

## Digitalisation of Historical Dress and Textile Collections: Facilitating Platforms for Accessibility, Preservation, and Research of Material Culture

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*By adopting new museological functions, surviving artefacts open up the possibility of illuminating complex interrelations between the lifecycle of humans and objects. Imbued with a unique and intimate material memory, historical textiles encapsulate evidence surrounding their conceptualisation, production, and consumption, as well as their distinct participation in the construction of social and cultural identities. Encouraged by conservation-related requirements and challenges posed by the traditional mechanics of storage and display, collections and archives have embraced a range of advanced technologies in order to strengthen their role as repositories of material information. The potentially unlimited virtual space of digital representations contributes to the specific goals of individual collections by enabling enhanced accessibility and widespread dissemination of content, thus allowing the values embedded within the physical structure of objects by both their makers and users to cross the barriers of institutional settings. Furthermore, considering the fragile nature of historical textiles and their susceptibility to deterioration, the development of digital collections lowers the risks of excessive handling while providing unprecedented opportunities for scholarly research and alternative pathways to artefact investigation. In order to address the diverse implications of the digitisation process, this paper will explore the relationship between physical and digital collections of dress and textile objects as material remnants of the past, the ability of digital representations to convey authentic cultural meaning and value, as well as the ongoing demand for the standardisation of data and its interoperability within the digital environment.*

**Keywords:** digitisation; dress; textiles; preservation; collections; material culture

### Izvorni znanstveni rad\*\*

Preuzimanjem novih muzeoloških funkcija, preživjeli artefakti otvaraju mogućnost rasvjetljivanja složenih međudnosa između životnih ciklusa čovjeka i predmeta. Prožeti jedinstvenom i intimnom materijalnom memorijom, tekstilni artefakti sadrže dokaze koji okružuju njihovu konceptualizaciju, proizvodnju i potrošnju, kao i njihovo izričito sudjelovanje u izgradnji društvenih i kulturalnih identiteta. Potaknuti konzervatorskim zahtjevima i izazovima tradicionalnih mehanizama pohranjivanja i izlaganja, povijesne zbirke i arhivi usvojili su niz naprednih tehnologija u svrhu unapređivanja svojih uloga kao spremišta materijalnih informacija. Potencijalno neograničeni virtualni prostor digitalnih prikaza pridonosi specifičnim ciljevima pojedinačnih zbirki uz ostvarivanje povećane dostupnosti i šire diseminacije sadržaja čime se vrijednostima koje su ugrađene u fizičku strukturu predmeta od strane njihovih stvaratelja i korisnika omogućuje prelaženja granica institucionalnih okruženja. Nadalje, uzimajući u obzir osjetljivost povijesnih tekstilnih predmeta i njihovu sklonost propadanju, razvoj digitalnih zbirki smanjuje rizike pretjeranog rukovanja pružajući do sada nezabilježene prilike za znanstveno istraživanje i alternativne oblike ispitivanja predmeta. U svrhu razmatranja raznolikih implikacija procesa digitalizacije, ovaj rad istražiti će odnos između fizičkih i digitalnih zbirki odjevnih i tekstilnih predmeta kao materijalnih ostataka prošlosti, sposobnost digitalnih prikaza za prenošenje autentičnih kulturalnih značenja i vrijednosti te kontinuirane zahtjeve za standardizacijom podataka i njihovom operabilnošću unutar digitalnog okruženja.

**Ključne riječi:** digitalizacija; odjeća; tekstil; očuvanje; zbirke; materijalna kultura

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## 1. Introduction

Transferred to the environment of collecting institutions, the physical structure of surviving objects preserves their historical existence while allowing them to acquire new roles as primary evidence of material conditions in which they were initially made, circulated, and consumed. As carriers of meaning with the ability to articulate historical processes and patterns belonging to the broader field of social and cultural history, collected and preserved artefacts open up the possibility of a direct, object-attentive methodological approach to scholarly investigations in a variety of disciplinary and interdisciplinary fields, ranging from art history and anthropology, to craft and design studies. Within the specific sphere of material culture research, the analysis and interpretation of extant objects, as well as the focus on their position within a range of community settings, expands the perspectives obtained through the study of visual and documentary sources by enabling archival remains to uncover encapsulated cultural beliefs and expressions of value [1]. In addition, historical abilities of objects to enter new cycles of consumption, extend their life expectancies as commodities, and transform their cultural biographies [2] highlight the ways in which interactions with the material world shape relationships between humans and objects, including the construction and communication of social and economic issues related to personal and collective circumstances.

By taking on various semiotic roles, dress and textile objects act as exemplary tools in expressing patterns of taste, negotiations of individuality and distinction, as well as compliance with societal standards surrounding rituals of birth, maturation, marriage, and death [3,4]. Moreover, while encapsulating prevailing aesthetic principles, manufacturing techniques, and pathways of global trade, detailed readings of their material properties open up the potential to approach textiles as specific “sites” of memory [5] invested with physical and emotional experiences linked to personal consumption practices and imbued with amicable and intergenerational meanings of social interchange. In order to carefully interpret intricate ties between the lives of humans and objects, artefact-based investigations require the adoption of a complex research methodology combined with the application of historical knowledge and professional skills that enable a closer look at evidence related to the processes of making and embodying textile objects. However, along with collection management and display, excessive handling for the purpose of scientific enquiry may further exacerbate deterioration and cause irreparable damage to their, already vulnerable, physical existence [6]. Made of natural

fibres, historical textiles belong to the category of artefacts with the highest degree of fragility whose safekeeping for future generations should be accompanied with the implementation of a range of preventive conservation measures. Despite being stored in controlled environments to minimise further degradation caused by light, humidity, inadequate temperature, dust, and contamination [7], opportunities to fulfil some of the central missions of collection-holding institutions concerning the dissemination of knowledge through public presentations of cultural heritage require an equal level of control along with the avoidance of indefinite displays. As a result, guidelines stipulated by the ICOM Committee for Museums and Collections of Costume in relation to accessioning, storage, conservation, and display of historical textiles, indicate the importance of documenting dress and textile collections as a valuable pathway towards the reduction of harmful effects associated with conventional hands-on practices [8].

## 2. Collecting institutions and technology

Although traces of information technology have been observed throughout the organisational processes of cultural institutions since the 1960s [9], unprecedented opportunities for the publication of textual information stored within museum databases and collection management systems started to emerge with the advent of institutional websites. Such novel avenues for scholarly research and public exploration of archival material opened up the opportunities to transform institutional conventions and substantially alternate contemporary interactions with the past. Marked by the adoption of digital technologies, the last decades have continued to experience exponential shifts in the accessibility of material culture objects through the unlimited space of the virtual sphere, with diversified ways of publicising knowledge managing to challenge and enhance some of the elementary functions of museums and material culture collections. While the increase in opportunities to document extant artefacts through digital repositories should be asserted as a tool instead of objective *sui generis* [10], digital re-contextualisation of information pertinent to museological afterlives of objects appears to be of crucial importance both in relation to the introduction of individual dress and textile artefacts to global audiences as well as with regard to their ability to serve as vehicles for historical analysis.

Within a number of collecting institutions, closer examinations of the materiality of textile objects can be commonly restricted due to preservation-related

considerations and their physical unavailability in times of display. As the object-based study of fibres, decorative patterns, construction techniques, and practices of wear demands detailed observation and application of a discipline-specific methodology, careful interpretations of garments and textiles are inevitably linked to viewing appointments, whereas handling needs to be performed by specialised museum professionals. Due to limitations imposed by their high sensitivity, the demand for first-hand examinations may, in most institutions, lead to substantial waiting times based on staff availability and may be accompanied by the need to locate relevant artefacts in disparate institutional settings. In addition, issues related to collection management, insufficient space, and limited funding, may keep a large percentage of artefacts permanently in storage, away from fulfilling their core museological function to communicate historical narratives to broader audiences. In cases such as these, as well as during the time spent on loan or undergoing conservation, previously mentioned documentation processes suggested by ICOM, including photography, pattern-taking, drawings, and written descriptions, may indeed significantly supersede the amount of repeated handling of historical textiles. In order to open the door for research in dress and textile history through representational material, additional steps are required to enable access to accumulated information. To this end, continuous and long-term assimilations of technological advancements within the structure of historical collections have managed to introduce museums and other collection-holding institutions towards their current position within the evolving context of digital culture.

### **3. Digital representations and issues of authenticity**

Through their ability to facilitate interaction with digital images rather than with sensitive or remotely located physical objects, digital databases have brought profound changes to the study of dress and textile history. Despite the material absence of a textile object, textual information concerning its provenance records, including origin and cultural practices surrounding ownership [11], as well as other inventory content in relation to curatorial, educational, or conservation-related material [12], can now be remotely discovered alongside digital images of the object's physical form. This way, digital projects enable historical details surrounding dress and textile artefacts preserved in institutions such as the Costume Institute collection of the Metropolitan Museum of

Art, where access by prior appointment requests may be limited to scholars, students, and designers, to extend their existence beyond the physical boundaries of institutional settings as exclusive guardians of materially embedded information. Aside from increasing the visibility of collection holdings, digital renderings encompass various sets of functions. As discussed by Anne Beaulieu and Sarah de Rijcke, integrated in databases, digital images take on new roles as interfaces leading users to change their habitual interactions with historical information as well as to adopt, what the authors term, "networked practices of seeing". In order to facilitate new ways of looking at objects, particularly when it comes to professionals with specific skills in working with digital material culture, digital representations should be sufficiently reliable, fulfilling a set of requirements in relation to their size, quality, and the implementation of the digitisation process. Rather than focusing on their quantity, digital images should be understood as active objects that enable detailed viewing possibilities without the direct interaction with objects. To meet these goals, digital museum objects should be accompanied by a high level of interactive functionality, such as the ability to zoom in to detect details invisible to the human eye or accommodate changes in resolution [13]. According to ICOM, the process of photographing historical dress and textiles necessitates utmost care and prior experience in museum photography. In order to obtain sharp images with accurate colours without repeated handling and prolonged exposure to light and heat, the documentation process should be accompanied by curators and conservation experts and conceptualised in advance in terms of the desired documentation of details, angles, and background [8]. With regard to challenges related to traditional mechanics of displaying historical garments that demand materialised substitutes for the human body or, as postulated by Mark B. Sandberg, "effigies - not simply the mannequin kind but an entire range of recorded and digital bodies" [14], complex three-dimensional visualisations with rotating figures and multiple points of view may maximise the use of digital technology by seamlessly creating an illusion of the key missing element of public exhibition - the human body.

Since the emergence of online databases and as part of an ongoing interest in the implementation of digitisation projects, digital objects have proven themselves as invaluable tools in scholarly research. However, discussions of the relationship between original objects and various types of museological substitutes [15] call attention to the complexity of issues surrounding the levels of authenticity provided by indirect, mediated engagement with archival content. Material culture scholarship highlights the

importance of sensory, tactile, and affective experience in dealing with objects with the purpose of uncovering their full potential as repositories of meaning. In a similar way, Walter Benjamin reminds us that “in even the most perfect reproduction, one thing is lacking” and by referring to the “unique existence” of a work of art, Benjamin stresses the importance of its ability to carry “the mark of the history to which the work has been subject”, a history that covers “changes to the physical structure of the work over time, together with any changes in ownership” [16]. Benjamin’s words expressed in relation to his concept of aura resonate with investigative aims of the interdisciplinary field of material culture studies, its focus on the study of man-made objects, as well as the adoption of artefact-based methodology. This may lead to assumptions that digital representations of historical dress and textile objects may not possess the ideas of materiality equal to those uncoverable in direct interaction with surviving artefacts. Within the established field of dress history, object-attentive investigation requires a particularly meticulous involvement with the extant object in order to observe all relevant information pertinent to its fabric, cut, construction, and style, to analyse details such as buttons, zippers, hooks, and trims, as well as to elucidate signs of wear, alterations strategies, and other physical interactions with the artefact that can identify individual circumstances of its previous owners [17,18].

As postulated by Ingrid Mida and Alexandra Kim within their “Slow Approach to Seeing”, a methodological phase that requires a distinctive, thorough approach when examining historical dress as material evidence, images taken during the research process may be beneficial, but are not to be used as a primary research method of object-based analysis [19]. On a similar note, while discussing the accessibility of historical artefacts, in their introduction to “Writing Material Culture History”, Anne Gerritsen and Giorgio Riello indicate the invaluable contributions of online catalogues, databases, and digitisation projects, as well as the importance of the integration of textual and visual information for material culture enquiries, ending on a note that “online access to digital images is one of the tools available to researchers and cannot substitute the engagement with material artefacts” [20]. However, as argued by contemporary museological scholarship, to ensure the fulfilment of their potential, digital museum objects should be released from imposed hierarchies of value established in relation to their physical counterpart in which they may occupy a lower position [21] and should be seen as objects in their own right, with their own aura that actualises, confirms, and enhances the historical authority of the original object [22]. Most

importantly, having in mind that aging and deterioration processes may affect textile artefacts regardless of conservation-related efforts, digital images possess the unique quality to capture a particular state of materiality and “solidify” the features of physical objects within a specific moment in time, excluding future marks of museological afterlives from their original historical biographies [23].

#### **4. Metadata schemas, interoperability, and searchability of digital collections**

The encounter of relevant archival material by dress and textile history scholars, museum professionals, and non-professional users remains largely dependent upon the institutional adoption of controlled vocabularies and standardised metadata schemas [24]. Responsible for the discovery of information, structured vocabularies describing textile objects, including their title, provenance, makers, date, and related concepts, facilitate access to digitised collections in relation to specific user enquiries and professional work in database settings. While focusing on the relationship between textiles and digital technology, Amanda Sikarskie offers insights into the Michigan State University’s Quilt Index, an immense digital repository of quilts collected by private and public institutions across the globe developed as part of a university’s digital humanities research and education project. By correlating the success of digitisation projects in archival preservation with the quality of selected metadata schemas, Sikarskie positions the adoption of internationally recognised standards for indexing and retrieval of visual culture and decorative objects such as the Dublin Core and VRA Core in relation to custom vocabularies. Sikarskie argues that metadata schemas should reflect the specificities of the collection and asserts that, despite their high interoperability with other collections, standard vocabularies may not necessarily represent the most appropriate solution due to their limitations in describing the abundance of details embedded in historical textiles [25].

Along with the study of material evidence, methodological approaches in dress and textile history indicate the importance of integrating object-attentive research with a range of primary visual and textual sources, such as paintings, photographs, illustrations, periodicals, inventories, diaries, and personal correspondence [7,26]. Given that this material may be located in distant museums, archives, and libraries, engagements with digital databases can be enhanced by aggregators with the power to connect multiple repositories, thus instigating novel pathways for

scholarly insights, curating opportunities, and juxtaposition of knowledge [12,27]. Significant contribution to the aggregation of dress and textile collections has been made by Europeana, a European Union project with the aim of creating a shared digital environment to empower Europe's rich cultural heritage sector. By joining aggregators whose scopes are marked by cultural domains, themes, nations, and regions, Europeana interconnects thousands of organisations, with the European Fashion Heritage Association acting as the world's largest fashion heritage network that provides a link between more than 50 private and public cultural heritage institutions from 15 European countries [28]. Established in 2014, the Association accompanied the Europeana Fashion project funded with the purpose of connecting geographically dispersed, heterogenous digital collections and building a thematic aggregator to supply the Europeana website with fashion-related content, including historical dress, accessories, photographs, magazines, drawings, catalogues, and videos [29]. In collaboration with brand archives, such as Salvatore Ferragamo, Missoni, and Pucci, as well as prominent museums, such as the Victoria and Albert Museum, Fashion Museum Antwerp (MoMu), Musée des Arts Décoratifs Paris, and Palais Galliera, among others, the Association has managed to develop the largest existing digital fashion heritage repository and expand access to fashion heritage data through the Europeana website.

With an extensive collection of over 1.2 million objects, the Victoria and Albert Museum continually implements strategies to redesign its online collections in order to facilitate the exploration of temporal and geographic contexts surrounding the original lives of objects and enhance the needs and experience of users by improving searchability and discoverability of its digital content. The museum's "Explore the Collections" portal enables visitors to enter their queries into the search field as well as to filter objects by category, maker (person or organisation), collection, gallery, style, place, type, technique, material, and date, allowing them to make further comparisons with similar artefacts via buttons available on the information page of each object. Discussing its goals to make collections discoverable through a search service that is both efficient and accurate [30], the Victoria and Albert Museum indicates an awareness of difficulties encountered by users during the digital search process. According to Joan Beaudoin, these issues may be commonly associated with search functions, field labels, order of retrieved items, as well as general differences in descriptions and terminology used by professional staff and external visitors [31]. In this sense, encounters with digital dress and textile collections and success in the

retrieval of information belonging to relevant material may be enhanced through improvements in the use of structured metadata schemas and nomenclature standards [32]. Yet, the accomplishment of such goals may be limited by the complexity of the digitisation process itself as part of which issues of expertise, time, and funding cannot be overlooked. In the United States, only a third of art museums have made their collections available online [31] and new projects related to the digitisation of cultural heritage are still being developed and supported within the network of Europeana. While Marie Riegels Melchior differentiates between the concepts of "dress museology", delineated as a practice that underpins the study of dress history based on the ICOM handling and preservation guidelines, and "fashion museology", described as its extension focusing on the cultural phenomenon of fashion with links to fashion industry, designers, and celebrity culture [33], this paper has considered and integrated "dress" and "fashion" as discussed by Mida and Kim whose object-based methodology outlined in "The Dress Detective: A Practical Guide to Object-Based Research in Fashion" covers objects defined by both terms, including within the notion of dress "all clothing and accessories that exist in material form" [19]. Understood as carriers of meaning, surviving artefacts have the power to act as texts and, in a distinctive way, enrich the exclusive analysis of written documents by drawing attention to the complexity of human voices that would otherwise remain absent from historical scholarship [34]. To this end, the paper aimed to approach the ways in which advanced technologies opened up new chapters in the history of material culture collecting by enhancing the visibility of the vast human experience of making, using, and embodying textiles through the means of a democratised and inclusive networked environment.

## 5. Conclusion

As a continuously evolving process, the digitisation of dress and textile collections has thoroughly transformed institutional practices by supporting a range of strategies that combine efforts related to the preservation of delicate archival material with innovative approaches towards the exploration of social and cultural history. Observed through the framework of material culture studies, along with their numerous advantages, the potential of digital museum objects to replace tangible, unmediated contact required for scholarly analysis in the field of dress and textile history has been positioned within the dichotomy of authenticity and representation.

While object-based approaches in the study of dress and textiles demand direct insights into the complex physicality of artefacts to uncover narratives surrounding human engagement with the material world, ranging from details of manufacture to consumption patterns and negotiations of identity, it can be argued that interactions with digital counterparts have the unique power to confirm the authenticity of surviving objects, their historical existence, and aura, as well as to strengthen the ability of digital collections to support novel modes of academic enquiry and curatorial initiatives. Most importantly, the wide-ranging opportunity to investigate dress and textile artefacts through digital repositories crosses the necessary boundaries imposed by their museological afterlives, allowing objects to communicate their physical presence outside the limits imposed by time and geographic proximity, thus forging a diversified participatory experience in the production of knowledge.

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