

Media Art and the Digital Archive¹

Cosetta G. Saba

This chapter aims to introduce an epistemological reflection on the concept of “digital archiving” applied to media art. If the latter appears for many reasons to constitute something “transient and un-archivable” (Ernst, 2004 and 2010), it is because it presents itself ontologically in an exponentially complex form. In other words, the aim is to underline the problems (theoretical and methodological) that media art poses to digital archiving. In order to keep media artworks accessible to contemporary and future users, their inclusion in digital archives is desirable. Digital archives can support the fundamental function of the *cultural conservation* of these works – understood as a process that not only documents and preserves the technological and material dimensions of these complex works, but also the cultural contexts in which they emerged and were seen. However, this is by no means a neutral process – as will become clear, the digital archiving of complex media artworks has a profound influence on their appearance and interpretation. Therefore, this chapter carefully investigates the epistemological implications of the digital archiving of media art.

| 101

First it is important to remember that, with respect to media art, the audiovisual component is one of the possible elements but not necessarily always the most important. Media artworks often take the form of complex installations, combining audiovisual components with sculptures, objects, and photographic components, amongst others. How is it possible to “archive,” for example, works such as the complex, sculptural installations *Human Being* (2009) by Pascale Marthine Tayou and *Experimentet* (2009) by Nathalie Djurberg,² or the “dissipative”³ sculptures of *Cetacea* (2005; 2010) from the DRAWING RESTRAINT 9 series by Matthew Barney?

Notwithstanding the complexity of many media artworks it is possible to establish a hierarchy between the elements that make up complex installations. If the audiovisual dimension is prominent, it can show itself according to a variety of typological modes such as: (multi)media installation with video, multichannel video installation, single-channel video installation, projective video installation, moving image installation, film installation, video sculpture, time-based installation, and interactive installation.⁴

What should be the procedure for the digital archiving of a film installation such as *Disappearance at Sea* (Cinemascope), 1996, by Tacita Dean, of the multichannel installation *The Lightning Testimonies* (2007) by Amar Kanwar,⁵ or of the *CREMASTER Cycle* (2002-2003)⁶ exhibition by Matthew Barney? How can we use the benefits of digital archiving for the future preservation and accessibility of these works without severely compromising their appearance and meaning?

102 | Creating a digital archive of media artworks potentially entails a reduction of the works' complexity. It is necessary to examine the complexity of media art and understand how the problems that arise in the digital archiving of such works can be resolved. From the viewpoint of information technology, digital archiving is the development of a "digital library," an expression that corresponds to an intrinsically multidisciplinary complex notion,⁷ which defines a system of constitution, order, management, and long-term preservation of "rich digital content" according to "specialized functionality" targeted at "user communities."

Developing a digital library involves a digital library system (software architecture concerning the specific functions required by a specific type of digital library) and a digital library management system (software infrastructure that produces and administrates a digital library system made up of all the functions considered fundamental for digital libraries and that provides for the integration of additional software in relation to specialized or advanced functions).⁸ Here, the definition of digital library will be limited to the archiving process and aimed at stressing a methodology that, allowing for the convergence of interdisciplinary skills, is able to reproduce the semantics of a complex application domain such as that of media art. This starts from the "conversion" procedures ("translation" and "transformation") of non-digital artwork into digital objects (or "information objects"). This conversion can only represent the complexity of the artwork in the form of a documentary trace.

The method of such an archiving practice is related to the notion of digital library, which is in its own way an "abstract system that consists of both physical and virtual components."⁹ It has to refer to the organization of contents¹⁰ (or, more precisely, the repository of contents, ontologies, classi-

fication schemes, and so on), by creating parameters of functional configuration (formats, user profile and document/data model etc.). The *contents* are built through the conversion process of physical objects (also in the case of graphic, photographic, or cinematographic documentary traces of conceptual artworks) into digital objects that, as mentioned before, transform these analogue originals into *documents* kept in the archive. The documentary character induced by the digitalization process must be able to translate the inherent complexity of media artworks.

WAYS OF ARCHIVING: RELATIONS BETWEEN “ARCHIVE” AND “CONTEMPORARY ART”

Over the course of the 20th century, visual artworks acquired an ever-increasing formal complexity. From the first decade of the 21st century onwards, this formal complexity can be seen in the works of a great variety of artists such as Pierre Huyghe, Philippe Parreno, Rirkrit Tiravanija, Tacita Dean, Nathalie Djurberg, and Félix Gonzales-Torres. The oeuvre of these artists is characterized by a recurring mode that presents itself as a “path” (Bourriaud, 1998 and 2009; Birnbaum 2005), where the works of art are only points of immanence in transit, that are also repeated and are subject to variations.

| 103

Overall, media art presents a prevalent typology of artworks that require new and effective documentation, preservation, and dissemination methods (with the relevant accessibility levels), which are able to make up a system that can manage the contemporary art scene from the preservation and archiving viewpoint. This scene must be documented, preserved, maintained, and made accessible in a digital archive that preserves contemporary materials and actually works as “archaeology of the future” according to Fredric Jameson’s definition (1991), starting from the ability to historicize the concrete examples of contemporary art.

Media artworks belong to a project (or “chain” of projects) and tend to be serial and variable instead of unique and stable. From this follows that media art proves to be “archivable” only from a documentary standpoint, given its multidimensionality and material, conceptual and progressive complexity (compare chapter 6.1). However, the present methods of documentation related to the digital archive show structural limitations. Hal Foster pointed out that, on one hand, interfaces are still screens (“windows”), icons, and texts, whilst on the other hand in this kind of archiving, it is essential to “transform a wide range of *mediums* into various systems of *image-texts*” (Foster, 2002). Because technological media are devices of the cultural industry that contain recording and storing systems, communication systems (with their own ways

of production and reception or consumption), “languages,” and expressive techniques, it follows that a proper digital archiving of these media requires the capturing of the specific form of experience (Casetti, 2008: 29-30) (of the relationship between the artwork and the audience) related to the medium in question.

In many ways, the digital archiving of complex media artworks entails consecutive “translations” and progressive “dispersions” of data, but not only that. It also involves a complex integrated system of documentation, semantic indexation, preservation, restoration, and cultural dissemination practices, as well as an epistemological check of applications and information technology, which are subject to programmed obsolescence. In fact, information technology itself requires cyclical monitoring programs, constant maintenance and continuous software upgrading, to ward off the ever-present risk of “everything returning to plastic and silicon again” (Ferraris, 2007).

104 | The processes that take place in media artworks during their translation into digital archival material (as will become clear, also in relation to the practices related to digital conservation), transform them into peculiar digital *contents* to safeguard at an ethical and cultural level, not only at a financial and legal level. Such processes give the action of “archiving” a double meaning. The first is the *construction of information objects*, which are *digital documents* of the media artworks, the second is their public *dissemination* and *accessibility*. In that sense, the digital archive can be an ideal platform for the “cultural conservation” of media artworks described above as a process that not only documents and preserves the technological and material dimensions of these complex works, but also the cultural contexts in which they emerged and were seen. But this is not a neutral “cultural epistemological” process (Foster, 2002: 71-72). In fact, in both its literal and metaphorical definition, the normative and selective administrative function of the archive continues to define itself in the “power” dimension, which is not simply an “operational power” (Foucault, 1972). The archive is a “social place” before being a “physical space”; it is a historically determined institutional space, responsible for the selection and the construction-conservation of documents (Derrida, 1995; Ricoeur, 2000). In a metaphorical sense, the archive is a “collective memory,” complete with an institutionalized method for the recording of testimonies designed for the construction of the documents to archive. It pertains to the selection of what, within a specific historical context and with regards to historiographic sources, can be made archivable and what cannot. The modal condition of the possibility of archiving is thus created by the “discourse” (the operating system of values and connections between data) underlying the archive, a discourse that, by indicating what is or is not archivable, selects and organizes the documents – institutionalizes them, as it were. This discourse is carried

out “silently” (Ernst 2004) and therefore not directly observable, but nevertheless it actively constructs and records the documents within the archive itself.

In that sense, as Wolfgang Ernst says, this “silence” is “power at work, unnoticed by narrative discourse.” According to Ernst: “This power is analogous to the power of media, which depends on the fact that media hide and dissimulate their technological apparatus through their content, which is an effect of their interface” (Ernst 2004: 48). A “silence” of this kind becomes traceable in the documentary testimonies of “historiographies,” in their intent of truth, in the “archived memories” which instead take a form of narrative (Ricoeur, 2000). In this way this silence also becomes traceable in the digital dimension, in the software infrastructure with regards to the interconnecting system of contents and, if it is web based, in the http protocols. As Ernst explains “The real ‘archive’ in the Internet (in the sense of *arché*) is its system of technological protocols” (Ernst 2010: 87). In such a view, the aggregated Internet database progressively shows the literal and metaphorical dimensions of the archive.

| 105

In the artistic environment, the diffractions of the cultural transformation produced by the application-diffusion of information technology and the relative “discourse formations” highlight in many different ways, as it were, its “symbolic form.” (Panofsky, 1927; Cassirer, 1923) Not so much (or, not only) with respect to artistic practices that conform to the information technology platform or that are digitally isomorphic (as with net art and software art), but rather in relation to a way of thinking – a principle of continuous *transcoding* that moves materials, technological platforms, expressive systems, and signs through a network of connections that are revealed by deeply transformative practices. This results in the final abandonment of the idea of originality in artistic work, since every digitalization process gradually undermines the presence of the source. What was already encoded is encoded again, and every (re-)encoding dissolves the notion of authenticity, that starting with Romanticism was inherited by aesthetics that introduced the idealistic notion of uniqueness, originality and thus “artistic character” as a quality belonging to the non-repeatability of the work. With digitalization, every “generation” of data is only a moment in a chain that has no beginning or end. This seems to be the operational principle of most contemporary art. As Nicolas Bourriaud pointed out: “[...] In these works, every element used is valued for its ability to modify the form of another. One could cite countless examples of these *transform* practices, all of which attest to the fact that invention modes of passage from one regime of expression to another is indeed a major concern of the art of the 2000s” (Bourriaud, 2009: 135). These transformative practices make use of “temporary displays” within which, in many remarkable ways, the “notion” of archive acts (Derrida, 1995).

In 2004, Hal Foster pointed out the repositioned centrality of the “archive” in the art of the 1990s, defining it as “an archival impulse,” with particular attention on the art works by Tacita Dean, Sam Durant, Thomas Hirschhorn and Pierre Huyghe, Philippe Parreno, Douglas Gordon, Stan Douglas, Liam Gillick, and Mark Dion (Foster, 2004). It is in fact a trend towards the metaphorical dimension of the archive, that develops its memorial and “immemorable” dimension (Ricoeur’s paradox of oblivion as immemorable resource) in the context of concrete artworks. This way, on the one hand it is possible to branch out towards the latent layers of oblivion and the subtle and silent forms of what Ricoeur calls “archival oblivion, that is archived oblivion” (Ricoeur, 2000, see also Agamben 2007) that inspired Christian Boltanski, Fabio Mauri, and Péter Forgács in different ways. On the other hand, the focus moves from the immediate normative-bureaucratic function of the archive deconstructed in the works of Michael Fehr, Andrea Fraser, Susan Hiller, and Sophie Calle, to the function that defines the archive as part of a complex enunciative and creative strategy, as in the projects of the Atlas Group/Waalid Raad, Thomas Hirschhorn, and Hans Peter Feldmann. In addition, artists such as Fiona Tan act upon single “archives of images” or “image archives” (see Noordergraaf, 2008 and 2009 and Elsaesser, 2009), in the same way that Ken Jacobs and Yervant Gianikian and Angela Ricci Lucchi previously did. Others, such as Gustav Deutsch, Matthias Müller, Christoph Girardet, and Martin Arnold make use of that database of 20th-century images that is cinema, through procedures of re-programming or post-production (see Bourriaud, 2002), as it already happened with Joseph Cornell (*Rose Hobart*, 1936-1939), Gianfranco Baruchello, and Alberto Grifi (*La Verifica incerta. Disperse Exclamatory Phase*, 1964-1965).

The modes of translation of the matter and the concepts from one form to another, from one work to another, involve the archive as a “device” (Foucault, 1972) and as a “display.” The complexity of this kind of practices was affected by the use of technologies, not only by information technology.

TECHNOLOGICAL WORKS AND INSTALLATIONS

The pervasive centrality of technology in contemporary art (in devices, strategies of composition, texture, exhibition modes, and media reception) is evident from a semiotic, social, financial and an aesthetic viewpoint. It has its peculiar expression in media art practices (from multimedia installations to live media, from net art to rich media). Since the 1990s, the challenges posed by media art have become ever more present in museums and international research projects in complex ways (see Saba, forthcoming). This is also tes-

tified by the proliferation of terms,¹¹ the multiplicity of definitions, and the multiplication of research that, in spite of its diversity, nevertheless seems to understand only the phenomenological aspects of the dynamic intersection between the media components that from time to time characterize the devices through which media art expresses itself (whose distinctive features are site, space, time, temporary/variability, and audience interaction).

As previously mentioned, in a wide variety of contexts in terms of environment and theme (Venice Biennale, Kassel documenta, Berlin Biennale für zeitgenössischen Kunst, Tate Triennial and so on) the format of the installation includes not only devices, different expressive practices and objects, but disparate disciplines as well. Pierre Huyghe's project *Note d'intention* is exemplary in such a sense, as is that of the architect François Roche on the "architecture of incompleteness," that Huyghe also elaborated on, in *Casting* (1995) and *Les Incivils* (1995). Something which is still definable as a "work" appoints a dynamic set of actions that involve different disciplines (cinema, music, architecture, but also anthropology, sociology, philosophy, medicine, etc.) and refers to other works and other texts, objects, concepts, bodies, events "that pass through different formats" (Bourriaud, 2009; Baker, 2004). Such disciplinary environments find a semantic amalgam, which transforms the installation work into an "event" whose constituent character is the "plural immanence" (Parfait, 1997: 36), where, notwithstanding the "allographic" variability, active "autographic" elements remain (Genette, 1994), and whose distinctive traits are constructed, as it is said, from site, space, time and the spectator's involvement.

The expressive components utilized in the installation develop a mutual capacity of transformation. Within the installation each expressive component presents a strong interrelational power and becomes able to modify the form of another component. In a way, "inter-linguistic" (or rather inter-semiotic) works exist, without necessarily producing a constituent interfusion (inter-mediality), since its components belong to an expressive series (photography, cinema, video, sculpture, etc.) and autonomous and different 'linguistics' (distinctive traits of artistic practices in the first decade of the 21st century). So, to define the work outlined by the installation action (authorial gesture), it is necessary to recognize and map the system of interrelations produced through the installed system's assumed configuration. It is to understand which relations activate themselves through the configuration of heterogeneous material components, conceptual aspects, various medial platforms and which autographic and allographic characters unfold themselves there. All these elements make up, in a process, the "text" and the "context" of media artworks together within a given exhibition circumstance that is often site specific.¹² And not just that. The project as a whole comprises the intrinsic arrangement of contemporary

artistic practices that end up being inclusive, with respect to the “work” and its “trans-textual” structure (and therefore also including contextual material such as interviews, conversations, photographic documents, etc.) (Genette, 1982).

Hence, in order to proceed to the digital archiving of these works it is necessary to prepare a set of documentary practices which, within an information technology dimension, allow for the construction of digital “contents” through which any given work can be processed. The documentation prefigures itself not only as methodology for the digital archiving of the metadata and the contents of media artworks (construction of the set of documents which make up the technological base of the whole work), but can be interpreted as a finalized act in the “physical” preservation even in the function of restaging and re-enactment practices (often subject to processes of recreation, see chapter 9.4.3). Within digital archiving, the whole work can exist only through documentation, which enables both conservation and access to the documentation of a media artwork, in all its components.

108 |

THE ENTRY OF ARTWORKS INTO THE “ARCHIVE”: CONSTRUCTING DOCUMENTS

Because of the complexity and the rapid obsolescence of devices, an artwork based on media technology – be it digital or analogue – risks being lost. Therefore, in the absence of a shared protocol, it has become necessary to define a model of documentation that structures its descriptions, the cataloguing criteria, the management of textual variants, the organization of contextual information, data indexing, and so on, and that encompasses various typological series: video installation (single channel and multichannel), complex installations with video, live media, sound art, and also live networking, interactive pieces and net art and software art. With respect to complex installation forms, one can distinguish works in which the audiovisual component is present and at times prevalent (for example, in the multichannel installation *Women without Men*¹³ by Shrin Neshat), from those in which it is not (as in the forementioned sculptural installation *Human Being* (2009) by Pascale Marthine Tayou). In the latter case, the digital techniques and preservation strategies must take into account the fact that the audiovisual component is only one of the constituent elements. Furthermore, the video component is present in various formats and not necessarily in line with the evolution of technology; in fact, it can deliberately be used in obsolete formats. Frequently, media artworks are systematically produced and installed with obsolete technology, as a response to what Rosalind Krauss has termed the post-media condition (Krauss, 2000; see also Baker 2002). Equally often, works produced with

now-obsolete technology are reinstalled with the use of current technological apparatuses (compare chapter 7.4). Contemporary media art is therefore characterized by the coexistence of numerous different formats and devices.

On one hand in the present historical-cultural context, digital technology finally makes it possible to disseminate the complete contents of libraries and museums (e.g., the European digital library, Europeana¹⁴), on the other hand, it presents certain difficulties with respect to archiving. First, there is the problem of “hyper-production,” the proliferation of documents and the uncertainty that derives from this (it is not clear how the documentary function develops, what a document is, or how the selection and ordering of the sources develops). Second, there is the issue of the fragility and instability of the documents due to the obsolescence of devices and formats and the consequent economic sustainability for the care and management of the contents of digital libraries.

In the field of media art, such criticism seems to bring about a methodological divide between the progressive updates of information technology and the various subsequent applications in a series of procedural models that are unrelated to each other. This aspect is translated in the limited interoperability between archival databases, and can influence the future accessibility of the documents. The important results of international research (carried out by, amongst others, the PrestoCenter Foundation) do not seem to be able to adequately respond to the complexity of the practices of archiving and preservation required by media artworks in capacity of their documentary accessibility at any of the following levels:

- the construction of document contents;
- the interoperability of the procedure of the work’s preservation through documentation practices;
- entry of the works to the archive through their documentary equipment;
- interoperability between various archival databases.

Regarding the documentation of media artworks, despite the recent increase in international networks between museums and research institutions to test and share the procedural models mainly concerning video art (*Media Matters*, Netherlands Media Art Institute) and the complex multi-media installation (*Inside Installations: Preservation and Presentation of Installation Art*, CULTURE 2000 / 2004-2007), the problem remains as to which methodology to adopt for time-based works and for performance and interactive works, and also for the complex installations in all their various typologies, not to mention for urban and architectural works in media art.

Regarding contemporary art's modes of existence, what can and must be archived in a digital library of complex works, according to which criteria, and in what order, still remains to be defined. How can we archive textual and contextual components in one aggregated complex of data and metadata so as to take into account the variability of the installations and their "plural immanences"? Which tools and methods do we need? In what way and according to which methods does the archive make the activity of documentation and conservation interdependent? How can technological assets of media artworks be recorded and how can their "transmission" be traced? How and according to which methodologies can the complex documentary aggregate of media artworks be made accessible and immediately usable?

These questions emphasize a dimension that can be seen as a function of the traditional archive: the transformation of a "work" into a "document." However, regarding the "digital library" and "digital preservation," further problems come to the fore: in fact, the documentary convergence in a digital archive of works that come from different media introduces a fundamental distinction – mainly regarding the work's audiovisual and interactive dimension – between "static or stable media formats" and "dynamic media formats." In the first example, it concerns a typology of files that translates artworks that are "closed" and "finished" at a display level into documents such as photographs, films, and video or audiovisual components of installations. In the second example, it concerns works that intrinsically consist of dynamic and variable "open" forms such as in the case of software art, where the composition process is continuously put in movement.¹⁵ From a conceptual point of view, these "works" translated into "documents" in the archive will respectively function as "static documents" and "dynamic documents."

A web-based media artwork is itself also already a "digital object" that already operates on the basis of an archive, temporarily making up fragments of the archive; it is made from and is indiscernible from the same archive. In the case of these "born digital" works, their incorporation in the archive coincides with their documentation. Furthermore, the software used will be an intrinsic part of the data. In that sense, as Ernst describes, "When both data and procedures are located in one and the same operative field, the classical documentary difference between data and meta-data (as libraries, where books and signatures are considered as two different data sets) implodes" (Ernst, 2004: 51). In such cases the notions of "artifact," "product," "object," and "document" seem to disintegrate and, with them, the traditional concept of the "archive." On the one hand, regarding the information technology archiving system, it has become possible to keep the data, metadata, and enriched data separate – even through the employment of dedicated grid networks in which distinct layers coexist (one for the transmitting of data, the other for

communicating metadata). On the other hand, regarding the archived work, a documentary difference between data and metadata persists at a system of relations level (semiotic, philological, etc.) and relates to the cultural definition of the work as a document. The fact that the archiving procedure operates within the same information technology operative field in which data is placed opens up the possibility to research new modalities of relation (for example, regarding the visual component, or the research on the ontology of the images in movement, etc.)

In fact, the relational complexity of the media artwork has two major effects. First, these artworks cannot be digitally managed through the application of the traditional cataloguing device of the archive – that is, standard classifiers for homogenous typologies – without causing considerable loss of information. They cannot be digitally archived according to a simple typological distinction (such as video performance/performance art, installation art; net art; etc.) without this causing, at a historical and cultural level, a loss of the relational “meaning” or, rather, their interdisciplinary nature, within the field of contemporary art. Second, these works cannot be documented and digitally conserved when generic practices and procedures are applied – such as documentation, preservation, restoration, migration, and emulation – without this causing a reduction in complexity, or rather a loss of meaning.

| 111

The necessity to redefine the concept of “archiving” is clear when it comes to ensuring the continued accessibility of media art, as well as its conservation. As argued above, the digital archiving of media art will have a clear impact on cultural institutions and the art system as a whole. This is because in the environment of museums and exhibition centers, as Foster explains: “More and more the mnemonic function of the museum is given over to the electronic archive, which might be accessed anywhere, while the visual experience is given over not only to the exhibition – that is, as an image to be circulated in the media in the service of brand equity and cultural capital. This image may be the primary form of art today” (Foster 2002: 95).

The documentation and dissemination of our media-based artistic heritage requires a clear methodology. As with physical conservation, the work’s complex installation configuration requires, at an archiving level, that the technological platform must be documented too. It follows that at a management level, it is the information technology that documents and preserves, “protects,” and opens on to the interpretation of the documentary traces of the complex work. Hence, there is both a practical and theoretical necessity of settling some basic issues that concern the “dematerialization” of media artworks caused by digital technology.

THE “PROTOCOL” DEFINITION: THE CASE OF VIDEO ART

The digital archiving of media artworks requires finding a model that is able to manage the dematerialization process in the right way (in an ethical, philological, semiotic, and technological sense). However, the dematerialization produced by information technology does not have to be interpreted as “negation of materiality,” but may be rethought as a new form of “relational materiality,” not stabilized in a device (paper, film, etc.) but active in the flow of information (always becoming) which manifests itself (on the surface) according to transitory occurrences. In digital archiving practices the audiovisual component, be it analogue or digital, goes through a transformation, or *transcodification*. As a document, the audiovisual component cannot be revealed in its own medium (this is at least Wolfgang Ernst’s argument, see 2004: 51).

112 |

Inasmuch as the practices of documentation and preservation refer to the origins of video art, the large migration of video artists’ entire collections in the last decade¹⁶ and the research relating to the processes of digitization (specifically highlighted in the FP7-ICT program 2007-2010) have made it clear that the digitization process produces a real transformation for at least two reasons. First, the conversion algorithms (and eventually the restoring algorithms), not to mention the compression algorithms, modify the digitized analogue audiovisual artwork according to the system and digital environment of the destination without establishing a correlation with the analogical environment that was the starting point. The latter can only be produced by the method, indexing, and construction of the documentary apparatus used in preservation (see chapter 6 of this book). Second, the receptive modality produces a strong transformation of the digitized work. This happens because, beyond the interface, it is based on complex database architecture. Furthermore, the works or the constituents of the analogical video work must be able to be “visualized” in the right way on displays that are variable both in dimensional and medial terms, as well as in terms of visual quality and expressive style.

Given such conditions, it follows that, in the absence of an internationally shared protocol, and in the presence of a high rate of obsolescence of digital technology, it would be an error to proceed in digitization by simply copying or migrating files into new formats. The evolution of the devices together with the immediate access to information and its “miniaturization” involve some codification standards, and all codification is a type of structuring that excludes the characteristics that are not “performable” in and by means of that model – it results in a progressive incapacity to transfer the information technology contents. In addition to the loss of data that might be caused by the types of compression, the same remediation system is involved in the loss of information. It is possible to minimize such losses by storing all contextual

information and metadata of the original documents.

Besides, if the history of a document's transmission is not maintained with respect to the various "traditions," it only takes one migration to produce a loss of information. After the digital transcodification in the following migration, route information can be lost at various moments in time, and this puts the integrity of the data at risk. At the very least, the information on what is corrupted from the original device is lost. For example, chemical analysis of the magnetic playback device is rarely carried out, which is compensated for by the procedure of photographic documentation. Therefore, the mold that might have attacked the device is no longer recognizable after digitization. As a consequence, the character of some of the deteriorations present in the digitized signal might no longer be detectable.

The original materials must definitely be preserved; the preserved digital copies, as far as possible, cannot be left out of consideration in the lifecycle of the original analogical work, especially since in the future it will be possible to extract "hidden" information that in the current state of information technology is not yet recognizable. And that is in relation to the double strategy involved in working for preservation purposes: on the one hand, it is necessary to maintain the work's documentary integrity; on the other hand, it's needed to act in the interests of its permanence using currently available technology, but it is desirable to proceed even in view of the technology that will exist in the future (see chapters 8.1 and 8.3).

| 113

The absence of shared protocols presents two types of risk, the one technological and the other cultural. From a technical viewpoint, the absence of shared standards creates problems in accessing documents (a historical example of such technological obsolescence are digital archives recorded on digital audio tape, DAT). More generally, it is not taken into account that the "migration" procedures require the transferring and copying onto new formats and devices, whilst the digital instruments necessary for reading are still supported. From a cultural point of view, the history of the transmission of the "document" can get lost. It is therefore necessary to adopt defined and shared criteria for the preservation of contextual information (to be understood as information "external" to the signal) and the metadata (to be understood as information that can be automatically extracted from the signal).

But this is not all. Also regarding the born-digital work, there is a problem of the method of archiving ("representation") and "preservation" ("codification"). It is, in fact, defined by the contents, the device and the format on which it was recorded. The trinomial of "data," "device," and "format," becomes inseparable in the work, and in its visual manifestation, giving these works a specific type of "scriptural" materiality that should be preserved.

The strategies of preservation, established and tested in some major

research projects (such as Inside Installations, DOCAM, Media Matters, and Aktive Archive), adopt the criterion of “variability” without testing and evaluating the procedures (both concerning migration and emulation practices). This criterion is governed by a re-interpretive logic that aims at the reproduction of the work’s conceptual dimensions, regardless of “material” circumstances, using new “materials,” new devices and new forms of visualization.

The “variability” criteria is intrinsically derived from digital-born media art. This can be deduced from two American influential theoretical guidelines, amongst others, which were defined in the research project *Capturing Unstable Media* (2003) and the important conference *Preserving the Immaterial: A Conference on Variable Media* (1998). “Instability” and “variability,” although not corresponding ideas, are based upon the same concept: the immaterial “separation” that is produced between the depth of data and the surface (interface) that emerges when the work is being displayed.

114 | As argued before, it is necessary to begin a reflection around the process of “dematerialization” informed by information technology: instead of theorizing a supposed “negation of materiality” it should focus on understanding what opens up “new forms of materiality” (Jiménez, 2002) or rather to begin a “rethinking of the multiplicity inherent in the material.” The media artwork’s translation and transfer into a digital form for documentary purposes, especially when it concerns audiovisual components, does not produce something immaterial, but assumes another type of materiality with different properties, rewritten from information technology codes (a “materiality” that occupies a physical space in the memory of the hard disk).

This alternative reflection allows for the double problem to be properly managed; the problem which arises when preservation work is being done. On one hand it is necessary to maintain the work’s documentary integrity; on the other it is necessary to work towards its digital permanence (through checking, refreshing, and migration) utilizing currently available technology (see chapter 8.1). It follows that first, the criteria implied by the definitions of “variable media” (Depocas, Ippolito, and Jones, 2003) and “intermediate formats” (Bourriaud, 2009) do not seem in any way to resolve the problem of treatment (philological, historic documentary, aesthetic, see Brandi, 2005 [1963]) of inscription (recording) and “writing” of the work both at an ontological level (physical, chemical, electronic, and information technology inscription) and a functional (or socio-semiotic) level. Second, the concept of “original” defines a quality referred to as being “compatible,” and “not equivalent,” to the “original” version; also with respect to the media origin, this is concerned with the “integrity” of the work and with the conservation of the artist’s intention, as well as the aesthetic and cultural history, which requires keeping the “history” of the transmission of the work to be documented.

All these aspects concern the redefinition of the new *material*, and not just *documentary*, status of the works themselves – or rather of their digital “translation” or “metamorphosis” for archiving preservation purposes. It is known that the system of “remediation” implied by the activity of archiving and digital conservation, or rather the current practices of migration and emulation, involves the risk of losing the textual aesthetic quality that can be minimized by way of the memorization of all the contextual data and metadata of the work or original document.

In particular regarding the audiovisual components of media art (or by extension any audiovisual work), the task of the protocols is to make the work’s diasystem layers (Segre, 1979)¹⁷ evident and sharable to guarantee cultural history, migration and emulation practices, as well as technical standards. In that sense, the presently widespread paradigm that removes the concept of the “unique original” must be rethought with a greater philological sensibility (even in a digital environment where, from a technical point of view, the distinction between “original” and “copy” has lost its meaning), just as one of the functions of the archive is to preserve the documentary *integrity* of the work. It must be taken into account the fact that remediation, variability, and migration are strategies able to guarantee not only the documentary but also the factual “permanence” of the complex work. In fact, as previously mentioned, the documentation – the constructive action of the media artwork’s archiving – even has an effect on museum preservation and presentation. According to this line of thinking, the digital archive not only relates to the construction of the documentary dimension of media artworks, but also predetermines its strategy for preservation.

| 115

CONCLUSION: TRANSCODIFICATION

All the forms of media art subject to digital transcodification can maintain meaningful signs and the experiential glow of the original production context. For audiovisual works, such signs can and must be preserved by means of migration and/or emulation processes that adopt philological criteria, so that the work’s material traces, expressive strategies, linguistic modalities, and perceptive modes can be restored in the form of digital documents or, more precisely, by means of an integrated set of digital documents. For all the typological cases in which contemporary media art presents itself, at a level of documentary archiving, the work (“*ergon*”) must be preserved through digital remediation and also what surrounds and culturally “frames” it (its “*par-ergon*”) or, rather, the interpretive and interactive modes, the strategies of use and the perceptive forms.

Regarding the present “preservation scenarios,” in facing the risks associated with the different modes of failure and loss of information at a procedural and/or technological level, it is necessary to take into account, in a consistent, modular and interrelated way, the digitization process that puts the different formats of the works together as a whole workflow, with their *parerga* to document, preserve and archive. The preservation of the memory of the artwork’s media origin, and therewith of the linguistic-expressive specificity of these media, concerns the concepts of digital archiving at different, but interrelated, levels. These are located at the moments of creating an integrated documentation and of conservation (such as migration and emulation). They are crucial functions of the digital archive, inasmuch as they relate to the construction of the document and must account for the verifiability of the sources, the authenticity of the data and the validation of metadata. It is necessary to know how to act in a preemptive way, prefiguring future developments in information technology with the aim of guaranteeing the integrity of data and metadata for the longest possible period. One must be aware of the totality or wholeness of the work, of its *integrity* and “material coextensivity” in order to be able to recreate the expressive complexity of media art on the basis of the documents that make up the digital archive.

From this point of view, in the context of the contemporary art system, where there is a progressive transformation of the digital library concept and continuous updating of the actions of digital preservation, it becomes more urgent than ever to develop a method and an ethic of the convergence of media artworks on information technology platforms, also for the purposes of an effective interoperability within the archive (and between different archives).

NOTES

- 1 Thanks to Sergio Canazza for his critical comments and suggestions regarding the area of information technology.
- 2 Both shown at the 53rd International Art Exhibition Venice Biennale, directed by Daniel Birnbaum.
- 3 See Prigogine and Stengers (1979).
- 4 See <http://glossary.inside-installations.org>. Last access: 11 May 2010.
- 5 Presented at documenta 12, at the Neue Galerie: <http://amarkanwar.com/>. Last access: 11 May 2010.
- 6 After the first exhibition at Ludwig Museum in Cologne (6 June 2002-1 September 2002), the second followed at the Musée d'Art Moderne de la Ville de Paris (10 October 2002-January 2003), and the third exhibition followed at the Solomon R. Guggenheim Museum, New York (21 February 2003-4 June 2003). See Dusi and Saba (2012).
- 7 "Digital libraries represent the meeting point of many disciplines and fields, including data management, information retrieval, library sciences, document management, information systems, the web, image processing, artificial intelligence, human-computer interaction, and digital curation. This multidisciplinary nature has led to a variety of definitions as to what a digital library is, each one influenced by the perspective of the primary discipline of their proposer(s)" – <http://www.dlib.org/dlib/marcho7/castelli/o3castelli.html>. Last access: 11 May 2010.
- 8 DELOS Network of Excellence on Digital Libraries website <http://www.delos.info>; the digital library Reference Model website <http://www.delos.info/ReferenceModel>. Last access: 11 May 2010.
- 9 Ibid., see note 7.
- 10 "The *content* concept encompasses the data and information that the digital Library handles and makes available to its users. It is composed of a set of information objects organized in collections. Content is an umbrella concept used to aggregate all forms of information objects that a digital library collects, manages, and delivers, and includes primary objects, annotations, and metadata. For example, metadata have a central role in the handling and use of information objects, as they provide information critical to its syntactic, semantic, and contextual interpretation" <http://www.dlib.org/dlib/marcho7/castelli/o3castelli.html>. Last accessed: 11 May 2010.
- 11 See *DOCAM Terminology* <http://archives.docam.ca/en/?cat=15>. Last access: 11 May 2010.
- 12 These are the key components of installation works that must be described according to their relational, textual, and contextual devices – that is, according to a certain and determined communicative situation – and they must be recorded

not only with traditional photo and video documentation practices, but also with methods that consistently complement each specific technique (for example, documentation of space, video, sound, light, interaction with visitors/interactors, etc.) using specific devices such as 3D relief, laser scan for the systemic “mold” of data relevant to space, or virtual reality photography. See *Inside Installations: Preservation and Presentation of Installation Art*, CULTURE 2000/2004-2007.

- 13 The multichannel video installation *Women without Men* (exhibited in the Room of Caryatids at the Royal Palace of Milan in 2011) is structured through “episodes” (single-channel video installations): *Mahdokht* (2004), *Zarin* (2005), *Munis* (2008), *Faezeh* (2008), and *Farokh Legha* (2008). The artwork has a film version, the 2009 feature film *Women without Men*, based on the novel with the same title (of 1989), by the Iranian writer Shahrnush Parsipur.
- 14 <http://www.europeana.eu>.
- 15 See the NESTOR Network of Expertise in Long-term STORage of Digital Resources – A Digital Preservation Initiative for Germany, http://www.langzeitarchivierung.de/Subsites/nestor/DE/Home/home_node.html. Last access: 20 July 2012.
- 16 See the projects *art/tapes/22 Collezione ASAC La Biennale di Venezia*, University of Udine, 2004-2007; *40yearsvideoart.de*, *Video Art in Germany from 1963 to the Present*, K21 Kunstsammlung, Dusseldorf 2005; *Rewind Artists' Video in the 70s & 80s*, University of Dundee and the Scottish Screen Archive, 2005.
- 17 See also the chapter “Testo,” in *Enciclopedia*, vol. 14, 280. Turin: Einaudi, 1981.

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