A Thesis
on the Authenticity and Preservation
of Functionally-Used Objects

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Abstract

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For many museums with physical collections, preventive conservation was the basis for "best-practice" collections management policies. Under such a philosophy, the purposeful subjection of a collections object to hazardous conditions would be unacceptable. Hazardous conditions simultaneously risked a permanent loss to the object's state of preservation and impacted its original authenticity. And yet, there were museums that functionally utilized their objects of functional or utilitarian purpose. Utilization referred to the museum using a utilitarian or functional object toward the purpose it was built to perform. There was not a large body of literature detailing how museums with functioning collections objects regarded the issues of authenticity and preservation. This study attempted to discover how museums that functionally-use objects from permanent collections considered how object authenticity intersected object preservation. This study employed a Delphi technique to acquire data. The intention was to find consensus, or a convergence of opinion, amongst the participants. Collections managers of five museums in the United States that functionally used objects were included in the study. The results of this study suggested a single principal conclusion: that the intersection of authenticity and preservation of museum collections objects is that of the functional-use of those objects. The authenticity and preservation of museum collections objects were independently and

predominately defined as hinging on the objects' active and functional use. The primary limitation to this study was the small sample size.

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With thanks

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Hollye Keister

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Carol O’Donnell

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"But whatever be the Difficulties, that lie in the way of this Enquiry; whatever it be, that keeps us so much in the Dark to our selves; sure I am, that all in the Light we can let in upon our own Minds; all the Acquaintance we can make with our own Understandings, will not only be very pleasant; but bring us great Advantage, in directing our Thoughts in the search of other Things."[1]

John Locke, 1689 CE

[1] John Locke, An Essay Concerning Humane Understanding, 2nd ed. (London: Printed for Awnsham and J. Churchil at the Black Swan, 1694), Book 1, Chapter 1, §1.

CHAPTER ONE: INTRODUCTION

No matter the organization or individual, a rational action is predicated on a philosophy, and preventive conservation is an established philosophical construct in the museum field. For many museums with physical collections, preventive conservation is the basis for "best-practice" collections management policies. Museum Registration Methods 5th Edition defines preventive conservation as, "the mitigation of deterioration and damage to cultural property through the formulation and implementation of policies and procedures…"[2] In other words, preventive conservation seeks to preserve material as it is in its original or current form. Museums that subscribe to the philosophy of preventive conservation appear to value the concept of originality or of the status quo,[3] and thus follow Edward Bruner's definition of "Authenticity as Originality", a term referenced from his published work, "Abraham Lincoln as Authentic Reproduction."[4] Under such a philosophy, the purposeful subjection of a collections object to hazardous conditions would be unacceptable. Hazardous conditions would simultaneously risk a permanent loss to the object's state of preservation and affect its original authenticity, affecting both the philosophy and the practical policy.

Yet, there are museums that functionally utilize their objects of functional or utilitarian purpose.[5] Utilization, in this regard, refers to the museum using a utilitarian or functional object toward the purpose it was built to perform. A museum with an airplane in its collection would fly

[2] Rebecca A. Buck and Jean Allman Gilmore, eds., *Museum Registration Methods Fifth Edition*, 5th ed. (Washington D.C.: AAM Press, 2010), 287
[3] David A. Scott, "Fractal Forms and the Deterioration of Artefacts," Studies in Conservation 50, no. 3 (2005): 179.
[4] Edward M. Bruner, "Abraham Lincoln as Authentic Reproduction: A Critique of Postmodernism," American Anthropologist 96, no. 2 (June 1994): 399-401.
[5] For the purpose of this study, utilitarian objects from permanent museum collections used according to their original function to fulfil institutional missions will be referred to as "empirically-used" objects. The term utilitarian is used to differentiate certain collections objects from others defined by prominent aesthetic characteristics. In this case, "aesthetic" relates to an object created with no practical purpose beyond formal or conceptual appreciation. The use of the word "empirically", from the root, "empirical", is employed to support the notion that knowledge is gained from experience and observation.

the airplane within the course of the museum's operations, for example, or a museum with clocks in its collection would wind or otherwise set them in motion. There is not a large body of literature detailing how museums with active, functioning collections objects expressly consider the authenticity and preservation of objects that are functionally used. Due to the dearth of information on the subject, this study attempted to discover how museums that functionally use objects from permanent collections consider how object authenticity intersects object preservation.

Several museums advertise that they functionally utilize their utilitarian or functional objects, ranging from significant museums of science and technology to small-scale reenactment villages or sites. Examples of note include the Deutches Museum in Munich Germany where they advertise the working demonstration of exhibited machines on request, the American Clock and Watch Museum of Bristol, Connecticut where throughout the museum's eight galleries, "timekeeping devices chime and strike upon the hour,"[6] and the Simeone Foundation of Philadelphia, Pennsylvania where regularly scheduled "Demo Days" allow visitors to experience working automobiles on the track.[7] An example of a smaller historical site that functionally utilizes objects includes New Salem, Illinois, the birthplace of Abraham Lincoln, and the source of Edward Bruner's research into the conceptual subdivisions of authenticity.[8]

It is impossible to know for certain how many museums in the world actively utilize functional collections objects. To know with authority requires the museum to advertise their activities, or for a personal visit to the institution. Searching the American Alliance of Museums

[6] "Home," American Clock and Watch Museum, accessed April 16, 2019, https://www.clockandwatchmuseum.org/.
[7] "Machine Tools," Deutches Museum, accessed April 16, 2019, https://www.deutsches-museum.de/en/exhibitions/materials-energy/machine-tools/.; "Demo Days," Simeone Foundation Automotive Museum, accessed April 16, 2019, https://www.simeonemuseum.org/events/category/demo-days/.
[8] Richard S. Taylor and Mark L. Johnson, "Inventing Lincoln's New Salem: The Reconstruction of a Pioneer Village" (Unpublished, 1993).

website for accredited museums whose missions are likely to host functioning objects, the website lists 86 science and technology museums, 74 transportation museums, 142 military museums, 685 historic house museums, and 1293 history museums that are members of the AAM.[9] If even 5% of those museums utilize functional collections objects, that provides a utilization statistic of 114 museums, not counting international nor non-AAM accredited institutions in the United States. As "functional objects" span the entire breadth of human activity and interest, the possibility of museums of all sorts to either host or functionally utilize functional objects is significant.

This study employed a Delphi technique to acquire data. The Delphi study utilized questionnaires anonymously submitted to a panel of experts over several series. Each series built upon the results of the last in an emergent fashion, and the participants were asked to agree or disagree with the results of each question with a series. The intention was to find consensus, or a convergence of opinion, amongst the participants. Collections managers of five museums in the United States that functionally-used objects were included in the study, thereby illuminating a window of contemporary opinion from those knowledgeable of functionally used collections objects.

As aforementioned, this study will add to the dearth of literature concerning the authenticity and preservation of functionally used museum collections objects. Considering the myriad museums, historical societies, and archives of the world that hold objects of practical functionality, any advancement of common knowledge of this sort must be valid and intrinsically necessary. For those institutions that hold objects of functional ability that remain un-utilized, or for those who may be considering utilizing their collections, it is in the best interest of those

[9] "Find a Member Museum," American Alliance of Museums, accessed April 15, 2019, http://ww2.aam-us.org/about-museums/find-a-museum?_ga=2.95869916.1378622703.1556764699-118405649.1554856726.

institutions to consider the opinions of professionals that accommodate functional object utilization.

CHAPTER TWO: LITERATURE REVIEW

This study attempted to discover how museums that functionally-use objects from permanent collections consider how object authenticity intersects object preservation. This literature review sought to explore the existing research that was available about how institutions and individuals understand the concepts of authenticity and preservation in the fields of public history, cultural preservation, and free market capitalism. This literature review is organized based on three of Edward Bruner's four definitions of object authenticity, discussing the concepts of originality, verisimilitude, and genuineness. Further research is included in each sub-section to support each concept and to ground theory in evidence of practical application.

Object Authenticity

In 1994, Edward Bruner published an essay in which he mused on the concept of authenticity. He identified four types of authenticity: Originality, Authority, Verisimilitude, and Genuineness.[10] All but the "authenticity of authority" were discussed below, as any authenticity of authority may be considered a sub-category of authenticity of verisimilitude, in that credibility may be merely what is told to a visitor, and nothing more. Bruner's work served as a framework for the following review of literature concerning the authenticity of museums objects.

Authenticity as Originality

Bruner's definition of original authenticity was rather self-referential. He wrote: "it means original, as opposed to a copy."[11] When referencing originality, the concept of proof or provenance must also be considered. Dennis Dutton, in his published work, "Authenticity

[10] Bruner, "Abraham Lincoln as Authentic Reproduction: A Critique of Postmodernism." 399-401.
[11] Ibid, 400.

in the Art of Traditional Societies," referred to provenance as "Nominal Authenticity" — any empirical data that could be researched about any given thing.[12] The New South Wales Ministry for the Arts, as an institutional example representing any cultural institution of ethics and merit, highly values provenance, detailing "documented provenance" as a factor in how they determined what to preserve.[13]

The concept of authentic originality was presented in the philosophical puzzle, the "Ship of Theseus," referenced in Plutarch's writings. Plutarch told the story of a ceremonial Athenian ship used year after year. The ship continuously needed repair and subsequent replacement of parts until it was composed entirely of new or replacement material. Athenian thinkers wondered whether the current ship of common reference, by then a materially different vessel, was the same as when it was originally built.[14] The 1964 Venice Charter for the Conservation and Restoration of Monuments and Sites (The 1964 Charter) codified a literal interpretation of the paradox. Pamela Jerome, in her published work, "An Introduction to Authenticity in Preservation," interpreted The 1964 Charter as prescribing a reluctance of monument repair using new materials. Monument reconstruction using new materials should never be performed. If new materials were utilized, they must be clearly distinguishable from the old.[15]

These opinions are shared amongst a contemporary audience. David Hallam, David Thurrowgood, and Col Ogilvie of the National Museum of Australia took a literal

[12] Denis Dutton, "Authenticity in the Art of Traditional Societies," Pacific Arts, no. 9 and 10 (July 1994): 4.
[13] "Safe in the Shed: Caring for Historic Farm Machinery" (Crown, 2001), http://www.environment.nsw.gov.au/resources/heritagebranch/heritage/safeinshedfinal.pdf. 10.
[14] Michael Bruce and Steven Barbone, Just the Arguments: 100 of the Most Important Arguments in Western Philosophy, 1st ed. (Hoboken, NJ: John Wiley & Sons, Inc, 2011).
[15] Pamela Jerome, "An Introduction to Authenticity in Preservation," APT Bulletin: The Journal of Preservation Technology 39, no. 2 and 3 (2008): 3.

interpretation of the paradox. They said, “if you replace or repair enough of an item it is no longer the item you set out to preserve.”[16] The New South Wales Ministry for the Arts further stated their own reluctance to change an established object, recommending that museums, “avoid reconstruction and restoration wherever possible. Repainting and replacing original parts with new ones or old ones from elsewhere, can mean that the original components and finishes of the machinery are destroyed.”[17] The NSW Ministry went on to claim that cosmetic and mechanical adjustments to the object are sufficient to destroy the fabric of the machine so that it can “no longer demonstrate its working history.”[18]

Definitions change as time goes by. Viewed as a purely Western construct, the aforementioned conditions did not, "incorporate a wide range of tangible and intangible expressions of authenticity."[19] In 1994, a conference was hosted by the International Council on Monuments and Sites, ICOMOS, and held in Nara, Japan, to discuss a new definition of authenticity. The result, known as the "Nara Document on Authenticity," expanded the definition to include the interests of different cultures. Japan, in particular, wanted the definitions revised because of their traditional timber buildings. “In Japan maintaining significant wooden temples involves periodically dismantling them to replace deteriorated fabric and then rebuilding using the original construction technology. This practice dates back centuries."[20] To the Japanese, the reconstruction bore no loss of authenticity. This concept of Progressive Authenticity, or Authenticity of Tradition, cemented the revelation

[16] David Hallam, David Thurrowgood, and Col Ogilvie, “Corrosion, Wear and Corrosive Wear; The Story of Lubrication Systems in Large Technology Object Storage and Use,” *Big Stuff*, 2004, https://bigstuff.omeka.net/items/show/65/, 3.
[17] “Safe in the Shed: Caring for Historic Farm Machinery.” 10.
[18] Ibid, 10.
[19] Jerome, “An Introduction to Authenticity in Preservation.” 4.
[20] Ibid.

that "authenticity is a concept much larger than material integrity," and was ultimately subjective by nature.[21]

Authenticity as Verisimilitude

Bruner's definition of authenticity of verisimilitude was another addition to his constructs of authenticity. Bruner borrowed the term from Richard Taylor and Mark Johnson from their unpublished work, “Inventing Lincoln’s New Salem: The Reconstruction of a Pioneer Village,” and maintained that, "authentic in this sense means credible and convincing..." and aimed to "...produce a historic site believable to the public, to achieve mimetic credibility.”[22] Objects of historic verisimilitude may not be original, so long as credibility was maintained.[23] Several forms of “credible” non-originality exist, spanning such objects as props, reproductions, copies, models, and restorations. These terms are discussed below.

Restorations, in particular, underlined an apt counter-argument to the original text of The 1964 Charter, as it concerned the addition of non-original material to a once original object. Elizabeth Pye, in her published work, “Challenges of Conservation: Working Objects,” asserted that restoration may be justified to maintain the understandable qualities of an object.[24] Alison Wain too, in her published work, “The Importance of Movement and Operation as Preventive Conservation Strategies for Heritage Machinery,” considered the risks to the originality of mechanical objects when parts were replaced. “These changes may be felt to have a negative effect on the authenticity of both the material and the experience of

[21] Ibid.
[22] Taylor and Johnson, “Inventing Lincoln’s New Salem: The Reconstruction of a Pioneer Village.”
[23] Bruner, “Abraham Lincoln as Authentic Reproduction: A Critique of Postmodernism.”
[24] Elizabeth Pye, “Challenges of Conservation: Working Objects,” *Science Museum Group Journal*, no. 6 (November 15, 2016): 1–5, http://dx.doi.org/10.15180/160608.

the machine…"[25] Pye made clear that once restored, an object was no longer original, although the traditional approach was to incorporate reversibility into any alteration.[26]

Reproductions and copies are more forms of credible non-originality. Bethany Sugawara, in her article, "But They're Not Real! Rethinking the Use of Props in Historic House Museum Displays," said reproductions were "objects created to represent specific historical objects for educational purposes."[27] But Richard Brilliant, in his work, "Roman Copies: Degrees of Authenticity," purported that there was more discretion to copies as a construct. Should a copy be of a prior work of art, not of a scientific display, that copy had a tendency of establishing itself in the culture of the time.[28] Brilliant used Roman copies of ancient Greek statuary as a case in point. "'Great names' must have stimulated the urge to collect, to possess, works of acknowledged distinction, attributable to famous artists, even in replication. Still the very process of replication, of reproduction, inevitably bore the signs of contemporary fashion."[29] In other words, a copy was inextricably tied to the artist or society who fashioned it, and that uniqueness may be established as a form of authenticity.

Bethany Sugawara further indicated that museums use props to "simulate an experience for visitors…"[30] Sugawara stated that some museum professionals harbor reservations with props as they aren't themselves authentic, but she proceeds to defend their use, saying, "props exist in historic house museums in the United States as a result of a

[25] Alison Wain, "The Importance of Movement and Operation As Preventive Conservation Strategies for Heritage Machinery," *Journal of the American Institute for Conservation* 56, no. 2 (May 25, 2007): 81–95, https://doi-org.offcampus.lib.washington.edu/10.1080/01971360.2017.1326238.
[26] Pye, "Challenges of Conservation: Working Objects."
[27] Bethany Watkins Sugawara, "But They're Not Real! Rethinking the Use of Props in Historic House Museum Displays," History News 58, no. 4 (Autumn 2003): 20.
[28] Richard Brilliant, "Roman Copies: Degrees of Authenticity," *Source: Notes in the History of Art* 24, no. 2 (Winter 2005): 19–27.
[29] Ibid.
[30] Sugawara, "But They're Not Real! Rethinking the Use of Props in Historic House Museum Displays."

culture that regularly seeks authentic experience through simulation."[31] Props, then, were easy to envision because an honest prop was never authentic. What props did provide was a simulation, a "re-creation of that object or experience."[32] In so doing, props created an immersive experience for the visitor that ultimately aided understanding.

Authenticity as Genuineness

Bruner's take on authenticity as genuineness compounded upon the previous authenticity as verisimilitude. Instead of being merely an object of resemblance, genuine authenticity, "is a complete and immaculate simulation, one that is historically accurate and true..."[33] The concept of simulation and of direct experience as authentic was grounded in empiricism. Empirical philosophy was established in John Locke's, "An Essay Concerning Humane Understanding," first published in 1689. Locke began by declaring that the mind contained no innate principles; the mind was borne a blank slate. By that reasoning, to account for any resultant knowledge throughout life, the mind must "let in particular ideas," so to furnish the yet empty Cabinet.[34] Ideas, Locke reasoned, were the result of the mind utilizing the senses (seeing, hearing, smelling, tasting, touching) toward interpreting the object of experience. This process, from experience to idea, was called perception. And ideas, collected, collated, and reflected upon in the mind, were the foundation of knowledge.[35]

Briann Greenfield and Patrick Malone stated the importance of direct experience with "artefacts of industrialization" in their work, "'Things' that Work: The Artifacts of

[31] Ibid, 22.
[32] Ibid, 20.
[33] Bruner, "Abraham Lincoln as Authentic Reproduction: A Critique of Postmodernism."
[34] Locke, An Essay Concerning Humane Understanding, Book 1, Chapter 2, §15.
[35] Ibid, Book 2, Chapter 1, §2-3.

Industrialization."[36] In ways that textbooks could not provide, the authors argued that seeing tangible objects in a museum setting was far more advantages to students wishing to understand the past. Greenfield and Malone, though, did not explicitly endorse the singular experience of functioning objects, while Jean-Francois Gauvin did, in his work titled, "Functionless: Science Museums and the Display of Pure Objects." He made the argument toward a more dynamic form of this reasoning, contending that the power of non-aesthetic objects was lost in a museum when the objects were forced to only be examined through a lens of sight-based aestheticism.[37]

Alison Wain acknowledged this philosophy and further applied the principal to functional objects and machines. She wrote, "movement, and particularly operation, contributes to maintaining the intangible heritage of how to operate and maintain machines, as well as the affective and sensory experiences associated with their operation."[38] Elizabeth Pye concurred with reference to functional objects, stating that, "for many people their significance lies in their mechanism and the way they function."[39] She referenced J. Farnsworth, who posited in his work, "Sculpture in Active Service," that while the object in the museum might be removed from its original, pure, context, "they still have much to contribute to our understanding of heritage."[40] Elizabeth Pye says further that any sort of digital replications of the future, while they may be convenient, "…cannot provide the genuine sounds and smells and the sense of being fully

[36] Briann Greenfield and Patrick Malone, "'Things' That Work: The Artifacts of Industrialization," *OAH Magazine of History* 15, no. 1 (Fall 2000): 5.
[37] Jean-Francois Gauvin, "Functionless: Science Museums and the Display of 'Pure Objects,'" Science Museum Group Journal, no. 5 (March 2, 2016).
[38] Wain, "The Importance of Movement and Operation As Preventive Conservation Strategies for Heritage Machinery." 81.
[39] Pye, "Challenges of Conservation: Working Objects."
[40] Ibid, 3; J Farnsworth, "Sculpture in Active Service," in *Sculpture Conservation: Preservation or Interference* (Aldershot: Scolar Press, 1997).

immersed in the past. For many people, it is the experience of the real thing which as the emotive power."[41]

In the same vein, Jillian M. Rickly-Boyd referenced Bruner's paper in his own, titled, "Establishing Authenticity in a Tourist Landscape: Spring Mill Pioneer Village," while discussing the authenticity of the Spring Mill Pioneer Village. To Rickly-Boyd, genuine authenticity described the water wheel that powered the Grist Mill. While the original wheel rotted away, it was reconstructed, and primary source documents were used to create the functional reconstruction. "Today the Grist Mill is still in operation. Every hour on the hour the miller grinds corn into meal, which tourists can buy for two dollars per two-pound bag."[42]

In Summation

Literature on the subject of object authenticity indicated a myriad of institutional interpretations. The "Ship of Theseus" underlined the amorphous and subjective nature of attempting a definition. Case studies of classical western institutions indicated an inclination toward an authenticity of object originality – that is – of an object with original material, while examples of non-western and postmodern institutions valued a changing authenticity and an authenticity of experience.

Functioning Object Preservation

Preventive Conservation

Museums might attempt to maintain object originality by attempting to stabilize objects through passive precaution, otherwise known as "Preventive Conservation." C. Caple

[41] Pye, "Challenges of Conservation: Working Objects." 13.
[42] Jillian M. Rickly-Boyd, "Establishing Authenticity in a Tourist Landscape: Spring Mill Pioneer Village," Material Culture 41, no. 1 (Spring 2009): 1–16.

defined preventive conservation as, "any measure that reduces the potential for, or prevents, damage," in his work, "The History of and an Introduction to Preventive Conservation."[43] Methods of preventive conservation included maintaining light, humidity, and temperature levels, and limiting the mechanical movement of object parts.[44] When left unchecked, hazardous conditions may have resulted in three types of damage, or deterioration to objects:

> 1. Chemical deterioration is the result of a chemical reaction. Chemical reaction rates, and hence deterioration, increase with higher temperature, increased concentration of reactants, and increased relative humidity.
>
> 2. Biological deterioration is caused by living organisms such as molds, insects, and bacteria. These agents become more active at higher temperatures and relative humidity.
>
> 3. Mechanical deterioration results from movement of the object's components, either due to the amount of water absorbed by organic materials or to thermal expansion of inorganic materials. As the object changes size and shape, cracking, splitting and warping result, causing additional damage to surfaces and joins. In a mixed collection, fluctuations in relative humidity cause more mechanical damage than changes in temperature.[45]

Preventive conservation philosophy involved any action taken to delay, mitigate, or outright avoid these aforementioned conditions, conditions expected to cause object degradation.[46]

[43] C. Caple, "The History of and an Introduction to Preventive Conservation.," in Preventive Conservation in Museums (London: Routledge, 2011), 1–18.
[44] Buck and Gilmore, Museum Registration Methods Fifth Edition, 288.
[45] Ibid.
[46] Ibid, 287.

Preventive Maintenance

Elizabeth Pye maintained that the field of conservation arose from the activities of making and repairing objects. It was a field that promoted a "scientific approach which sought to understand the chemistry of materials and the way they deteriorate," while attempting to retain "as much of the fabric of the original object as possible."[47]

Certain museums and institutions, whose collections comprised a considerable number of industrial or functional objects, showed an inclination toward activities that combined both preventive conservation philosophy and direct object intervention into a sort of "preventive maintenance" philosophy. The Henry Ford is one of those museums. The institution published guides detailing maintenance tips for a number of utilitarian or mechanical objects. One of those object types were automobiles. In a guide titled, "The Care and Preservation of Historic Motorized Vehicles," Malcolm Collum wrote that the document outlined steps required to maintain vehicles in their existing condition with the goal of preserving original materials and intended functions.[48] Those steps included removing, draining, and neutralizing the battery, draining the fuel tank, bracing the clutch pedal, greasing the fittings, and draining, refilling, and circulating engine oil.[49] The National Park Service and their series of "Conserve-O-Grams" echo the Henry Ford's efforts. In their Conserve-O-Gram titled, "Preparing Historic Motorized Vehicles for Storage or Exhibit," it is stated that "The preservation of a vehicle's outward appearance is important, but the

[47] Pye Challenges of Conservation 3; The preservation of antiquities, Rathgen; A history of conservation, Plenderleith; The Father of modern archaeological conservation, Gilberg.
[48] Malcolm Collum, "The Care and Preservation of Historic Motorized Vehicles" (The Henry Ford, 2016), https://www.thehenryford.org/docs/default-source/default-document-library/the-henry-ford-motorized-vehicles-conservation.pdf/?sfvrsn=2, 1.
[49] Ibid.

preservation of its functional elements is often overlooked."[50] And like the Henry Ford, the guide only goes so far as to say that "following these steps will maintain the original materials but will not allow the vehicle to run."[51]

The Henry Ford's "The Care and Preservation of Clocks," composed by Mary M. Fahey, shared similar sentiments with The Henry Ford's automobile guide, while also including environmental considerations indicative of traditional preventive conservation. Of note were the guide's concern for the clockwork mechanism and metal hardware. Fahey stated the importance of winding the clock at the same time each day, to not overwind the mechanism, and to have the mechanism inspected, cleaned, and oiled by a professional once every five years to check for broken parts and accumulations of dirt.[52] She further stated the value of coating hardware in Renaissance Wax, of polishing severely corroded hardware, and of degreasing the hardware with acetone.[53]

In reference to The Henry Ford's "The Care and Preservation of Furniture and Wooden Objects," written by Clara Deck, the guide broke from this thesis' precedent of referencing purely mechanical objects. Furniture is still utilitarian, however, and subject to use and intervention. The guide recommended the direct removal of dust from finished wood, cleaning via dilute detergent, and a covering of wax.[54] The guide further indicates structural

[50] "Preparing Historic Motorized Vehicles for Storage or Exhibit" (National Park Service, September 1999), https://www.nps.gov/museum/publications/conserveogram/10-03.pdf.
[51] Ibid.
[52] Mary M. Fahey, "The Care and Preservation of Clocks" (The Henry Ford, 2016), https://www.thehenryford.org/docs/default-source/default-document-library/the-henry-ford-clocks-conservation.pdf/?sfvrsn=2.
[53] Ibid.
[54] Clara Deck, "The Care and Preservation of Furniture and Wooden Objects" (The Henry Ford, 2016), https://www.thehenryford.org/docs/default-source/default-document-library/the-henry-ford-furniture-amp-wooden-objects-conservation.pdf/?sfvrsn=2.

repairs should be as unobtrusive as possible and that liquid hide glue be applied for adhering loose fragments and veneer.[55]

In all three publications by The Henry Ford, the guides are prefaced by two initial steps: “The first step in the care of collections is to understand and minimize conditions that can cause damage. The second step is to follow basic guidelines for care, handling and cleaning (or maintenance).[56] And all the aforementioned activities were predicated on the understanding that failing to do so would accelerate the degradation of the object, due either to the expiry or corrosive nature of the materials[57] or if the object may ever be converted to functional status in the future.[58]

Object Operation

Evidence exists that object operation itself aids physical preservation where functional objects are concerned. Alison Wain, in reference to heritage machinery, stated that, "movement...helps to preserve the physical fabric of machines by facilitating actions such as the circulation of lubricants and rotation of pressure points."[59] It was the opinion of mechanical engineers that the "best way to preserve a mechanical system is to keep it operational, operated, and maintained..."[60] Proof of institutional adherence to the above musings existed as care and maintenance documents from for-profit manufacturing corporations, as detailed below, and non-profit cultural institutions alike. These documents

[55] Ibid.
[56] Ibid, 1.
[57] “Moisture left in the cooling system will promote corrosion.” 2
[58] “Drain the fuel tank and clean the lines to the fuel pump and carburetor. As fuel dries, it leaves a tenacious “varnish” which will clog the system.” 2
[59] Wain, “The Importance of Movement and Operation As Preventive Conservation Strategies for Heritage Machinery.”
[60] Hallam, Thurrowgood, and Ogilvie, “Corrosion, Wear and Corrosive Wear; The Story of Lubrication Systems in Large Technology Object Storage and Use.”

highlighted methods of preservation in service to functionality: namely, recommendations of regular operation and servicing.

The watchmaker Patek Philippe stated that regular servicing is essential for assuring a watch's longevity:

> Quartz and mechanical watches with manually wound and self-winding movements should be serviced every five years. ... A manually wound watch should preferably be wound every morning. This optimizes the flawless function of the movement and reduces its susceptibility to shocks and positional variations.[61]

By way of corroboration, the watchmaker Piaget echoed these statements, guiding the customer to regularly service the watch to extend its accuracy and lifespan. Under Piaget's daily care tips, they recommended that, "even if you are not planning on wearing your watch, you should still wind it regularly to prevent the oils from different mechanisms drying out...Over time, its lubricating oils dry out and may cause friction, which will affect the accuracy of the mechanism."[62]

Film cameras were not dissimilar machines, and they also benefited from continual operation. While most camera manufacturers abandoned film capture in favor of digital technology, a select few still made and marketed mechanical cameras. The M-A by Leica was one of those cameras. The instruction manual for the Leica M-A stated:

> All mechanically operated bearings and sliding surfaces on your Leica are lubricated. Please remember this if you will not

[61] Patek Philippe SA, "Services: Importance of Maintenance," Storefront, 2017, https://www.patek.com/en/retail-service/services/importance-of-maintenance.
[62] Piaget, "Care Advice: Storing and Transporting Your Watch," Storefront, 2017, http://www.piaget.com/customer-service/care-and-maintenance.

> be using the camera for a long period of time. To prevent the lubrication points from becoming gummy, the camera should be wound on several times and released with every shutter speed with no film loaded every three months. It is also recommended that you repeatedly move and use all other controls, such as the image field selector.[63]

Automobiles operated through the use of mechanics just as cameras and watches did, though power was derived not from human muscle or gyroscopic motion, but the chemical combustion of petrochemicals. While the specific shape of the parts differed, the principal of the minute operations of springs, gears, and associated material were the same. The owner's manual for the 2016 model year Alfa Romeo 4C indicated:

> Failure to properly maintain your vehicle or perform repairs and service when necessary could result in more costly repairs, damage to other components or negatively impact vehicle performance.[64] In addition, if your vehicle is used under demanding conditions, including: ... Allowing the vehicle to sit for long periods of inactivity.[65]

Prolonged inactivity of myriad objects may result in their inability to operate and may have eventually resulted in their ruination. Wain noted that permanent immobility was detrimental to mechanical object care in museums. She cited a number of authors to that end: S. Ball stated in their work, “Larger & Working Objects: A Guide to Their Preservation and Care,” that "structural components exposed to a constant static load in one direction can bend

[63] Leica Camera AG, “Leica M-A Anleitung / Instructions” (Leica Camera AG, n.d.), 52.
[64] FCA Group Marketing S.P.A., “Alfa Romeo 2016 4C Owner’s Manual” (FCA US LLC., 2016), 260.
[65] Ibid, 320-321.

and break"[66] and J. Ashton and D. Hallam, in their cooperative effort, “The Conservation of Functional Objects – An Ethical Dilemma,” said, "Seals and gaskets become brittle and deformed unless they are regularly wetted and moved."[67] The normal operations of machines, so these authors said, were largely self-preservative, and when machines ceased to function, so too ceased their preservative qualities.

Active utilization, though, did not come without a price. Wain stated in tandem with her otherwise positive regard of object use, that, "movement can, however, also have negative effects on the preservation of original physical material through wear and component failure..."[68] In so saying, throughout the course of an object’s operation, the object will undergo stress and parts will inevitably fail.[69]

In Summation

The tangible preservation of functioning objects frustrated established norms of object preservation. Preventive conservation, in its attempt at the stabilization of original material, risked object deformity through unidirectional stress and the eventual expiry of component parts or processes, according to S. Ball, J. Ashton, and D. Hallam, whereas Alison Wain states that dynamic movement risked damage by means of inevitable wear and tear. In contrast to her other stances, Wain described various benefits of dynamic movement, as the natural movements of functional objects were preservative by nature. These stated benefits were bolstered by evidence of non-profit and for-profit materials advocating for

[66] S. Ball, Larger & Working Objects: A Guide to Their Preservation and Care, ed. P. Winsor (London: Museums & Galleries Commission, 1997).
[67] J. Ashton and D. Hallam, “The Conservation of Functional Objects - An Ethical Dilemma,” AICCM Bulletin 16, no. 3 (1990): 19–26.
[68] Wain, “The Importance of Movement and Operation As Preventive Conservation Strategies for Heritage Machinery.” 81
[69] Ibid, 82.

either continual operation or continual maintenance. Activity, then, was not in aid to component parts but to the whole of the object as a functioning or “complete” system.

CHAPTER THREE: METHODOLOGY

This study attempted to discover how museums that functionally-use objects from permanent collections consider how object authenticity intersects object preservation. The methodology used was a modified Delphi Study. Participants were provided questions organized within two series' to be answered. Each series contained two questions: an authenticity-related question and a preservation-related question. The answers from those questions were subsequently thematically condensed and reintroduced to the participants for agreement or disagreement. At the end of the series' consensus, the series was complete, and a new series began with new questions related to the results of the previous series confirmation.

The purpose of the Delphi method was an attempt at consensus; significant results were ascertained from the mutual agreement or disagreement of professional experts on the subject at hand. The Delphi Study design was emergent and open-ended: each subsequent round relied upon and related to the answers of the previous round. Due to time constraints placed on this study, the number of series were capped at two, resulting in a total of four questions and four related and respective consensuses. Data was analyzed as a conglomeration of similar thematic elements found within the respective answers to each individual question. After all data collection activities concluded, answers were further analyzed and compared by individual thematic content for patterns. The patterns themselves were color coded for clarity and may be viewed in the appendices at the end of the document.[70]

Phase One of sampling was targeted at museums that self-identified as institutions that functionally-used objects in the course of their activities, or that appeared likely to functionally utilize objects in the course of their activities. The sampling was non-randomized to assure a

[70] Reference pages, 56; 58; 59; 61; 62; 65; 66.

baseline participant group. Participants were solicited via their professional email address. Specifically, an exploratory email was sent to each participant's institution's general information address requesting the contact information of the staff member most responsible for collections management or collections registration.[71] Once received, the solicitation to the relevant staff member was sent.[72] Sufficient address of academic intent and assurance that no retaliation would be assessed in the event of a decline to participate was provided. After participants were secured, solicitation activities ceased, and all appropriate disclaimer documents were dispatched for signature. These included all contact and consent forms.[73]

The complete list of solicited museums were: the Automobile Driving Museum, The National Watch and Clock Museum, The Flying Heritage and Combat Armor Museum, The Living Computer Museum, The Center for Wooden Boats, the Antique Gas and Steam Engine Museum, the Charles River Museum of Industry and Innovation, The American Clock and Watch Museum, and the Simeone Foundation. Out of these nine institutions, five agreed to take part. To assure faithful answers to the study's questions, the identities of the five museums that agreed to take part, and the museum professionals that spoke on their behalf, are the protected secret of the research group.

Participant viability was ascertained further in Phase Two of sampling, by use of an introductory questionnaire.[74] The questionnaire was used to discover certain exploratory background information about each of the participant's institutions including the participant's professional title, their academic background, the museum's collections materials, and if and how many of those materials were functionally-used. If in the course of the questionnaire a

[71] Reference page 68.
[72] Reference page 69.
[73] Reference pages 70; 71; 72.
[74] Reference pages 73; 74.

participant divulged that their museum did not functionally-use at least one collections object, that participant and their respective museum were disqualified and notified accordingly. Full text examples of the study's sampling and solicitation materials may be found in the appendices at the end of the document.[75]

Anonymity amongst the research participants was maintained by conducting the study within the SurveyMonkey website program. By design, the participants had no knowledge of the other participant's identities and were not informed of how many participants there were. While data such as participants' IP addresses were recorded by the program, they were not relevant to the study and were destroyed once all research activities were complete. Further explanation of the data collection materials (the study questions and results) may be found in the appendices at the end of the document and discussed by item in the next chapter.[76]

[75] Reference pages 57 – 80.
[76] Ibid.

CHAPTER FOUR: RESULTS AND DISCUSSION

This study attempted to discover how museums that functionally-use objects from permanent collections consider how object authenticity intersects object preservation. The methodology employed in this study required two Delphi series', each composed by two questions and two confirmations. Out of the nine institutions approached for participation, five agreed to take part. To assure faithful answers to the study's questions, the identities of the five museums that agreed to take part, and the museum professionals that spoke on their behalf, were the protected secret of the research group. By design, the participants had no knowledge of the other participant's identities and were not informed of how many participants there were.

Before the start of the Delphi questionnaires, the introductory questionnaire was distributed to each participant to establish certain background information on the properties and collections of each institution.

Questionnaire Analysis

Question One asked: "What is the approximate number of accessioned collections objects claimed by your institution?" Out of five responses, two participants reported up to 1,000 objects, two participants reported between 1,000 and 10,000 objects, and one participant reported between 10,000 and 100,000 objects. The results are displayed graphically in Figure 1.

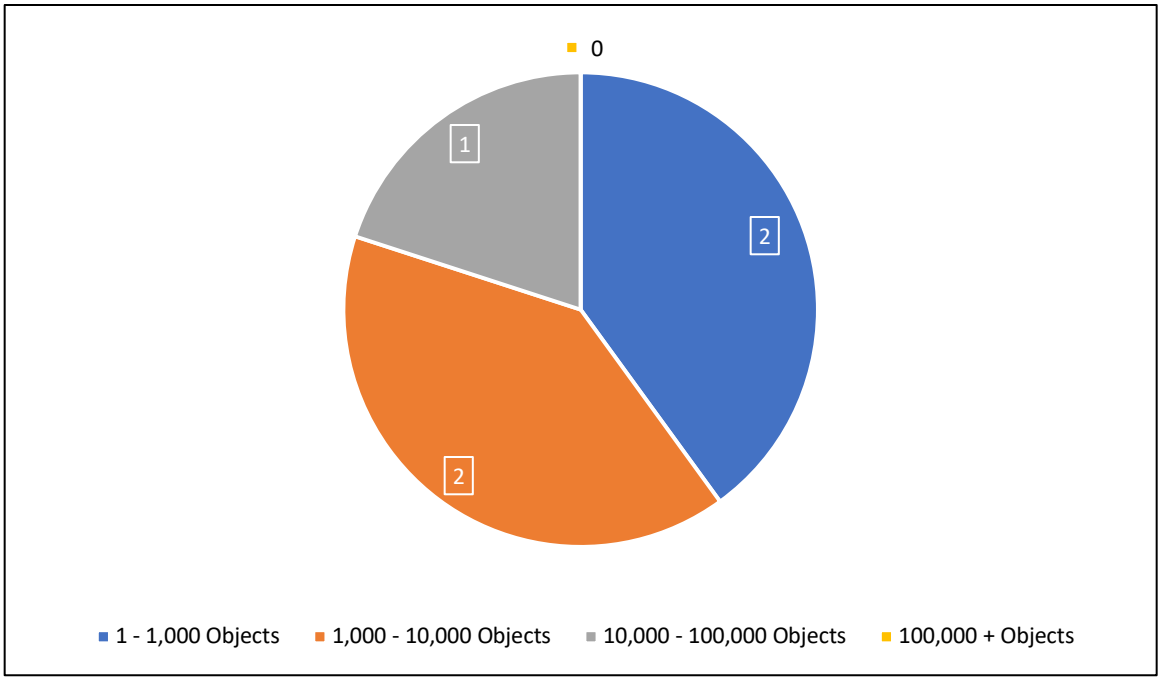

Figure 1: What is the approximate number of accessioned collections objects claimed by your institution?

Question Two asked: "What type of object does your institution's collection mainly consist of?" Participants answered as many of the given options as they deemed necessary. Out of eleven responses, two participants reported "Personal or public transportation objects," two participants reported "Heavy machinery and industrial objects," two participants reported "Computers," two participants reported "Small mechanical objects or measurement tools," and three participants reported "Other." No participants reported either "Musical instruments" or "Art objects." The results are displayed graphically in Figure 2. With regard to the write-in results, out of three responses, one participant reported "Texts," one participant reported "Technical Documentation and Software for the Computers," and one participant noted Military Aircraft for the Vehicles." The breakdown for write-in answers under "Other" are displayed in Figure 3.

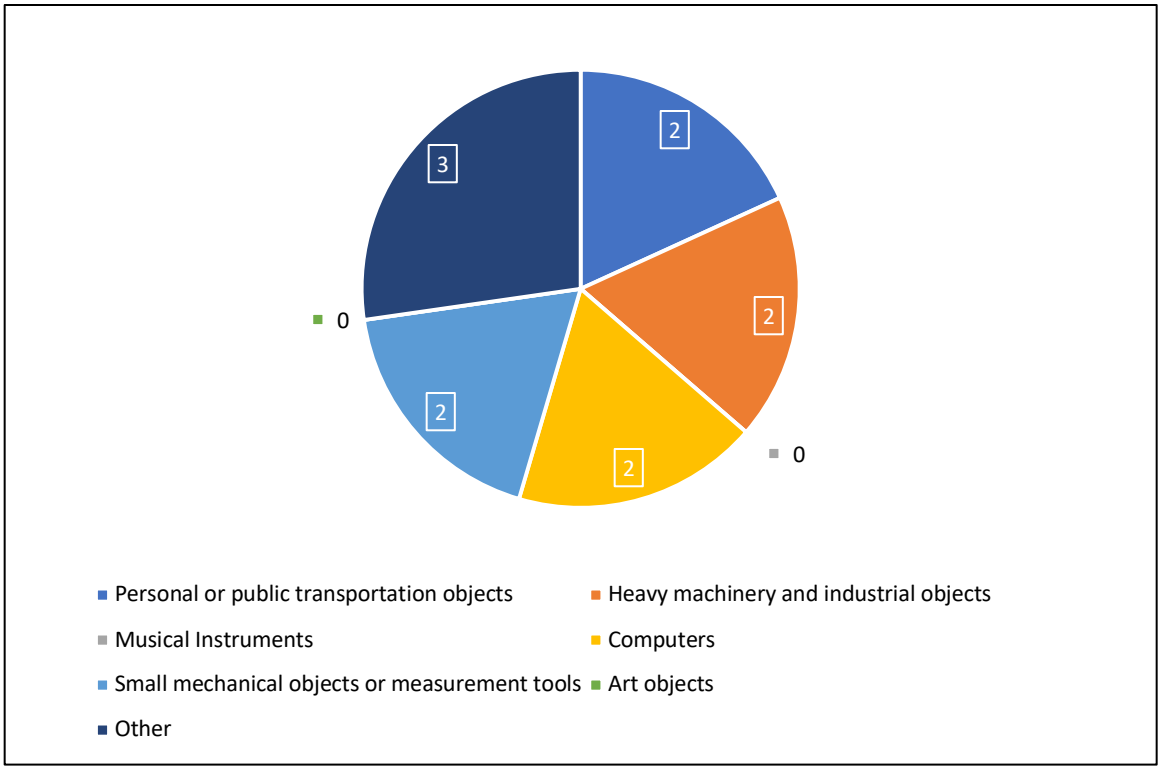

Figure 2: What type of object does your institution's collection mainly consist of?

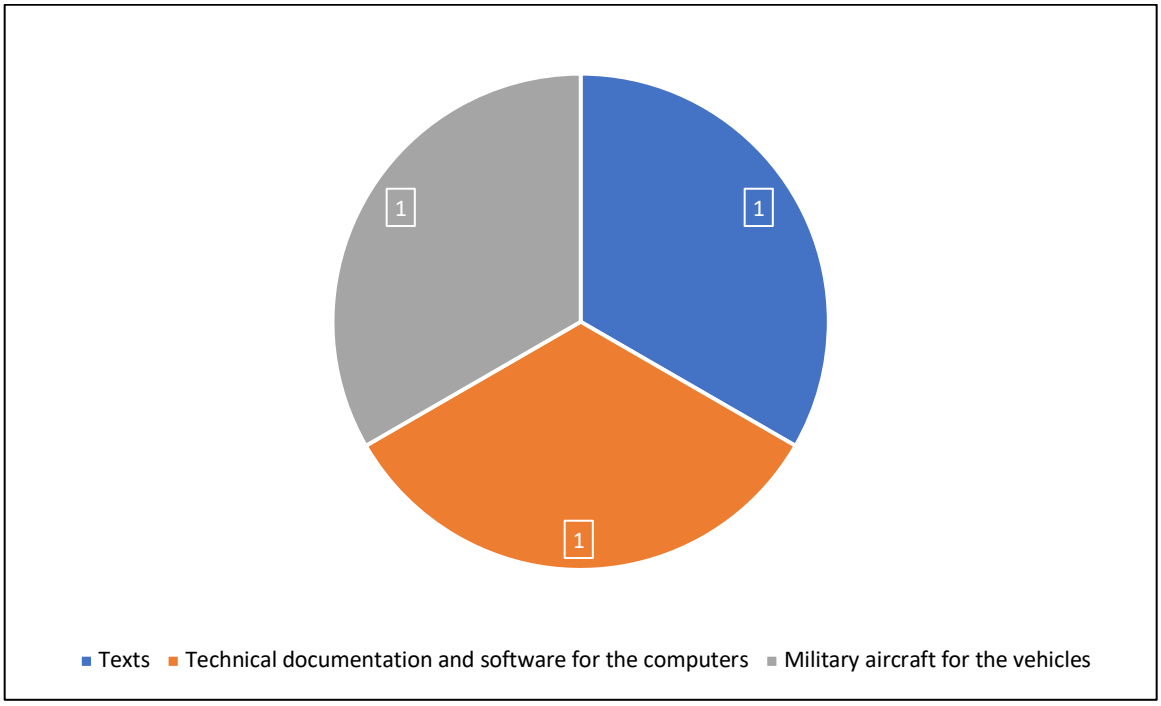

Figure 3: Breakdown of write-in answers under "Other" from Question 2

Question 3 asked: "Whether on exhibit or in storage, no matter how frequently, is at least one object in your institution's collection utilized, operated, or set in motion (as opposed to sitting still) as per the function it was built to perform?" Out of five responses, all participants reported "Yes." No participants reported the answers "No" or "N/A." The results are displayed graphically in Figure 4.

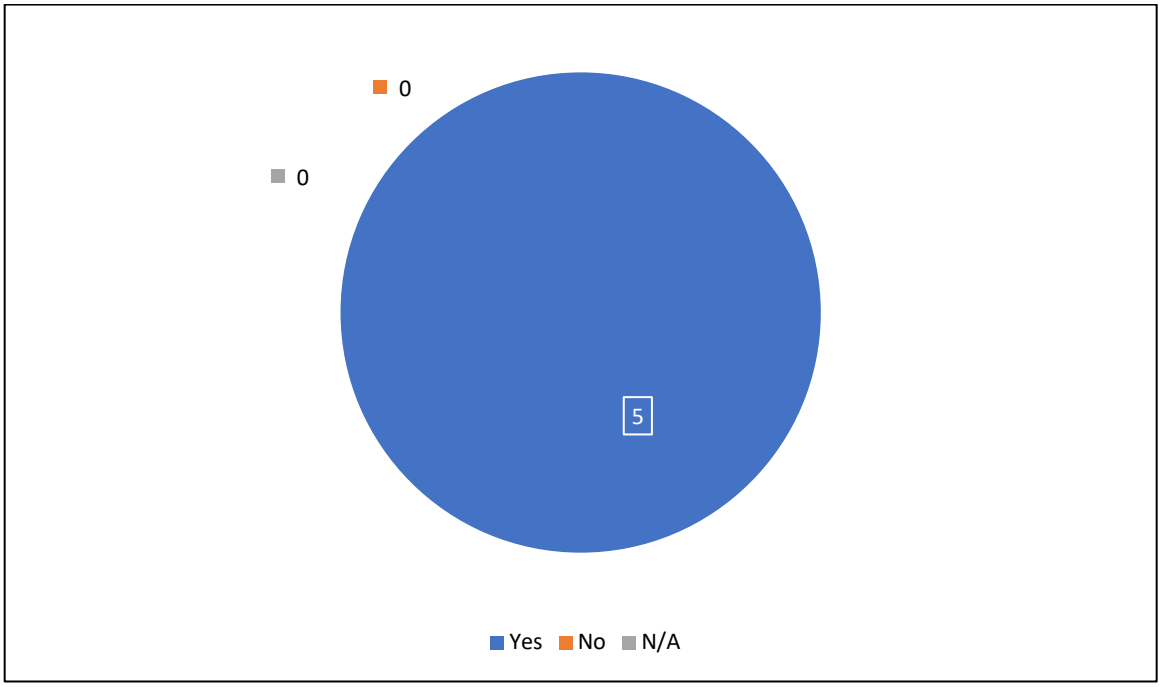

Figure 4: Whether on exhibit or in storage, no matter how frequently, is at least one object in your institution's collection utilized, operated, or set in motion (as opposed to sitting still) as per the function it was built to perform?

Question 4 asked: "If on Question 3 you indicated "Yes," please answer the following question. Whether on exhibit or in storage, in general, how often does your institution utilize, operate, or set in motion your institution's collections objects (excluding planned regular maintenance, etc.)?" Out of five responses, two participants reported "Always; the object(s) is still, static, or un-utilized none of the time, one participant reported "Sometimes; the object(s) is still, static, or un-utilized some of the time, and two respondents reported "Rarely; the object(s)

is still, static, or un-utilized much of the time." No participants reported the answer "N/A." The results are displayed graphically in Figure 5.

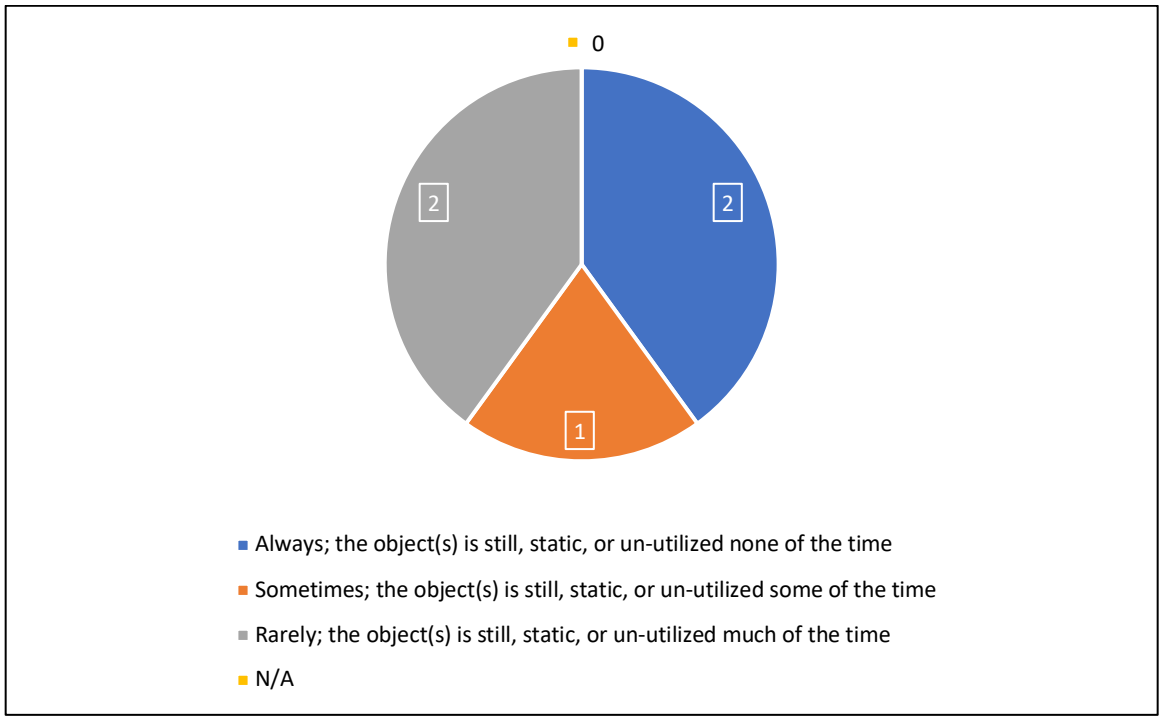

Figure 5: Whether on exhibit or in storage, in general, how often does your institution utilize, operate, or set in motion your institution's collections objects (excluding planned regular maintenance, etc.)?

Question 5 asked: "What is your professional title with respect to your institution?" Out of five responses, four participants reported "Collections Manager," and one participant reported "Curator." This question was a write-in prompt. The results are displayed graphically in Figure 6.

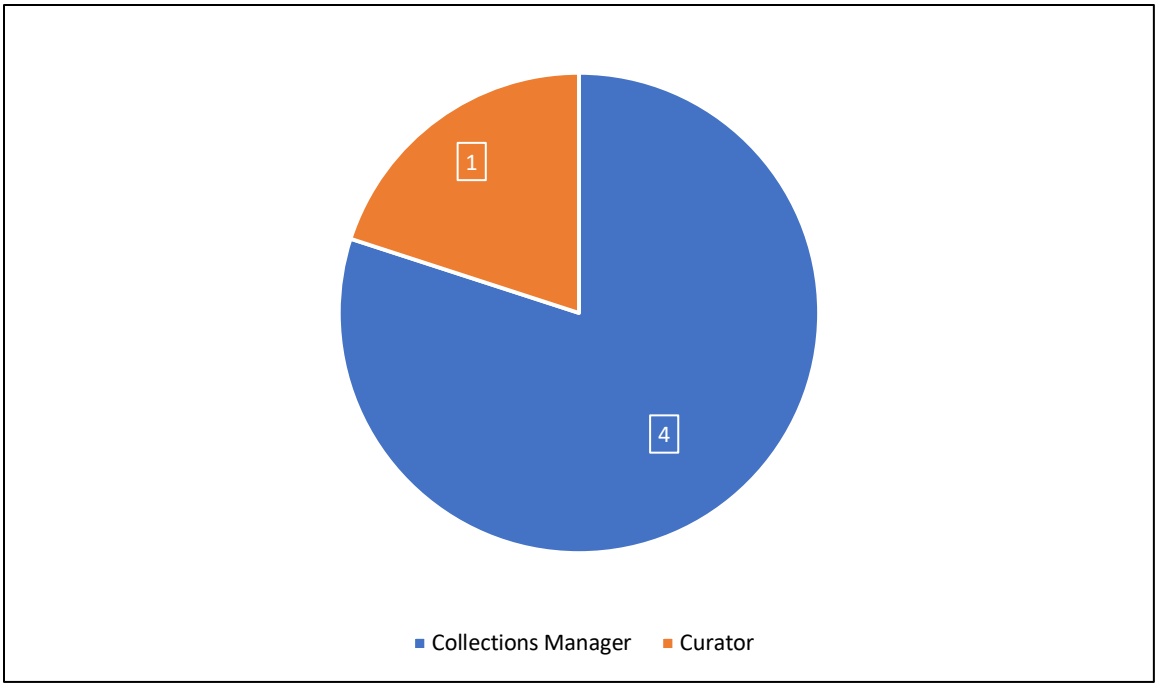

Figure 6: What is your professional title with respect to your institution?

Two more write-in questions were asked in the questionnaire, "What is your academic or professional background," and "Please record the name of your institution," but the answers are redacted to protect the identities of the participants.

The museums represented in the study claim between 1 and 100,000 accessioned collections objects while trending toward between 1 and 10,000 objects. The museums represented claim a varied distribution of mechanical and utilitarian collections objects sans art objects and musical instruments. The museums represented all claim to actively use at least one collections object and, as a group, average the utilization of that object "sometimes," between "always" and "rarely." Finally, out of five participants, four identify as a collections manager and one identifies as a curator. These findings appear to be consistent with the prerequisite qualities of Delphi study participants as the aforementioned.

Delphi Analysis

The Delphi section is organized into introductory and confirmation questions. Long form coding results and participant answers may be found in Appendices A-D (57 - 61) located at the end of the paper.

Series One: Authenticity Question

Series One: Authenticity posed the question, "What are the qualities that describe an authentic utilitarian or mechanical artefact in a museum?" Out of five responses, five unique ideas emerged. The unique ideas were, "The artefact works and operates," "The artefact is available to be used by visitors," "The artefact is composed of original parts," "The artefact is composed of appropriate replacement parts," and "The artefact has documented and verifiable provenance," at the frequency indicated in Figure 7. Two significant ideas emerged, being "The artefact works and operates," numbering three independent references out of eight, and "The artefact is composed of original parts," numbering two independent references out of eight.

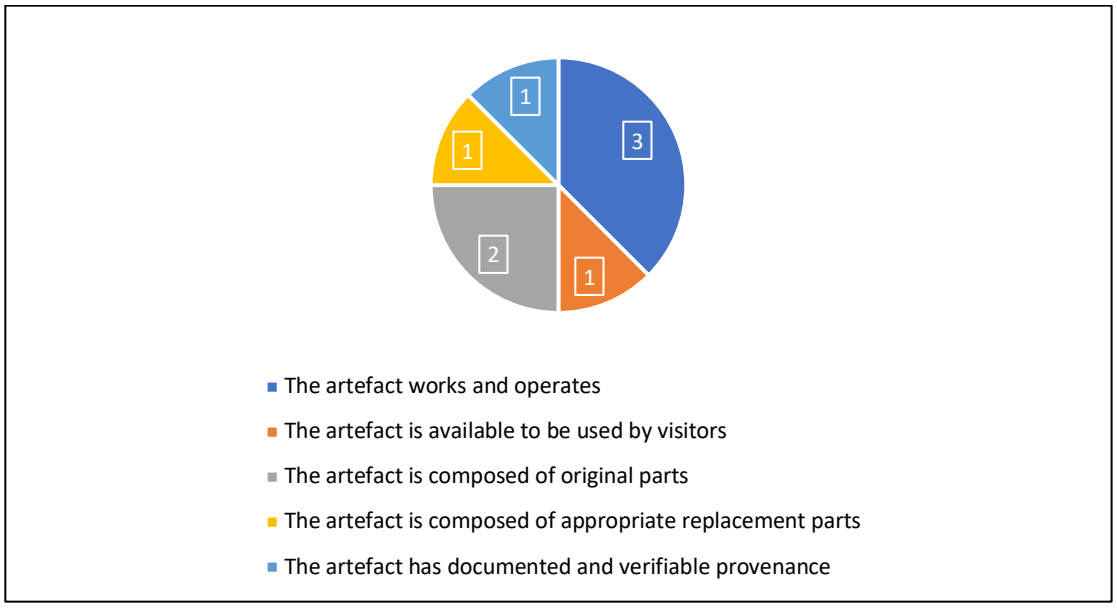

Figure 7: What are the qualities that describe an authentic utilitarian or mechanical artefact in a museum?

Series One: Authenticity Confirmation

Series One: Authenticity Confirmation presented the unique ideas from Series One: Authenticity Question to the participants for their agreement or disagreement. Those ideas were: "The artefact works and operates," "The artefact is available to be used by visitors," "The artefact is composed of original parts," "The artefact is composed of appropriate replacement parts," and "The artefact has documented and verifiable provenance." One participant posed a clarification question requesting the definition of an "appropriate replacement part." The explanation that an "appropriate replacement part may be understood as new old stock sourced ultimately from the original manufacturer" was provided for the purposes of the study. Out of five responses, three participants agreed with the list of ideas as a whole, while two participants disagreed. These results may be viewed graphically in Figure 8.

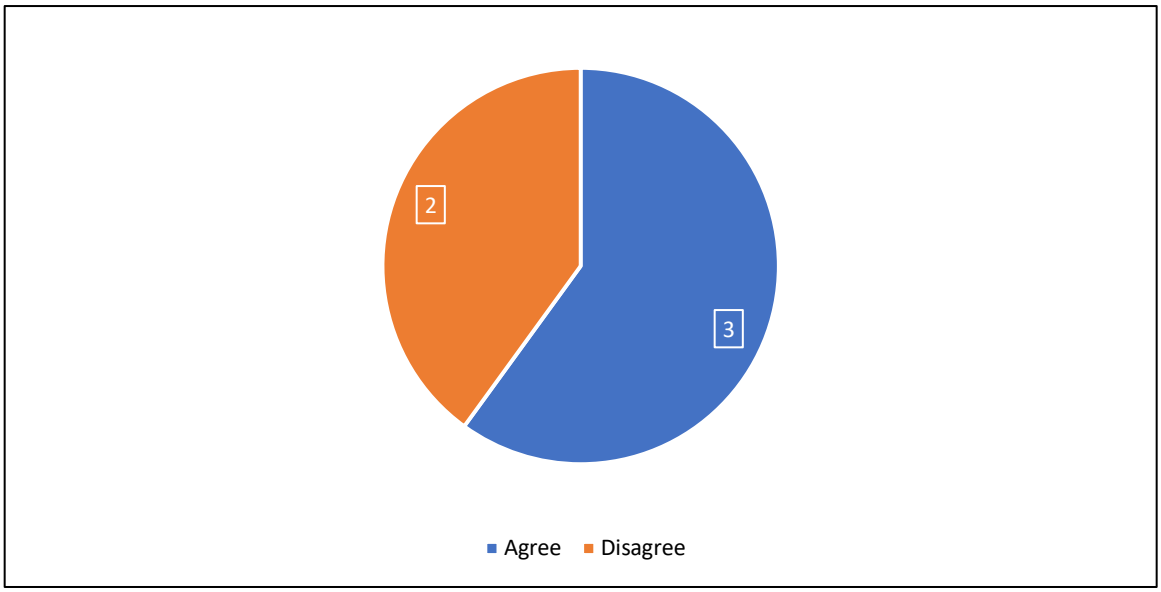

Figure 8: Series One: Authenticity Confirmation

The disagreements were as follows:

> Disagreement 1
>
> "Sometimes the appropriate replacement parts cannot be found. In order to keep the artefact working, sometimes a compromise must be made. How much does this affect "authenticity?""
>
> Disagreement 2
>
> "The only aspect I disagree with is "The artefact is available to be used by visitors." In our museum, visitors are allowed to experience the artefacts working, but are not allowed to use any of the artefacts in the collection. Also, "appropriate replacement parts" in our museum consist of "new old stock" but also include newly manufactured parts that are consistent with manufacturer's specifications at the time of artefact's original manufacture."

Participant disagreements seemed to indicate a dissatisfaction with the definition of "appropriate replacement parts," but it is important to note that the disagreements did not condemn the concept of replacement part authenticity. Rather, Disagreement 1 posed the question of to what degree replacement material affected the authenticity of an otherwise original object. For the purpose of this question, a compromise made with good-faith new replacement material sufficed for the two dissenters. Participant disagreement also found dissatisfaction with the position that authenticity must allow for direct visitor interaction of operational artefacts. The results of Series One: Authenticity were the unique ideas that were mutually agreed upon by the participants. The consensus was:

1. The artefact worked and was operable
2. The artefact was composed of original parts
3. The artefact had documented and verifiable provenance

Series Two: Authenticity Question

Series Two Introductory posed the question, “How does the replacement or modification of artefact parts affect artefact authenticity?” Out of ten responses, five unique ideas emerged as indicated in Figure 9. The unique ideas identified were, “The repair or replacement of original parts will affect authenticity to some extent,” “There is value in the repair or replacement of parts when those actions allow the artefact to operate,” “It is important to indicate what parts of the artefact have been repaired or replaced,” “When the repair or replacement of parts is done with attention to the authenticity of the artefact, then authenticity is not threatened,” and “The authentic life of a machine requires the repair or replacement of non-functioning parts.” Three significant ideas emerged, “The repair or replacement of original parts will affect authenticity to some extent,” numbering two out of two out of ten references, “There is value in the repair or replacement of parts when those actions allow the artefact to operate,” numbering three references out of ten, and “When the repair or replacement of parts is done with attention to the authenticity of the artefact, the authenticity is not threatened,” numbering three references out of ten.

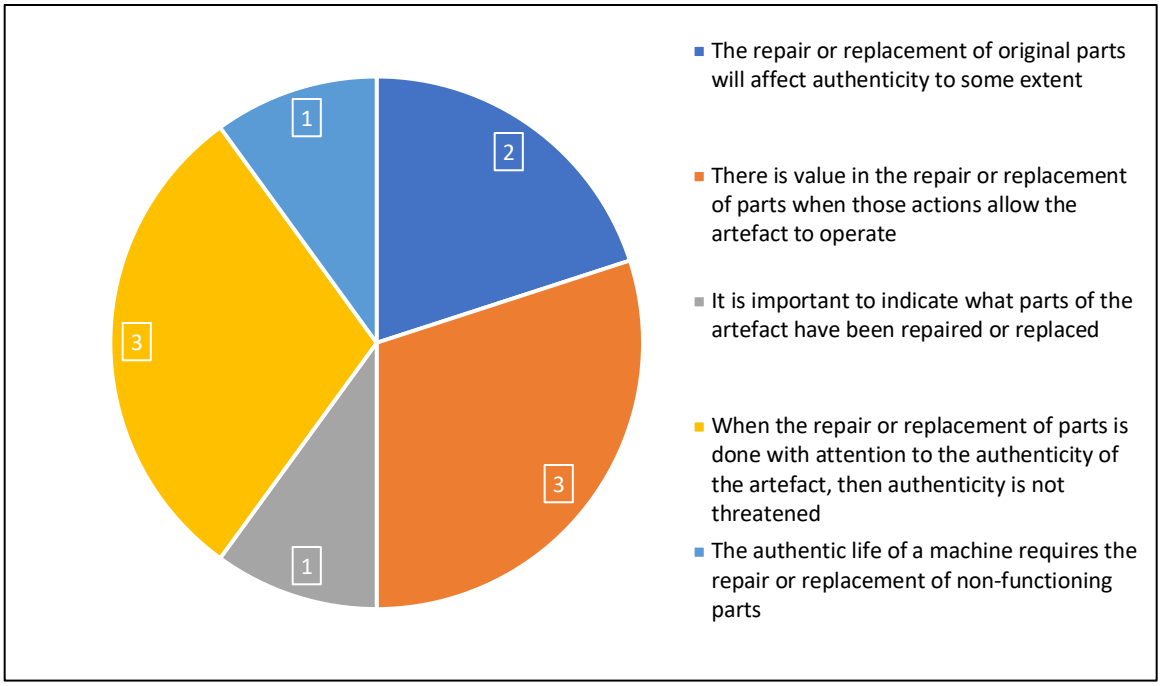

Figure 9: How does the replacement or modification of artefact parts affect artefact authenticity?

Series Two: Authenticity Confirmation

Series Two: Authenticity Confirmation presented the ideas from Series Two: Authenticity Question to the participants for their agreement or disagreement. Those ideas were, "The repair or replacement of original parts will affect authenticity to some extent," "There is value in the repair or replacement of parts when those actions allow the artefact to operate," "It is important to indicate what parts of the artefact have been repaired or replaced," "When the repair or replacement of parts is done with attention to the authenticity of the artefact, then authenticity is not threatened," and "The authentic life of a machine requires the repair or replacement of non-functioning parts." Out of five responses, agreement was unanimous, resulting in five "Agree" responses and zero "Disagree" responses. The results of Series Two: Authenticity were as follows:

1. The repair or replacement of original parts will affect authenticity to some extent.

2. There is value in the repair or replacement of parts when those actions allow the artefact to operate.

3. It is important to indicate what parts of the artefact have been repaired or replaced.

4. When the repair or replacement of parts is done with attention to the authenticity of the artefact, then authenticity is not threatened.

5. The authentic life of a machine requires the repair or replacement of non-functioning parts.

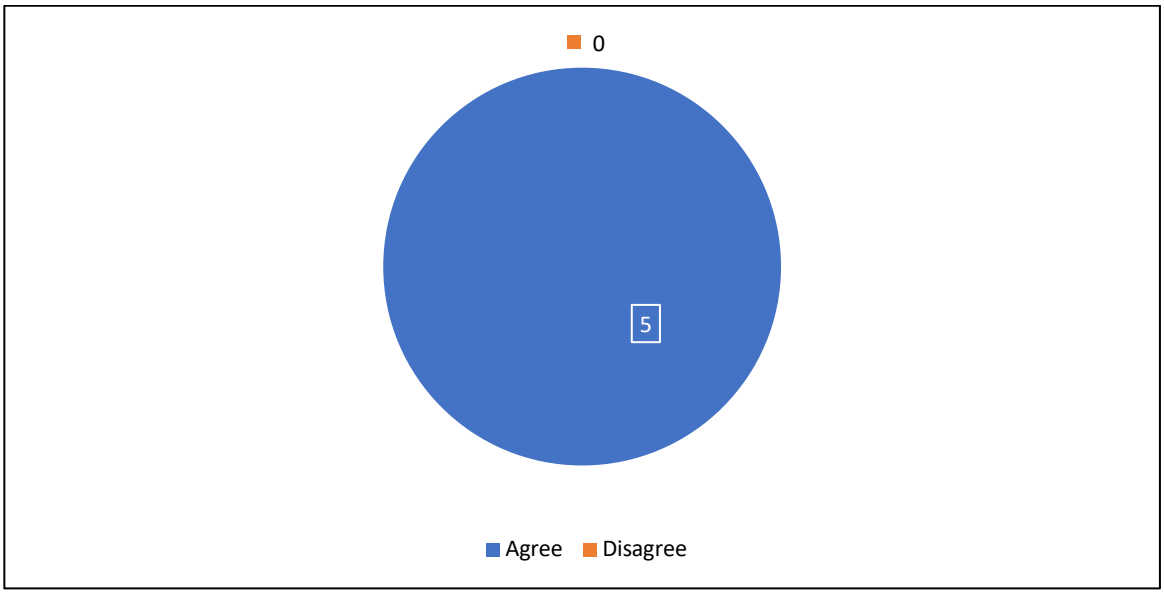

Figure 10: Series Two: Authenticity Confirmation

Authenticity Discussion

The authenticity line of questioning from both series one and two resulted in the following combined results, each agreed upon by all participants:

1. The artefact worked and was operable.

2. The artefact is composed of original parts.
3. The artefact has documented and verifiable provenance.
4. The repair or replacement of original parts will affect authenticity to some extent.
5. There is value in the repair or replacement of parts when those actions allow the artefact to operate.
6. It is important to indicate what parts of the artefact have been repaired or replaced.
7. When the repair or replacement of parts is done with attention to the authenticity of the artefact, then authenticity is not threatened.
8. The authentic life of a machine requires the repair or replacement of non-functioning parts.

There was no disagreement. Taken together, these eight results formed the conclusion to the question: "What are the qualities that describe an authentic utilitarian or mechanical artefact in a museum." These findings were primarily in keeping with Edward Bruner's definition of authenticity of genuineness. The most significant thematic result was a focus on the object in operation, echoing the opinions of Alison Wain. An authenticity of verisimilitude was also present in the results, as results 5 and 6, above, attest. If over the course of an object's use, parts were replaced to continue its operation, then the object would, as inferred from these results, be authentic by virtue of verisimilitude and genuineness. The copy would be a genuine simulation. A proper example of a simulation of a copy would be the grist mill referenced by Jillian M. Rickly-Boyd in Chapter 2. Only a single combined result, number 2 above, indicated the authenticity of an object to rely on its originality, an outlier in the study. These results also highlighted literature discussed in the section of Chapter 2 dedicated to preservation. The value of repairing and replacing non-functioning parts was in keeping with the Henry Ford's

publications, and the necessity of maintaining the object's ability to function was found amongst the many instruction manuals produced by manufacturing corporations.

Series One: Preservation Question

Series One: Preservation Question posed the question, "What are the qualities that describe best-practice object preservation of a utilitarian or mechanical artefact in a museum?" Out of five responses, six unique ideas emerged at the frequency indicated in Figure 11.

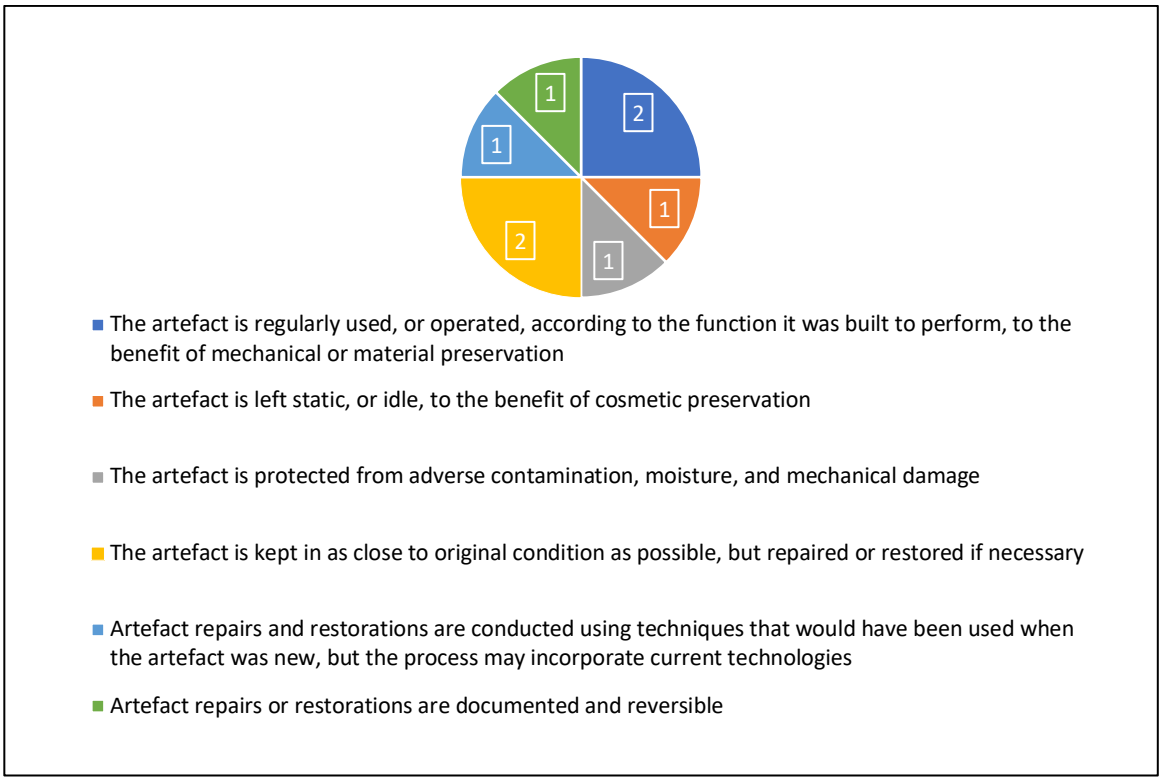

Figure 11: What are the qualities that describe best-practice object preservation of a utilitarian or mechanical artefact in a museum?

The six unique ideas were, "The artefact is regularly used, or operated, according to the function it was built to perform, to the benefit of mechanical or material preservation," "The artefact is left static, or idle, to the benefit of cosmetic preservation," "The artefact is protected from adverse contamination, moisture, and mechanical damage," "The artefact is kept in as close

to original condition as possible, but repaired or restored if necessary," "Artefact repairs and restorations are conducted using techniques that would have been used when the artefact was new, but the process may incorporate current technologies," and "Artefact repairs or restorations are documented and reversible." Two significant unique ideas emerged, "The artefact is regularly used, or operated, according to the function it was built to perform, to the benefit of mechanical or material preservation," at the rate of two independent references out of eight, and "The artefact is kept in as close to original condition as possible, but repaired or restored if necessary," at the rate of two independent references out of eight.

Series One: Preservation Confirmation

Series One: Preservation Confirmation presented these ideas to the participants for agreement or disagreement. Out of five responses, three participants agreed with the list of ideas as a whole, while two participants disagreed. These results may be viewed graphically in Figure 12.

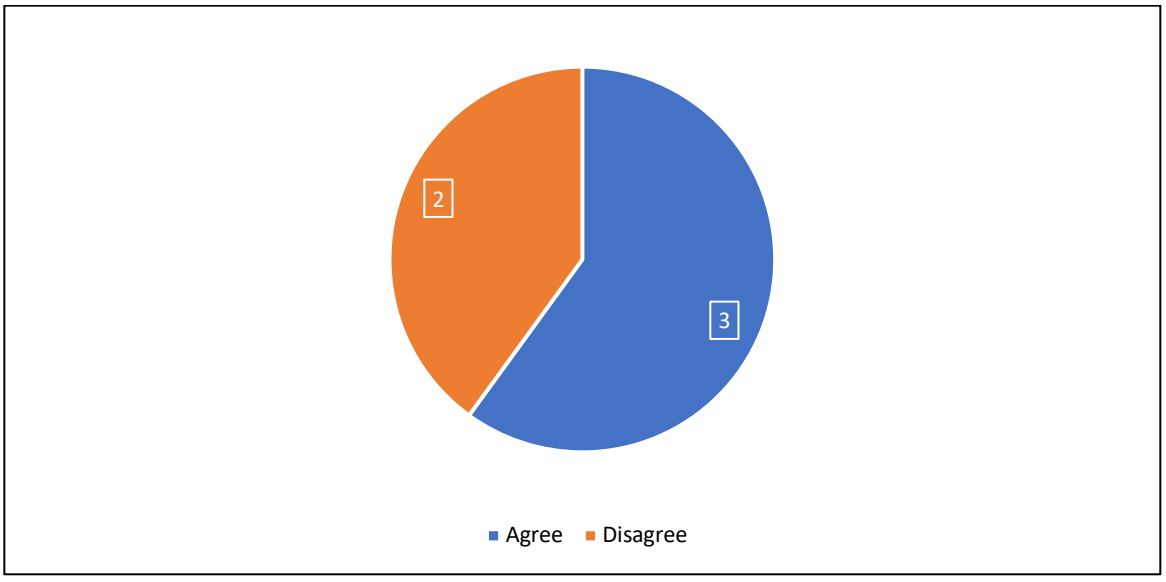

Figure 12: Series One: Preservation Confirmation

The disagreements were as follows. A section of Disagreement 1 was redacted to protect the identity of the participant:

> Disagreement 1
>
> "I agree with all of the statements above except one- the second statement. We are a mostly hands on museum, most of our artefacts that are on display are NOT left static or idle (while some are) most are either left out not behind glass or are in the water so that they can be used by our staff, volunteers and visitors for educational, demonstration and maintenance purposes. We strongly believe that the best way to experience our artefacts is to first hand see, touch, move, row, or sail them. [redacted] As mentioned- some artefacts are indeed left static, but most of those are not visible to the public."[77]
>
> Disagreement 2
>
> "Artefact is regularly used vs. artefact is kept idle, appear to contradict one another."

Participant disagreements indicated a dissatisfaction with the concept of any preservative quality of object idleness. In Disagreement 1, the participant noted that there was considerable value, not only in maintaining functionally-used objects, but in the ability to teach with objects in motion. Disagreement 1 did not outright refute the idea of "the artefact is left static to the benefit of cosmetic preservation," but the refutation is inferred: their museum's processes do not normally utilize static or still objects, and their disagreement may indicate that stativity was not of value to them with regard to preservation. In Disagreement 2, the participant noted the

[77] Sentence redacted to protect the identity of the participant.

contradiction of strategy between idle and functioning preservation. Agreed upon by all participants were the following:

1. The artefact is protected from adverse contamination, moisture, and mechanical damage
2. The artefact is kept in as close to original condition as possible, but repaired or restored if necessary
3. Artefact repairs and restorations are conducted using techniques that would have been used when the artefact was new, but the process may incorporate current technologies
4. Artefact repairs or restorations are documented and reversible

Series Two: Preservation Question

Series One: Preservation Question found agreement in the value of protecting artefact material from adverse conditions and damage, keeping the artefact in original condition if possible, conducting repairs or restorations if necessary, and keeping those repairs documented and reversible. Agreement was also found concerning artefact repairs, inferring artefact operation might not guarantee preservation. Series One: Preservation Question disagreements further bolstered this point, stating explicitly that the contradiction in two referenced strategies, idle versus functionally-used preservation, rendered them unable to agree to every idea as a whole. For that reason, Series Two: Preservation Question posed the question, “How does artefact operation affect the preservation of artefact mechanics or material, specifically with regard to physical artefact longevity?” Out of six responses, two unique ideas emerged at the frequency indicated in Figure 13.

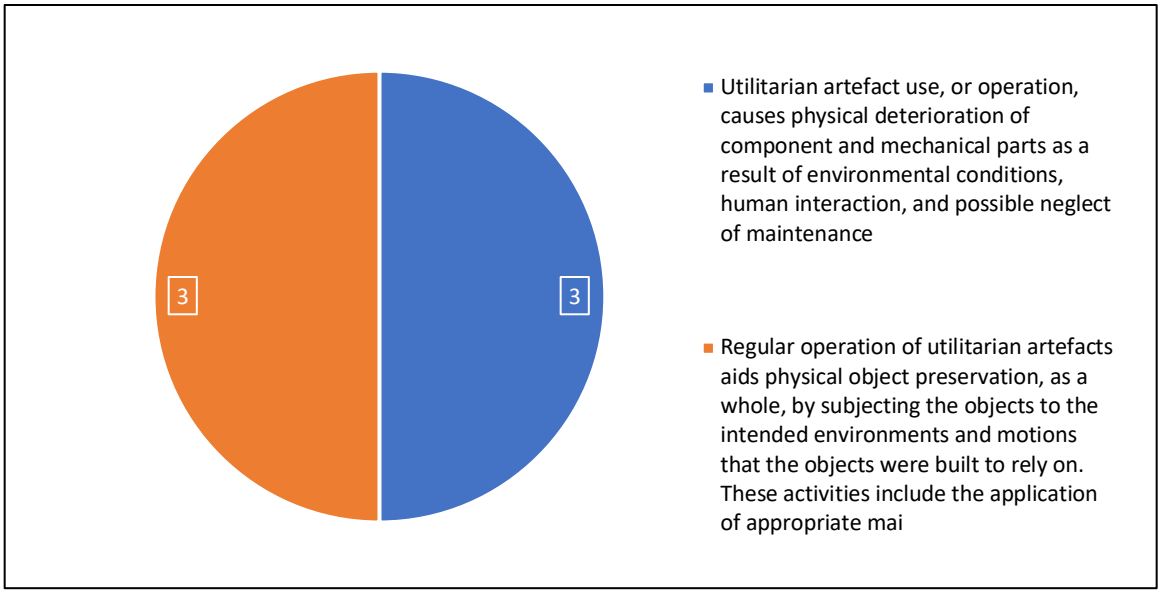

Figure 13: How does artefact operation affect the preservation of artefact mechanics or material, specifically with regard to physical artefact longevity?

The unique ideas were, "Utilitarian artefact use, or operation, causes physical deterioration of component and mechanical parts as a result of environmental conditions, human interaction, and possible neglect of maintenance," and "Regular operation of utilitarian artefacts aids physical object preservation, as a whole, by subjecting the objects to the intended environments and motions that the objects were built to rely on. These activities include the application of appropriate maintenance." Both of the identified unique ideas were equally significant, each garnering three independent references out of six total unique ideas.

Series Two: Preservation Confirmation

Series Two: Preservation Confirmation presented these ideas to the participants for agreement or disagreement. Out of five responses, agreement was unanimous, resulting in five "Agree" responses and zero "Disagree" responses at the frequency indicated in Figure 14.

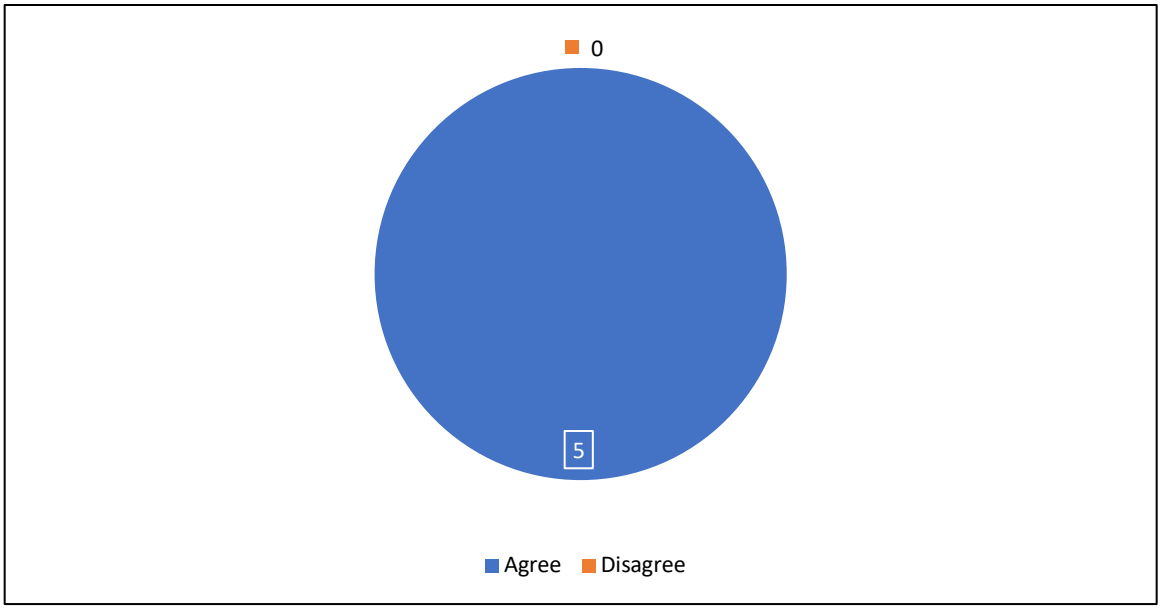

Figure 14: Series Two: Preservation Confirmation

The results of Series Two: Preservation Confirmation were as follows:

1. Utilitarian artefact use, or operation, causes physical deterioration of component and mechanical parts as a result of environmental conditions, human interaction, and possible neglect of maintenance.

2. Regular operation of utilitarian artefacts aids physical object preservation, as a whole, by subjecting the objects to the intended environments and motions that the objects were built to rely on. These activities include the application of appropriate maintenance.

Preservation Discussion

The preservation line of questioning from both series one and two resulted in the following combined results, each agreed upon by all participants:

1. The artefact is protected from adverse contamination, moisture, and mechanical damage

2. The artefact is kept in as close to original condition as possible, but repaired or restored if necessary

3. Artefact repairs and restorations are conducted using techniques that would have been used when the artefact was new, but the process may incorporate current technologies

4. Artefact repairs or restorations are documented and reversible

5. Utilitarian artefact use, or operation, causes physical deterioration of component and mechanical parts as a result of environmental conditions, human interaction, and possible neglect of maintenance.

6. Regular operation of utilitarian artefacts aids physical object preservation, as a whole, by subjecting the objects to the intended environments and motions that the objects were built to rely on. These activities include the application of appropriate maintenance.

There was no disagreement. Taken together, these six results formed the conclusion to the question: "What are the qualities that describe best-practice object preservation of a utilitarian or mechanical artefact in a museum?"

These findings were primarily in keeping with the recommendations set forth by the National Park Service and the Henry Ford's publications. They also echoed Alison Wain's work, promoting the preservative value of continuously operating heritage machinery. The operation of functionally-used objects provided for the preservation of the object as a whole, while the maintenance of functionally-used objects provided for the preservation of component parts. These preservation techniques allowed for the object to be authentic according to empirical activity, even at the risk of authenticity of originality. An outlier in the group, result number one above, was a holdover from the tenants of traditional preventive conservation.

CHAPTER FIVE: CONCLUSTION AND IMPLICATIONS

This study attempted to discover how museums that functionally-use objects from permanent collections consider how object authenticity intersects object preservation. Two primary research questions were explored; “What are the qualities that describe an authentic utilitarian or mechanical artefact in a museum?” and “What are the qualities that describe best-practice object preservation of a utilitarian or mechanical artefact in a museum?” The results, demarcated by their respective topic, were discussed in Chapter 4.

Based on a comparison of the preservation-related and authenticity-related results, this study resulted in one principal conclusion: that the intersection between the two constructs of preservation and authenticity of functionally-used objects was the functional-use of the object itself, either through utilization or maintenance. Operation or maintenance of functionally-used objects seemed to be the key to establishing and maintaining both authenticity and preservation of museological materials capable of operation.

This conclusion, though, was a result of data explored in a limited fashion. A primary limitation of this study was a certain lack of data comparison; several contradictory results and outliers (participant responses) were not directly addressed in the Delphi fashion, and as a result, the contradictions remained and were established as the final results to be analyzed. By addressing these contradictions within their own Delphi rounds, further clarification might have resulted in greater precision of the conclusion. The final results, while generally harmonious and in favor of functional object utilization, contained certain outliers and technicalities that would benefit from future research. The other limitation was the sample size. The participant group was small due to the inherent difficulty in identifying appropriate participant museums; the data set was limited to museums that self-reported their functional object-use and further by those

museums that agreed to participate. This study should not be used to extrapolate any field-wide truth, but as a spring-board to conduct further study.

The implications of this study have relevance to institutions that hold objects of functional capability. Museums that hold these objects, but do not use them for fear of harming them, should perhaps strive to value a collections management philosophy, not of maintaining original object material and original object authenticity, but of promoting object activity and the preservation and authenticity-related benefits such activity provides. Both authenticity and preservation seemed to hinge on the ability of the functionally-capable object to function. As stated in Chapter 1, objects of a functional or utilitarian nature span the entire breadth of human enterprise. It is entirely cromulent to anticipate that functionally-capable objects pervade all manner of museums. In order to experience these objects in working order, then, the culture of the museum field that places such a premium on original, tangible material will have to change.

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APPENDICES

Appendix A – Series One: Authenticity Question - Coding and Long Form Responses

Question

Drawing from your professional experience:

What are the qualities that describe an authentic utilitarian or mechanical artefact in a museum?

Responses

Museum 1

A object that has been used to either create or maintain/preserve other objects (whether the objects are other tools or devices of transport IE boats in our museum's case) or a actual object that someone can still use; hand tools, boats, etc

Museum 2

Age, Documented provenance, Available information on Manufacturer, Manufacturer location/date, Owner, History of use

Museum 3

It works. Visitors can use it.

Museum 4

Original, In Working Order, Usable, Accurate

Museum 5

In our museum we verify that all of our automobiles are authentic by VIN number, engine number, or a well documented history of the car that tells the story of a particular vehicle back at least 25 years.~~Usually with automobiles there is no question if a car is authentic, unless it is a rare, custom, or special interest vehicle i.e. was once owned by someone of political importance or a public figure such as a movie actor/actress.~~ More attention if paid to authenticity in the restoration process where the end goal is to have a car restored back to exactly how the factory put it together. In this case we go as far as using proper hardware and proper authentic original or replacement parts with correct registered part numbers.

Condensed and Coded Responses

1. The artefact works and operates.
2. The artefact is available to be used by visitors.
3. The artefact is composed of original parts.
4. The artefact is composed of appropriate replacement parts.
5. The artefact has documented and verifiable provenance.

Appendix B – Series One: Authenticity Confirmation - Long Form Responses

Question
Series One – Question One: What are the qualities that describe an authentic utilitarian or mechanical artefact in a museum?

Participant's Answers:

1. The artefact works and operates.
2. The artefact is available to be used by visitors.
3. The artefact is composed of original parts.
4. The artefact is composed of appropriate replacement parts.
5. The artefact has documented and verifiable provenance.

If you agree with these answers as a whole, click agree. If you disagree with any aspect of these answers, click disagree and explain why in writing.

Responses
Museum 1
Agree

Museum 2
Disagree (please explain):
Sometimes the appropriate replacement parts cannot be found. In order to keep the artefact working, sometimes a compromise must be made. How much does this affect "authenticity?"

Museum 3
Disagree (please explain):
The only aspect I disagree with is "The artefact is available to be used by visitors." In our museum, visitors are allowed to experience the artefacts working, but are not allowed to use any of the artefacts in the collection. Also, "appropriate replacement parts" in our museum consist of "new old stock" but also include newly manufactured parts that are consistent with manufacturer's specifications at the time of artefact's original manufacture.

Museum 4
Agree

Museum 5
Agree

Appendix C – Series Two: Authenticity Question - Coding and Long Form Responses

Question

Participant results of Series One/Question 1 found disagreement over the concept of authenticity of replacement artefact parts. "Authenticity" was otherwise mutually defined as, "the artefact works and operates, the artefact is composed of original parts, and the artefact has documented and verifiable provenance." Therefore,

How does the replacement or modification of artefact parts affect artefact authenticity?

Responses

Museum 1

There is no way to avoid affecting authenticity. However, selectively restoring an artifact enhances its value to the viewer by showing how the item looked or operated in its natural state. It is important to indicate clearly what parts of the artifact have been modified or replaced.

Museum 2

Replacement or modification of artefact parts is done with care and attention to the authenticity of the artefact then I believe that the authenticity is not being threatened. Sometimes modifications could even improve an artefact's authenticity. Properly cleaning an artefact can reveal aspects of it previously unknown.

Museum 3

Generally speaking it does not affect the authenticity of the vehicle as a whole. If a part is replaced with a part that is not NOS but an identical reproduction of said part the vehicle itself will have lost zero authenticity. Surely this is a debatable topic, however in a lot of cases with certain vehicles that are extremely rare, finding parts can be very difficult and improvisions have to be made the keep the car in working order.

Museum 4

~~I suspect a purist would say, replacement of any parts makes the artefact no longer an authentic artefact.~~ Practical activity is different. It turns out that replacing parts of our collection – working computers – is necessary to keep them running. If the "authentic" part of the computer is that it continues to run its operating systems and software, then replacing a few bolts or batteries does not change the experience of using the equipment to run operating systems and software. ~~Some computer peripherals are difficult to keep running, like vacuum-column 9 track tape drives or disk pack drives. We have found that emulating this equipment in software, with the programs also being loaded in emulation, is more expedient. Perhaps someday we will get these peripherals to work, but until then, an emulated tape drive makes the real "authentic" CPU actually operable. How about if we attempt to run a different operating system on a certain piece of equipment than had ever run on it before. If it is an accident of fate that this particular piece of equipment, in its provenance, always ran under the operating system TOPS-10, but never ran WAITS, but we decide that it is an ideal place to now exhibit the operating system WAITS. Which would have worked perfectly well on it back in the day, as it works perfectly well on it today. Does this mar the authenticity of this equipment? If you are not using a tank to kill people, is it really an authentic "tank" experience?~~

Museum 5

It affects authenticity to an extent, but any working machine is going to need replacement parts. If you are modifying those parts or using parts that are modern in a non-modern machine, I think that affects authenticity more than using "new-old stock" parts or originals. The life of a machine is going to include replacement of non-functioning parts; it is just what happens with machines.

Condensed and Coded Responses

1. The repair or replacement of original parts will affect authenticity to some extent.

2. There is value in the repair or replacement of parts when those actions allow the artefact to operate.

3. It is important to indicate what parts of the artefact have been repaired or replaced.

4. When the repair or replacement of parts is done with attention to the authenticity of the artefact, then authenticity is not threatened.

5. The authentic life of a machine requires the repair or replacement of non-functioning parts.

Appendix D – Series Two: Authenticity Confirmation - Long Form Responses

Question
Series Two – Question Two: How does the replacement or modification of artefact parts affect artefact authenticity?

Participant's Answers:

1. The repair or replacement of original parts will affect authenticity to some extent.

2. There is value in the repair or replacement of parts when those actions allow the artefact to operate.

3. It is important to indicate what parts of the artefact have been repaired or replaced.

4. When the repair or replacement of parts is done with attention to the authenticity of the artefact, then authenticity is not threatened.

5. The authentic life of a machine requires the repair or replacement of non-functioning parts.

If you agree with these answers as a whole, click agree. If you disagree with any aspect of these answers, click disagree and explain why in writing.

Responses
Museum 1
Agree

Museum 2
Agree

Museum 3
Agree

Museum 4
Agree

Museum 5
Agree

Appendix E – Series One: Preservation Question - Coding and Long Form Responses

Question

Drawing from your professional experience:

What are the qualities that describe best-practice object preservation of a utilitarian or mechanical artefact in a museum?

Responses

Museum 1

~~In our museum's opinion/philosophy; the best practice is to use the artefact so that people have a more intimate understanding of the object's purpose, use and reason for invention/design. To us, there is more educational value in seeing an object perform it's function than sit idle.~~ For most of our artefacts- if they are not actively used they deteriorate faster. Hand tools will rust and wooden boats will rot or crack if they just sit in storage or in the water not moving. Therefore we use the tools to maintain the boats that we preserve.

Museum 2

Accession information, Location in storage or gallery, Protection from contamination/moisture/mechanical damage

Museum 3

In restoring computers -- doing what an engineer of that time would have done to repair the equipment. Sometimes using current technologies.

Museum 4

Keeping the artifact in as close to original condition as possible. Any changes are documented and original parts/pieces are kept and cataloged along with the object. Any changes made to the object are reversible.

Museum 5

This depends entirely on the object. There is a term that we use in automobile restoration and preservation, "it is only original once." Depending on the vehicle in question, if it is complete and verifiably original (unrestored) and in good shape we will consider leaving the car alone as it is a good example of a well preserved car that is a usable research tool for the restoration of other vehicles like it. We do our best to maintain such cars by keeping all of its operable features functioning. Generally speaking, preserving a restored vehicle or an original vehicle, the key to sucess is keeping it running and driving it as frequently as possible. Allowing any piece of machinery to sit static is an excellent way to preserve it cosmetically, and damage it mechanically.

Condensed and Coded Responses

1. The artefact is regularly used, or operated, according to the function it was built to perform, to the benefit of mechanical or material preservation.

2. The artefact is left static, or idle, to the benefit of cosmetic preservation.

3. The artefact is protected from adverse contamination, moisture, and mechanical damage.

4. The artefact is kept in as close to original condition as possible, but repaired or restored if necessary.

5. Artefact repairs and restorations are conducted using techniques that would have been used when the artefact was new, but the process may incorporate current technologies.

6. Artefact repairs or restorations are documented and reversible.

Appendix F – Series One: Preservation Confirmation - Long Form Responses

Question

Series One – Question Two: What are the qualities that describe best-practice object preservation of a utilitarian or mechanical artefact in a museum?

Participant's Answers:

1. The artefact is regularly used, or operated, according to the function it was built to perform, to the benefit of mechanical or material preservation.

2. The artefact is left static, or idle, to the benefit of cosmetic preservation.

3. The artefact is protected from adverse contamination, moisture, and mechanical damage.

4. The artefact is kept in as close to original condition as possible, but repaired or restored if necessary.

5. Artefact repairs and restorations are conducted using techniques that would have been used when the artefact was new, but the process may incorporate current technologies.

6. Artefact repairs or restorations are documented and reversible.

If you agree with these answers as a whole, click agree. If you disagree with any aspect of these answers, click disagree and explain why in writing.

Responses

Museum 1

Disagree (please explain):

I agree with all of the statements above except one- the second statement. We are a mostly hands on museum, most of our artefacts that are on display are NOT left static or idle (while some are) most are either left out not behind glass or are in the water so that they can be used by our staff, volunteers and visitors for educational, demonstration and maintenance purposes. We strongly believe that the best way to experience our artefacts is to first hand see, touch, move, row, or sail them. [redacted]

Museum 2

Disagree (please explain):

Artefact is regularly used vs. artefact is kept idle, appear to contradict one another.

Museum 3

Agree

Museum 4

Agree

Museum 5
Agree

Appendix G – Series Two: Preservation Question - Coding and Long Form Responses

Question

In Series One, participant consensus indicated that artefact operation is a quality of authenticity and preservation. Therefore,

How does artefact operation affect the preservation of artefact mechanics or material, specifically with regard to physical artefact longevity? Please explain.

Responses

Museum 1

~~Since most of our artefacts are utilized or operated in their traditional intended use on a regular basis, we have the opportunity to witness how the artefact performs its function from its conception of design and purpose.~~ We also first hand see how the artefact naturally deteriorates over time from use, weather conditions and- well- human error. ~~We then get to preserve the artefact back to its original glory through the combination of artefact vessels needing traditional artefact tools and vis versa, along with traditional techniques that we get to educate to our huge volunteer base and constant flow of visitors.~~ If these vessels were not actively operated, floated or maintained, we would most likely not have them to this day. Wood being an organic material essentially "lives". Being out of the water, it dries out and the boat would crack, once relaunched it would either need a long time to reswell or would just sink. A wooden boat in the water for a length of time not being rowed or sailed would rot. Our hand tools stay sharp and in pristine shape because they actively are being used and sharped on these vessels.

Museum 2

Since operation for demonstration is mostly sporadic, it is easy to neglext regular maintenance procedures meant to keep the mechanism in good shape. It is also important to have adequately trained operators to avoid damage to mechanisms.

Museum 3

~~Another issue is the software that runs on the computers. We like to put copies on exhibit, saving the scarce originals. But much of the software is copy protected, so we have to put the originals on the exhibit floor.~~ Many visitors have never handled 5.25 or 3.5 inch diskettes, so they are mishandled and eventually broken. Right now there is a supply of originals, but eventually we will run out. Balancing "use" with "using up" is an ongoing debate.

Museum 4

Artefact operation adversely affects artefact preservation, including the physical mechanics of the machine and the materials the machine is made from. Running/operating any artefact must be weighed against the physical deterioration of the machine because it will ultimately shorten its life.

Museum 5

The way different machines work in our collection dictates how we go about preservation. For instance, each automobile from differernt eras call for different service intervals and differrent

types of oil. We also have to do a lot of research to find which modern products would be best to use in each application.

Condensed and Coded Responses

1. Utilitarian artefact use, or operation, causes physical deterioration of component and mechanical parts as a result of environmental conditions, human interaction, and possible neglect of maintenance.

2. Regular operation of utilitarian artefacts aids physical object preservation, as a whole, by subjecting the objects to the intended environments and motions that the objects were built to rely on. These activities include the application of appropriate maintenance.

Appendix H – Series Two: Preservation Confirmation - Long Form Responses

Question
Series Two – Question One: How does artefact operation affect the preservation of artefact mechanics or material, specifically with regard to physical artefact longevity? Please explain.

Participant's Answers:

1. Utilitarian artefact use, or operation, causes physical deterioration of component and mechanical parts as a result of environmental conditions, human interaction, and possible neglect of maintenance.

2. Regular operation of utilitarian artefacts aids physical object preservation, as a whole, by subjecting the objects to the intended environments and motions that the objects were built to rely on. These activities include the application of appropriate maintenance.

If you agree with these answers as a whole, click agree. If you disagree with any aspect of these answers, click disagree and explain why in writing.

Responses
Museum 1
Agree

Museum 2
Agree

Museum 3
Agree

Museum 4
Agree

Museum 5
Agree

Appendix I - Recruitment Materials

General Museum Inquiry Email:

Subject Line:
"A Question for the Collections Manager"

Message:
"[Name]

I am a graduate student at the University of Washington in Seattle with a question for the staff member responsible for collections management. Could you please provide me their email address?

Thank you,

Josh Sundermeyer
Master's Candidate
University of Washington
Department of Museology
Seattle, WA 98105

jsunder@uw.edu"

Specific Message to the Participant:

Subject Line:
"Requesting your participation in a research study"

Message:
"[Name]

Pursuant to my master's thesis at the University of Washington, I am conducting a research study concerning the concept of authenticity and preservation strategy of mechanical and utilitarian museum objects.

Would you consider participating in my research? Your museum demonstrates mechanical object exhibition and operation and, as a result, would be ideal for my study. Your participation would be of great value, and much appreciated.

The research will encompass a short survey and a modified Delphi study, conducted anonymously online, and will ask you questions about object authenticity, utilization, and preservation. I anticipate the study will involve three to six rounds of questions with two questions per round. Each question should not take longer than a few minutes to answer.

Kindly advise whether you will participate in this study, and please contact me if you have any questions.

Thank you for your consideration.

Respectfully yours,

Josh Sundermeyer
Master's Candidate
University of Washington – Seattle
Department of Museology
Seattle, WA 98105

jsunder@uw.edu
314.262.1225"

Message Response in the Affirmative:

Message:
"[Name],

I can't thank you enough for agreeing to participate! Enclosed, you will find an information sheet for you to read over. If you have any questions over the materials, please let me know.

You will soon be sent a survey link to a consent agreement that details your rights, privileges, and privacy particulars with regard to the study. Once each participant submits the agreement, the study can proceed.

Once again, thank you for your participation.

Respectfully yours,

Josh Sundermeyer
Master's Candidate
University of Washington – Seattle
Department of Museology
Seattle, WA 98105

jsunder@uw.edu
314.262.1225"

Appendix J – Consent Form

Title A Study in Address of the Authenticity and Preservation Strategy of Functioning Utilitarian Artefacts in Museums

Researcher Contact Joshua Sundermeyer
314.262.1225 // jsunder@uw.edu

Chair Contact Wilson O'Donnell, Museology Graduate Program, University of Washington
206.543.4642 // wilsonod@uw.edu // UW Tower, Box 359485

Consent Form

You are invited to participate in a questionnaire and a modified Delphi Study that are part of my master's thesis work at the University of Washington in Seattle. The purpose of this research is to explore the relationship between object authenticity and preservation strategy of functioning utilitarian museum artefacts. The means of exploration is an attempt at consensus through a comparison of opinion from professionals who work at museums that interpret functioning utilitarian and mechanical objects.

Your institution will not be identified in my published report, and your personal identity will remain anonymous. Your participation in this study and your individual responses will be strictly confidential to the research team. Other panelists will not be able to see your verbatim responses, nor will they have knowledge of your identity. Any comments that are published will be anonymized. Your participation in this research study is voluntary; refusal to participate will involve no penalty, and you may discontinue participation at any time.

If you have any questions now or in the future, you may contact me, Josh Sundermeyer, via email, or you may contact my Thesis Committee Chair. Should you have a question about the wording or meaning behind a question within and during the study, please contact me and a clarification message will be distributed to each participant. In acknowledgement of these rights and conditions, and that you are 18 years of age or older, sign and date below.

_____
Name (Print)

_____
Signature

_____
Date

Appendix K – Participant Information Sheet

Title A Study in Address of the Authenticity and Preservation Strategy of Functioning Utilitarian Artefacts in Museums

Researcher Contact Joshua Sundermeyer
314.262.1225 // jsunder@uw.edu

Chair Contact Wilson O'Donnell, Museology Graduate Program, University of Washington
206.543.4642 // wilsonod@uw.edu // UW Tower, Box 359485

Information Sheet

The purpose of this research is to explore the relationship between object authenticity and preservation strategy of functioning utilitarian museum artefacts. The means of exploration is an attempt at consensus through a comparison of opinion from professionals who work at museums that interpret functioning utilitarian and mechanical objects.

The research will be conducted entirely online through a survey service (SurveyMonkey), and the questions will encompass multiple choice, check box, and short answer prompts. You will be alerted to a new series of questions by an email link sent by the SurveyMonkey domain. There will be no time limit per survey and you can complete each series at your own pace, but the research process cannot proceed until all responses are submitted for each series.

Before the beginning of the modified Delphi Study, a brief multiple-choice questionnaire will be distributed so to ascertain certain background information regarding you and your institution's collection.

Over the course of the modified Delphi study, you will be provided questions to answer. Each question will take place within a "series," and there will be two questions per series. Each answer received by each participant to a question within a series will be compared and determined to be in either mutual agreement or conflict.

If each individual answer to a question received by each participant is found to be in mutual agreement, that question will be considered completed. But if conflicting answers are received by the participants with regard to a specific question, the answers received will be condensed in summation and reintroduced anonymously back to each participant. This reintroduction will prompt each participant the ability to agree or disagree with the consensus of the reintroduced opinions as a whole. Should a participant disagree with the reintroduced opinions as a whole, they will be prompted to explain why in writing.

Once each question in a series has been answered in either agreement or disagreement, the series will be considered complete and a new series will be introduced. Once completed, previous questions and series' will not be reintroduced.

Appendix L – Introductory Questionnaire Longform

Title and Information

A Study in Address of the Authenticity and Preservation Strategy of Functioning Utilitarian Artefacts in Museums

Researcher: Joshua Sundermeyer // Email: jsunder@uw.edu

Thesis Advisor: Wilson O'Donnell, Museology Graduate Program, University of Washington
Phone: 206.543.4642 // Email: wilsonod@uw.edu // Mail: UW Tower, Box 359485

Introductory Questionnaire

The purpose of this research is to explore the relationship between object authenticity and preservation strategy of functioning utilitarian museum artefacts. The means of exploration is an attempt at consensus through a comparison of opinion from professionals who work at museums that interpret functioning utilitarian and mechanical objects.

Before we begin the modified Delphi Study, I would like to conduct a brief multiple-choice questionnaire so to ascertain certain background information regarding you and your institution's collection.

For the purpose of this study:

1. The term "utilitarian" is defined as "designed to be useful or practical rather than attractive." [78]

2. The term “machine,” or “mechanical artefact/object,” is defined as "a mechanically, electrically, or electronically operated device for performing a task." [79]

3. An object may exhibit both aesthetic and utilitarian qualities.

1. What is the approximate number of accessioned collections items claimed by your institution?

   Please indicate which answer best matches your institution:
   (Between 1-1000 accessioned collections objects.)
   (Between 1000-10,000 accessioned collections objects.)

78. “Utilitarian,” *Oxford English Dictionary* (Oxford: Oxford University Press, 2018), https://en.oxforddictionaries.com/definition/utilitarian.
79. “Machine,” *Merriam-Webster* (Springfield, Massachusetts: Encyclopaedia Britannica, 2018), https://www.merriam-webster.com/dictionary/machine.

(Between 10,000-100,000 accessioned collections objects.)
(My institution claims 100,000+ accessioned collections objects.)

2. What type of object does your institution's collection mainly consist of?

Please indicate as many answers as necessary that best match your institution:
(personal or public transportation objects)
(heavy machinery and industrial objects)
(musical instruments)
(computers)
(small mechanical objects or measurement tools)
(art objects)
(other: please describe in the space below)

3. Whether on exhibit or in storage, no matter how frequently, is at least one object in your institution's collection utilized, operated, or set in motion (as opposed to sitting still) as per the function it was built to perform?

Please indicate which answer best matches your institution:
(yes)
(no)
(n/a)

4. If on question 3 you indicated (yes), please answer the following question. Whether on exhibit or in storage, in general, how often does your institution utilize, operate, or set in motion your institution's collections objects (excluding planned regular maintenance, etc.)?

Please indicate which answer best matches your institution:
(Always; the object(s) is spent still, static, or un-utilized none of the time)
(Sometimes; the object(s) is spent still, static, or un-utilized some of the time)
(Rarely; the object(s) is spent still, static, or un-utilized much of the time)
(n/a)

5. What is your professional title with respect to your institution?

Please record your response in the space below:
[]

6. What is your academic or professional background?

Please record your response in the space below:
[]

Appendix M – Delphi Surveymonkey Information Page

Researcher: Joshua Sundermeyer
Contact: jsunder@uw.edu

Chair: Wilson O'Donnell, Museology Graduate Program, University of Washington
Contact: 206.543.4642 // wilsonod@uw.edu // UW Tower, Box 359485

For the purpose of this study:

1. The term "utilitarian" is defined as "designed to be useful or practical rather than attractive." [1]

2. The term “machine,” or “mechanical artefact/object,” is defined as "a mechanically, electrically, or electronically operated device for performing a task." [2]

3. An object may exhibit both aesthetic and utilitarian qualities.

The purpose of this research is to explore the relationship between object authenticity and preservation strategy of functioning utilitarian museum artefacts. The means of exploration is an attempt at consensus through a comparison of opinion from professionals who work at museums that interpret functioning utilitarian and mechanical objects.

Your institution will not be identified in my published report, and your personal identity will remain anonymous. Your participation in this study and your individual responses will be strictly confidential to the research team. Other panelists will not be able to see your verbatim responses, nor will they have knowledge of your identity. Any comments that are published will be anonymized. Your participation in this research study is voluntary; refusal to participate will involve no penalty, and you may discontinue participation at any time.

If you have any questions now or in the future, you may contact me, Josh Sundermeyer, via email, or you may contact my Thesis Committee Chair. Should you have a question about the wording or meaning behind a question within and during the study, please contact me and a clarification message will be distributed to each participant. In acknowledgement of these rights and conditions, and that you are 18 years of age or older, sign and date below.

For information regarding the SurveyMonkey privacy policy, please click here:
https://www.surveymonkey.com/mp/policy/privacy-policy/

[1]. “Utilitarian,” Oxford English Dictionary (Oxford: Oxford University Press, 2018), https://en.oxforddictionaries.com/definition/utilitarian.
[2]. “Machine,” Merriam-Webster (Springfield, Massachusetts: Encyclopaedia Britannica, 2018),

https://www.merriam-webster.com/dictionary/machine.

Please click "Next" to access the series.

Appendix N – Clarification Email to a Question Posed by a Participant

The following is an email sent to each participant:

Subject Line
University of Washington Museology Study Question Clarification

Body
A question was posed by a participant asking what an "appropriate replacement part" means with regard to question one of the confirmation. For the purposes of the study, an appropriate replacement part may be understood as new old stock sourced ultimately from the original manufacturer.

If this information changes your answer, please contact me directly and I will supply you with a custom web link that will allow you to answer the question again.

Signature
Thank you,
Josh Sundermeyer

Appendix O – Discarded Series 2 Delphi Question and Longform Answers

Question

Does artefact operation affect the preservation of artefact context, specifically with regard to visitor interpretation, education, and knowledge? Please explain.

Responses

Museum 1

Absolutely, in the most positive educational way we could hope for. Since we actively maintained our fleet of artefact vessels right on the docks of our museum, anyone who wonders down to The Center for Wooden Boats cannot help but witness traditional woodworking and carpentry being performed by staff and volunteers. They are welcome to come right up and ask us questions, pick up a tool (we watch!) smell some wood shavings or even get in a boat and row it for themselves! Many visitors become volunteers after a conversation with someone actively volunteering because they want to learn more and the best way to do so is helping someone row a traditional boat for the first time or helping restore one themselves. We help people fall in love with wooden boats that did not they did or did not know they even existed! You cannot come down to The Center for Wooden Boats without learning something or taking part of us with you.

Museum 2

If operating an artefact consumes materials, say yarn on a loom, using materials consistent with the time period of the artefact helps maintain the context. For example, don't weave on a 200 year old loom with synthetic yarn.

Museum 3

We are committed to letting visitors interact with our computers, with as few barriers and stanchions as possible. However, some of our computers have front panels with enticing switches. Some visitors, and not only children, can't help themselves, and have to flip the switches. Many of these switches can be fatal to the operation of the computer, necessitating a time-consuming reboot. Several strategies have emerged to keep visitors from flipping switches – telling visitors which things they can touch (keyboards) and not touch (switches). Putting up little signs with a red circle/slash over a touching finger. As we get more visitors, this has become a bigger problem, as the guest services staff can’t watch everybody. So we are beginning to deploy a strategy of Plexiglas covers over the switches. Turns out that the covers need to be more than symbolic – they will even reach around the Plexiglas cover to flip switches. A recent response has been to disable some of the switches internally.

Museum 4

I think preservation of the artefact is our highest goal, but visitor experience is also highly important. Certain artefacts will never be operated due to their rarity, but many can be operated in a controlled environment so that the visitor can experience a machine they have no other way of experiencing. It adds to visitor knowledge and education and there is no other way to deliver that to the visitor in many instances.

Museum 5

Yes, operation does affect the preservation of context. For instance, we have several Ford Model T's in the collection. We find it very important to keep those cars factory correct and in fully functioning condition as to fully explain the magnitude of the cultural change that those specific automobiles brought about. We like to also show that simplicity in design and proper care makes it possible for a car that is 100 years old to operate as it did new.