Material Authenticity of the Ephemeral

International Workshop – Historical Authenticity in the Museum IV
October 16 to 18, 2017

Kerschensteiner Kolleg, Library Building
Deutsches Museum • Museumsinsel 1 • Munich
Material Authenticity of the Ephemeral

Ephemeral objects constitute the core of this international workshop, dedicated to discussing current methods, theories and trends in conservation science, material culture studies and museum studies. These three disciplines are closely connected, particularly due to the materials constituting objects and face fascinating challenges when dealing with materials with short durability or usability – ephemeral materials.

On the one hand, current methods of dealing with ephemeral cultural heritage can comprise research studies, conservation treatments or reconstruction of objects. Whether natural or synthetic materials or their decomposition products, these all depict layers of passing time and require decision making processes on ways of dealing with their fugacity. On the other hand, further methods and state-of-the-art discussions when dealing with ephemeral art, like sound objects or performance art, based on alternative media for carrying and transforming information, are to be considered. The preservation of an object’s materiality is not always compatible with the preservation of its function.

Which part of an object is authentic and aimed to be preserved? Such a question raises further questions of the meaning and value of material, form and function.

Non-destructive testing methods allow for a detailed examination of objects, sometimes also from hidden interiors in a black box. When modern scanners, computed tomography or digital conversions are used, new media becomes available: as high-resolution images, three-dimensional representations or audiovisual records. These media allow for a thorough documentation, reconstruction and medial presentation of objects. Furthermore, the investigation process becomes transparent and it generates new perspectives of (re-)presentation.
Fragile objects in particular can be replaced through the use of media, disintegrating objects can be made available again, selected aspects can be more easily documented and media can support the contextualization of objects in exhibitions.

The various values of objects are connected with its authenticity: for instance in comparison with modern media the original object might be emphasized as historically authentic. Furthermore, the medial or digital transformation of selected aspects of objects can highlight its value and it may gain the potential of becoming a new object, authentic in itself.

The ways of dealing with ephemeral materials and all their associated challenges are relevant for museums of Natural History, or Science and Technology, as well as Musical Instruments and even museums emphasizing on historical cultures, such as the industrialization. Bringing together the theories and methods from the conservation science, material culture studies, and museum studies offers new potential for future practice and theory in these fields.
Monday, October 16, 2017
Kerscheinsteiner Kolleg

1.00 pm
Opening & Registration

1.15 to 2.20 pm
Welcome
Helmuth Trischler, Chair of Research, Deutsches Museum
Achim Saupe, Leibniz-Research Alliance
“Historical Authenticity”

Introduction
Marisa Pamplona-Bartsch & Rebecca Wolf

2.20 to 7.00 pm

Conservation Science

Chair: Marisa Pamplona-Bartsch
Stefan Simon, Yale University, New Haven
Exploring Context and Values: The Role of Heritage Science in Cultural Heritage Research

Break

Chair: Katharina Preller
Elena Gómez-Sánchez, Deutsches Bergbau-Museum Bochum
Following the Natural Degradation of Caoutchouc: Material Analysis of a Diving Suit from the Turn of the 20th Century

Charlotte Holzer, Deutsches Museum
How to Preserve the Story of a 19th Century Glass Fibre Dress
Break

Chair: Fabienne Huguenin
Hanna Hölling, University College London
Trace, Memory, Time: Perpetuating Media Art

Summary & Perspectives
Stefan Simon

Laboratory Visit

Tuesday, October 17, 2017
Kerscheinsteiner Kolleg

9.30 am to 12.00 pm

Theory & Measurement

Chair: Elke Cwiertnia
Stefan Brüggerhoff, Deutsches Bergbau-Museum Bochum
Introductory words

Patrícia Falcão, Tate, London
Software-based Art Installations as an Object of Conservation

Break

Chair: Panagiotis Poulopoulos
Nadja Wallaszkovits, Austrian Academy of Sciences, Vienna
Digitization and Restoration of Historical Audio Recordings:
A Balancing Act between Authenticity and Manipulation
12.00 – 1.00 pm

*Exhibition “Musical Instruments”*

Silke Berdux, Deutsches Museum
Guided Tour, Oskar Sala and the Digitization of Audio Tapes

Lunch

2.30 to 6.00 pm

*Kerscheinsteiner Kolleg*

Chair: Achim Saupe
Johannes Müske, University of Zurich
Constructing Authenticity: Ethnographic Archives and the Material Traces to Intangible Cultural Heritage

Gerard Alberts, University of Amsterdam
In Defiance of Authenticity: Software as Heritage

Break

Chair: Leon Chisholm
Fabian Offert, University of California, Santa Barbara
Preservation as Translation: The Case for Programmable Logic Devices as a Strategy for Circuit-Level Authenticity

Katja Müller-Helle, Freie Universität Berlin
Orchestrated Destruction: The Dissolution of Form and the Production of Sound since 1950

Summary & Perspectives
Frank Bär
Wednesday, October 18, 2017

9.00 to 10.00 am

**Performance & Communication**

**Exhibition „Marine Navigation“**  
Dominik Kimmel, Römisch-Germanisches Zentralmuseum, Mainz  
Introductory words

Chair: Dominik Kimmel  
Jörn Bohlmann, Deutsches Museum  
Just Doing It Right: Craftsmanship and Historical Authenticity in the Case of Restoring Historical Boats and Ships

10.15 am to 1.30 pm

**Kerscheinsteiner Kolleg**

Chair: Ellen Harlizius-Klück  
Peter Bartsch, Museum für Naturkunde Berlin  
On the Minor Differences between Natural Objects and Man-made Constructs

Break

Chair: Rebecca Wolf  
Lars-Christian Koch, Ethnologisches Museum der Staatlichen Museen zu Berlin  
Materializing Sounds: Sonic Concepts and the Ephemeral in North Indian Musical Instrument-Manufacturing

Frank Bär, Germanisches Nationalmuseum, Nürnberg  
Aura versus Information? Artifacts and Their Virtual Representation
Exploring Context and Values: The Role of Heritage Science in Cultural Heritage Research

Cultural heritage is ephemeral, and although it can be quite resilient, it cannot be regarded as a renewable commodity. The task of sustaining cultural heritage in the face of constant change often becomes subject to considerable tensions. There is no single, monolithic way of understanding cultural heritage and so, approaches to its preservation must necessarily reflect this diversity of perspectives.

With the “Nara-Document (1994) on Authenticity” the idea ends that there are absolute criteria for the assessment of values and authenticity, as cultural dependencies control the perception of cultural heritage. The Burra Convention by ICOMOS Australia, defines conservation as “all the processes of looking after a place so as to retain its cultural significance”.

Both documents have opened the doors to a value-driven concept of conservation, where cultural significance is defined by a variety of value categories of e.g. historic, esthetic, social, scientific or financial kind, expanding the concept of conservation over purely material-based criteria. If conservation can be described as management of change, good conservation can be defined as “sustainable management
of change”, starting with the interdisciplinary exploration of the direct and indirect context of cultural heritage, defining its values and aiming at optimizing preservation, integrity and access to cultural heritage.

Sustainability has as well technical as social facets, with stakeholder involvement being a key criterion. In the current debate about the confederate monuments in the US, the need for a more inclusive identification and inclusion of stakeholders became obvious. Great disparities continue to exist between the more and less connected in access to the internet in what is often referred to as the digital divide.

Heritage science has a crucial role to play in this process. It contributes significantly to exploring the context of cultural heritage, increasing often its value of through research and education. It contributes to solving questions around authenticity and provenance, important core challenges for modern museums and, most importantly, is increasingly embracing the diversity of world perspectives.

Stefan Simon is Director of Global Cultural Heritage Initiatives at Yale’s Institute for the Preservation of Cultural Heritage (IPCH), dedicated to advancing the field of heritage science through transdisciplinary research, education and training, as well as practice and advocacy.

Trained as a conservation scientist, Simon earned his Ph.D. in Chemistry from the Ludwig Maximilian University, Munich. He has broad experience in scientific research, specializing in material deterioration diagnostics, microanalytics, climatology, and non-destructive mechanical testing. Simon served as Director of the Rathgen Research Laboratory with the National Museums in Berlin and as a Council Member and Vice
President of ICCROM, the International Centre for the Study of the Preservation and Restoration of Cultural Property. He is the current President of the International Council on Monuments and Sites’ (ICOMOS) Scientific Committee for Stone (ISCS).

Elena Gómez-Sánchez, Deutsches Bergbau-Museum Bochum

**Following the Natural Degradation of Caoutchouc: Material Analysis of a Diving Suit from the Turn of the 20th Century**

Extensive material analyses, among them FTIR, GCMS and REM-EDX, were performed on samples of a turn of the century diving suit (19th–20th century). The object is part of the collection of the Deutsches Bergbau-Museum Bochum (German Mining Museum). The present work aimed at investigating the materials, especially its polymeric components, and state of conservation of the object, with the purpose of supporting the conservators when planning conservation measures before the suit can be exhibited again.

The study allowed discovering a range of caoutchouc materials used in the diving suit with different purposes, produced with different manufacture processes and different additives, as seen e.g. in REM-EDX. In this respect, the analytical study was able to bring to the surface the manifold formulations in which a given macromolecular structure can appear in a single object and uncovered further questions on the technical reasons behind this fact. Through material analysis, a further aspect of the object and its material nature within the context of the technological advances of the time was revealed.

Caoutchouc could be found as lining in waterproofing layers in the textile, as sealing material in the helmet and in three-dimensional caoutchouc elements. In the object, a wide range
of conservation states for caoutchouc are present, notably in the waterproofing textile, ranging from brittle material to that still maintaining its elasticity. The detailed FTIR study allowed to follow the degradation process and to link certain features to the conservation state of samples.

After finishing her PhD in Organic Chemistry in 2008 (Spanish National Research Council), Elena Gómez Sánchez started her specialisation in Conservation Science at the Spanish Cultural Heritage Institute under the direction of Marisa Gómez.

From 2009 to 2015 she was a researcher at the Rathgen-Forschungslabor (Staatliche Museen zu Berlin). In Berlin she worked on several projects (among them KUR-ILKAR) specialising on the organic analysis of museum objects by means of GCMS and FTIR. During this time she focused on polymer degradation and the management of biocide contamination in large institutions.

Since 2015 she is a scientist at the Material Science Section of the Deutsches Bergbau-Museum Bochum. Her main research area is the natural degradation of polymer materials in museums and their conservation issues.

Charlotte Holzer, Deutsches Museum

How to Preserve the Story of a 19th Century Glass Fibre Dress

On June 10, 1893, Infanta Eulalia (1864–1958) came to the show room of the Libbey Glass Company on her visit to the Chicago World Fair. The crystal room was filled with pieces of cut glass and decorated with glass fibre fabrics, highlighting a dress made of the same material. The story goes, that the
Spanish princess was so fascinated by the shiny textile, that she ordered such a lustrous evening gown for herself. The dress survived in the Deutsches Museum in Munich. It arrived here in April 1924 as a gift by Infanta Eulalia’s sister, who was married to a Bavarian prince. Historic photographs from the 1920s, 60s and 80s illustrate the decay process of the dress after entering the museum collection: The first feature that was lost after mounting the gown on a museum mannequin, is the adequate historic silhouette of the early 1890ies.

The second picture shows a surface darkened with dust, the glass fibre fabric and braided ribbons are damaged and the silk lining disintegrates into mere single threads. On the photographs taken around 1986 the bodice is already missing and a row of fringes is detached from the skirt.

Since 2014 Infanta Eulalia’s dress is being examined in preparation for the current conservation project. During this process the question arose: which of this special dresses stories, can still be told after having finished the work? The very acts of cleaning the surface, stabilizing the fabric or constructing a suitable three-dimensional mount for the skirt will change its material and appearance in the future. The reconstruction of the bodice is not included in the conservation concept, however some kind of loss compensation has to be discussed before exhibition, unless the original reappears in the near future.

Charlotte Holzer has a MA in textile conservation and is working on her PhD thesis at the Technical University of Munich. The project deals with the history and conservation of handmade glass fiber textiles, with a special focus on the glass fiber dress from the Deutsches Museum.

In 2015 and 2016 Charlotte received funding through the
Scholar-in-Residence Programme at the Deutsches Museum and was awarded with the Rakow Grant for Glass Research 2016 from the Corning Museum of Glass. Her research interests cover complex conservation treatments on historic costumes and handling hazardous materials, especially mineral fibres.

Selected Projects: Reconstruction and conservation of an embroidered court dress (2013/14) and preparation of historic bags for an exhibition (2013) at the BNM, Preliminary studies for systematically dealing with asbestos containing objects at the Technisches Museum Wien (2011/12).

Hanna B. Hölling, University College London

*Trace, Memory, Time: Perpetuating Media Art*

“In the future, the only artwork that will survive will have no gravity at all” maintained Nam June Paik, the acclaimed father of video art, in 1980. He speculated that the art of the future, once liberated from the gravity of its material, will lack a “preservable” aspect. Paik’s prophetic statement seems to reflect the reality confronted by the many institutions collecting, displaying and preserving media art that seek to arrest works in a physical form while, at the same, attempt to acknowledge their fleeting, transitory, and ephemeral nature.

Media artworks based on film, video and computer code that incorporate playback and display technology confront us with the vulnerability and instability of their physical carriers and visual contents. Being in the process of continuous reinterpretation, rescription, and remediation, these artworks move between formats and platforms, seemingly unconcerned with the gravity of their physical carriers.

Media artworks differ from traditional media such as painting
and sculpture by not conforming to the conventional collecting, archiving and musealization processes. Changeable by nature, these works question the established views considering what an artwork is, or might be, what is being exhibited and preserved, and what subsequently enters the realm of cultural memory.

In response to the thematic focus of this conference and engaging with the notions of duration, trace and archive, my paper aims to reconsider the standard assumptions about the conservation of artworks in general, and media artworks in particular. By introducing the concept of temporal materiality, it challenges the ideas of an enduring object and chronological time that for decades underpinned conservation.

To illustrate my thoughts, I will present iterant assemblages of Paik’s multimedia from my recent book Paik’s Virtual Archive: Time, Change, and Materiality in Media Art (University of California Press, 2017).

Hanna Hölling is Lecturer in the History of Art and Material Studies at the Department of History of Art, University College London. She works on the intersections of art history and theory, material culture studies and conservation. Her research, writing and teaching focus on the art and cultural developments since the 1960s and 70s and on aspects of time, change, materiality and archive in relation to how we conceive of artworks in terms of objects that endure.

She has published and received awards internationally. Among her monographs are Paik’s Virtual Archive: On Time, Change and Materiality in Media Art (University of California Press, 2017) and Revisions-Zen for Film (Bard Graduate Center, 2015). She was awarded the Andrew W. Mellon Professorship, Cultures of Conservation, at the Bard Graduate Center in New York.
Software-based Art Installations as an Object of Conservation

Software-based Art installations are typically very recent additions to Museum Collections. Tate’s earliest work was acquired in 2003 and the number of works acquired has been steadily but slowly increasing. Over this period of time, Time-based Media Conservation has approached the preservation of these works as opportunities for research.

We have used the acquisition and display processes to develop our knowledge of the technical aspects of these works, to increase our understanding of the different ways in which artists use software, the relation of the software to the work and also the technologies available for preservation. All these aspects are essential to define the object of conservation, and to understand what needs to be preserved.

In 2017 the Tate Collection owns 10 software-based artworks, this may seem a small number, but these artworks are unique in their nature, in the sense that each artwork uses different technologies in different ways and therefore requires individual analysis and care.

This paper will address these multiple aspects from the view of the Time-based Media Conservation Department at Tate, and we will discuss the strategies that we have put in place, how we were able to develop them as well as current research taking place collaboration between Tate and external experts.

Patrícia Falcão is a Time-based Media Conservator with a
background in video and photography conservation. She has worked at Tate since 2008. Currently her main focus is the acquisition of time-based media artworks into the Tate Collection. She also collaborates with both the Research and Information Systems Departments in the development of Tate’s strategy and infrastructure for the preservation of high value digital assets. Her main area of interest is the preservation of the digital components of contemporary artworks. Patricia completed her MA at the University of the Arts in Bern with a thesis on risk assessment for software-based artworks. She continued to develop research in this field within PERICLES, a pan-European project that aims to address the challenge of ensuring that digital content remains accessible in an environment that is subject to continual change.

Nadja Wallaszkovits, Austrian Academy of Sciences, Vienna

**Digitization and Restoration of Historical Audio Recordings: A Balancing Act between Authenticity and Manipulation**

Specifically in the field of sound restoration, digitization and signal processing has opened new horizons concerning preservation and access of sound materials. Most important international archives make use of digital databases and disseminate an increasing number of digital audio recordings.

Driven by the expiration of copyrights, the record market shows a steady increase of re-issues of commercial historical sound recordings, many of them of great artistic value. But the way the material is presented to the public in this context is not traceable, as documentation of transfer and restoration processes is lacking. Therefore a critical assessment of historical audio sources is not possible for the user.

The paper compares the professional guidelines of classical
restoration in cultural heritage with daily practice in the audio world. A wide knowledge about the original source and its production process, storage conditions and re-recording influences is essential to properly decide if and how artefacts should be restored in a historically and ethically accurate way. Starting with a critical assessment of the source material and its artefacts, exemplified by means of measurements, spectral analyses and audio examples, the discussion addresses ethical and aesthetical questions and traces the various stages between restoration, re-issue, remastering and re-interpretation.

Nadja Wallaszkovits studied musicology and audio engineering in Vienna and has been working as sound engineer for national and international recording companies. In 1998 she joined the Phonogrammarchiv where she manages the audio department as a specialist for audio restoration, rerecording and digital archiving.

She is consultant for archival technology for national and international institutions and is guest lecturer at the University of Vienna and at the Universities of Applied Sciences in Berlin and Berne. She is also involved in a Public Private Partnership collaboration together with NOA GmbH Vienna, dedicated to the restoration of acetate media. Nadja Wallaszkovits is vice chair of the IASA Technical and Training & Education Committees, and is member of the AES Technical Committee.

Johannes Müske, University of Zurich

**Constructing Authenticity: Ethnographic Archives and the Material Traces to Intangible Cultural Heritage**

The paper investigates the role of ethnographic archives for the creation of “authentic” cultural phenomena, such as traditions
or cultural heritage. By taking the example of ethnography, it is asked how the archiving of culture on data carriers can be regarded as a strategy of transforming the ephemeral into stable and “objective” facts. Why are some cultural elements, e.g. traditional practices or knowledge, regarded to be “authentic” while others are not? Taking as starting point the approaches of material culture studies, cultural heritage studies, and museum studies which state that the authentic and/or heritage is rather constructed than to be “found,” I will take a closer look at the processes and practices of authentication that materialize in the realm of archives and other heritage institutions.

The paper argues that the creation of “records,” i.e., documents such as archival cards, photographs, and sound recordings do precede the politics of heritage, and that fugitive cultural phenomena are authenticated by a) creating stable witnesses of the ephemeral (and thus “unscientific”), which serves b) as a strategy to create an “objective” basis of culture, by using “scientific” technologies such as photography or phonography.

I will first briefly introduce the methods and practices of the early ethnographers and their collection efforts during the first half of the twentieth century. Secondly, I will ask how these archival techniques helped to establish the traces that connected the ephemeral with the heritage. The research is based on archival research and is part of my ongoing project on ethnography and the phonograph. The paper applies to the material culture or museum studies sections.

Johannes Müske, PhD, is lecturer at the University of Zurich and currently a postdoctoral researcher at the Deutsches Museum. BA 2004, MA 2007 (both University of Hamburg), PhD 2012 (University of Zurich). Research and teaching positions at the Universities of Hamburg, Basel, Zurich, LMU Munich; scientific
Gerard Alberts, University of Amsterdam

In Defiance of Authenticity: Software as Heritage

Recent experience with preserving and reviving the Amsterdam Digital City presented a rather harsh confrontation with the practical reality of software as heritage. Software will hardly show itself to the interested historian without being run on some working system. One does not get very far without an emulation or a replica. Either way, efforts to revive the 1994 webserver of the Digital City did not come without compromise.

Digital material, even if it does have a material basis, escapes the observer. However, the level of fugacity in heritage of digital culture depends not so much on the matter but rather on the expectation of the historian. Studying a cultural phenomenon by what are traditionally called ephemera, say T-shirts, is a well-known approach. Studying software as science, or more generally as an intellectual endeavour, also could follow well-known pathways. Software as the thing that is supposed to work, by contrast, software taken as technology poses the really hard problem for heritage. The typology proposed here is not a typology of different materials, but of different approaches to the same subject matter.
Hardly ever can a piece of software can be made to run again. The context is not there and the systems on which it once ran are no longer available. “Maintenance” implies that, in order to “run”, the text of the software evolves and is freshly emulated. Only under a certain aspect, bringing out a certain portion of the software, can it be made to run. If emulation is the very practice of software, in present software just as in heritage, then which of these aspects is ever going to be considered “authentic”?

Gerard Alberts is an associate professor of history of digital cultures at the Korteweg-de Vries Institute for Mathematics at the University of Amsterdam. He served the ESF project Software for Europe as its project leader. Gerard is a member of the editorial board of the Annals of the History of Computing; of the journal Internet Histories; of the Springer series History and Philosophy of Science.

He succeeded Martin Campbell-Kelly as the editor of the Springer Series History of Computing. His work on the history of software with David Nofre and Mark Priestley was honoured with the 2015 Michael S. Mahoney Award for best paper in history of computing by SHOT-SIGCIS. His teamwork on preserving the heritage of DDS, the Amsterdam Digital City, received the Digital Preservation Award 2016 in the category Safeguarding the Digital Legacy.

Fabian Offert, University of California, Santa Barbara

*Preservation as Translation: The Case for Programmable Logic Devices as a Strategy for Circuit-Level Authenticity*

Today, three basic strategies are usually employed in the preservation of material digital artifacts (MDAs): substitution,
the simple repair or replacement of broken hardware, emulation, the simulation of hardware in software, and portation, the adaption to an entirely new hardware context. These strategies, however, are only viable if the goal is mere surface or interface authenticity.

But what about more elaborate MDAs, like computer-based digital artworks or highly idiosyncratic historic computing machines, which specifically and intentionally explore or exploit all the possibilities and limitations of their medium? MDAs that employ both software and hardware in ways that make them literally irreplaceable? Following Claude Shannon, I argue that the inherent symbolic quality of both software and hardware allows us to treat preservation as translation. We can then devise a promising new preservation strategy for highly idiosyncratic MDAs: their technologically accurate recreation by means of Field Programmable Gate Arrays.

Field Programmable Gate Arrays (FPGAs) are variable arrays of logic gates. Unlike in a regular integrated circuit, the specific functions of these logic gates are programmable, making it possible to recreate nearly every piece of hardware imaginable with circuit-level technical authenticity.

By just providing it with a standardized (immaterial) description, the FPGA becomes a specific (material) piece of hardware. FPGAs, in a sense, are the stem cells of the hardware world. As a preservation strategy, the use of FPGAs has yet to be adopted by museums and collections. If implemented properly, however, it promises to revolutionize the way MDAs are documented and preserved. In my presentation I propose a first draft of this strategy based on case studies from my curatorial practice at ZKM | Karlsruhe.

Fabian Offert is a doctoral candidate in the Media Arts and
Technology Program at the University of California, Santa Barbara, where he works with Prof. George Legrady and Prof. Wolf Kittler. Before, he was Assistant Curator at ZKM | Center for Art and Media in Karlsruhe, Germany, where he curated and managed several large-scale exhibitions. Fabian received his Dipl. degree from Justus Liebig University Gießen, where he was a student of composer and director Heiner Goebbels. As a fellow of the German Academic Exchange Service, he was a visiting scholar at the University of California, Berkeley. He is a fellow of the Regents of the University of California and an alumnus of the German National Academic Foundation. Most recent publication: Conceptual Superposition. The Aesthetics of Quantum Simulation (SIGGRAPH Asia 2015 Art Papers). www.zentralwerkstatt.org

Katja Müller-Helle, Freie Universität Berlin

**Orchestrated Destruction: The Dissolution of Form and the Production of Sound since 1950**

Rebellion, transgression, and scandals are the normal conditions of avant-garde culture. The jarring sequence of events that saw everything – from paintings to museums – coming under attack, not only staked out the battlefield of artistic autonomy, it also set the theorems of the avant-garde, such as art’s release into daily life or the transgression of the boundaries of the art object in social praxis. In this paper the theorem of transgression will be analyzed on the material basis of an extreme case where transgression becomes destruction – that is to say, the demolition of musical instruments in avant-garde culture.

When Nam June Paik, Arman, or Philip Corner destroyed classical instruments in rigorously composed actions, with the later prospect of their demonstrating this transgression in musealized relics, and when these are subjected to theoretical
classification as objects of transgression, the project of material
destruction becomes a complex process of Evidenz-creation
involving object, picture, notation and museum.
In my paper destructed, misused, and reframed musical
instruments are treated as material repositories of culture.
They become vehicles for affect, anti-bourgeois critique, or
transgressive states of consciousness within a history of excess.

Dr. Katja Müller-Helle is post-doctoral scholar at the
Kollegforschergruppe BildEvidenz. Geschichte und Ästhetik of
Free University of Berlin. Her research covers the history and
theory of photography, media history, historiography of avant-garde cultures and theories of pictorial evidence.

Among her publications are Zeitspeicher der Fotografie.
Future of Futurist Movement Photography”, in: The Getty
Fotografische Bildevidenz am Rand der Wahrscheinlichkeit”,
in: Zeitschrift für Medienwissenschaft, no. 11, 2/2014: 37-48;
Blitzlicht. Berlin/Zürich: diaphanes, 2012 (edited with Florian
Sprenger).

Jörn Bohlmann, Deutsches Museum

Just Doing It Right: Craftsmanship and Historical Authenticity
in the Case of Restoring Historical Boats and Ships

Restoring historical wooden boats - and ships of steel - contains
various challenges. Depending on whether the vessels will be use
“only” as “dead” showpieces in museum exhibitions or “alive” as
museum-vessels under way: workmanlike – and thus: authentic
- restoration of historical vessels requires mastery of traditional
skills and techniques. When boats and ships “only” are exhibited
as museum-objects ashore, “only” conventional methods of conservation, restoration and exhibition are required. In contrast, if vessels furthermore are under way, seaworthiness and safety must be guaranteed. Then, broad adaptations to modern techniques such as life-saving equipment, fire prevention, radio- and navigation instruments etc. are to be installed.
In order to restore authentically, knowledge about historic tools, materials, methods and its proper mastery is a necessity.
Yet, using traditional tools, methods and materials is complex. Not all craftsmen are experienced and skilled in handling traditional techniques. In addition, modern materials, tools and techniques reduce costs of restoration- and maintenance significant; it simplifies labor noticeably and ensures distinctly longer lifecycles of the vessels.

For instance: modern glues and glass fiber fabric may replace traditional caulking of wooden boats. Besides proper waterproofness, it guarantees also protection against shipworms (Teredo navalis), gives stiffness of the hull, etc. Thus, in restoring boats and ships, often “shortcuts” are taken. That counteracts ethical aspects of the Venice Charter and ignores UNESCO’s convention of intangible heritage which declares, among others, traditional craftsmanship as worth protecting.

This contribution highlights a spectrum of ethics in restoration, which academic approaches often overlook: craftsmanship. In addition to a vivid lecture, concrete questions and visions will be asked at certain objects shown at the maritime exhibition of the Deutsches Museum.

Dr. Jörn Bohlmann is curator for maritime exhibitions at the Deutsches Museum. As a professional journeyman in the craft of sail-making, he worked several years at sea, in the high latitudes of the Arctic and the Sub-Antarctic, among others.
Ashore again, he became a professional wooden boat builder at a ship preservation center in Norway, specialized in the restoring of heritage-protected vessels for Riksantikvaren, Norway’s upmost authority for the protection of monuments and sites. After sixteen years of labour in his maritime trades, he studied Cultural Anthropology in Norway. In 2014, he earned his PhD at the Norwegian University of Science and Technology with his work on the reconstruction of sails and craftsmanship in the case of a late 16th century wreck-finding; he worked, among others, in the research team of the Danish Viking Ship Museum in Roskilde.

Peter Bartsch, Museum für Naturkunde Berlin

On the Minor Differences between Natural Objects and Man-made Constructs

Natural History Museums accumulate enormous numbers of organismic remains. The Preservation of the organisms’ functionality is always in conflict with the preservation of its materiality. The investigation of the organisms’ phylogenetic and ontogenetic history, ecological and individual functionality always depends on the production of artefacts, representations of limited aspects of organisms on different levels. What you encounter in a Museum of Natural History are different sorts of authentic artefacts, organ systems, cellular components, DNA-sequence data, recordings of acoustical and electrical signals, or even observations written down in a journal.

The vast number of objects simply reflects the vast diversity of variants of organisms and natural objects that follow largely unpredicted rules beyond simple physical laws and chemical reactions and that need the same number of nomenclatural addresses, defined by unified published name, date and locality, before any generalizing and simplifying approach.
Except that organismic remains are usually the result of a self-sustaining process since at least 3.3 billion years, there are only minor differences to the other human artefacts, creations of artwork or technology, but even this difference might vanish in some of the future natural history collectibles in view of the progress of genetics. Conservational approaches of these objects are similar, with emphasis on long-term preservation problems of complex organic compounds and reactive chemicals.

If we compare some typical architectural and technological constructions, we recognize that we are able to keep these as an authentic and functional piece of history, even if we have to change, repair and rebuild them constantly.

This is simply due to the fact that structure and function is known, predetermined by us and easier defined during their lifetime by parameters of structure and composition. Whatever “authentic” object is presented, it is meaningless without its potential “aura” of ephemeral supplements, the context of emergence and perception. These, however, in natural sciences remain educated guesswork without reference to the original.

Dr. Peter Bartsch is curator of the fish collection at the Museum für Naturkunde (MfN) in Berlin and commissioner of building. An ichthyologist, embryologist and comparative anatomist by training (University of Köln), he became curator at the MfN in the year 2000. His scientific interests focus on the ontogeny and phylogeny of basal groups of bony fish.

His academic career includes research positions in Tübingen and at the Naturhistoriska Riksmuseet, Stockholm. At the MfN, Peter Bartsch held the position of head of the department of collections 2010 to 2013 and since 2005 he is in charge of the building program.
Lars-Christian Koch, Ethnologisches Museum der Staatlichen Museen zu Berlin

**Materializing Sounds: Sonic Concepts and the Ephemeral in North Indian Musical Instrument-Manufacturing**

Cultural concepts of sounds are handed over to next generations over centuries and influence the imagination and construction of musical instruments significantly. This process of materializing sounds will be discussed using the North Indian string instruments mainly the rudra-vina and the sitar as case studies.

Considering the ancient Indian concept of nada (sound) and its direct connection to the human body, the perception of sound-formation inside an instrument results in, among other construction details, the complete cavity of most string instruments of Northern India.

The air column inside the instruments is believed to create the actual sound while vibrating, a basic concept which changes the construction of the instruments in an essential way. While this is a stable conceptual factor, the sound aesthetics are changing constantly, often determined by the availability of certain materials and their decay.

In this lecture I argue that culturally shaped sonic concepts play a central role in instrument manufacturing and influence not only the materiality, production and distribution of musical instruments but the music and its transmission as well. In a museum context this should be considered as a complex which has to documented and preserved as a whole.

Recent researches on three-dimensional and CT (computed tomography) scanning in connection with musical instrument reproduction projects and sound analysis studies will illustrate
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Frank Bär, Germanisches Nationalmuseum, Nürnberg
Aura versus Information? Artifacts and Their Virtual Representation

It is common place that the study of historical facts is a prerequisite for understanding the present and for drawing conclusions for possible future action. Historical research has to rely on material references from the past, be they graphic, literal or in the form of three-dimensional artifacts. Seeing their importance, they have to be preserved as well as possible despite their mostly ephemeral composition due to the use of organic materials.

While Walter Benjamin in 1935 stated the loss of the original object’s aura through its reproduction by photography or
image and thus indirectly claiming the importance of the original work of art, more than 80 years earlier, in 1853, the Franconian nobleman Hans Freiherr von und zu Aufseß had chosen a different way of approaching historical references for the collections of the newly founded Germanisches Nationalmuseum: Historical artifacts are considered as carriers of information about cultural history, allowing grouping original objects together with copies, photos or descriptions as testimonies of equal value.

First by drawings and analogical photography, then by digital imaging, objects have always been reproduced as faithfully as possible. Technical progress has enabled three-dimensional representations of artifacts that can render surfaces as well as interior structures which, as for example musical instruments, allow investigating otherwise inaccessible features and thus increasing the amount of retrievable information as compared to the preserved original. Continuously expanding the limits of information retrieval from original objects by technical means raises the question of whether the original object will be replaced entirely by its representation in the future.

Frank P. Bär is curator of the musical instrument collection since 1997 and head of the research services (2006) and photo departments (2014) in the Germanisches Nationalmuseum (GNM) in Nuremberg. He studied musicology and German linguistics at the University of Tübingen and holds a PhD in musicology. Within the European community funded project MIMO (2009–2011) – Musical Instrument Museums online – he was responsible for coordinating the digitization of 45,000+ musical instruments in public collections.

He is member of the MIMO Core Management Group who is tasked with the sustainability and enhancement of the
service and represents Germany in the COST action FP 1302 WoodMusICK’s management committee. At the GNM he is project director for the DFG-funded research projects MUSICES (2014–2017) (together with Fraunhofer EZRT) and Collecting musical instruments – the Rück example (2015–2018).
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