

The Persistent Narrative

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Abstract:

“Clothes might...be understood as forms of thought, reflections and meditations as articulate as any poem or equation” (Bari 2016). Dress has inspired a multitude of narratives from the perceptive observations of scholar Ann Hollander (Hollander 1999), to poet laureate Robert Pinsky’s reflections on the fabrication of his *Shirt* (Pinsky 1997), to the personal narrative of young interviewees on *thetab* blog who identify fashion as playing “a significant role in our transformation and development as human beings” (*thetab* 2016). Narrative can be supported and driven by stimulating media and shared through best practices information architecture. Interpretive narrative can be inspired by digitally enhanced displays of dress created by museologists and technologists. The Drexel Digital Museum Project (DDM) is an international, interdisciplinary group of researchers focused on production, conservation and dissemination of new media for exhibition of historic fashion. This paper shares our research.

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Introduction to the Project

The Drexel Digital Museum project (DDM) was begun in 1998 as a prototype archive for high quality, multiple view, images of historic fashion from the Drexel Historic Costume Collection, now the Robert and Penny Fox Collection; and to create a best practices, open source historic costume/fashion information system with controlled vocabulary. The Collection had no curator at the time, was partially archived on 3”x5” paper cards, and in need of professional custodianship. An additional aim of the project was to gain an audience for the then 14,000 plus fashion objects in the collection and appoint a proper caretaker. Project research has resulted in over 40 journal articles, book chapters, conference proceedings and numerous invited lectures on the DDM research in the communities of historic costume, fashion design, informatics and digital cultural heritage. In 2008 a full time curator was hired. The Collection is now housed in a best practices environment, with building beginning on a new permanent exhibition space. It has grown to 17,000 plus objects, including the recently donated, intact archive of late, renowned fashion designer and Philadelphia native James Galanos.

The team of international collaborators has grown to include: Drexel University’s Colleges of Media Arts & Design, Computing and Informatics, Arts & Sciences, the iDEA E-Repository of the Hagerty Library, and the Fox Historic Costume Collection; Seoul National University; the University of New South Wales, Australia; the Fulbright Foundation; the Costume Society of America and London College of Fashion, University of the Arts London.

Best Practices Imaging for Historic Artifacts

Before designing the archive, a survey of the members of the Costume Society of America (CSA) revealed one of the prime requirements of the archive should be high quality images of dress, with multiple views and details of construction and embellishment. At the time, 1998, museums, afraid of their images being reproduced for non-licensed commercial gain, were display-

ing low quality images, often watermarked for added copyright protection. To the DDM team, the value of an image was to advertise a collection, by bringing the viewer as close to the aura of the object as possible and leaving them wanting to visit the collection in person. Much has been written about the changing identity of the museum and its role in the community with a rise in leading global institutions championing an open access movement within the arts (Bautista 2014). Quality image making, conservation and distribution play a large part in this role.

Adam Lowe, one of the founders of the high resolution imaging company Factum Arte, argues that "...facsimiles, and especially those relying on complex (digital) techniques, are the most fruitful way to explore the original and even to help re-define what originality actually is." And that "the digital is just one instance in the life of the original object" (Sattin and Lowe 2014). To best utilize the set up time and photographer fee we imaged at the highest possible resolution and data standards of the time. The specifications we used then still meet the standards of the National Archive of the United States and, in our most current research, far surpass them (fig.1).

A Comparison of Archival Data and Image Standards National Archive-Drexel Digital Museum Project			
	Current NARA Standards	DDM Standards 2000-2014	DDM Standards 2015
image parameter	10- 16 megapixel	6 megapixel	126.5 megapixel
image mode	24 bit RGB	24 bit RGB	24 bit RGB
pixel array	4800 x 3700 pixels	4500 x 3000 pixels	8831 x 14325
alternative image parameter	6 megapixel	6 megapixel	N/A
alternative pixel array	4000 x 3000 pixels	4500 x 3000 pixels	N/A
file formats	JPEG, uncompressed TIFF	JPEG, uncompressed TIFF	JPEG, uncompressed TIFF
color profile	custom ICC	MOAC standard	MOAC standard
noise (other objects or patterns in background)	minimal noise	no noise, grey photopaper background	no noise, grey photopaper background
zoom	no zoom technology	no zoom technology, individual close-up files	high resolution detail at 100% zoom
future file processing options	files stored direct from camera, minimal processing	RAW files stored direct from camera, TIFF	RAW files stored direct from camera, TIFF, HTMLS object panorama
header data	camera header data tags saved	camera header data tags saved	camera header data tags saved
image stitching	source files and stitched files saved	source files and stitched files saved	source files and stitched files saved

Fig. 1: Comparison chart: Drexel Digital Museum Project (DDM) and the US National Archives and Records Administration (NARA) image standards.

To meet the CSA users' wish for multiple views we used Apple's QuickTime Virtual Reality (QTVR) software to stitch together 18 views of the dress as we rotated it on a Kaidon Rig. An example can be seen in this image of the 18 views and details of a Givenchy gown donated to the Collection by Grace Kelly. With QTVR, the viewer can rotate the garment and zoom in on 'hotspots' of details (fig.2).



Fig. 2:
Evening gown. Hubert de Givenchy. 1963. Image Collection Drexel Digital Museum. Object Collection: Fox Historic Costume Collection. 69.11.1. Gift of Princess Consort of Monaco Grace Patricia Kelly (actress and Philadelphia native Grace Kelly).

As bandwidth speeds have increased, QTVRs have been replaced with video and Apple has dropped support of the plugin. “QuickTime 7 for Windows is no longer supported by Apple. New versions of Windows since 2009 have included support for the key media formats, such as H.264 and AAC, which QuickTime 7 enabled. All current Windows web browsers support video without the need for browser plugins.” (Apple 2014) Flash was briefly considered as a replacement for QTVR but also required a plugin. Google has blocked Flash from the popular Chrome browser in December of 2016 and Facebook “made every video on its website play in HTML5 by default across all browsers (Verge 2017).” A plugin free environment would be our best path for sustainability. Because of the best practices employed in our image capture process from the beginning of the project we are able to convert the QTVR images into MP4 using Camtasia software.

Our image capture process now uses GigaPan technology to create 3D interactive media, ObjectVR, which can be displayed at up to 3 times life size. Our foremost responsibility in the image capture process is to confirm the quality and authenticity of the data used to create the digital facsimile. Similar to our QTVR process, the garment is mounted upon the Kaidon Rig and rotated to capture 18 views of the image. Using GigaPan technology we have captured 4 columns of 10 rows of images for each view, producing 40 Camera RAW images per view for a total of 720 images per garment. Each stitched image created using GigaPan technology is approximately 125 megapixels (fig.3).

The images are then taken into Adobe Photoshop where the garment is selected from the background. The background is replaced with a gradient, mid-tone grey, backdrop created in Photoshop. This background was tested on a variety of fashion designs to determine a uniform background, which would best display the variety of colors and textures of fashion garments (fig. 4). Object2VR by Garden Gnome Software, which generates object VRs as HTML5 output formats, is then used to turn the TIF files into an interactive ObjectVR. These current processes use web ready HTML5 outputs, a developing mark-up language standard for structuring and

presenting multi-media and graphic elements online (Applause 2015). Using HTML5 is ideal for its cross-browser and cross-platform compatibility and plugin-free output. These high resolution ObjectVR can be rotated, panned and zoomed into minute detail, allowing the viewer to be an active participant in the exhibition of historic fashion, creating individual narrative through digital interpretation <http://digimuse2.westphal.drexel.edu/DDMFranklinTurnerJessie03/>.



Fig. 3:
GigaPan imaging session set-up, Motion Capture Lab, Drexel University, 2015. Left to right: Nick Jushchyshyn, Director, Animation and Special Effects, Fulbright Scholar Daniel Caulfield Sriklad, Project Director Kathi Martin, Fox Collection Curator Clare Sauro.



Fig. 4:
Front, back and close-up views, ObjectVR. Evening gown. Jessie Franklin Turner. 1932. Image Collection: Drexel Digital Museum. <http://digimuse2.westphal.drexel.edu/DDMFranklinTurnerJessie03/> Object Collection: Fox Historic Costume Collection. 64.59.7. Gift of Mrs. Lewis H. Parsons.

The creation of such digital objects highlight the potential to embed further layers of digital interpretation for an audience of various interests in the dress narrative. The 1963 Givenchy gown donated by Grace Kelly is an example of an archive piece, imaged by the DDM that has a wealth of related digital assets of Grace Kelly wearing the garment. Getty images, digitized press coverage and video footage from the British Pathé archive are just some of the digital content that exist online. Investigation into the HTML5 output offers the potential to embed this content within the final image, ultimately extending the narrative of the original physical garment through digital annotation.

Inclusive Informatics

A second user requirement from that early survey was the ability to query the archive from a variety of terms. As we create the artifacts for the visual narrative, rich metadata descriptions of our media, mapped to current standards of archiving, ensure their continued discovery, access and conservation. A critical element in description schema is a structure of agreed upon terms to describe the costume object (fig. 5). Our user groups include historic costume collection scholars, fashion design students and faculty, fashion designers, historians and dedicated followers of fashion. To incorporate as many varieties of terms, we decided to create a hierarchy of fashion terms that would marry the historic costume collection terminology research conducted by the International Committee for Museums and Collections of Costume of the International Council of Museums (ICOM 2016) with historic and contemporary fashion design terminology from Pickens (Pickens 1957), and the vocabularies of the Getty Research Institute Getty (Getty 2016) among other sources.



Fig. 5:
Historic Fashion/Costume terminology, DDM.

Synonyms are used extensively as a means to assign multiple terms to the object's identity. A click on the object record displays the levels of the hierarchy the archivist used to get to the assigned term. The archivist can assign a term from any level of the hierarchy if the more granular term is not known. Terms may be added to the hierarchy as the archive expands. In current use by DDM we require citations from 3 publications in which the term appears before it can be added to the hierarchy. The publications may be from varied disciplines – fashion, art history, cultural heritage, popular culture, etc. There is a newly formed Inclusive Vocabulary Working

group among members of the Costume Society of America to create a data structure for this project and to crowd source terms from the costume community which would sort by popularity of use. This would keep the terms in the hierarchy current without ignoring the historic references.

For description of the original object, we borrowed extensively from the Core Categories for Visual Resources (VRA Core) and the fields used in the Museum Educational Site License Project (MESL). The DC standard and AMICO's data dictionary allow the project team to specify data elements related to materials, dimensions, provenance and production techniques along with other technical, administrative, descriptive, and preservation metadata elements (fig. 6). As available technology has advanced we collaborated with Open Source software Collective Access to update the back end. A visitor view of the back end can be accessed at http://digimuse2.westphal.drexel.edu/drexel_login: guest; password: guestaccess.

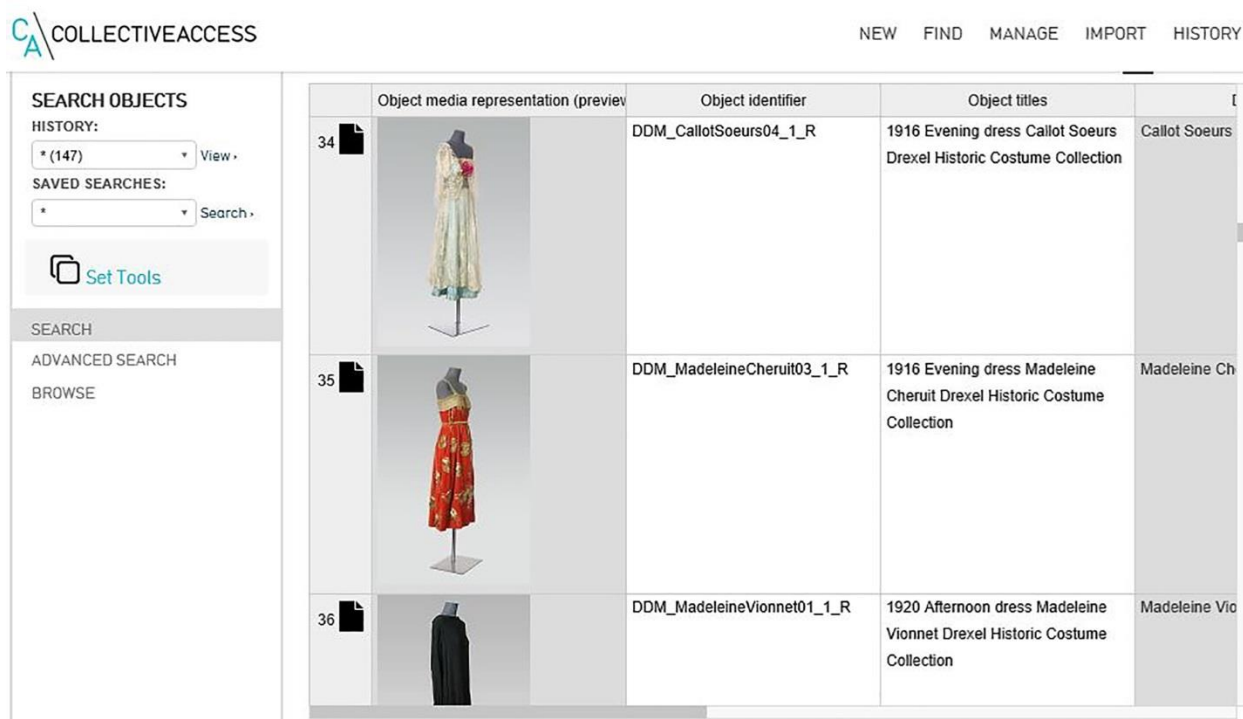


Fig. 6: Search screen, Collective Access backend, DDM.

While the ObjectVRs and archival information will be hosted and accessible via DigiMuse, the hundreds of still images as well as documentation of the process used to stitch them into ObjectVRs will be recorded in the iDEA as a repository, hosted by the Drexel Library Group (DUL), for the research output of the institution, both for preservation and to provide the opportunity for other researchers to examine and repurpose the process and results of research. By providing a permanent record of the DDM's workflows and content, iDEA will allow others to go beyond interacting with the ObjectVRs and understand how they were created. The DUL team has developed a strategy to provide description and discovery of the DDM's research objects across multiple platforms.

To provide a framework for this, DUL has worked with the DDM team to map metadata from the customized fields in DigiMuse to Metadata Object Description Schema (MODS). MODS is a robust metadata schema maintained by the Library of Congress which provides a high degree of granularity and extensibility and can be used to describe a wide variety of physical and digital

objects. MODS also supports the use of embedded uniform resource identifiers (URIs) for entities such as names and topics, which will facilitate eventual exposure of these assets via linked open data.

Dressing, shipping, insuring, and preparing for display of original historic fashion objects is expensive. These finite objects will deteriorate with each additional exhibition. Our high resolution, interactive ObjectVRs record the original object at that moment in time, before further deterioration. The team plans to integrate the ObjectVRs into 3D panoramas of historic spaces and exhibit them in high resolution, large scale display in future exhibitions (fig. 7). Using an iPad, the audience will be able to rotate the garment to all sides, zoom in on details and access linked data from other repositories. The digital museum can be loaded onto a hard drive and shipped around the world, scaled up for exhibition on 12 foot monitors or scaled down for 24" monitors. The ObjectVRs can be combined with digital artifacts and 3D panoramas of other historic spaces to create additional perspectives and new interpretations of our collective cultural heritage.

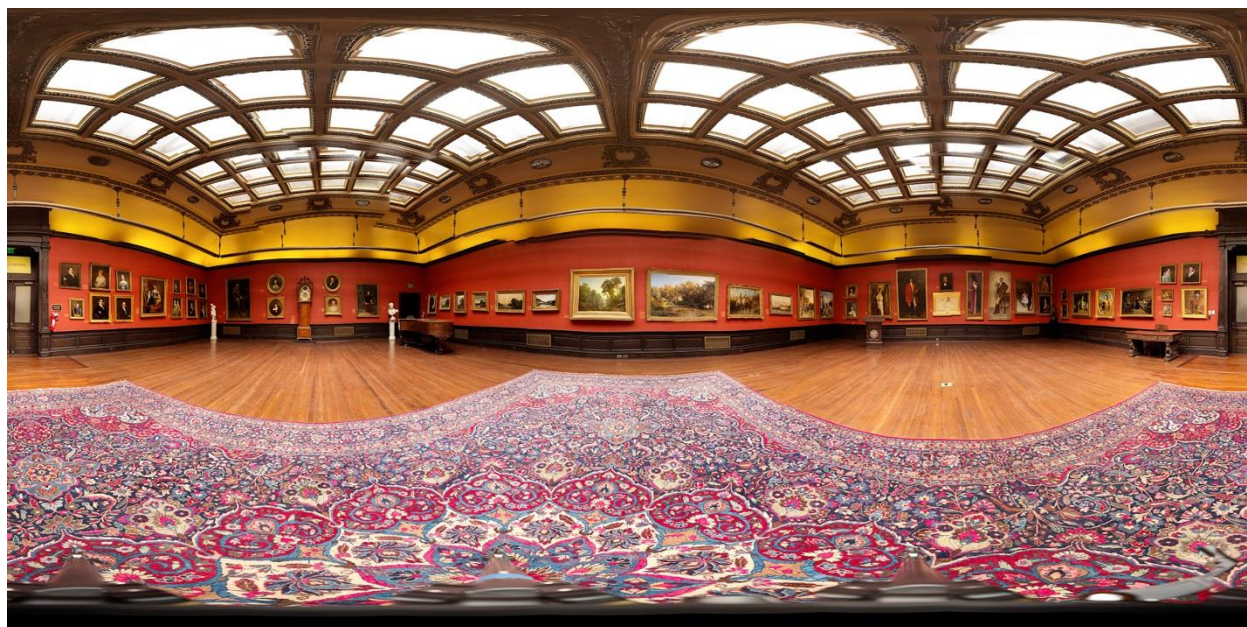


Fig. 7:
GigaPan panorama, Drexel Picture Gallery, Drexel University.

Conclusion

By giving public access to the information that was previously relegated to the file cabinets and card catalogues through APIs and datasets, and doing it in a way that enables users to manipulate and re-interpret that data, museums are expanding the ways in which the public can encounter and interact with their collections. Through openness we can build upon connectedness, which will preserve and enrich our cultural heritage.

The DDM will provide, through continued imaging research and the iDEA repository, broad access to examples of fashion's rich cultural heritage. This open access to information and digital content offers a new type of digital interpretation for the user and the creation of further narratives beyond what would previously been available through physical display of the original fashion object. Building an international and customizable electronic dialogue about dress increases the potential for multiple narratives about the original object and can ultimately create a persistent narrative that transcends the aura of the original object.

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