<mark>This DRAFT can be used as a basis to continue a collection of ideas (please note: more detailed explanations and examples for illustration can be inserted into an added part with comments to the guidelines)</mark>

The Fragment in the Digital Age

Guidelines for the Use of Digital Techniques in the Conservation-Restoration and Presentation of Fragments

Almost all surviving works of art have been fragmented in the course of their history in different ways and with different consequences. Causes include natural aging and natural disasters, but above all anthropogenic factors; these include ideological reasons leading to vandalism and iconoclasm, as well as changes in contemporary taste, changes in use, and consequent neglect and decontextualization. However, the incompleteness of these works today—the fragmentary nature inherent in them—is rarely acknowledged when compared to their original state.

These guidelines deal with fragments that, immediately recognizable as such, have repeatedly been the subject of consideration in terms of how best to understand, re-integrate, and present them. The rapid development and enormous increase in the importance of digital techniques in conservation-restoration and in the mediation of fragmentary art and cultural property require an update of fundamental considerations.[1] The guidelines would like to help identify opportunities and risks in order to make the very best use of digital possibilities.

A. Conditions

- Analog and digital methods and techniques in the research, preservation and mediation of fragments complement each other. For this reason, they are equal.
- It is necessary to ensure the scientific transparency of analog and digital reconstructions. What is based on evidence from the fragment, what on analogies, what on hypotheses? Confirmed findings and subjective interpretations must remain clearly distinguishable, even for laypersons.
- The appreciation of the fragment in its material authenticity and its intrinsic values should be promoted through digital simulations.
- Research results on fragmentary art and cultural assets that are used for digitization must be traceable. To allow for continuous development and critical review, they must remain accessible in the long term.
- Scientifically-based digital reconstructions require high quality standards for metadata. Such reconstructions are hardly ever definitive. Their provisional nature requires constant reference back to the fragmentary original and the use of all available research results.
- Protection against misuse (e.g., through falsification within iconographic programs) must be ensured for both analogue and digital reconstructions.

---

[1] For the theoretical basis and other documents on the subject, see the appendix.

Hochschule für angewandte Wissenschaft und Kunst Hildesheim/Holzminden/Göttingen
University of Applied Sciences and Arts

www.hawk.de

- The commitment and resources needed for the professional preservation of fragments must not be diminished or even replaced by digitization projects.
- … etc.

B. Using the Possibilities and Opportunities of Digital Reconstruction

Improvement of Communication, Mediation and Participation

- Digital reconstructions can improve access to interdisciplinary research results and promote transdisciplinary exchange.
- Digital reconstructions vividly convey both original and later design phases. This eliminates the need to modify the fragment. Interventions in the original substance are reduced.
- The participation of social groups that have been hard to reach in the past is promoted through playful interactive opportunities to explore fragments.
- The digital information about the art and cultural history of fragments can be made available to laypersons and professionals, regardless of location.
- Such a cost- and barrier-free educational opportunity can also address previously neglected aspects, such as offering exciting insights into art technology, object and restoration history, as well as highlighting conservation issues.
- The appreciation of the fragment in its material authenticity and intrinsic values can be strengthened with the help of 2D and 3D reconstructions. The connection between the physical object and the digital information is indispensable, since the significance of the additional information can only be understood by directly viewing the fragment.
- …etc.

Strengthening Digital Techniques for a More Cautious Conservation-Restoration Practice

- The use of digital techniques can significantly reduce invasive procedures on the material of the fragment during examinations and conservation-restoration activities. This means that the preservation of the passed down historical material through efficient monitoring, maintenance and care becomes the main focus.
- Digital techniques can significantly improve the precision and comparability of conservation-restoration studies and documentation.
- De- and re-restorations and the associated damage to the historical material can be largely replaced by virtual visualization, e.g. of different design phases.
- The time-bound interpretation of the fragment through retouching, additions, and partial reconstructions can be greatly reduced by means of digital techniques of presentation and mediation. This reduction of physical interventions in the historical material also improves the conditions for future research.
- …etc.

C. Creating Awareness of the Limitations of Digital Reconstruction

- The ability to manipulate digital data can lead to the alteration and falsification of virtual representations. Through interdisciplinary and transdisciplinary collaboration, this needs to

Hochschule für angewandte Wissenschaft und Kunst Hildesheim/Holzminden/Göttingen
University of Applied Sciences and Arts

www.hawk.de

be monitored and misuse needs to be prevented by constantly reviewing the entire chain of data processing.

- Digital reconstructions are bound to the prevailing zeitgeist in their design and are therefore usually short-lived. Practitioners and audiences alike must be aware of this. Respect for the fragmentary original is therefore also essential for this reason.
- Digital reconstruction reaches its design limits when it comes to representing physical materiality and surface design. It is necessary to convey the fact that the resulting digital materiality and colours are far removed from reality.
- Virtual presentations must not be allowed to upstage the fragment in terms of its physical and intrinsic perceptibility. The expressiveness that a fragment possesses must remain tangible. In all cases, the audience must be given the opportunity to view the fragment without digital aids.
- Aiming digital reconstructions at specific audiences (such as non-specialist tourists) should not undermine the scientific credibility of such reconstructions.
- …etc.

D. Desiderata

Previous experience with digital techniques in the study, preservation, and communication of fragments has demonstrated the need to improve interdisciplinary collaboration in this field. As a result, the following urgent desiderata can be identified:

- Digital techniques in the conservation-restoration and presentation of fragments need to be incorporated into university teaching and interdisciplinary research much more than they have been in the past.
- Interdisciplinary offerings for digital training and continuing education are needed.
- A binding terminology of digital restoration is a prerequisite for interdisciplinary collaboration. In this way, basic principles and objectives can be defined in common. The development of a multilingual glossary therefore remains an urgent task.
- …etc.

APPENDIX

Starting point:

Consensus exists on the principles on which these guidelines are based:

the irreplaceable nature of the original as a source of knowledge

the original as a historical document

the commemorative and contemporary values of the original

the preservation of the historical and aesthetic authenticity of the original

the fragment and its potential unity

the clear distinction between fragmented original and supplement

Hochschule für angewandte Wissenschaft und Kunst Hildesheim/Holzminden/Göttingen
University of Applied Sciences and Arts

www.hawk.de

the importance of research-based documentation and its long-term public accessibility

…etc.

The basis for this:

- The "classical" theories of restoration and historic preservation: Alois Riegl, Georg Dehio, Cesare Brandi…

- The "classic" international charters and documents: ICOMOS Venice Charter (1964), Burra Charter (1979-2013), Nara Document on Authenticity (1994), as well as ICOM Code of Ethics (1986-2004) etc.

- The documents on the preservation and communication of cultural assets using digital techniques: London Charter (2006), Principles of Sevilla (2011), Statement of the Koldewey Society (2016), Statement of the German Cultural Council on Cultural Heritage and Digitization (2016)

- Further papers …

Please enter comments, explanations, additions and examples regarding sections A, B and C of the guidelines in a separate document!

Ursula Schädler-Saub and Wolfgang Wolters
in cooperation with Max Rahrig, Jan Raue, Stefan Schwingeler as well as Angela Weyer

Hochschule für angewandte Wissenschaft und Kunst Hildesheim/Holzminden/Göttingen
University of Applied Sciences and Arts

www.hawk.de