

BETWEEN REAL THINGS AND EXPERIENCE. AUTHENTICITY AS A VALUE FOR THE MUSEUM OF THE PRESENT DAY: AN INTRODUCTION

Museums draw a considerable part of their significance for society from the fact that they are places of collecting and preserving the »real«. They are places where the past is experienced and at the same time they are locations of the encounter between yesterday and today, as well as between »us« and the »others«. Gottfried Korff calls this the museum game between the other and oneself¹. The museum's collections are material references for our understanding of the world today and its past. As a »place of real presentations« in a »society on which the seal of the non-authentic lies«², as a »refuge of materiality in a virtualised world«³ the museum is undiminishedly held in high esteem⁴. Especially in an era in which due to the digital revolution, information is available everywhere and at all times – in real time, but also quickly evaporating again, museums are the »material memory«⁵ and instances of permanent preserving the witnesses from the past. In a world that we know primarily through various devices and media, they are still the keepers of »real« things. In a time when facts can often be »alternative« making it difficult to distinguish between truth and lies, they are the institutions where genuine testimonies and objective evidence are held, open and accessible to everyone. In this sense, museums are indispensable places of authenticity of our time.

A closer look at the »catch all concept«⁶ of authenticity, however, shows that even in a museum, a simple distinction between »real« and »fake«, »original« and »non-original«, »right« and »wrong« is often not possible. If the topos of authenticity is to endure as a value for orientation in an obscure world, it requires a differentiated approach to its meaning, especially in and by museums that are generally recognized as authorities of the authentic in society. For this reason, both museology and cultural heritage research have long been intensively concerned with the »fascination of the authentic«⁷. The discourse usually oscillates between its significance as a category of qualities or attributed qualities of things and monuments and the »authentic experience«⁸.

The Leibniz Research Alliance Historical Authenticity, which brings together historians and museum experts with representatives of a wide range of other disciplines hosted the conferences from which this publication results. It is extending this scholarly discourse, particularly in a specific thematic area »Identifying and conveying authenticity in museums and collection-based institutions«⁹. The present volume reflects the current discussion and shows how relative, relational and sometimes even paradoxical the attribution, awarding and assertion of authenticity can be. This introductory article suggests a way – selected and structured from the author's own point of view to approach the topics and questions that speakers and authors have dealt with¹⁰.

Although we often seek it for orientation, authenticity seems impossible to be grasped as an objectively describable characteristic in museums as well as in libraries and archives. The papers gathered in this volume reveal this. Achim Saupe describes it as a »label«¹¹, Ulrich Großmann as »scientific fiction«¹², Petra Feuerstein-Herz as a »fragile, problematic, difficult to replace vision (Leitvorstellung)«, as a »legitimate instrument of authentication«¹³, and in reference to Immanuel Kant as a »regulative idea«¹⁴. Taking up this thought, authenticity in the sense of Kant could be understood as a »regulative principle«, or »transcend-

dental idea«¹⁵ as a conception that can never be thought »in concreto«¹⁶; or as an »aesthetic idea« to be understood as the »conception of the power of imagination that gives much to think about, without there being any definite thought, i. e. concept, consequently adequate enough to make it completely comprehensible in any language«¹⁷.

In each of its dimensions – such as materiality, visual appearance, spatial location, function and meaning of objects and features – authenticity in a museum can at the same time be relativized¹⁸. The authenticity inherent in or attributed to the objects and their messages is always dependent on something else and is always changing: throughout the course of time, changing contexts inside and outside the museum as well as through the ever-changing knowledge of the different investigators and viewers and their multiple perspectives¹⁹. Regardless of whether one describes authenticity as a quality of things, as an attribution or as Sian Jones and others do, as a network of relationships between people, places and things²⁰, it is only theoretically attainable as it is always simultaneously accompanied by its own relativization. This state is also called the »authenticity paradox«²¹. For Dimitrios Theodossopoulos, this leads to a series of dilemmas »that complicate or present challenges to the study of authenticity«²². In practical museum work, these dilemmas repeatedly require decisions to be made, e. g. in restoration, in research and referencing or in the presentation of the exhibition²³.

In order to make authenticity understandable in the museum context, it can probably be best described as the result of multi-layered processes in which many players are involved²⁴, or as Sharon Macdonald puts it: »authenticity is to be established through the expert knowledge attached to an object or practice«²⁵. In the Leibniz Research Alliance Historical Authenticity, we refer to the practices of authentication in museums²⁶. In this sense, museums are not only »places of authenticity« but also instances of authentication that are perceived as »authorities«. And in other words, following Hannah-Lee Chalk one could say: »This way of thinking is concerned more with how things are done, rather than focusing on what things are«²⁷.

This may sound like an academic discussion with little use for practical museum work. However, it is only through the awareness and understanding of the processes of authentication and verification performed by all the players, such as scientists and museum professionals that the objects in the museum and the messages associated with them are given their full social value. The public's understanding of the processes of »authentic« perception is equally important. This idea is also an underlying idea of the »Nara document on Authenticity«, which was agreed upon by ICOMOS in association with the UNESCO World Heritage Committee in 1994²⁸. Only when they understand these processes will museum visitors be able to appreciate the value of their encounter with the past – included therein the collected testimonies of natural heritage – and its significance as a »resource of the past« in the museum and also be able to assess its credibility and plausibility²⁹.

Although we increasingly relativize and deconstruct authenticity as a quality of things, we at the same time construct it again as a »moral ideal«, following Charles Taylor³⁰ or, referring to Jürgen Habermas, as a Standard of Values (»Wertstandard«)³¹, as an »ethical category that emphasizes claims to truthfulness in communicative action«³². In this respect, authenticity remains a central value in the daily work in museums and in dealing with cultural heritage: as a criterion of scientific truthfulness, as an ethical standard in dealing with objects and sources, as well as an ideal of communication between the public and »museum makers«. Or in other words as a quality feature of museum practice. Thus the preoccupation with authenticity is always a discussion about the meaning and functioning of the museum itself.

IS IT ALL RELATIVE? AUTHENTICITY BETWEEN CHARACTERISTIC AND ATTRIBUTION?

The scientific discourse on the phenomenon of »authenticity« in museums is usually at the same time one about the significance of the material object and about the »relics of the past« that are preserved there³³.

The spectrum of considerations ranges from the description of an aura of the original, as Walter Benjamin has done in his frequently cited Paper »Das Kunstwerk im Zeitalter seiner technischen Reproduzierbarkeit« or the differentiation he makes between »trace« and »aura« in his uncompleted »Passagenwerk«³⁴ to Gottfried Korff's »sensual appeal of the objects«³⁵ or the »magic of the originals«³⁶, to the labelling of the objects as »data carriers« and »manifestations of ideas«³⁷, up to a conception of authenticity as a mere sometimes culturally differing attribution³⁸. The discourse also includes attempts to empirically prove the effect of »authentic things« to the visitor³⁹. In her publication, fundamental to recent research on authenticity in cultural heritage, which appeared in 2010, the archaeologist and social anthropologist, Sian Jones, states that »our understanding of authenticity in the material world is marked by a problematic dichotomy between material-oriented and constructivist perspectives«⁴⁰. »On the one hand there is the materialist approach, still widely employed in heritage conservation, which treats authenticity as a dimension of »nature« with real and immutable characteristics that can be identified and measured. On the other hand there is the constructivist position, popular amongst academics and cultural critics, who see authenticity as a product of »culture«, or to be precise the many different cultures through which it is constructed«⁴¹.

From the former approach authenticity is understood »as an objective and measurable attribute inherent in the material fabric, form and function of artefacts and monuments«⁴². These concepts of authenticity usually link the authenticity of an object to its status as an original, the determination of an unambiguous authorship and a largely unchanged substance⁴³. In this sense there is a close relationship between authenticity, originality and genuineness. W. Benjamin defines the original in distinction to technically reproduced things: »Even in the most perfect reproduction, one thing is still missing: the here and now of the artwork – its unique existence in the place where it is located. But it is in this unique existence and nothing else that history took place, to which it has been subjected to in the course of its existence. The here and now of the original defines the concept of its authenticity«⁴⁴.

Constructivist concepts go beyond the materiality of the object and understand authenticity as an attribution and not as a characteristic. They assume that authenticity is »rather a quality that is culturally constructed and varies according to who is observing the object and in what context«⁴⁵. There are numerous examples of how objects have been changed in the course of their lifetime before and in the museum or how different and changing functions and meanings have been ascribed to them from different perspectives. Seen in this way, authenticity is not something that can be found nor is inherent in the objects per se. The 2016 published report »Authentication in the Museum«, which this publication follows up on, is also based on the understanding that authenticity is not to be understood as a property of things but as an attribution⁴⁶.

Other concepts attempt to combine the two perspectives and go beyond them⁴⁷. Sian Jones, for example, argues that »for when we look at how people experience and negotiate authenticity through objects, it is networks of relationships between people, places and things that appear to be central, not the things in and of themselves«⁴⁸. In any case, changes of status and meaning, such as relationality, can be understood as immanent criteria of authenticity. The history of provenance, the object biography, also known as »cultural biography«, thus become central methods for documenting and communicating authenticity in its constant changing⁴⁹. S. Forster, A. Blackwell and M. Goldberg aptly describe this as an approach »that lends itself to discovering a hundred worlds in a single object as opposed to the world in a hundred objects«⁵⁰. The contributions in this publication follow on from this discussion.

According to **Ulrich Großmann**, »the concept of authenticity is not an absolute but a relative criterion«⁵¹. In an overview article at the beginning of this publication, he deals in a fundamental way with what historical authenticity means in relation to the object in the museum context. Using various examples from art history and architecture, he shows how relative at first sight authentic things can be. For example, comparing a well-preserved plaster cast in a museum with the poorly preserved original leads to the question of which

of the two objects is of greater value as an authentic work⁵². Following U. Großmann's observations, »there are different obvious degrees and forms of authenticity, so we need at least the relation to be able to judge the degree of authenticity«⁵³.

Starting from the current research discourse on the »topos of authenticity« and with a view to museums, historical research and cultural heritage, the historian **Achim Saupe** in the second article of this volume undertakes a current evaluation of the concept of the authentic between subject- and object-related authenticities, between »the fixed truth of a historical original« and an authenticity »in relation to the needs of the consumer«⁵⁴. In the context of preserving cultural heritage, he describes how a different understanding of authenticity can lead to conflicts among different players. »Rather than simply attributing authenticity, or even taking it as an essence of things, it is preferable to examine authenticity primarily in terms of communicational structures, i. e. to ask to whom and when authenticity is attributed, as well as how and why«⁵⁵. On this basis, A. Saupe understands questions of historical authenticity even as an »analytical tool« for analysing these »authentication processes«⁵⁶.

Several contributions in this volume deal with the meaning and character of authenticity in the natural science context, especially as a criterion of scientific truthfulness⁵⁷. In the context of the discourse described in this first chapter, **Hannah-Lee Chalk** in line with other current research, suggests that the authenticity of natural scientific objects should also be understood as the result of selected practices. Using the example of the dinosaur »Stan« in the Manchester Museum, she describes these processes, which she divides into »practices of finding and keeping« – and »practices of display«⁵⁸. »This way of thinking is concerned with how things are done, rather than focusing on what things are«⁵⁹. She presents a scale for assessing the material and visual authenticity of objects.

CONFLICTS AND DECISIONS:

OBJECTS BETWEEN CHANGING STATES AND AUTHENTICITY IDEALS

As the previous contributions and explanations show, the authenticity ideal of the unambiguous and unmodified can hardly ever be achieved. This can be seen in particular from the material-oriented approach in search of the authentic condition of objects in museums or those preserved elsewhere. It is almost never possible to name the one authentic state of the object. Even in the phase of its life prior to its transfer to the museum, it may have been altered, repaired, reused or destroyed. In this case, what would be the »unchanged« condition that has to be preserved? What would be the »original«, »authentic« condition to be preserved and made visible?

Especially fast-decaying materials and ephemeral works of art cannot be seized unchanged⁶⁰. For example, archaeological objects have usually remained in the ground for a long time between their use and their discovery. They are corroded and have to be conserved and restored. Also in the museum itself or on the way there, the object may have been subject to a processes of »de-authentication«. Paintings were retouched, sculptures were provided with new pedestals and archaeological or paleontological objects were altered or supplemented during restoration. In all these cases, multiple, changing, »authentic« states can be named. But it is not only the objects themselves that are subject to change; contemporary ideas and ideals of authenticity and the way the material is handled are also subject to change. This can be seen, for example, in the changing approaches to restoration and presentation in the museum. In her contribution, the restorer **Sandra Kaiser** describes how the perception of authenticity in archaeology changed in the 19th century. Using the example of the significance of the corroded surface, the patina, on archaeological objects made

of metal, she shows how relevant attributions of qualities such as authenticity and age were first adhered to the surface. She describes how these have shifted towards the scientific value of the context, which could no longer be located on or in the object itself.

Robert Skwirblies and **Mareike Vennen** use the example of the altarpiece »The Adoration of the Kings« by Giovanni di Pietro, ascribed to Raphael until the 19th century, and the skeleton of the »*Brachiosaurus brancai*« in the Berlin Museum of Natural History to show what was considered authentic throughout the life of these objects and how these ideas were negotiated⁶¹. The story of the two objects shows how materially (initially) badly preserved museum objects, art historical and natural history objects alike can be transformed in their meaning and be presented and received in changing ways.

Different ways of dealing with the dilemma of changing and »relative authenticity« can lead to conflicts in museum practice. Often a tension arises between the demand to preserve the object in a condition as untouched as possible and a modern visitor-oriented presentation in the museum. In all these cases and those mentioned above, decisions have to be made: which state, which layer of time or which functionality is to be conserved or shown in which way. Part of the processes of restoration and conservation should therefore be a constant engagement with the ethical principles of the work on originals. These, however, will never stand still. Several articles in this publication deal with these changes, conflicts and decisions. **Katharina Steudtner** and **Laura K. Steinmüller** define two phases of existence in the life of an object: the time of usage and the phase after discovery. The authors show that ancient archaeological artefacts and monuments at ruin sites are subject to constant transformations throughout their lives, especially in the phase after their discovery. Using two examples from Turkey and Iraq, they also illustrate how conservators, restorers and heritage conservators are usually confronted with a long history of interventions and decisions when dealing with artefacts and monuments⁶².

Restorers and conservators are particularly faced with questions about the authenticity of an object which form the basis on how to handle the objects⁶³. **Stavroula Golfomitsou** shows the effects of the ever changing challenges to museums, such as the shift in focus from the collection to the public, increased openness, or the implementation of inclusion and participation. These have an impact on the profession and work of the restorer and conservator: starting from an artistic profession and moving towards a scientifically based one that increasingly has to deal with value-based questions in a holistic manner. In so doing, she states that »conservators need to gain a holistic understanding, not only of the collection, but also of the museum and how it makes use of it for the benefit of the public«⁶⁴.

These »conflicts of authenticity« can well be seen in the treatment of old musical instruments, which are the subject of several articles in this volume. Does the authenticity of the object show itself in its form, its material or its functionality according to its original purpose? Is it better to make an old instrument playable or to keep it as untouched as possible in its last state? Is it rather a matter of presenting an authentic instrument or a musical experience that is as authentic as possible, which as an ephemeral event is even furthermore difficult to preserve? Using musical instruments as an example, **Judith Dehail** describes how the deontological principles of conservation and restoration have changed in the course of the 20th century. She shows how the concept of »authenticity« has shifted: from a focus on functionality, with the objective of rediscovering authentic music, to a focus on material authenticity, with the objective of preserving the original substance. It also shows which conflicts could arise from the visitor's perspective⁶⁵.

Museum ships are another example illustrating the conflict between conserving the substance of an object as unaltered as possible and preserving or restoring its functionality, e. g. for private or commercial use. **Jörn Bohlmann** uses several examples from the world of shipping to show how difficult it can be for private players, but also for museums as public cultural and educational institutions, to comply with ethical guidelines on authenticity. He thereby also refers to the opportunity to create and preserve authenticity by using

traditional materials and craft techniques in restoration, repairs and maintenance work. In this way, knowledge of »endangered« craft techniques and the techniques associated with tools can also be preserved. Thus, in addition to the preservation of the material cultural heritage, a contribution can be made to the preservation of the intangible cultural heritage⁶⁶.

PLACES, SPACES AND STRUCTURES:

AUTHENTICITY BETWEEN HISTORICAL LOCATION AND TRANSLOCATION

The challenges described in the connection with the objects affect places, spaces and structures in a similar way: historical buildings and locations, archaeological sites and landscapes or ensembles that once formed them. They are of particular importance for determining, attributing and also experiencing of authenticity. On the one hand, they enable an »authentic« spatial experience and on the other hand, they form contexts – spaces, functional contexts and feature situations – from which the museum objects originate.

The relation between the object and its provenance, the entity of find and feature, for example in archaeological research, only provides the object with its full meaning. If the spaces are stripped of the objects or if these are modified, a different authenticity on both sides results. Krzysztof Pomian describes the transition to museumisation as a regular process from the »useful thing« to a relic of the past that refers to a »lost past« and thus becomes »a system of signs with symbolic character«⁶⁷. For this he shapes the term of the »Semiophor«, two-sided objects with a material and a semiotic aspect⁶⁸. The objects now become »mediators between the past and the future«⁶⁹.

Places and spaces therefore require very special consideration – also in the discourse about the authentic in museums⁷⁰. Using the example of several Baroque wooden altars, **Sílvia Ferreira** in her paper shows how Portuguese museums have dealt with the challenge of presenting these objects in new museum contexts after the dissolution of the monasteries in the 19th century in which they had previously stood. A part of the original authenticity, the original religious context and the associated dialogue between space, ambience, rituals and individuals is lost and replaced by a new dialogue with the perspectives of the curator, the art historian and the visitor⁷¹.

In her contribution to the »rediscovery« and institutionalization of new memorial sites up to the present time, »forgotten« places of Nazi mass crimes in the course of a new historical movement, **Heidemarie Uhl** uses several examples to describe the changing ways of dealing with these historical sites. Thereby she explains in detail the debate on the design of the »Topography of Terror« in Berlin and the memorialplace Mauthausen. She shows what fascination the historical places of happenings and the material remains have on the visitors. Also, how »authentic« places become spaces of experience »that hold out the prospect of direct communication with the past«⁷².

Museums were generally founded on the basis of a collection of »authentic« objects – – no matter how these objects are justified as authentic. With memorial sites, historical places, castles and palaces, display mines, archaeological sites, industrial monuments and other heritage sites this is different: They gain their value through the »historic authenticity« of the location experienced by the visitor in various different ways. These places also allow for an emotional experience which is empirically proven, even in the case of complete destruction or reconstruction. The question of the aura of the place thus arises in the same way as the question of the aura of the original object, which can be experienced by many visitors, for example through »the traces of age«⁷³. **Sebastian Karnatz** and **Inga Pelludat** use the example of the new conceptual design of a museum on the Franconian Cadolzburg near Nuremberg to show how to deal with the

reconstruction of largely destroyed historical sites. Since the original objects were also lost, the authentic, i. e. unique and impressive museum experience there now derives less from the actual objects and their exhibition contexts but rather from the exposure of the gaps in the museum's material base in the most precise as possible way. »The authentic museum experience is transmitted especially in the exposure of the scientific decisions that were made in the run-up to the exhibition«⁷⁴.

People or biographical museums form a special group within museums in authentic locations. **Gudrun Kruip** uses the example of these houses, which mostly honour the achievements of individuals, to show how the authentic place changes the reception and the credibility of the museum narrative. »The House functions like a hinge between inside and outside, the past and the present. [...] At its best, visiting a biographical museum becomes an emotional experience somewhere between historical re-enactment and intellectual learning«⁷⁵.

A different view of their authenticity is required for buildings that are more or less original in their material substance but have been taken out of their original spatial context. In his contribution, **Ulrich Großmann** also deals with the issue of exhibiting architecture. Open-air museums, which often display translocated architecture, face a special challenge of this kind. The buildings were mostly moved from an old location to a new one and often apparently authentically merged in new way to form new villages. This often leads to images that could never have existed like that⁷⁶.

ORDERING, INTERPRETING, STAGING: AUTHENTICITY BY CONTEXTUALIZING THE MUSEUM

The relationality and relativity of authenticity becomes evident not only in the individual objects and the contexts from which they originate, but also in the relationships, contexts and spatial settings in which the things are placed as well as presented in the museum. Old ensembles or interrelated findings and spatial experiences have been destroyed and are created anew in the museum, either within the framework of a classification logic of the collection or in the ever-changing museum presentation. Contextualisation is thus an essential process of constructing and deconstructing authenticity in the museum.

Several authors in this volume deal with the logics of order in archives and collections and show what significance the collection context or systematic classification have for the authenticity of the objects. Logics of order, which underly every systematic collection, are described and structured in systematics and thesauri. Using the example of the Information Centre for the Heritage of German Coal Mining (Informationszentrum für das Erbe des Deutschen Steinkohlenbergbaus), **Michael Farrenkopf** and **Stefan Siemer** show how a new logic of order is being developed in a current project at the Deutsches Bergbau-Museum Bochum, involving numerous collections and groups of objects. Thereby a new mining classification system and a mining-specific thesaurus of object names were used to put the recording and documentation of collection clusters on a new basis⁷⁷. With respect to this context, **Claus Werner** explores the question of how classifications and controlled vocabularies relate to a relative concept of authenticity, how they can generate authenticity, but also prevent it. For him, too, authenticity in the museum is increasingly to be understood as a relative term. It is only in retrospect that the meaning and historicity is ascribed to things. Depending on the observer, different, possibly even contradictory interpretations may arise. In the context of this multi-perspective, the question is therefore less whether something is authentic, but rather in what way or for whom.

The selection, classification and grouping of objects in a collection can be scientifically, socially or politically motivated. If values or frameworks change, for example a change of regime, the logic of order and systematics

could easily be changed and reassessed. Using the collection of historical posters as an example, **Laura Demeter** describes changes in the collection strategy of the Museum für Deutsche Geschichte (GDR) after the fall of the Berlin Wall during the transition to the Deutsche Historische Museum Berlin in 1989/1990. Objects in the collection of the Museum für Deutsche Geschichte before 1989 were not considered to be important because of their own significance and authenticity, but rather because of their role and relationship in the collection⁷⁸. In the course of an exhibition, objects are usually re-contextualized – thus extending the processes of authentication by a further stage. Narratives, didactic explanations, visual accents and scenography play an essential part on how visitors perceive objects – and thus also what they consider authentic and what not. Usually the curator or exhibition organizer has the sovereignty of interpretation and in turn has to make various decisions, for example in which »authentic« significance he wants to present objects to the public. By arranging, highlighting and staging, exhibition organizers create relations and contextualize objects in various ways in space and time thus charging them with meaning. In doing so, they present the objects and their interpretations in various degrees of suggestibility or objectivity. These processes mark the final phase of authentication in the museum at the interface with the visitor, which directly involves the objects in their material form. With mixed and virtual reality, social media, virtual tours and online exhibitions, the dimension of the material is transcended, and the questions of authenticity are given further facets. However, the processes of contextualization and staging generally apply here too⁷⁹.

Uwe R. Brückner and **Linda Greci** use several case studies from their own practice to show what significance scenography can have on the creation and perception of authenticity in museums and how museums with the original object in mind can become places of authentic experience. They describe »authenticity« both as a source value of objects with testimonial character and as a category of aesthetic reception⁸⁰. As G. Korff and others have already stated, it is no longer the object itself that is to be regarded as auratic, but rather its perception. Due to the increasing focus on experience, the so-called performative space is becoming increasingly important in exhibition making.

A possible conflict between the desire to show »authentic« objects and creating a fulfilling experience for the visitor has existed for museums not only in recent times, but ever since they started addressing a broader public. Museum architecture also plays an important role in this⁸¹. Using the example of the Natural History Museum in Vienna (NHM) **Stefanie Jovanovic-Kruspel** shows how authenticity was used for »storytelling« in connection with museum architecture and decoration in the 19th century. Based on current observations and analyses of sources, she describes in this context a number of examples of how material, visual and object authenticity were dealt with and which can still be clearly seen today. It oscillates »between an absolute commitment to truth and a playful approach to the narration«⁸².

Anja Grebe addresses historical forms of presentation in modern museum practice. Using the example of the reinstallation of the Kunstkammern in Ambras Castle and the Kunsthistorisches Museum in Vienna, she describes the principles of order and presentation on which museums of the early modern period were based. She shows the contradictions and dilemmas that can arise when historical collections and their presentations are reconstructed. Even if they are well documented, the historicizing exhibitions are more a depiction of historical theory than a re-experience of actual historical modes of display⁸³. She suggests using the term »historically informed redisplay« instead of »authentic« displays⁸⁴.

Archives and libraries as places for collecting and preserving, have comparable functions to museums. While the »three-dimensional« object is at the centre of attention in the case of these, the focus in libraries and archives is on the written tradition. As a materially existing document, book or journal in a depot or exhibition, however, the written word also becomes a museal thing.

Petra Feuerstein-Herz shows in her paper how »relativity« and complexity of the concept of authenticity in books and other written testimonies become evident in a special way. She describes the double charac-

teristic of the »medium book« as a work and as a carrier of texts – as artefact. Moreover, since Gutenberg's invention, the book has lacked the characteristic of uniqueness. The digital age with its unlimited reproducibility has brought about a further shift. Using the example of the Herzog August Library in Wolfenbüttel, the article deals with the museal presentation of the collection within the co-existence and interaction of the work and the book.

In connection with the challenge of exhibiting literature, **Klára Rudas**, **Merse Szeredi** and **Gábor Dobó** present the concept for an exhibition in the Avant-Garde magazine *A Tett* by the Hungarian writer and poet Lajos Kassák. Among other things, the exhibition experimented with presenting complex research results. An intermediate form between exhibition and a »narrative-free« arrangement is the display depository or Depot Exhibition. Here the curator relinquishes his »institutional authority« over his knowledge holdings⁸⁵. The visitor thus has similar possibilities to contextualize the objects just as the curator has by taking over part of the authentication processes in the museum. Against this background, **Thomas Thiemeyer** from the perspective of cultural studies explores what makes the depot so attractive as a metaphor, method or venue for the museum of today.

PLAYERS AND AUDIENCES: CONVEYING AND PERCEIVING OF THE AUTHENTIC

At the outset we discussed the idea of understanding authenticity rather as a category for the entire »museum experience« than as an absolute quality of things. This is generated and negotiated through a network of communicative relationships between people, places and things⁸⁶. In her contribution, **Hendrikje Brüning** deals with these communicative relationships with regard to their implications in practical museum management. She points out a number of factors that are important for determining whether and how authentic museums are perceived and how these factors can be taken into account in museum knowledge transfer⁸⁷. Likewise, **Kiersten F. Latham** describes an empirically verifiable significance of the »network of things« that make something real⁸⁸.

In the context of perception, the aesthetics of things is also an essential dimension of authenticity in museums. **Ruth Keller** investigates the aesthetics of objects and their effects on the recipients. Starting from Arthur Schopenhauer's epistemological approach to vision⁸⁹, she describes a sensual, intellectually uncontrollable effect of historical materiality. Using objects from the history of technology and industry as examples, she shows what effect surfaces, colour, format and space can have on the viewer as well as which processes are triggered in them and which communication processes can arise.

Museums increasingly pursue participatory concepts and formats for the collaboration of non-experts with experts and for the participation and inclusion of various players from various cultural backgrounds⁹⁰. **Susannah Eckersley** takes a holistic approach to the multiple simultaneous meanings of authenticity in museums – both from a material-related and a constructive perspective. Using the case study »Multaka: Treffpunkt Museum«, a project for refugees in Berlin, she describes these multiple authenticities and their meaning. At the same time she relates Multaka to the »contact zone theory« of Marie Luise Pratt and James Clifford⁹¹.

A first-hand report from an experimental archaeological research project on the major Mayen pottery centres demonstrates how decisions and perceptions with which scientific authenticity is produced and evaluated are made by the players involved at different levels. **Michael Herdick** states that by the interaction of the most diverse protagonists, »on the basis of varied professional foundations of experience and knowledge, a creative tension emerges that can provide an impetus for both communication and research«⁹². Of great importance is thereby the potential for research transfer which arises from the interaction of academic and non-academic protagonists in experimental archaeology.

Another example from the field of archaeology shows how contemporary players and their ideas can shape a conception of history permanently. To this day, from the Alps to the far north, people of the older Bronze Age are depicted in an almost uniform manner, the men with a cape and more or less armed, the women with an oversized skirt and tight top, bronze disc and hairnet. **Sylvia Crumbach** describes the origins of these imageries of the Germanic tribes at the end of the 19th century and their acceptance up to the National Socialist period and also questions their authenticity. She shows what role archaeology played as a »science of legitimation« and that ideas once formed are often passed on without reflecting on them⁹³.

Up to this point, the authors' contributions in this volume are primarily concerned with perceptions of authenticity from the point of view of the different protagonists on the basis of their function. But what do museum visitors, readers, or users of an app actually associate with the often conjured »longing for authenticity«⁹⁴? What significance do real things have for them and is the often described aura of the original, »the sensual appeal that is the basis for the fascinating effect of the object worlds in the museum«⁹⁵, perceivable and empirically verifiable? For some years now, psychological and social science studies and publications of audience research, including those from the Leibniz Research Association, have been dealing with how authenticity is perceived⁹⁶. They describe »perceived authenticity« as a cognitive factor or category that influences the museum experience⁹⁷. In her paper **Kiersten F. Latham** presents a large-scale study of 21 US museums, which use a phenomenological approach to empirically investigate how visitors perceive »the real« in the museum. In the process, she can identify »four qualitatively different ways of understanding ›the real thing‹: Self, Relation, Presence and Surround«⁹⁸.

Empirical studies from the environment of the research network have identified comparable modes of perception. On the one hand, these studies show that in many cases, for example when it comes to understanding the function of an object, it makes no difference to the visitor whether he stands in front of a so-called original or, for example, a copy. On the other hand, there are also empirically verifiable factors that make the encounter with the original a special experience for the visitor. So far this has not been achieved by other media, such as copies or images. A survey of more than 800 visitors to the eight Leibniz research museums showed that from the visitors' point of view, authentic objects are characterised above all by a close connection with the past, which is why they arouse interest or promote understanding in a special way and allow them to re-experience historical situations⁹⁹.

Originals, for example in archaeological and historical museums, enable an encounter with the past, which of course is not »immediate«, but nevertheless allows a felt time leap into past worlds. Test persons describe the significance that traces of use or defects or the use by historical personalities have for them¹⁰⁰. In their own imagination, visitors become part of the unique network of objects, people and places described by Sian Jones. Thus the »direct experience of an historic object can achieve a form of magical communion through personal incorporation into that network«¹⁰¹.

It is probably these repeatedly mentioned, also by the test persons only with difficulty describable feelings and often seemingly singular factors (such as »traces of use«), which constitute an authentic experience – in this case with the past. They would be empirical evidence for the »sensual appeal of things« conjured up by Gottfried Korff¹⁰², or the theories in Arthur Schopenhauer's theory of colours on the »external, empirical view of objects in space, as it is produced, on the stimulus of sensation in the sensory organs, by the mind and the other forms of intellect that are added to it«¹⁰³. Here Walter Benjamin speaks of the aura that the reproductions lack: »What is missing here can be summarized in the concept of the aura and one can say: What withers away in the age of technical reproducibility is its aura«¹⁰⁴.

The extent to which the visual appearance of the object itself, or rather the »accompanying practices« of authentication in the museum, such as naming, scenography or the spatial and institutional framework,

contribute to triggering these feelings, could be part of further investigations. Here, too, the above-mentioned visitor survey at the eight Leibniz research museums provides initial insights, since it shows the desire for a contextualization of the objects not only by additional factual information, models and illustrations, but equally by combining them with interesting and vivid stories.

In any case, from the perspective of perceptual phenomena, authenticity would then not only be a construction, an »ethical category«, an attribution by the institutional players of the museum and other institutions, but a value that is at least subjectively perceived or felt by museum visitors in their communicative exchange with the objects and a value that is important to them.

REPLICA, RECONSTRUCTION AND FORGERY: RELATIVE AUTHENTICITIES OF THE UNREAL

In addition to the so-called originals, which can be defined as already described at the outset by their uniqueness in materiality, space and time and by the existence of a life before the museum¹⁰⁵, there are numerous objects in museums that replace or supplement them, either because the original has been lost or needs to be protected or is not available for other reasons¹⁰⁶.

A discussion on authenticity in museums is therefore always a discussion on the role of copies, replicas, reconstructions and similar forms of representation of the original. Especially the rapidly developing technologies of digitisation offer new opportunities to represent real objects realistically or even to replace or duplicate them. Bruno Latour and Adam Lowe ascribe copies a significance of their own, if they are of good quality: they are then part of the »career« of the original and permanently linked to its biography¹⁰⁷. Several articles in this volume deal with the significance and »relativity« of the »non-original«¹⁰⁸.

With the choice of Mainz as the conference location, this central topic in the discourse on authenticity was also geographically located. The Römisch-Germanisches Zentralmuseum is one of the few museums in the world that has maintained the tradition of copying uninterruptedly since its foundation in 1852. In its exhibitions originals and copies are displayed side by side. Scientific copies and reconstructions are produced in the laboratories of the RGZM. For several years now, an intensive development of these competences has been taking place, also with digital means. During the conference in Mainz, selected techniques of reproduction and reconstruction could be visited and discussed on site and in the laboratories. Many other museums around the world still own numerous reproductions, plaster casts and other replicas even though they no longer produce them. This applies in particular to the collections of antiquities set up at universities for comparative study.

Wolfgang Wettengel uses the example of the exhibition »Tutankhamun – His Tomb and the Treasures«, which, besides didactic media, exclusively shows replicas, to illustrate the opportunities that an exhibition without originals still offers today: It protects the originals from transport damage and enables the visitor to discover for the first time the funeral treasure and the placement of the grave goods in the various chambers of the tomb in their original arrangement. Although this exhibition cannot show the individual objects in their material originality, it enables visitors to see parts of their authentic contextualization instead.

Less extensively described in this volume so far are copies in the fine arts. In an overarching contribution, **Annette Tietenberg** in a comprehensive way deals with the concepts of »original« and »copy« in art. Using the example of the exhibition copy, she reflects the concepts of »work of art« and uniqueness in art in contrast to the substitute, replica or reconstruction. She describes exhibition copies, which often serve the primary purpose of compensating for the loss of aesthetic images which have been destroyed or lost as »specific and anachronistic historical models« and as a »component of the artistic praxis«. As such they have a value of their own. Exhibition copies are for example »bound up more strongly than »originals« in

medial interactions and narrative patterns which aim for effects suggesting authenticity and influence processes of historicisation«¹⁰⁹.

Earlier on, we discussed the special dimension by which »authentic« sounds and music can enrich the »Past Experience« and the conflicts of authenticity that may arise in the process¹¹⁰. Instead of making old musical instruments playable, and thereby possibly altering or damaging the original substance, copies or reconstructions can be used for performance practice. **Panagiotis Pouloupoulos** examines concepts and practices used in the reconstruction of historical string instruments at the Fin de Siècle and describes the role of these reproductions as museum artefacts and their influence on our perception of »authentic« medieval instruments. Using the example of fiddles from the Deutsches Museum in Munich and others, he shows what significance these instruments had in spite of not having playable originals, for instrument making, playing technique and the perception of medieval sounds of that time. As »monuments for the ears« **Susanne Rühling** describes signals, music and other acoustic events. They can enrich our understanding of past human worlds and behaviour patterns by an important dimension. She shows the importance of musical instruments, both originals and reconstructions, as acoustic documents of the past, for example the carrying out of archaeo-acoustic experiments¹¹¹, but also the challenges to authenticity in the »auditive event«, for example, by modern interpreters or listening habits. In the concert, another authenticity-determining aspect of the »context« described above becomes visible or audible: every musician knows that an instrument sounds differently in another room, no matter who is playing it. The example of the musical instruments thus show well how »authenticity« can only be described in the »network« of relationships between object, space and people.

Special forms of replicas or copies are forgeries. They differ from other replicas in that they were made to deceive. They pretend to be something other than what they are, so they are not authentic¹¹².

Based on an analysis of more than 70 exhibitions on the subject of art forgery and authenticity between 1900 and 2015, **Felicity Strong** shows how the approach to this controversially discussed topic in the art world has developed in research and exhibition concepts. In the course of this, an increasing preoccupation with the counterfeiter as an artist of modernity becomes apparent. **Boris Jardine**, **Joshua Nall** and **James Hyslop** present a current research project at the Whipple Museum of the University of Cambridge that explores the identification of forgeries amongst early scientific instruments. Based on their research on the so-called Mensing forgeries, they show how important it is to deal with the provenance of each object. Their work also shows that a black and white distinction between genuine and counterfeit was not possible here. Suspect objects in these cases are »composites, »aggressive« repairs, imitations and cases of mistaken attribution«¹¹³. »Outright forgeries lie on a continuum with the most carefully provenanced survival, and in both cases it is the life history of the instrument that is of interest«¹¹⁴.

Also **Artemis Yagou** presents a group of objects that can be described as both »authentic« and fake at the same time¹¹⁵. In her contribution, she presents the results of a recent study of four pocket watches from the Fitzwilliam Museum (Cambridge) that were destined for the Ottoman market. In particular, she describes whether and for whom the authenticity of these objects was important and who these users were. In doing so, it becomes clear how forgeries can also convey »authentic« image and status.

These latter examples clearly show the importance of the »communicative structures« described by Achim Saupe, the relationships between objects, people and places, for the attribution of authenticity alongside a material-oriented view.

BETWEEN COLLECTION INFRASTRUCTURE AND VIRTUAL WORLDS – AUTHENTICITY AS A VALUE FOR SCIENTIFIC INTEGRITY

Museums are – and this of course is particularly true for research museums – also highly frequented meeting places between research and society. For this reason, the current discourse in a fundamental way touches on questions of how museums deal with truth, evidence, hypothesis, interpretation and source criticism. This is of great relevance, especially since museums can reach a broad public with their exhibitions and educational programmes and thus have a great social impact. In this context, authenticity can also be understood as a concept for establishing credibility and as a quality feature of scientific evidence¹¹⁶.

Original objects play a central role in this. Even if we increasingly deconstruct or at least relativize the authenticity of the objects as an absolute characteristic in the current debate, the original things in the museum are nevertheless our sources. They are the basis for our material-based research and the evidence for our findings. In the exhibition, the »original« serves to establish credibility. It is the proof we use to show visitors where our findings come from. The determination and systematic documentation and communication of the »authenticity status« of an object and all processes associated with it is therefore of vital importance. Research museums in particular have a special responsibility in this respect, as they conduct research on objects and on the basis of objects in a comprehensive manner. Several authors address these processes. **Till Töpfer** characterizes the importance of authenticity in natural history collections from the perspective of a scientist and thereby describes a »hybrid authenticity« of biological type species¹¹⁷. Primarily, these objects serve as evidence of natural variation in space and time¹¹⁸. Organic specimens are collected as representatives of organic reality, but they also serve as ideograms of abstract conceptions such as the species concept¹¹⁹.

Biological objects in natural history collections are documentations of species in space and time. But also in their function as scientific evidence, objects are subject to modifications and developments. The evolving scientific knowledge, in particular due to new scientific research methods, for example in genetics and material research, as well as the increasing provenance research, can lead to reassessments, such as the identification of species in natural science or the origin of objects. **Willi E. R. Xylander** illustrates how these are modified, for example by preparation or determination and thus lose »their naturalness«¹²⁰. Their authenticity and their documentary value are then based on the remains of the individual specimens deposited in the collections as well as on the associated documentation. W. E. R. Xylander also uses various examples to show how new methods of investigation, for example on DNA sequences, and new collection strategies (e. g. samples of tissue or film and audio documentation) change the perspective on the object.

A particularly careful handling of scientific validity and evidence is required by the potential of the rapidly developing digital media technologies, especially for the creation of three-dimensional depictions and reconstructions or virtual worlds. The almost unlimited possibilities of these media for the use in museums and cultural heritage documentation are currently leading to an intensive – also critical – discussion among museum representatives and media designers. A number of recent studies and publications deal with these challenges¹²¹. Several authors in this volume describe the extent to which concepts of authenticity may need to be developed further than they have been thus far.

A special opportunity for new technologies is to present museum exhibits more easily and in a more diverse way in their original or better in former – but also in new – contexts¹²². **Martin Zavesky** and **Ingmar Franke** describe design challenges to achieve the greatest possible conformity of perception with reality for the viewer. These consist, among other things, in dealing with proportions and perspectives to achieve an optimized and thus authentic visualization in the sense of the human gaze and vision¹²³.

However, digital images and reconstructions can also change ideas of the object itself. Based on two research projects, **Ralf H. Schneider** and **Caroline Robertson von Trotha** show how digital techniques can influence the authenticity of cultural heritage¹²⁴. Using the example of the Jupiter Giant Column from Ladenburg, they show that knowledge about a cultural object is of great importance for the authenticity of the artefact, but at the same time digital technologies influence knowledge and thus authenticity¹²⁵. **Andreas Hensen** uses the turbulent history of this column to show how a digital model can contribute to restoring the authenticity of an object, at least in part – and what further values can be derived from this for the object¹²⁶.

The development of digital reconstructions and visualizations for museum practice leads several authors of this volume to consider how to deal with scientific validity, plausibility, imprecision and gaps in knowledge. In her paper **Mieke Pfarr-Harfst** examines digital reconstructions as knowledge models and their authenticity. She describes 3D models »as a kind of digital 3D knowledge models [...] in which object based knowledge is gathered, consolidated, condensed and visualized«¹²⁷. However, she asserts that so far there are no strategies or standards for their authentication and plausibility of the knowledge accumulated in them¹²⁸. **Dominik Kimmel**, **Michael Orthwein** and **Stephan Schwan** also use several examples from their own practice as well as empirical studies to examine how to deal with the conflict between ensuring the best possible scientific validity and the requirements of an easy-to-understand visualization that corresponds to modern viewing habits when using realistic depictions in museum education.

The discussion in the course of numerous other digital initiatives at other museums or cultural heritage sites shows that comparable challenges exist there¹²⁹. Perhaps it is time to take up the »London Charter for the Computer-based Visualisation of Cultural Heritage«, to continue it and, in consultation with museum associations, to formulate »ethical standards for the creation of digital reconstructions« as guidelines for the most essential principles¹³⁰. Similarly, as early as 1964, conservators and restorers in the field of monument conservation have led the way with the »Venice Charter for the Conservation and Restoration of Monuments and Sites« and the following conventions of Nara, Burra and Faro for the conservation and restoration of cultural heritage¹³¹.

The current scientific discourse on the authentic could thus make another significant contribution towards dealing with things in the age of digitalization.

(Translation Remark: If not stated otherwise English quotations from sources in German language are the authors and editor's translations)

Notes

- *) Notes marked as »in this volume« refer to papers published in: D. Kimmel / S. Brüggerhoff (eds), *Museums – Places of Authenticity?* RGZM – Tagungen 42 (Mainz 2020). DOI: 10.11588/pro-pylaeum.745.
- 1) Korff 1997, 147; cf. Korff 1992, 141; 2008, 21: »Die Dinge des Museums sind fremde Dinge. Und sie sind dies, weil sie authentisch sind«.
 - 2) Levi-Strauss 1967, 391 (quoted after Korff 1992, 142).
 - 3) Rehberg 2012, 17.
 - 4) See Korff 1992, 141-142.
 - 5) Stranski 1989, 41.
 - 6) Saupe in this volume, 37.
 - 7) Korff/Roth 1990, 17.
 - 8) See, among others, the conference of the ICOM International Committee for Museology »Originals and Substitutes in Museums«, Zagreb 1985 (ICOM 1985) or Korff/Roth 1990; Clifford 1990; Pomian 1990; Deneke 1990, 66 ff.; Korff 1992; 1997; further current literature on objects see also Fitzenreiter 2014; Thiemeyer 2015; Sabrow/Saupe 2016. – On the experience see: Macdonald 1997; Pekarik/Doering/Karns 1999; Falk/Dierkin 2018, esp. chapter 11 and others; Jones 2009; Hohenstein 2018, esp. 136-169.
 - 9) See <https://www.leibniz-gemeinschaft.de/en/research/leibniz-research-alliances/historical-authenticity.html>. – For an overview of the current discourse on historical authenticity see: Sabrow/Saupe 2016b, 7-28, with numerous literature on the

- topic, especially pp. 17-21; Saupe 2017. – An overview of the meaning and research of the term »authenticity« see also, among others, Knaller/Müller 2006b; Knaller 2006; 2007; Rössner/Uhl 2012; Saupe 2014; Jones 2010; Jones et al. 2017.
- 10) I would particularly like to thank Achim Saupe, Stephan Schwan and Willi Xylander for valuable suggestions.
 - 11) Saupe in this volume, 35.
 - 12) Großmann in this volume, 33.
 - 13) Feuerstein-Herz in this volume, 245.
 - 14) Feuerstein-Herz in this volume, 245.
 - 15) »Es ist ein großer Unterschied, ob etwas meiner Vernunft als ein Gegenstand schlechthin, oder nur als ein Gegenstand in der Idee gegeben wird. In dem ersteren Falle gehen meine Begriffe dahin, den Gegenstand zu bestimmen; im zweiten ist es wirklich nur ein Schema, dem direct kein Gegenstand, auch nicht einmal hypothetisch zugegeben wird, sondern welches nur dazu dient, um andere Gegenstände vermittelst der Beziehung auf diese Idee nach ihrer systematischen Einheit, mithin indirect uns vorzustellen.« (»It is a big difference whether something is given to my reason as an object par excellence, or only an object as idea. In the first case, my concepts tend to define the object. In the second case, it is really only a scheme to which no object, not even hypothetically, is added directly, but which serves only to introduce other objects to us indirectly, by means of a relationship to this idea according to its systematic unity.«) (Kant AA III, 442-443 [Kritik der reinen Vernunft, 2. Aufl. 1787, Anhang zur transzendentalen Dialektik]; <https://korpora.zim.uni-duisburg-essen.de/kant/aa03/442.html> [16.06.2020]) (Translation: Debra Jenne).
 - 16) Kant AA XVI, L 249-251. IX 91-94. 1-5. [537] (Handschriftlicher Nachlass) <https://korpora.zim.uni-duisburg-essen.de/kant/aa16/537.html> (16.06.2020).
 - 17) »Als eine »ästhetische Idee« zu verstehen als »Vorstellung der Einbildungskraft, die viel zu denken veranlasst, ohne dass ihr doch irgendein bestimmter Gedanke, d. i. Begriff, adäquat sein kann, die folglich keine Sprache völlig erreicht und verständlich machen kann.«. Kant AA V. 313-314 (Kritik der Urteilskraft 1790, §49); <https://korpora.zim.uni-duisburg-essen.de/kant/aa05/313.html> (16.06.2020).
 - 18) On the relativity of authenticity see Macdonald 2013, esp. 129-136; Großmann 24, Feuerstein-Herz 245, and Grebe 227 in this volume.
 - 19) Cf. Thiemeyer 2015.
 - 20) Jones 2010; Jones/Yarrow 2013; Macdonald 2013; Jones et al. 2017. – On the relations cf. Herdick in this volume, 303ff.
 - 21) E. g. Knaller 2016, 44; On the authenticity paradox see also Saupe 2017; Härle 2017; Knaller 2007; Daur 2013.
 - 22) Theodossopoulos 2013, 338; on the materiality, classification and authentication of objects, especially 351-352.
 - 23) Cf. Xylander 2020.
 - 24) Cf. Jones 2010.
 - 25) Macdonald 2013, 133.
 - 26) Cf. inter alia Eser et al. 2017, 3-5.
 - 27) Chalk in this volume, 47-48.
 - 28) The Nara Document on Authenticity (<https://whc.unesco.org/archive/nara94.htm>). »§9, Conservation of cultural heritage in all its forms and historical periods is rooted in the values attributed to the heritage. Our ability to understand these values depends, in part, on the degree to which information sources about these values may be understood as credible or truthful. Knowledge and understanding of these sources of information, in relation to original and subsequent characteristics of the cultural heritage, and their meaning, is a requisite basis for assessing all aspects of authenticity. 10. Authenticity, considered in this way and affirmed in the Charter of Venice, appears as the essential qualifying factor concerning values [...]«. – On authenticity and Cultural Heritage cf. Röttjer 2019, esp. 40f.
 - 29) On the »resource of the past« (Ressource Vergangenheit) also see Schweizer 2014.
 - 30) Taylor 1991, 15-16; Knaller 2007, 29.
 - 31) Cf. Habermas 1981, for example 41-42; ibidem 36. »Wertstandards haben weder die Allgemeinheit von intersubjektiv anerkannten Normen noch sind sie schlechthin privat«.
 - 32) Härle 2014, 9; on the theory of the concept of Authenticity cf. Knaller 2007, 29-36.
 - 33) See inter alia Pomian 1990.
 - 34) Benjamin 1963, 13 (first published in French in Zeitschrift für Sozialforschung 5, 1936, 40-68); 1982, 560: »Spur und Aura. Die Spur ist Erscheinung einer Nähe, so fern dassein mag, was sie hinterließ. Die Aura ist Erscheinung einer Ferne, so nah das sein mag, was sie hervorruft. In der Spur werden wir der Sache habhaft; in der Aura bemächtigt sie sich unser. [M 16 a, 4]«.
 - 35) Cf. Korff: »The museum piece is both near and far. This double characteristic emanates irritating effects that have always made museum objects, objects of fascination.« (Korff 1992, 141). – »However, objects also have a charming quality, an emotional impact, which is based on the attested, accredited otherness [...]«. (Korff 2008, 21) (Translation: Debra Jenne).
 - 36) Rehberg 2008, 28.
 - 37) van Mensch 1985, 15-18.
 - 38) See inter alia Sabrow/Saupe 2016, 7-14; Deneke 1990, 65.
 - 39) Empirical studies on the effect of the original see Hampp/Schwan 2017, 89-100, see also chapter V and note 77.
 - 40) Jones 2010, 181.
 - 41) Jones 2010, 182.
 - 42) Jones 2010, 181.
 - 43) Eser et al. 2017, 1.
 - 44) Benjamin 1963, 11-12 (Translation: Debra Jenne). – Concerning the definition of »Originals« also see in this volume Großmann 32f.; Tietenberg 339ff.; Kimmel/Orthwein/Schwan 441f. – On the discussion see also: Latour/Loewe 2011; Saupe 2012; Foster/Blackwell/Goldberg 2014; Foster 2016.
 - 45) Jones 2010, 182.
 - 46) Eser et al. 2017, 1-3.
 - 47) Vgl. »Making it Real. Historical Authenticity in Museums and Collections in the UK, Germany, and Europe, 03.12.2019 – 05.12.2019 Cambridge« after: H-Soz-Kult, 14.07.2019. www.hsozkult.de/event/id/termine-40785 (16.06.2020).

- 48) Jones 2010, 187.
- 49) See Foster et al. 2014, 1; Hoskins 2006; Latour/Loewe 2011.
- 50) Foster et al. 2014, 1.
- 51) Großmann in this volume, 23-24.
- 52) Großmann in this volume, 24.
- 53) Großmann in this volume, 24.
- 54) Saupe in this volume, 36; cf. also Tunbridge/Ashworth 1996.
- 55) Saupe in this volume, 40.
- 56) Saupe in this volume, 38-39.
- 57) See especially the contributions Xylander, Töpfer in this volume.
- 58) Chalk in this volume, 48.
- 59) Chalk in this volume, 5; cf. Abram/Lien 2011.
- 60) Material authenticity of the ephemeral. Publication for the conference in the research association Historical Authenticity Munich 2017 (in preparation).
- 61) Skwirbli/Vennen in this volume, 65-75.
- 62) Steudtner/Steinmüller in this volume, 77.
- 63) An the discussion see also Jones/Yarrow 2013, 3-26.
- 64) Golfomitsou in this volume, 94.
- 65) Dehail in this volume, 100-101.
- 66) Bohlmann in this volume, 112.
- 67) Pomian 1990, 42.
- 68) Pomian 1988, 50. 84. 95; see Korff 1997, 147.
- 69) Pomian 1990, 64; on the objects in museums see also Pomian 1988, 14-15.
- 70) On the authenticity of historical places, see also the publications in the research association: Drecoll/Schaarschmidt/Zündorf 2019; Bernhardt/Sabrow/Saupe 2017.
- 71) Ferreira in this volume, 123.
- 72) Uhl in this volume, 133.
- 73) This is shown by results of empirical visitor studies. For example, Mangelsen 2014, 63.
- 74) Karnatz/Pelludat in this volume, 156.
- 75) Kruip in this volume, 163.
- 76) Großmann in this volume.
- 77) Farrenkopf/Siemer in this volume, 17 ff.
- 78) Demeter in this volume, 195.
- 79) Cf. Kimmel/Orthwein 2019; in this volume f. ex.: Pfarr-Harfst; Hensen; Schneider/von Trotha; Kimmel/Orthwein/Schwan; Zavesky/Franke.
- 80) Brückner/Greci in this volume, 202.
- 81) For the museum architecture see, among others, Frankenberg 2013.
- 82) Jovanovic-Krisper in this volume, 217.
- 83) Grebe in in this volume, 231.
- 84) Grebe in in this volume, 232.
- 85) Thiemeyer in this volume, 260.
- 86) Cf. Jones et al. 2017, 3; Jones 2010, 189; Jones/Yarrow 2013; Macdonald 2013, 129-131.
- 87) Brüning in this volume, 274.
- 88) Latham in this volume, 325.
- 89) Schopenhauer 1854.
- 90) E.g. »Großbaustelle 793« in the RGZM 2014-2015 (Kimmel/Mangelsen 2018; cf. inter alia Simon 2010).
- 91) Eckersly in this volume, 291.
- 92) Herdick in this volume, 309.
- 93) Crumbach in this volume, 318.
- 94) E.g. Sabrow/Saupe 2016, 7; Rössner/Uhl 2012.
- 95) Korff/Roth 1990, 16.
- 96) E.g. Hampp/Schwan 2017, 89-100; Mangelsen 2014; S. Schwan / S. Dutz, Authentizität, unpubl. study 2018 (IWM Tübingen / Leibniz Research Alliance Historic Authenticity); further lit. on visitor-related studies see: Kimmel/Orthwein/Schwan in this volume, 452 ff.
- 97) Cf. Peharik 1999, 155; Golding 2000a, 270; 2000b.
- 98) Latham in this volume, 324.
- 99) Unpubl. study 2018: friendly information S. Schwan, Tübingen.
- 100) Latham in this volume, 324 f.; Mangelsen 2014, 63; Hampp/Schwan 2017.
- 101) Jones 2010, 189.
- 102) i. a. Korff 1992; Korff/Roth 1990, 17; for aura and visitor interest see also Weindl 2019.
- 103) »[...] äußeren, empirischen Anschauung der Gegenstände im Raum, wie sie, auf Anregung der Empfindung in den Sinnesorganen, durch den Verstand und die ihm beigegebenen übrigen Formen des Intellekts zustande kommt.« Schopenhauer 1816, preface to the 2nd edition 1854 (Translation: Debra Jenne); cf. Keller in this volume, 279.
- 104) Benjamin 1963, 13.
- 105) On the significance of the original see also note 33, 34 and 44; and Hampp/Schwan 2017, 90; Thiemeyer 2016, 81-90.
- 106) As early as 1985, an ICOM conference dealt in a fundamental way with the question »Original and Substitutes in Museums«. ICOM International Committee for Museology (ICOFOM). Annual meeting, Zagreb, 1985 (ICOFOM Study Series 8, Stockholm 1985).
- 107) Latour/Lowe 2011, 4; for copies see also Foster et al. 2014.
- 108) See among others Großmann in this volume, 24.
- 109) Tietenberg in this volume, 346
- 110) See also Dehail in this volume, 97.
- 111) Rühling in this volume, 361.
- 112) On the significance of counterfeits see Doll 2012; Reulecke 2016.
- 113) Jardine et al. in this volume, 381.
- 114) Jardine et al. in this volume, 381.

- 115) Yagou in this volume, 385 ff.
- 116) On the significance of the concept of evidence from the perspective of cultural studies, see Lethen 2015; Harrasser/Lethen/Timm 2009.
- 117) Töpfer in this volume, 397.
- 118) Töpfer in this volume, 395.
- 119) Töpfer in this volume, 398.
- 120) Xyländer in this volume, 410.
- 121) See Jones et.al. 2017 with references; Bentkowska-Kafel/Baker/Denar 2012; Xyländer 2019. – For digital learning see also Schwan/Cress 2019.
- 122) See Zavesky/Franke in this volume, 411; Kimmel/Orthwein/Schwan in this volume, 441.
- 123) Zavesky/Franke in this volume, 413.
- 124) Schneider/Trotha in this volume, 417.
- 125) Schneider/Trotha, in this volume, 418.
- 126) Hensen in this volume, 421 ff.
- 127) Pfarr-Harfst in this volume, 432.
- 128) Pfarr-Harfst in this volume, 437.
- 129) As seen in the workshop 2018: »Virtual, Mixed and Augmented Reality as a means of transferring knowledge«, in the project »Leibniz-Netzwerk musealer Transfer – Vermittlung – Dialog«, funded by the »Aktionsplan Leibniz-Forschungsmuseen.«
- 130) www.londoncharter.org/; »Faro Convention«: Framework Convention on the Value of Cultural Heritage for Society (adopted by the Council of Europe in 2005); cf. Bundeskanzleramt 2016; see Denar 2012 with further references.
- 131) On the Nara Document see: Falser 2012, 63; Macdonald 2013, 132-134; Jones 2010, 185-186.

References

- Abram/Lien 2011: S. Abram / M. Lien, *Performing Nature at World's Ends*. *Ethnos* 76/1, 2011, 3-18. DOI: 10.1080/00141844.2010.544855.
- Benjamin 1963: W. Benjamin, *Das Kunstwerk im Zeitalter seiner technischen Reproduzierbarkeit* (Frankfurt 1963).
- 1982: W. Benjamin, *Gesammelte Schriften vol. V, 1-2 »Das Passagen Werk«* (ed. by R. Tiedemann) (Frankfurt 1982).
- 2011: W. Benjamin. *Gesammelte Werke* (Frankfurt 2011).
- Bentkowska-Kafel/Baker/Denar 2012: A. Bentkowska-Kafel / D. Baker / H. Denar, *Paradata and Transparency in Virtual Heritage* (London 2012).
- Bernhardt/Sabrow/Saupe 2017: Ch. Bernhardt / M. Sabrow / A. Saupe (eds), *Gebaute Geschichte. Historische Authentizität im Stadtraum* (Göttingen 2017).
- Bundeskanzleramt 2016: Österr. Bundeskanzleramt (ed.), *Rahmenvereinbarung des Europarates über den Wert des Kulturerbes für die Gesellschaft. Eine Bestandsaufnahme*, Wien 2016. (www.kulturdokumentation.org).
- Clifford 1990: J. Clifford, *Sich selbst sammeln*. In: Korff/Roth 1990, 87-106.
- Daur 2013: U. Daur (ed.), *Authentizität und Wiederholung. Künstlerische und kulturelle Manifestationen eines Paradoxes* (Bielefeld 2013).
- Denar 2012: H. Denar, *A New Introduction to The London Charter*. In: Bentkowska-Kafel/Baker/Denar 2012, 57-59. www.londoncharter.org/fileadmin/templates/main/docs/ch6_denard.pdf (16.06.2020).
- Deneke 1990: B. Deneke, *Realität und Konstruktion des Geschichtlichen*. In: Korff/Roth 1990, 65-86.
- Doll 2012: M. Doll, *Fälschung und Fake. Zur diskurskritischen Dimension des Täuschens*. *Kaleidogramme* 78 (Berlin 2012).
- Drecol/Schaarschmidt/Zündoerf 2019: A. Drecol / Th. Schaarschmidt / I. Zündoerf (eds), *Authentizität als Kapital historischer Orte. Die Sehnsucht nach dem unmittelbaren Erleben von Geschichte* (Göttingen 2019).
- Eser et al. 2017a: Th. Eser / M. Farrenkopf / D. Kimmel / A. Saupe / U. Warnke (eds), *Authentisierung im Museum. Ein Werkstattbericht*. *RGZM – Tagungen* 32 (Mainz 2017). DOI: 10.11588/pro-pylaeum.297.405.
- 2017b: Th. Eser / M. Farrenkopf / D. Kimmel / A. Saupe / U. Warnke, *Einleitung*. In: Eser et al. 2017a, 1-10.
- Falser 2012: M. Falser, *Von der Charta von Venedig 1964 zum Nara Document on Authenticity 1994: 30 Jahre »Authentizität« im Namen des kulturellen Erbes der Welt*. In: Rössner/Uhl 2012, 63-88.
- Falk/Dierkin 2018: J. Falk / L. Dierking, *Learning from museums. Visitor experiences and the making of meaning* (Walnut Creek 2018).
- Fitzenreiter 2014: M. Fitzenreiter (ed.), *Authentizität. Artefakt und Versprechen in der Archäologie*. *Internet-Beiträge zur Ägyptologie und Sudanarchäologie* 15 (London 2014). <http://www2.rz.hu-berlin.de/nilus/net-publications/ibaes15/index.html> (16.06.2020).
- Foster/Curtis 2016: S. M. Foster / N. G. W. Curtis, *The Thing about Replicas – Why Historic Replicas Matter*. *European Journal Arch.* 19/1, 2016, 122-148.
- Foster/Blackwell/Goldberg 2014: S. M. Foster / A. Blackwell / M. Goldberg, *The Legacy of Nineteenth-century Replicas for Object Cultural Biographies: Lessons in Duplication from 1830s Fife*. *Journal of Victorian Culture* 19/2, 2014, 137-160. DOI: 10.1080/13555502.2014.919079.
- Frankenberg 2013: P. von Frankenberg, *Die Internationalisierung der Museumsarchitektur. Voraussetzungen, Strukturen, Tendenzen*. *Berliner Schriften zur Museumsforschung* 31 (Berlin 2013).

- Goulding 2000a: C. Goulding, The Museum Environment and the Visitor Experience. *European Journal of Marketing* 34/3-4, 2000, 261-278. DOI: 10.1108/03090560010311849.
- 2000b: C. Goulding, The Commodification of the Past, Postmodern Pastiche, and the Search for Authentic Experiences at Contemporary Heritage Attractions. *European Journal of Marketing* 34/7, 2000, 835-853. DOI: 10.1108/03090560010331298.
- Graf/Rodekamp 2012: B. Graf / V. Rodekamp (eds), Museen zwischen Qualität und Relevanz. Denkschrift zur Lage der Museen. Berliner Schriftenreihe zur Museumsforschung (Berlin 2012).
- Habermas 1981: J. Habermas, Theorie des kommunikativen Handelns. I. Handlungsrationalität und gesellschaftliche Rationalisierung (Frankfurt 1981).
- Hampp/Schwan 2017: C. Hampf / S. Schwan, Authentizität in der Wahrnehmung und Bewertung von Museumsobjekten. In: Eser et al. 2017a, 89-100.
- Harrasser/Lethen/Timm 2009: K. Harrasser / H. Lethen / E. Timm (eds), Sehnsucht nach Evidenz. Zeitschrift für Kulturwissenschaften 2009/1, 1-122.
- Härle 2014: G. Härle, Authentizität gibt es nicht – aber sie kann sich ereignen. Ungekürzte Fassung 2014. www.ph-heidelberg.de/haerle/downloadbereich (16.06.2020); gekürzt: *Theme-Centered Interaction* 28/2, 2014, 23-47.
- Hohenstein/Moussouri 2018: J. Hohenstein / T. Moussouri, Museum Learning. Theory and Research as Tools for Enhancing Practice (London, New York 2018).
- Hoskins 2006: J. Hoskins, Agency, Biography and Objects. In: C. Tilley / W. Keane / S. Küchler / M. Rowlands / P. Spyer (eds), *Handbook of Material Culture* (London 2006) 74-84.
- Jones 2009: S. Jones, Experiencing Authenticity at Heritage Sites: Some Implications for Heritage Management and Conservation. *Conservation and Management of Archaeological Sites* 11/2, 2009, 133-147. DOI: 10.1179/175355210X12670102063661.
- 2010: S. Jones, Negotiating Authentic Objects and Authentic Selves: Beyond the Deconstruction of Authenticity. *Journal of Material Culture* 15/2, 2010, 181-203. DOI: 10.1177/1359183510364074.
- Jones/Yarrow 2013: S. Jones / Th. Yarrow, Crafting Authenticity: An Ethnography of Conservation Practice. *Journal of Material Culture* 18/1, 2013, 3-26. DOI: 10.1177/1359183512474383.
- Jones et al. 2017: S. Jones / S. Jeffrey / M. Maxwell / A. Hale / C. Jones, 3D Heritage Visualisation and the Negotiation of Authenticity: the ACCORD Project. *International Journal of Heritage Studies* 24/4, 2017, 333-353. DOI: 10.1080/13527258.2017.1378905.
- ICOFOM 1985: ICOM International Committee for Museology (ICOFOM), Originals and Substitutes in Museums. Annual meeting, Zagreb, 1985. ICOFOM Study Series 8 (Stockholm 1985).
- ICOMOS 1994: ICOMOS, The Nara Document on Authenticity 1994. <https://whc.unesco.org/archive/nara94.htm> (16.06.2020).
- Kant AA: I. Kant, Gesammelte Schriften (ed. vol. 1-22 Preussische Akademie der Wissenschaften, vol. 23 Deutsche Akademie der Wissenschaften zu Berlin, from vol. 24 on Akademie der Wissenschaften zu Göttingen. Berlin 1900 ff. In: *Bonner Kant Corpus*. <https://korpora.zim.uni-duisburg-essen.de/kant/aa03/442.html> (16.06.2020).
- Kimmel/Mangelsen 2018: D. Kimmel / F. Mangelsen, Vermittlung archäologischer Forschung. Konzept und Besucherstudie zur Ausstellung »Großbaustelle 793«. In: J. Drauschke / E. Kislinger / K. Kührtreiber / Th. Kührtreiber / G. Scharrer-Liška / T. Vida (eds), *Lebenswelten zwischen Archäologie und Geschichte. Festschrift für Falko Daim zu seinem 65. Geburtstag. Monographien des RGZM 150* (Mainz 2018) 199-214.
- Kimmel/Orthwein 2019: D. Kimmel / M. Orthwein. Unsichtbares sichtbar machen. Das Mixed Reality Lab im Museum für Antike Schifffahrt des RGZM. *Museumskunde* 84, 2019 Online Erweiterung. <https://www.museumbund.de/wp-content/uploads/2020/04/final-kimmel-orthwein.pdf> (16.06.2020).
- Kimmel/Schwan in prep.: D. Kimmel / S. Schwan, Vermittlung. In: M Sabrow / A. Saupe (eds), *Handbuch Historische Authentizität* (in prep.).
- Korff 1992: G. Korff, Zur Eigenart der Museumsdinge (1992). In: Korff 2007, 140-145.
- 1997: G. Korff, Fremde (der, die, das) und das Museum (1997). In: Korff 2007, 146-154.
- 2007: G. Korff, Museumsdinge: deponieren – exponieren (Köln 2. erw. Aufl. 2007).
- 2008: G. Korff, Sechs Emders Thesen zur Rolle des Museums in der Informationsgesellschaft. *Museumskunde* 73/2, 2008, 19-27.
- Korff/Roth 1990a: G. Korff / M. Roth (eds), *Das Historische Museum. Labor Schaubühne, Identitätsfabrik* (Frankfurt, New York 1990).
- 1990b: G. Korff / M. Roth, Einleitung. In: Korff/Roth 1990a, 9-27.
- Knaller 2006: S. Knaller, Genealogie des ästhetischen Authentizitätsbegriffs. In: Knaller/Müller 2006, 17-35.
- 2007: S. Knaller, Ein Wort aus der Fremde. *Geschichte und Theorie des Begriffs* (Heidelberg 2007).
- 2016: S. Knaller, Original, Kopie, Fälschung. Authentizität als Paradox der Moderne. In: Sabrow/Saupe 2016a, 44-61.
- Knaller/Müller 2006a: S. Knaller / H. Müller (eds), *Authentizität: Diskussion eines ästhetischen Begriffs* (München 2006).
- 2006b: S. Knaller / H. Müller, Einleitung. *Authentizität und kein Ende*. In: Knaller/Müller 2006a, 7-16.
- Latour/Lowe 2011: B. Latour / A. Lowe, The Migration of the Aura – or How to Explore the Original Through Its Facsimiles. In: T. Bartscherer / R. Coover (eds), *Switching Codes. Thinking Through Digital Technology in the Humanities and the Arts* (Chicago 2011) 275-297.
- Lethen/Jäger/Koschorke 2015: H. Lethen / L. Jäger / A. Koschorke (eds), *Auf die Wirklichkeit zeigen. Zum Problem der Evidenz in den Kulturwissenschaften. Ein Reader. Schauplätze der Evidenz 2* (Frankfurt, New York 2015).
- Lévi-Strauss 1967: C. Lévi-Strauss, *Strukturelle Anthropologie* (Frankfurt 1967).
- Macdonald 1997: S. Macdonald, A People's Story: Heritage, Identity and Authenticity. In: Ch. Rojek / J. Urry (eds), *Touring Cultures: Transformations of Travel and Theory* (London, New York 1997) 155-175.
- 2013: S. Macdonald, *Memorylands: Heritage and Identity in Europe Today* (London, New York 2013).

- Mangelsen 2014: F. Mangelsen, die Wirkung des (Original-)Objekts bei der Vermittlung im archäologischen Museum [unpubl. Masterarbeit Univ. Mainz 2014].
- Pekarik/Doering/Karns 1999: A. J. Pekarik / Z. D. Doering / D. A. Karns, Exploring Satisfying Experiences in Museums. *Curator* 42, 1999, 152-173. DOI: 10.1111/j.2151-6952.1999.tb01137.
- Pomian 1990: K. Pomian, Museum und kulturelles Erbe. In: Korff/Roth 1990, 41-64.
- 2013: K. Pomian, Der Ursprung des Museums. Vom Sammeln (Berlin [1988] 42013).
- Rehberg 2008: K.-S. Rehberg, Zwischen Auratik und Virtualisierung. *Museumkunde* 73/2, 2008, 31-36.
- 2012: K.-S. Rehberg, Hort der Materialität in einer virtualisierten Welt. Überlegungen zu Chancen und Misere einer kulturellen Erfolgseinstitution. In: Graf/Rodekamp 2012, 17-33.
- Rehling/Paulmann 2016: A. Rehling / J. Paulmann, Jenseits von »Original« und »Fälschung«. In: Sabrow/Saupe 2016a, 93-125.
- Reulecke 2016: A.-K. Reulecke, Täuschend ähnlich. Fälschung und Plagiat als Figuren des Wissens in Künsten und Wissenschaften. Eine philologisch-kulturwissenschaftliche Studie (München 2016).
- Rössner/Uhl 2012: M. Rössner / H. Uhl, Renaissance der Authentizität? Über die neue Sehnsucht nach dem Ursprünglichen (Bielefeld 2012).
- Röttjer 2019: J. Röttjer, Authentizität im UNESCO-Welterbe-Diskurs. Das Konzentrations- und Vernichtungslager Auschwitz-Birkenau. In: Drecol/Schaarschmidt/Zündoerf 2019, 35-55.
- Sabrow/Saupe 2016a: M. Sabrow / A. Saupe, Historische Authentizität (Göttingen 2016).
- 2016b: M. Sabrow / A. Saupe, Historische Authentizität. Zur Kartierung eines Forschungsfeldes. In: Sabrow/Saupe 2016a, 7-28.
- in prep.: M. Sabrow / A. Saupe, Handbuch Historische Authentizität (in prep.).
- Saupe 2014: A. Saupe, Empirische, materiale, personale und kollektive Authentizitätskonstruktionen und die Historizität des Authentischen. In: Fitzenreiter 2014, 19-26.
- 2017: A. Saupe, Historische Authentizität: Individuen und Gesellschaften auf der Suche nach dem Selbst – ein Forschungsbericht. *H-Soz-Kult*, 15.08.2017. <http://hsozkult.geschichte.hu-berlin.de/forum/2017-08-001> (16.06.2020).
- Schwan/Cress 2017: S. Schwan / U. Cress (eds), *The Psychology of Digital Learning. Constructing, Exchanging, and Acquiring Knowledge with Digital Media* (Heidelberg 2017).
- Schopenhauer 1854: A. Schopenhauer, Über das Sehn und die Farben (Leipzig 21854). <https://www.gleichsatz.de/b-u-t/trad/shauer/as1sehfarb.html> (16.06.2020).
- Schweizer 2014: B. Schweizer. Zur Authentizität archäologischer Stätten. Vergangenheit als Ressource. In: Fitzenreiter 2014, 123-137.
- Simon 2010: N. Simon, *The Participatory Museum*. www.participatorymuseum.org (16.06.2020).
- Taylor 1991: Ch. Taylor, *The Ethics of Authenticity* (Cambridge MA, London 1991).
- Theodossopoulos 2013: D. Theodossopoulos, Laying Claim to Authenticity. Five Anthropological Dilemmas. *Anthropological Quarterly* 86/2, 2013, 337-360.
- Thiemeyer 2015: Th. Thiemeyer, Work, Specimen, Witness: How Different Perspectives on Museum Objects Alter the Way they are Perceived and the Values Attributed to them. *Museum & Society* 13/3, 2015, 396-412.
- 2016: Th. Thiemeyer, Werk, Exemplar, Zeuge. Die multiplen Authentizitäten der Museumsdinge. In: Sabrow/Saupe 2016, 81-90.
- Tunbridge/Ashworth 1996: J. E. Tunbridge / G. J. Ashworth, *Dissonant Heritage. The Management of the Past as a Resource in Conflict* (Chichester, New York 1996).
- van Mensch 1985: Peter van Mensch, Museums and Authenticities. Provocative Thoughts by Peter van Mensch. In: ICOFOM 1985, 13-20.
- Weindl 2019: R. Weindl, Die »Aura« des Originals im Museum: Über den Zusammenhang von Authentizität und Besucherinteresse (Bielefeld 2019).
- Xylander 2019: W. Xylander, Nicht nur weil wir es können. Reflexionen zu Kriterien für den Einsatz von Virtuality in Naturkundemuseen. *Museumkunde* 84, 2019, 148-155.
- in prep.: W. Xylander, Art, Typus und die Authentifizierung der biologischen Vielfalt. In: Sabrow/Saupe in prep.