT provides helpful guidelines for Costume Core to keep such work moving forward.

To improve Costume Core's short lists of terms, both for more targeted searches and more efficient data entry, recent work on the project has taken advantage of a combination of methods from metadata reconciliation and digital humanities text analysis. Now that several popular vocabularies (AAT , EFT, and LCSH) are available as LOD (with Nomenclature-NMC coming in 2020), it is possible to download relevant terms, and their related properties, as a dataset which can be compared with others using tools like Excel, Google Sheets, and OpenRefine[20] (a tool for cleaning, transforming, and reconciling data). Zeng's presentation "Create Microthesauri and Other Datasets from the Getty LOD Vocabularies" provides helpful steps for performing a query on the Getty linked open data sets to collect a subset of terms to create a "microthesaurus."[21] This workflow uses SPARQL, a semantic query language that is designed to work with data stored in the Resource Description Framework (RDF) format. The same workflow Zeng describes can be adapted for use with other vocabularies that are accessible via SPARQL.

Work is underway to compare terms from the AAT and EFT to terms proposed for Costume Core, along with terms currently in use for other small collections around the country, collected as they are made available. AAT terms are accessed through the Getty SPARQL endpoint (http://vocab.getty.edu/), and EFT terms are available through Wikidata, a sister project of Wikipedia/Wikimedia that allows for user-contributed publishing of LOD. The first steps of this process include the use of clustering within OpenRefine, followed by functions within Google Sheets (such as vlookup or query), to identify matching or related terms. By mapping all of these to terms with URIs, and identifying synonyms across different vocabularies, the stage is set for linked data.

How Has Costume Core Been Tested?

Vassar

Artifact Analysis

Since 2002, the Drama Department at Vassar College has been adding images and metadata online to represent its collection of historic clothing. Over the years, students have filled out different versions of the paper worksheet shown in **Figure 3** to note the physical details of objects. Students entered metadata, originally in an Excel spreadsheet and later in a Filemaker database, which was eventually migrated to Omeka (https://omeka.org/) as a content management system. All of these tools support the use of custom metadata elements such as those in Costume Core.

The earliest worksheet was based on one used by the Costume Institute, where numerous Vassar students have interned over the years. When an NEH grant for Preservation Assistance for Smaller Institutions in 2010[22] provided funding for workshops, the worksheets then further evolved to include more details of the best practices learned from visiting experts. The inclusion of more specific fields helps to guide undergraduate students to record more details and parse them, step-by-step, rather than expecting them to remember to include it all in a single free-text description field. In addition to providing Costume Core's short controlled vocabularies for each field to insure better consistency of terminology, students were gradually provided with supporting images to accompany the terms, in a binder for cataloging. These visual guides were essentially an early paper prototype for the DressDiscover web application (at https://dressdiscover.org/worksheet/ and described below).

Text Analysis

The Vassar dataset is also a resource to explore how simple text analysis tools can be used to collect terms from existing catalog records. Current work in progress includes downloading public catalog records from both the Vassar collection and the Costume Institute, which are available to download in CSV format (comma separated values, a format which can be viewed as a spreadsheet). These datasets have then been converted to TXT (plain text) format, and reduced to a list of words, using the AntConc tool.[23] This word list can then be either sorted alphabetically or by the number of appearances of each word. The next step will be to take these word lists and match them to the existing lists of terms discussed above in the section on vocabulary, especially the AAT and EFT. Both of these methods take advantage of batch processing techniques to identify critical gaps in the existing vocabularies.

Data Remediation

The Vassar collection has further provided a useful experiment for data cleanup techniques. Although this collection was the test bed for developing Costume Core over the years, older records are not up to date with either the latest structure of elements or the latest versions of the controlled vocabularies. In general, working with legacy data presents particular challenges: in a field that is already underfunded, rarely is there incentive to go back and tidy up older data. Generally, the effort goes into new data, sometimes meaning that a single institution may have two or more incompatible datasets or systems running simultaneously.

However, "data hygiene" is possible. The first step with the Vassar dataset has been to export the existing data using a customized version of the CSV Export Format plugin for Omeka.[24] Next, values in each column have been compared to the current draft of Costume Core terms, using a combination of OpenRefine, Google Sheets, and Excel. This has been helpful on two different counts: not only to clean up the Vassar data to conform, but also to expand the Costume Core lists to express a fuller range of options. As each column is "cleaned" to be more standardized, it can be re-imported via the CSV Import Plus plugin.[25] As each element is standardized in this way, then future consistency is enforced by the addition of drop-down lists for data entry for that element, using the SimpleVocab plugin in Omeka.[26]

However, it is important to note that the skills needed for this kind of data remediation are beyond the scope of most costume collection managers, and probably require the advanced technical skills and assistance of librarians and technologists. Most significantly, collection managers must advocate for the allocation of time and money to perform such functions. Proprietary systems also can make this more challenging. It is very important for collection managers to talk to the staff managing their systems, whether it be local colleagues or vendors, to make it clear that the need exists to work with data in batches for such data cleanup efforts.

HistoricDress Project

The small research collection at Vassar is just one of many such collections across the country. Some were pioneers in sharing collections online, such as the university collections at Drexel,[27] Cornell,[28] and the Fashion Institute of Technology,[29] along with large museum collections like the Costume Institute at the Metropolitan Museum of Art.[30] Over the years, more and more collections have followed. How could they be brought together in some kind of unified search interface? What would be necessary to make them compatible? An article for the journal *Dress* explored some of these questions in 2015.[31]

This is the need the HistoricDress project set out to address.[32] Based at Smith College, and their surrounding Five College consortium in Massachusetts, this project had Mellon Digital Humanities funding in small increments over several years, providing support for a multi-disciplinary team to explore collaborative, inter-institutional approaches to representing historic clothing online. That funding allowed for the completion of prototypes using different content management systems: Omeka, CONTENTdm, and Snapdragon.

Student interns from the Five Colleges began this work by cataloging materials from the extensive personal research archive of costume historian Nancy Rexford. As the first stage focused on Nancy's cards for 19th century shawls in collections across the country, it became clear that additional fields beyond the standard Dublin Core or VRA Core fields were important for sorting and searching shawls, such as border type, overall shape, and design motifs. Consequently, each such field required the creation of a short controlled vocabulary.

Figure 5. A data entry screen for the Historic Dress project, using JSTOR Forum. The pop-up window shown is for a student cataloger to choose from a controlled list of terms to describe the collar of the object.

An additional digital humanities grant from Artstor has allowed for continued testing of the metadata schema and vocabularies (through early 2020), using the JSTOR Forum cataloging tool. This customized application profile provides built-in access to the Getty Vocabularies and can support specialized lists for Costume Core to aid novice catalogers (**Figure 5**). Through JSTOR Forum it is possible to share this content publicly in Artstor's public collections.[33] JSTOR Forum also interacts with Omeka through a plugin, allowing both images and metadata to be exported to an Omeka site for a more customized display or for use in a digital exhibition. The work records in JSTOR Forum have allowed for experimentation with different ways of implementing these costume-specific fields within the structure of VRA Core. For example, one possibility is to use the extent and shape attributes in the measurement set to encode Costume Core's elements for structural details like neckline or sleeve type.

DressDiscover Project

The vocabulary work has led to another stage of development: working on a web application called "DressDiscover" with a developer, Minor Gordon, and a costume historian, Jennifer Farley Gordon. The team working on HistoricDress identified one barrier preventing public engagement with online art collections: the difficulty in finding the right words to describe and search for detailed visual materials. Going back to the "leg-of-mutton sleeve" example mentioned previously, how would you know that term for sleeves if you haven't studied costume history at length? There is potential for a visual workflow to circumvent these problems. What if we take some of these complicated terms, and their many synonyms across time and

around the world, and think of them rather as concepts represented by images? Testing of this idea is underway with the "DressDiscover" app (https://dressdiscover.org/worksheet/).
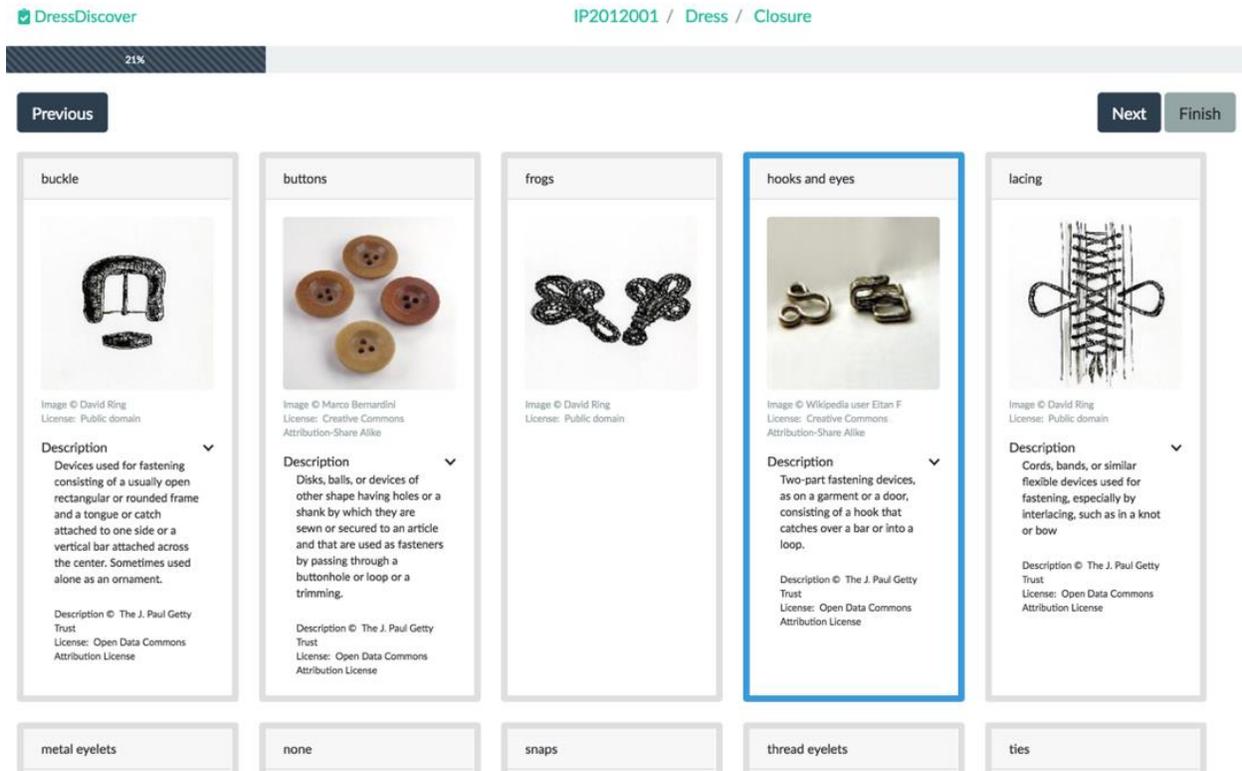

Figure 6. A screen from the DressDiscover app showing a choice of options for closures, using openly licensed images from Wikimedia Commons and definitions from the AAT. An overview of the app is shown in a YouTube video.[34]

Imagine a student, or a volunteer helping out in a museum, using this app to do a "close reading" of an object. The "worksheet" function of the app consists of a series of screens, with different features depending on the type of object (**Figure 6**). Each feature is represented by an image in a grid. For example, a dress can be described in terms of silhouette, closure, material, neckline, sleeve type, and so on. Non-expert users will engage with an object, learn what features are important to look for, and get visual help with vocabulary terms. Their observations could even be collected via crowdsourcing and then contributed back to the holding institutions.

There is potential also for this app to be used in reverse as a tool for constructing a search query based on visual choices, without having to know the correct vocabulary. This could also help with the long-term goal of cross-collection searching. The multitude of different formats and inconsistent vocabularies in legacy metadata will not be resolved any time soon. Therefore, a customized form of indexing may be more feasible than custom data entry. The work already underway to match vocabularies and identify synonyms may help with this process. Rather than a faceted search which requires terms to be placed in granular data fields, the better solution may be to use some of the functionality of DressDiscover as a visual search refinement tool that generates costume history specific keyword search queries across a range of publicly accessible

costume history websites, using multiple synonyms. This refinement would not require institutions to change the structure of how their metadata is stored, or to formally contribute metadata to a shared resource. Rather, the only requirement would be for collections to make their metadata publicly accessible online and allow it to be crawled.

Conclusion

In the years that the work on Costume Core has gradually unfolded, two main focus areas have emerged: ease of use for novices, and adoption of linked data for cross-collection compatibility. The groundwork has been laid for more inter-institutional collaboration, to share methods, systems, and vocabularies on the way to the goal of searching across collections. While aspects of Costume Core have been tested informally with additional collections, the next step will be to perform more formal user testing and make improvements based on feedback and contributions from the wider costume history community.

NOTES

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