



McDONALD INSTITUTE CONVERSATIONS

# Authenticity and cultural heritage in the age of 3D digital reproductions

Edited by Paola Di Giuseppantonio Di Franco,  
Fabrizio Galeazzi and Valentina Vassallo



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Fabrizio Galeazzi and Valentina Vassallo

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## Chapter 8

# Ektypa and 3D models of Ektypa: the reality(ies) of a digital object

Eleni Bozia

‘The authenticity of a thing is the essence of all that is transmissible from its beginning, ranging from its substantive duration to its testimony to the history which it has experienced. Since the historical testimony rests on the authenticity, the former, too, is jeopardized by reproduction when substantive duration ceases to matter. And what is really jeopardized when the historical testimony is affected is the authenticity of the object.’ (Benjamin 1999)

‘Beyond the cult of the valuable object...the predominant element in these museums, much more than the object in itself, is the discourse – the logical sequence, the syllogistic chain, the reasoning process which each individual display and the overall script of the exhibition as a whole seek to expound.’ (Montaner 1990, 18–21)

The two statements above summarize the controversy regarding authenticity – the traditional viewpoint that authenticity is the property of one and only one object against the counterpoint that there are other parameters, such as experience, representation and the subsequent discourse with an artefact that can redefine its value and authenticity. Similarly, Dutton (Dutton 2003, 258ff.) considers two types of authenticity, nominal and expressive. In the case of historical artefacts there is also the consideration of the authenticity of experience, as described by Phillips (Phillips 1997, 1–4). A comprehensive overview of the matter that should also problematize any attempt to argue in favour of the singularity of authenticity is the NARA document compiled by UNESCO in 1993, establishing quantifiable parameters for the definition of authenticity. The following two articles offer us a framework for the

consideration of authenticity, as it will be discussed in this chapter:

‘11. All judgements about values attributed to cultural properties as well as the credibility of related information sources may differ from culture to culture, and even within the same culture. It is thus not possible to base judgements of values and authenticity within fixed criteria. On the contrary, the respect due to all cultures requires that heritage properties must be considered and judged within the cultural contexts to which they belong.’

‘13. Depending on the nature of the cultural heritage, its cultural context, and its evolution through time, authenticity judgments may be linked to the worth of a great variety of sources of information. Aspects of the sources may include form and design, materials and substance, use and function, traditions and techniques, location and setting, and spirit and feeling, and other internal and external factors. The use of these sources permits elaboration of the specific artistic, historic, social, and scientific dimensions of the cultural heritage being examined.’

Here my intention is to discuss the stratification and multifaceted nature of authenticity against the backdrop of authentic copies of inscriptions. More specifically, I examine ektypa (cliché, squeeze, Abklatsch, estampage), which are the paper casts of physical inscriptions, and argue that their existence and usage as mediums of research redefine the traditional appreciations of authenticity. A major issue that surfaces against

the backdrop of the study of ektypa and that will be addressed throughout is the degree of authenticity they afford. Scholars have raised questions such as: 'Can an ektypon rival the original inscription?' 'Does the 3D model of the ektypon bring us closer to the real artefact, or does it simply fake reality?'

The first section relays aspects of and thoughts on authenticity in the literary and archaeological worlds and briefly discusses the idea of authentic copies that the passing of time has legitimized, arguing that authenticity is not only a relative term, but also a relative and acquirable quality for any object. The following section furnishes a discussion focused on ektypa, the authentic paper copies of inscriptions, through the practices of the Digital Epigraphy and Archaeology project, which is an online database for the electronic preservation and dissemination of the 3D models of ektypa and their enhanced automatic analyses. The third section offers a discussion of the levels of authenticity and reality(ies) of an artefact. It will be argued that the nature of the artefact, including considerations of its authenticity, relies on the way it is being utilized. Therefore, it seems that there are other levels of authenticity that presuppose the scholar's appreciation of the non-authenticity (in the traditional definition of the term) of the artefact that is being examined.

### Thoughts on authenticity

The word 'authentic' rings heavily in both experts' and non-experts' ears. It can validate and ultimately bestow dignity on a work of art – whether a book, painting, statue or historical artefact – or compromise it. How should one perceive authenticity, though? Even the most basic dictionary lemma furnishes us with an umbrella definition.

'authentic: real or genuine; not copied or false; true and accurate; made to be or look just like an original' (Merriam-Webster Dictionary)

Against this backdrop, how are we to interpret the image in Figure 8.1? Medieval copyists for centuries copied manuscripts that would otherwise have been lost forever. Their art relied as much on the precise copying of the text as on the beautification of their *oeuvre d'art*. Each copied manuscript then was an original of its own accord and was in turn consulted and copied. Therefore, the word 'copy' does not necessarily betray fallacy or lack of originality. Additionally, when typography was developed, albeit more prodigious in manuscript preservation, it did bear for



SCRIPTORIUM MONK AT WORK. (From *Lacroix*.)

**Figure 8.1.** *Scriptorium monk at work.* Illustration from 'Pentateuch of Printing with a Chapter on Judges' by William Blades (1891).

a while the stigma of mass technological production. Indeed the personal hand-wrought copy, the product of the artistic sensibilities of each copyist, ceased to exist and gave its place to the more mass-produced typo graphed copy.<sup>1</sup> However, it is this multitude of copies that has safeguarded the very existence of the text. Subsequently these initially condemned copies have become pieces of history. The initial manuscript may have been lost or is inaccessible; however, the text itself has been given eternal life and thus will continue to contribute to literary history. Therefore, when we study a work of art, we need to appreciate that there is multifariousness in its nature. A book, for instance, can be appreciated holistically, or as a text, a product of a certain quality paper and ink, or as the property of an individual or an institution that has a life of his/her/its own.<sup>2</sup> Henceforth, the socio-political, historical and manufacturing attributes of any object can render it an original.

Discussions on and determinations about authenticity in archaeology and epigraphy are considered pertinent to the study and subsequent evaluation of artefacts. The seminal importance of original artefacts is undeniable. Our knowledge of material, architecture, engineering techniques, lifestyle in ancient and medieval communities, socio-political and religious constructions, and ultimately the piecing together of history rely heavily on close examination of original artefacts and building constructions. It cannot be denied, though, that after the initial excavation,



preservation and cataloguing, environmental conditions, or even political discrepancies, render the removal of objects to safer conditions pertinent – preferably within condition controlled museum rooms. This authentic archaeological process deprives everyone not involved in the excavations of experiencing the aura of viewing and appreciating objects in their original findspot. Ultimately, though, their long-term preservation is contingent on this deprivation and lack of authenticity.

Figure 8.2 also prompts us to other courses of thinking. During the nineteenth century, museums favoured the creation of casts of their exhibits. The advantages are obvious, as this approach favours

accessibility, education and archaeological training. The Victoria and Albert Museum displays such objects in their Court of Casts.<sup>3</sup> One has to consider that these (in)authentic creations have enhanced the study of antiquity, by training future archaeologists not simply through theory and behind museum glass, but through hands-on experience.<sup>4</sup> We should also note that these casts have an originality of their own; their social history is inextricably interwoven with the human record, independent of the original artefact from which they derive.

Archaeology is also the science of the recreation of the past based on facts and tangible evidence. Flavio



**Figure 8.2.** *Court of Casts in the Victoria and Albert Museum.*

Biondo, the Italian Renaissance humanist historian who created a guide to the ruins and topography of Ancient Rome in the fifteenth century, now considered an early founder of archaeology, essentially recreated something non-existent. Archaeologists throughout the centuries have been excavating sites that will never return to their original state, essentially manipulating the findspots. Therefore, there is in archaeology an inherent condition of recreation of the authentic.

There are numerous cases of essential reformation and recreations on different levels in order to preserve the 'pristine' condition of what we consider part of the human record. Glasgow cathedral with its imposing gargoyles (some of them reconstructed),<sup>5</sup> the case of the copy of the Nozze di Cana of Venice housed in the Louvre with its unexpected potency,<sup>6</sup> and the cast of Trajan's column in the Victoria and Albert museum that was created in the nineteenth century and that preserves the reliefs in much better state than the original, are testaments to the role of (in)authentic creations in recreating, studying and preserving the past.

Therefore, it seems that authenticity can be bestowed upon an artefact at later points in its life. Historical significance, for instance, usually cannot be claimed during the first lifetime of any object. Additionally, an object does not have a uni-modal nature. An inscription is an artefact as such, but it is also about the text it carries, a part of an archaeological site, a product of a scribe, and of course an historical and/or sociopolitical medium due to the ideas it purveys. Consequently, the changing quality of some of the above may also alter the level of authenticity. More specifically, if an inscription is weathered, then its copies in whatever form are bound to be the more authentic versions of the inscribed text.

### Digital epigraphy: a new version of epigraphy or a new-found authenticity

#### *Epigraphy: a collaborative matter*

Epigraphy is the discipline tasked with collecting, deciphering, classifying and interpreting inscriptions. They are published in editions and commentaries, with indices and concordances to facilitate the use of the collections of texts, which are usually arranged geographically or by categories of inscription. Because the material is so varied, epigraphic techniques must always be applied in the context of the relevant branch of classical studies, and epigraphy is thus a research field that invokes the entire spectrum of classical studies. For, in every case, epigraphy depends on archaeology and historical topography to evaluate the inscription bearer and its archaeological context; it depends on palaeography to classify and date the

script, on philology to reconstruct the text and place it in its literary context, and, according to the particular problems raised, on onomastics, linguistics and so on.

Ektypa are the legitimate paper copies of stone inscriptions. Their treatment is twofold; they are not despised or critiqued, as they are by definition copies, but they are not valorized either. Determinations of their usefulness have been mainly practical. The possibility of making a copy of the inscription that one can study in the future, re-examine and use with students has been the primary benefit. The general appreciation, though, is that an ektypon can never rival the original inscription.

Collections of ektypa provide a unique insight into the study and understanding of Greco-Roman History. The study of this material requires the involvement of a wide variety of specialists, as discussed above. Consequently, accessibility is the only way to actually achieve a profound, meaningful and all-encompassing study of the inscriptions. Furthermore, some ektypa can no longer be manually handled due to their fragility. The only way to facilitate and advance research, therefore, is electronic preservation, dissemination, and study.

On the other hand, most classical disciplines are themselves dependent on the results of basic epigraphic research, as new finds of inscriptions are the only source of significant additions to our corpus of ancient texts. Whole branches of research into the ancient world, such as prosopography or social, economic, administrative, and military history, are based for the most part on epigraphic sources. Where the literary tradition is silent or has come down to us only in fragments or excerpts, as is the case for the history of the third century AD, epigraphic evidence can sometimes fill the gap. Or sometimes an inscription can throw a whole new light on what has been transmitted in literary sources, as has happened through recent finds in Spain (the *Senatus consultum de Cn. Pisone patre* and the *tabula Siarensis*) which offer a contemporary, official version of events to set alongside Tacitus's account of the death of Germanicus and its consequences. Lexicographers too see inscriptional evidence as of equal worth to the language of literature transmitted in manuscripts and often distinguished from it only by the accident of transmission, so it is no surprise that the *Thesaurus Linguae Latinae*, the comprehensive dictionary of the Latin language, relies on epigraphic corpora and new findings.

#### *Why does an ektypon matter?*

Epigraphers utilize various documentation techniques to make a copy of their find that will serve as a complete and reliable basis for restoring and editing the text, of which usually only fragments remain. Sometimes,



however, after returning from an epigraphic field trip, the find needs to be re-examined: perhaps the reading, which initially seemed completely obvious, fails to stand up to subsequent scrutiny; perhaps doubt is subsequently cast on a reading previously believed to be absolutely certain. Often it is only then that the unity of fragments is recognized – if, for example, notes made on adjacent fragments are discovered lying next to one another in the folder, while the originals are kept at different locations. A fraction of a dedication may be housed in an epigraphic depot, while the altar itself bearing the rest of the inscription has been set up in the courtyard of a museum.

On occasion, it may be helpful to draw on the aid of a photograph. Yet it is much more beneficial if the epigrapher has ektypa at his/her disposal, for thus, should the occasion arise, ektypa of various fragments can be joined together. Often a reading is impossible until the ektypon itself is at hand. While a paper cliché can be read in appropriate lighting conditions at any time, a photograph only shows the artefact at a particular moment in time and can on occasion distort the appearance of the actual find. The ektypon is indeed even superior to the original in cases where the item bearing the inscription is standing in the shade and cannot be moved on account of its great weight.

Furthermore, one should also consider cases in which the original inscription is now misplaced, lost or destroyed. It is then that the ektypon acquires a new sense of originality, as it is the closest witness to the stone inscription. Researchers are faced with similar situations when the inscription is badly weathered and no longer legible, or when it is significantly more weathered than at the time when the ektypon was created.<sup>7</sup> It is then that we are faced with a different aspect of originality. The inscription itself may lay a claim on authenticity of material and construction. The ektypon, on the other hand, is the one that extends the life of the text and is closer to the original. If the lettering techniques and strokes of the scribe are not visible any longer on the inscription, then the ektypon is even more authentic and can be considered to be the only artefact that actually preserves these types of ancient metadata.

Finally, readings of weathered inscriptions can prove to be challenging and occasionally rely on philological knowledge or even on conjecture and educated assumptions. A term that was coined within this context by Jameson (Jameson 2004), ‘democratization of knowledge’, can contribute to achieving better readings.<sup>8</sup> Accessibility of the text to a larger number of readers enhances the possibility that the inscribed text will be read correctly. At this point, though, we are assuming open access and dissemination of the

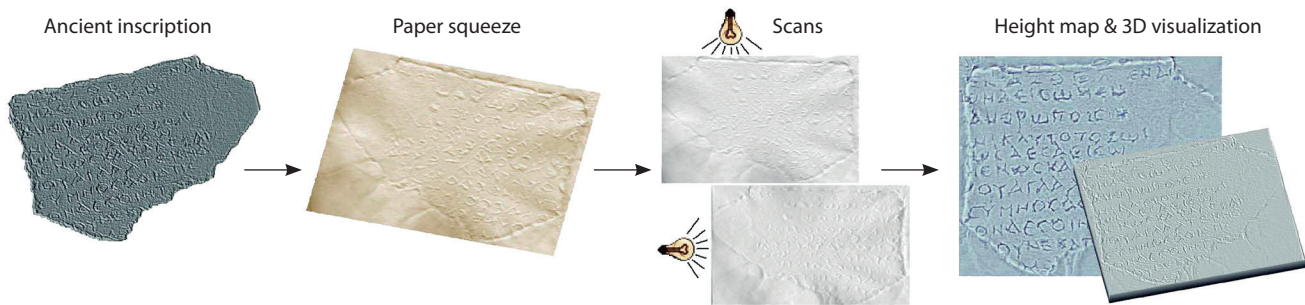
ektypa themselves or a level of academic mobility, if one is to visit multiple museums and institutions to lay their hands on the ektypon. The alternative, the photograph, cannot capture the lettering details and the attributes of the scribe.

#### *The Digital Epigraphy and Archaeology Project*

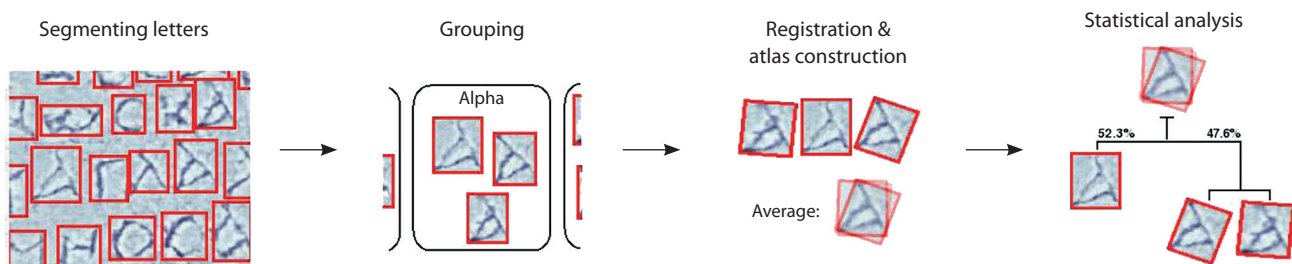
The Digital Epigraphy and Archaeology project (DEA)<sup>9</sup> is a novel and technologically advanced scientific tool for the effective study and comparative analysis of Greek and Latin inscriptions. It provides archaeologists and epigraphists with a cost-effective and efficient method for 3D digitization of inscriptions based on ektypa as well as access to an online dynamic library of 3D ektypa. Additionally, the system provides options for enhanced visualizations and further automatic analysis. The project can be accessed at: <http://www.digitalepigraphy.org>.

The Digital Epigraphy and Archaeology (DEA) Toolbox is a unique initiative in the field of digital epigraphy as it provides the methods to digitize ektypa with minor handling with the use of an office scanner. The Toolbox runs as a web application that focuses on the digitization, 3D visualization, data mining and electronic dissemination of ektypa and other archaeological artefacts. A new technique was developed that automatically creates a 3D model with the use of an office scanner.<sup>10</sup> The tridimensional digitization of ektypa is achieved through the bidirectional scanning of the ektypon using a typical scanner with a moderate 300 or 600 dpi (dots per inch) resolution. The scanned images are then being processed by the algorithm that was developed, which analyses the depicted shading in the images and reconstructs in 3D the original inscription. The advantages of this process are numerous: 1) It does not require any additional expensive equipment. 2) The ektypa can be safely preserved in a digitized form, thus eliminating the possibility of deterioration of the squeezed paper. 3) They can also be distributed electronically, facilitating epigraphic studies. 4) Finally, the digital ektypa can be more effectively visualized compared to 2D images, as they can be viewed from different angles, under different artificial lighting conditions, and in different zooming scales.

An experimental scientific toolbox that performs various levels of post-processing analysis of the digital inscriptions was also designed. Our set of algorithms includes letter segmentation and grouping, calculation of statistics in their shape variation, visualization of the statistics in the forms of dendrograms, and comparison of lettering techniques. These functions can facilitate the identification of letterforms, even in the case of corrupted fragments.



**Figure 8.3.** Illustration of the Digital Epigraphy Toolbox's 3D digitization process.



**Figure 8.4.** Illustration of the analysis of lettering techniques.

The Digital Epigraphy Toolbox offers a graphical interface that includes user-friendly options for 3D visualization of inscriptions, 3D navigation, and comparative analysis of letterforms. The user can upload an inscription in various formats, such as scanned images of ektypa, photographs of inscriptions or even 3D object files produced by 3D scanners, laser and depth scanners, etc. He/she then has the option to reconstruct the tridimensional shape of the inscription from images, view, rotate and zoom into the 3D model of the inscription, and apply different virtual lighting conditions. The user also has the option to automatically segment the letters and statistically compare the letterforms in a group of inscribed characters. The variability of letterforms is then plotted as a comprehensible dendrogram. This tool can prove very useful especially in cases where the epigraphist needs to compare and analyse the letterforms of a large group of inscriptions. Finally, the user has the option to save, download and share the digitized inscriptions with the scientific community as well as search through a semi-supervised dynamic library of uploaded inscriptions. This dynamic library is thematically organized according to language, area of origin, date, etc. Each database entry contains a comprehensive record of the inscription in the form of plain text, 3D model, photograph of the original inscription, and other information about the inscription. Figures 8.3 and 8.4 illustrate the main steps of the method.

### Copy vs. original: how a copy verifies the original

An ektypon is by definition a copy-imitation of the original. However, its authenticity relies on its preservation of the original form of the physical object. Letter shape, text and other content information are more reliably preserved on an ektypon than in a picture or simply an edited text of the stone inscription.

Furthermore, occasionally the original inscription has been lost, destroyed, or is more weathered than at the time that the ektypon was created. That grants the latter another degree of authenticity, and an issue that surfaces is how to retain this newly modelled authenticity of the ektypon. The most reasonable response to this issue is the development of the 3D models of existing libraries of ektypa, which will contribute to their electronic preservation, accessibility and dissemination to the scholarly community.<sup>11</sup>

A case study is presented below. Cornell University launched an expedition to Asia Minor and the Assyro-Babylonian Orient (1907–1908) that was planned by John Robert Sitlington Sterrett, Professor and Chair of the then Department of Greek at Cornell. He had selected three Cornell alumni to lead it: Albert Ten Eyck Olmstead, Jesse E. Wrench and Benson B. Charles. At the beginning of the expedition, they spent two weeks creating ektypa of the *Res Gestae* of the emperor Augustus inscribed on the walls of the temple of Rome and Augustus in Ancyra (modern





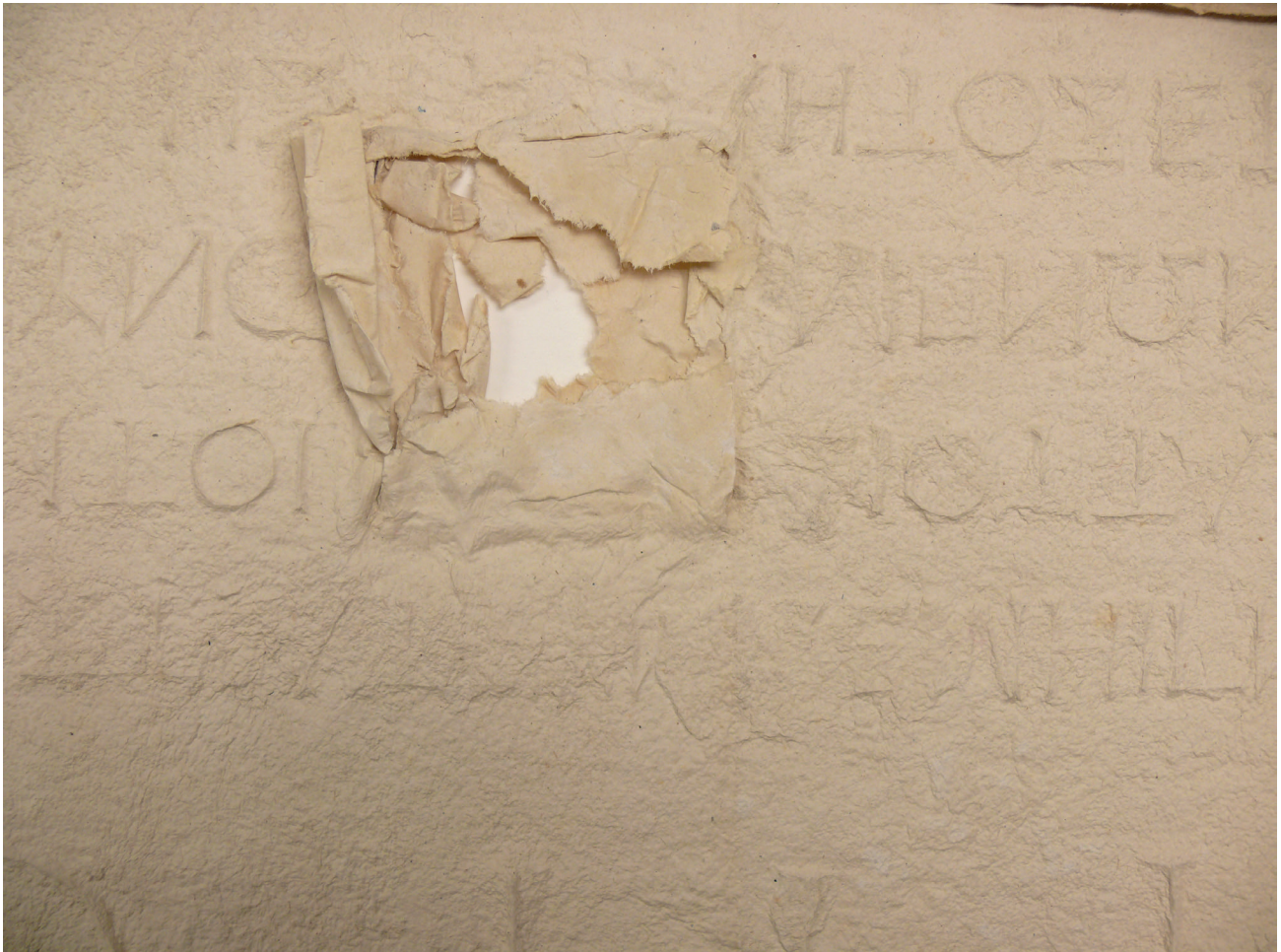
**Figure 8.5.** 1907 Cornell expedition making an ektypon at Quru Bel, Arslan Tash.

Ankara, Turkey), the *Monumentum Ancyranum*. Figure 8.5 documents the expedition.<sup>12</sup>

The ektypa travelled back to Cornell and have been housed there ever since. It should be noted that ektypa, albeit made of durable paper, still succumb to environmental conditions, humidity, dryness and tearing (Figs 8.6, 8.7).<sup>13</sup>

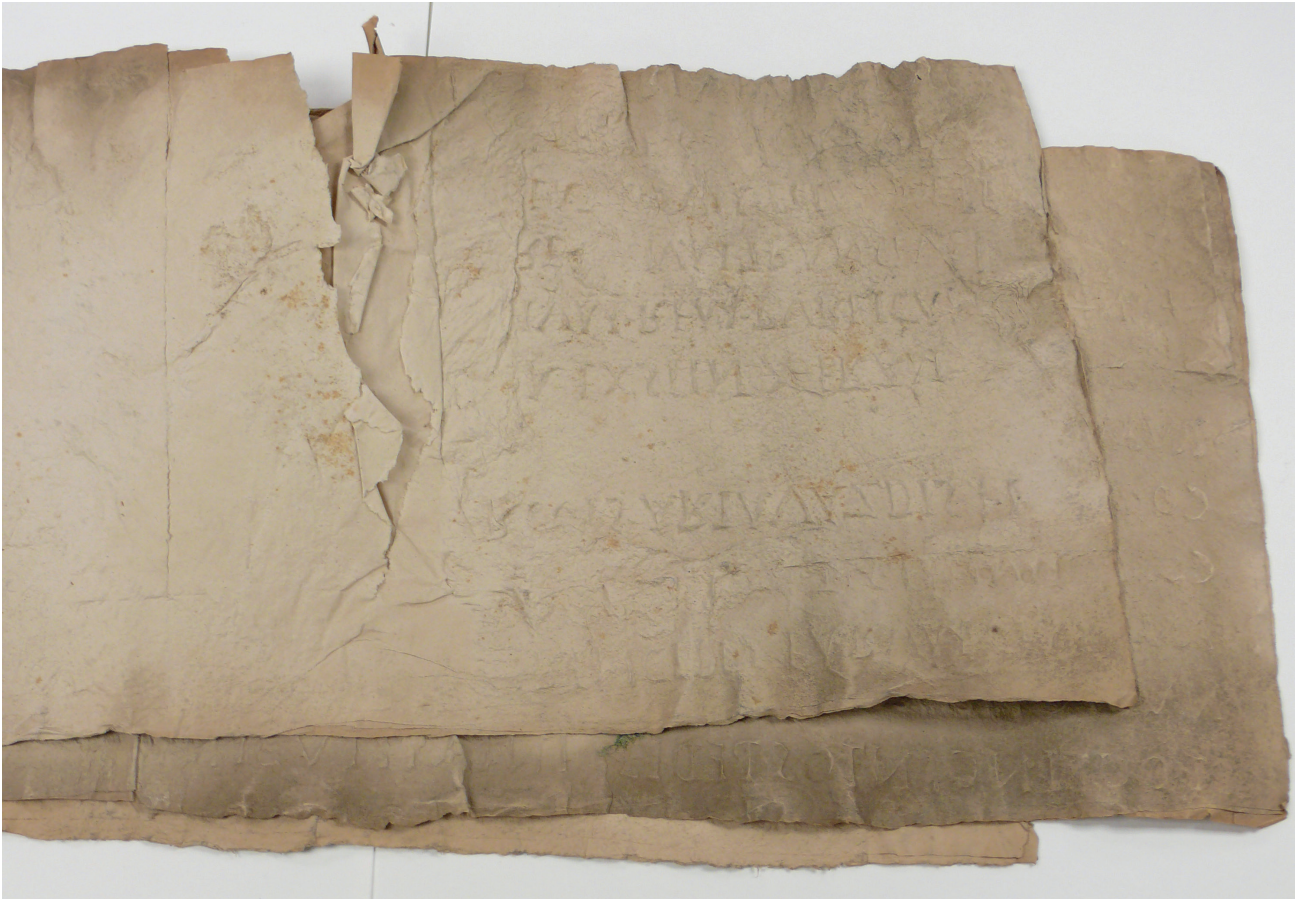
Other copies of the *Res Gestae* exist in the form of photographs (Fig. 8.8), a popular and easily manageable form of digital preservation and dissemination. Photographs, however, as discussed above, heavily depend on lighting and the surrounding conditions. Additionally, they do not offer the possibility of accurate measurements, the study of lettering techniques or any similar close study or analysis.

Attempting to find a solution to the aforementioned limitations of those epigraphic media, the DEA offers the 3D model of the ektypa (Fig. 8.9).<sup>14</sup> Parry (Parry 2007, 5881) discusses the initial hesitation to accept the digital object and the juxtaposition between



**Figure 8.6.** Ektypa of the *Res Gestae* of the emperor Augustus. Photograph by Cornell University Library.





**Figure 8.7.** *Ektypa of the Res Gestae of the emperor Augustus. Photograph by Cornell University Library.*

‘virtual’ and ‘real’. He does suggest, though, that with the advent of technology it is a matter of ‘recalibrating authenticity’.<sup>15</sup>

The DEA project is also working with 3D printing, essentially rematerializing the digital file into a tangible copy of the inscription. Neely and Langer (Neely & Langer 2013) call the process ‘a physical embodiment of the engagement’. The 3D-produced inscription does not bear the aura of the original stone one, and obviously lacks the original material. The inscribed text, though, is a more reliable descendant. Therefore, its authenticity should not be brought into question. Also one should not forget the cases of fragmentary inscriptions that have been separated and housed in separate locations. Their online accessibility in 3D can significantly assist in identification and immediate comparison of letterforms and lettering techniques. Neely and Langer (Neely & Langer 2013) make the case of re-materialization of the web in the form of 3D printing. Sloan (Sloan 2012) coined the phrase ‘flip-flop’ to verbalize the physical existence-digital existence-physical existence cycle.

It should be noted at this point that museums and institutions that house historical artefacts have always been the purveyors *par excellence* of knowledge, physicality and originality. Eitner (Eitner 1975, 78) states that: ‘quality resides in the object’. Macdonald (Macdonald 1998, 11) validates objects as ‘instantiation of scientific and political certainty’. The preponderance of museums, the originality of their nature, the aura of centuries, lives and civilizations that they bear is undeniable. However, how are newly moulded 3D models to be treated? Do they pose a threat to museum objects? Apocalyptic opinions were of course inevitable (James 1995; Saumarez-Smith 2000). I, in turn, contend that we are dealing with new authentic descendants—representations of the primary artefact that can fulfil different potentials. First, there is not an issue of originality, as we talk about authentic copies. There is not an issue of misplacement and out of historical context consideration, as the objects housed in museums have already been relocated and thus removed from their original historical and archaeological context. The 3D models are new objects that can assist more people





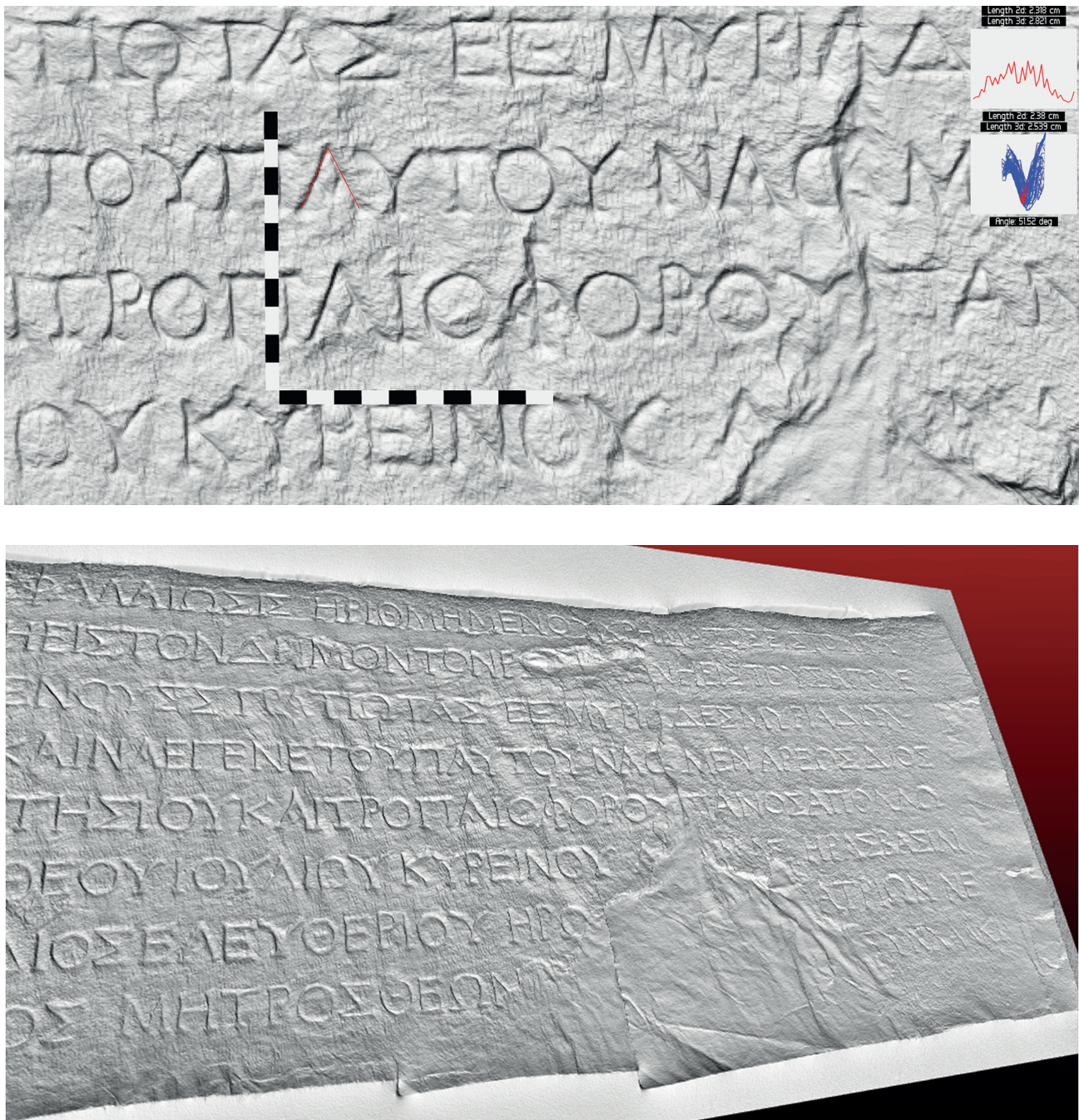
**Figure 8.8.** Photograph of the *Res Gestae* inscribed on the *Monumentum Ancyranum*, Ankara, Turkey, 1883. *Res gestae Divi Augusti: acc. Tab 11 / ex monumentis Ancyrano et Apolloniensi iterum edidit Th. Mommsen Ref CIL 03, p. 774.*

in realizing the authenticity of the originals, as they afford accessibility that may lead to closer study and scrutiny of details, physical contact that is otherwise prohibitive, and the ability to provide new experiences to people – experiences that will also be inextricably connected to the one original primary object. It is not a matter of physicality any longer or of authenticity, it is a matter of revitalizing the life of *the* artefact via the copious new models.<sup>16</sup>

Another aspect of 3D models that is criticized is the obfuscation and adulterated nature of the authenticity of experience. According to the critics, when an artefact is taken out of its natural environment, it is being deprived of its nature and intrinsic value.

Benjamin (Benjamin 1999), in his famous essay, claims that: ‘Even the most perfect reproduction of a work of art is lacking in one element: its presence in time and space, its unique existence at the place where it happens to be.’ While this thesis is valid, one needs to consider that not all historical artefacts that are studied are located in their original find spot. *Au contraire*, more often than not, environmental conditions, natural catastrophes, shifts in the political landscapes as well as the simple need for restoration and preservation lead experts to transfer artefacts to museums and condition-controlled places. In the case of the ektypa, it is important to try to contextualize the artefact with respect to the inscription, the inscription bearer and



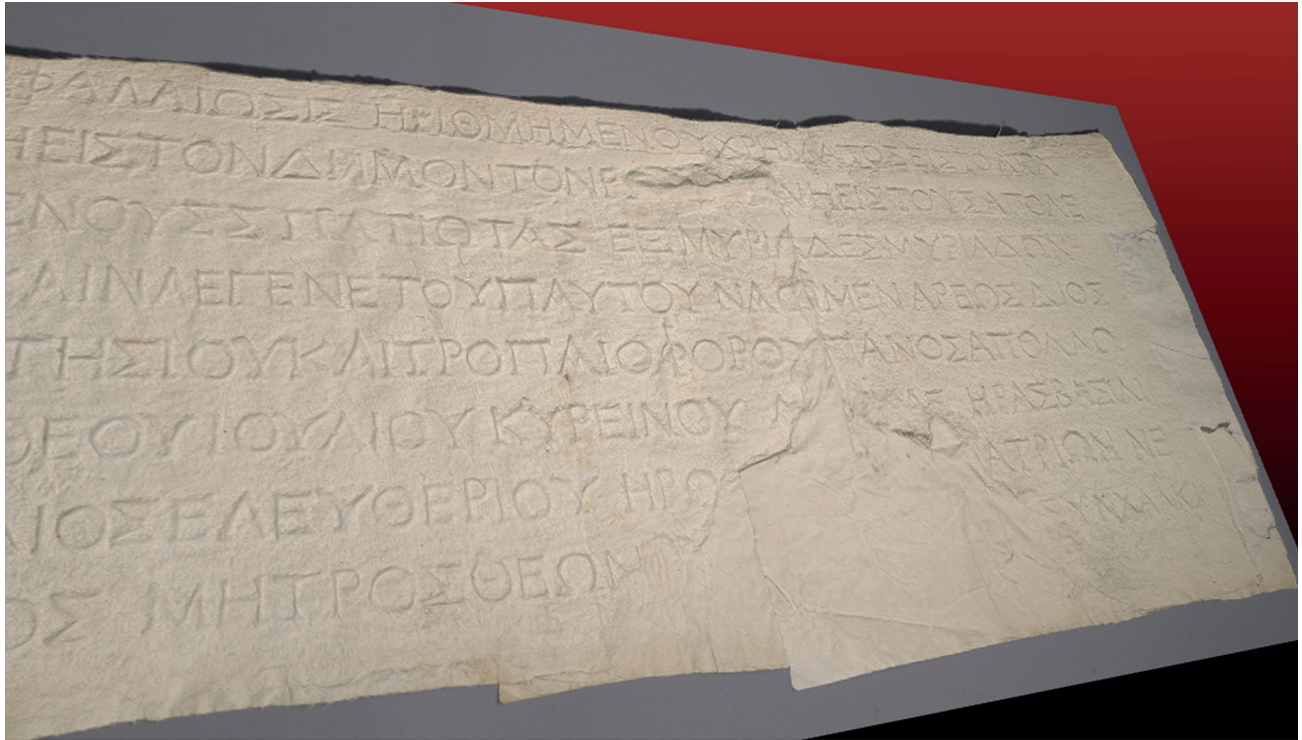


**Figure 8.9.** *Res Gestae* of the emperor Augustus: 3D model of the Ektypa.

the site where it was located, and then employ the 3D model to minimize the distance from the physical object.<sup>17</sup> An option in the DEA is to visualize the 3D ektypon with the original ektypon surface (see Fig. 8.10).<sup>18</sup> Furthermore, the metadata are meant to be an all-encompassing record of the artefact, and the system also allows for other additions, such as images of the monuments, 3D digitizations of the monument as well

as the inscription bearer and in general everything that could render a digital archive the source of the afterlife of each artefact. The *Res Gestae* constitutes an interesting case study for another reason: the only other surviving copy of this work existed on the bronze pillars crowning the Mausoleum of Augustus. However, they have long been lost. The other surviving inscriptions of the text are not complete.<sup>19</sup>





**Figure 8.10.** *Visualization of the 3D ektypon with the original ektypon surface.*

Through my analysis it becomes apparent that in the case of inscriptions, we should consider that we are dealing with a multi-levelled authenticity. First the authenticity of the object is twofold – one that relates to the stone itself and another to the text. Moreover, the age of the artefacts that results in their fragility, destruction, loss and inaccessibility bestows upon the digital copies and 3D-digitized and 3D-printed objects a new aura of authenticity. Wilkinson (Wilkinson 2012) suggests that ‘the difference between “make-and-take” and “makerspace” is the variety in the end product, and the ownership over the full process that the maker feels.’ We should not perceive this to be an intrusion on or vitiation of authenticity. As a matter of fact, we should appreciate it as a more authentic cognitive experience, as the 3D digital existence involves scanning and physical contact along with the concept of creation that is prevalent in the 3D printing process.<sup>20</sup> Britton (Britton 2012) commented that libraries tend to be the maker spaces that: ‘foster play and exploration, facilitate informal learning opportunities, nurture peer-to-peer training, work with community members as true partners, not as users or patrons, develop a culture of creating as opposed to consuming.’ This statement validates the assumption that 3D digitization actually authenticates the learning process and produces a

more original experience for the participant. It is the process of re-appropriating authenticity, appreciating the original artefact, preserving digitally as many of its qualities and information as possible, and enhancing our understanding of the object by being permitted to re-examine it via different media and processes.<sup>21</sup> This re-appreciated authenticity abides by the constructivist approach in Western philosophical culture that argues in favour of authenticity as cultural construct and suggests that replicas can have authentic qualities.<sup>22</sup>

The value of artefacts, monuments and knowledge itself is established against the backdrop of their social appreciation and standing. Archaeology is the study of the human record, but it also relies heavily on the human factor being preserved. The more authentic part of the edification process is the ability to have contact with the object of your study. Digitization, 3D printing and virtual reality that allows for virtual reconstructions of ancient sites do not simply reignite the public’s interest, but also give every new generation the opportunity to develop personal connections with the artefacts, contribute to their study and understanding, and henceforth to their preservation. As a matter of fact, Dutton (Dutton 2003) suggests that authenticity relies heavily on the audience’s perception and appreciation. Their educated and conscious reception and consideration is a seminal factor towards bestowing

authenticity on any product. Trant and Wyman (Trant & Wyman 2006) argue that: 'Built on the constructivist educational theory that emphasize personal meaning-making and a user-centred focus in the development of on-line and in-gallery experiences, these projects (3D printing) strive to provide a unique and compelling engagement with works of art.'<sup>23</sup> Niyazi (Niyazi 2013) suggests that giving people the option to have a hands-on experience with the artefacts may lead to new amalgamated yet fresh creations molded through different peoples' diverse experiences and breath new life to an artefact.<sup>24</sup>

## Conclusion

This chapter has explored the multi-levelled nature of authenticity. Living in the era of 3D digitization and printing, hence of recreation and different representations of artefacts, we need to reconsider authenticity and originality. Objects acquire new afterlives that subsequently grant them eternity. Accessibility also contributes to making them part of multiple lives in different countries and under different conditions, hence rendering them intrinsic parts of cultures to which they would otherwise have been foreign. Therefore, it should come as no surprise that even the authenticity of experience is more variegated.

This chapter discussed as proof of concept the Digital Epigraphy and Archaeology project that promotes the multi-modal nature of historical artefacts through their 3D digitization, analysis and preservation. 3D models of *ektypa* furnish the realities of an inscription, as they provide scholars with advantageous access to the text of the inscription, thus facilitating and promoting research. 3D models of the *ektypa*, especially in case of lost, fragmentary or severely weathered inscriptions, constitute the only survivor of the original text and the sole possibility to join fragments of texts through automatic textual analysis. Consequently, I contend that 3D representations of *ektypa* consider other existential realities of inscriptions and stimulate their examination as textual entities without being reductive to the inscription itself.

## Notes

- 1 Along these very lines of prolificity, see Schwarz (Schwarz 1996) and Boon (Boon 2010). Boon discusses the fundamental human need for copying. Both authors appreciate the multitude of copies to social cornucopia.
- 2 Rothenberg (Rothenberg 2000) explores aspects of authenticity – its broad sense, and multifarious nature. He stresses that 'the meaningful preservation of any information entity is ultimately defined in terms of which of its attributes can and must be preserved to

- ensure that it will fulfill its future use, whether originally intended, subsequently expected, or unanticipated.'
- 3 On replicas and their quality, as well as authenticity as established through socio-cultural circumstances, see Foster and Curtis (Foster & Curtis 2016)
- 4 Hein (Hein 2000), the museum philosopher, discusses at length the inevitable shifts in museums that prioritize the public's experiences.
- 5 Jones and Yarrow (Jones & Yarrow 2013) discuss conservation, socio-cultural practices, and influences on authenticity against the backdrop of the Glasgow Cathedral.
- 6 A valuable accompaniment for our appreciation of the particular case of the Nozze di Cana and the aura of facsimiles is presented by Latour and Lowe (Latour & Lowe 2011).
- 7 On a larger scale the Georgia O'Keeffe museum launched a project to recreate the O'Keeffe home in the form of 3D models so as to document any changes in its condition.
- 8 On democratization, see also Neely & Langer 2013.
- 9 The *Digital Epigraphy Toolbox* is part of the Digital Epigraphy and Archaeology Project [DEA], an interdisciplinary initiative by researchers from the Digital Worlds Institute and the Department of Classics at the University of Florida. Its Advisory Board includes scholars from both the United States and Europe. The goal of the DEA is to develop new open-access scientific tools and apply concepts from digital and interactive media and computer science to the Humanities.
- 10 For details on the methodology, see Barmpoutis (Barmpoutis et al. 2010)
- 11 See Barmpoutis (Barmpoutis & Bozia 2016)
- 12 See Charles 1911, 32
- 13 I would like to thank Cornell University Library for granting me permission to use the images.
- 14 Lynch (Lynch 2000) furnishes a detailed discussion of the authenticity of digital objects.
- 15 Jones (Jones 2010) elaborates on authenticity as determined by a network of people, places, and objects accompanied by a case study of the Hilton of Cadboll.
- 16 Conn (Conn 2010, 20–57) discusses the shift in the focus of museums and the revised nature of the previously object-oriented museums.
- 17 Jeffrey and Jones (Jeffrey & Jones 2016) discuss the ACCORD project that focuses on 3D reproduction of objects of historic heritage of Scotland. Although they admit that the 3D objects 'include the absence of touch...the absence of experiential dimensions such as weather, sound...', they note that 'nevertheless, complex and dynamic relationships are set up between heritage objects and their digital replicas...'
- 18 See Barmpoutis (Barmpoutis et al. 2014)
- 19 Shipley (Shipley 1924, 333)
- 20 On cognitive development, see Cohen (Cohen 1983). The results can be found on the Georgia O'Keeffe Museum Imaging Project blog (<http://www.gokmconservation.org/resources/blog/>) (visited 19 August 2016).
- 21 Jeffrey (Jeffrey 2015) as well as Latour and Lowe (Latour & Lowe 2011) suggest that part of the aura of the original



artefact can be transferred to its reproduction, crediting a large portion of responsibility to the quality of the latter. However, I believe that the aura or even the quality of the reproduction need to be judged on individual basis against the backdrop of the intentionality of each object-reproduction.

- 22 Jones 2010; Hall 2006; Holtorf 2015; Holtorf & Schadla-Hall 1999; Lowenthal 1992; Pye 2001.
- 23 See also Museum: A Culture of Copies on <http://www.hf.uio.no/ikos/english/research/projects/a-culture-of-copies/> Published Jun 27, 2013 12:27 PM – Last modified Nov 13, 2015 06:53 PM (accessed 19 August 2016).
- 24 Jeffrey and Jones (Jeffrey & Jones 2016) also make the case that ‘3D printing creates a further element of complexity as the digital object “migrates” back into the material world. In this case, we can see an analogue-digital-analogue cycle at work, in which some original forms of authenticity are lost, but new ones are created through the production process.’

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