CULTURAL HERITAGE AND NEW TECHNOLOGIES: THE ROLE OF TECHNOLOGY IN PRESERVING, RESTORING AND DISSEMINATING CULTURAL KNOWLEDGE[1]

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ABSTRACT

This article focuses on the role of new technology in the preservation, restoration and dissemination of cultural knowledge illustrated by the example of the 'Hoffmann Collection of Cultural Knowledge' (HC-CK). Some background information on the conceptualisation and aims of the project are given in the introduction. New technologies as an integral part of research, preservation,

restoration and presentation are then discussed. The focus of the discussion in the second part will be on the inclusion of new technology as an essential part of research outputs, on the powerful capacities of intermediality as observed in the HC-CK and on an example of a digitally created space (database) where all genera of primary and secondary productions meet to offer researchers the possibility to convene multiple places. This article finally suggests that it is the right time to connect the astounding predisposition of new technologies in the form of digital media to reshape the unique spaces of research and the dissemination of research outcomes.

Keywords: Carl Adolf Gustav Hoffmann, cultural knowledge, digital media, new technologies

INTRODUCTION

Between 1894 and 1943, German Lutheran missionary Carl Adolf Gustav Hoffmann, together with a number of Northern Sotho missionary assistants, gathered an unrivalled collection of Northern Sotho cultural knowledge which is still scattered across various institutions in Germany and South Africa today. The interest of Annekie Joubert in missionary Hoffmann's work stems from the early 1990s, when she was doing research on the oral traditions of the Hananwa and Lobedu people in South Africa. While exploring various archives in Germany and South Africa, she often came across the name Carl Hoffmann. His writings, drawings and photographs left her with an impression of the large number of people he had come into contact with, many of whom would otherwise not have made it into any historical record. This realisation affected her deeply and she embarked upon a research project to find out who this man was.

As Joubert is based at the Department for African Studies at the Humboldt-Universität zu Berlin, Germany, she has chosen to collaborate with other scholars[2] further afield whose knowledge and insight have become central to understanding the work of Hoffmann and his co-producers. The research team has been working on the so-called 'Hoffmann Collection of Cultural Knowledge' (HC-CK) since 2010. The scientific goal is to provide vital tools for entry into the Hoffmann's life and work, in the form of a contextualised and annotated re-edition of his ethnographic articles, combined with a film and a comprehensive database. The HC-CK also has the collective goal of restoring and securing the oral records of the people amongst whom missionary Hoffmann worked in South Africa, and ensuring their accessibility for future research – especially for African scholars. The project also aims to safeguard, disseminate and repatriate this threatened cultural heritage through new technology such as filming and digitisation, and through the bilateral exchange of material in digital format between the archives in Germany and South Africa.

THE INCLUSION OF NEW TECHNOLOGY[3] AS AN ESSENTIAL PART OF RESEARCH OUTPUTS

New technology in the form of digital photographs, films and files, has until recently not been used as an integral part of research, but only as a means of providing illustrations of, or replacements for, field experiences. Researchers such as Ruby (1975, 105) and Rouch (1974, 39) are of the opinion that scholars do not regard 'ethnography in the visual mode' with the same scientific esteem as written ethnography. These views have since been confirmed about 30 years later by Margret Eifler (2003, 444), who notes: 'It seems that filmmakers still do not carry the same intellectual and artistic estimation in the academic world as do writers.' The lack of visual material in the study of oral art (folklore), anthropology and ethnography can be attributed to a cynicism towards visual data in favour of verbally recorded evidence and prejudice in favour of literacy/written sources in scholarly pursuits and academic outputs. There seems to be very little room in the scientific community for visualisation. Scholars tend to distrust visual phenomena and look more to written directions to guide their reasoning. In the Hoffmann Collection we wish to reach beyond the essential descriptive narrative paradigm through the inclusion of new technology that encompasses all forms of digital data (cf. Whisnant 1995, 202).

We reflect in this section on our own 'backstory',[4] our field research experiences and interventions as researchers over the past years, and we share our views on why we, as a research team, regard the inclusion and convergence of new technology to be an essential part of this research project. It became clear from our rummaging through archive cellars and vast quantities of visual material that maps, photographs, postcards and drawings were powerful cultural commodities in the 20th-century missionising landscape of South Africa. As researchers we started to 'see' how central the visual system became in projecting the work of the Lutheran missionaries in South Africa, and how it was used to integrate the 'mission' into German and South African public life. We became aware of the fact that our digital filmed data should be lying at the interface between our field research in the original context with its interlocutors and the written text with its implied reader. We realised that knowledge is rooted in the image, as much as it is in the text. As in Hoffmann's time, visual systems therefore play an indispensable role as methodological tool for the collection, preservation, analysis and representation of data. As our book publication (*Ethnography from the mission field: The Hoffman Collection of Cultural Practice*) focuses on the ethnographic writings of Hoffmann and his co-workers, it was not possible for us to capture their memories and methods of knowledge production (e.g., performance, storytelling and transcription) in printed form. In order to form an impression of Hoffmann's encounters with African men and women we could, however, piece together a virtual past – a moment – through archival residues and by re-visiting the descendants of the people he interacted with, the spaces and places

where he lived and worked, and where interactions with the interlocutors took place and where transcriptions were made a century ago.

The purpose of our technological convergence of different forms of media (published book, digital film and database) is to contextualise Hoffmann's scientific writings, which take up the main focus of our book. We want to enhance the publication through visual information in order to enrich the fullness of Hoffmann's life and the comprehensiveness of the scientific work produced by him and his interlocutors. This kind of intermediality provides us with powerful capacities to unsettle the formal and limiting taxonomies of archives – what is found in them, and how to use them. Our intention is to interlink visual data (archive material and field research data) with scholarly interpretation through exploiting the inherently narrative medium of film, as well as the immersive and interactive qualities of visual systems (new media) (cf. Underberg and Zorn 2013, 20). The viewer/reader is invited into 'visual spaces' where s/he can be immersed[5] into an 'imagined past' – 'meeting' and 'hearing' Carl Hoffmann, the person who played an inspirational role in the production of the collection.

We strive in this project to go beyond 'ethnography from the writing desk' by juxtaposing the physical experience of being in the field and in an archive with the reader/viewer, thereby not only sharing the material produced – old as well as new – but also alerting scholars and researchers to the extent to which German archives and South African Lutheran mission stations hold information that is pertinent to research.

We want our fact-based documentary film and digital database to stand as independent 'visual archives' that undertake to integrate historical and contemporary life worlds for both insiders (local African communities) and outsiders (scholars, researchers, students). Yet, we also want them to be a prevailing reminder of a 'long conversation', a shared space of reciprocal communication and documentation between a missionary and the local African communities who, at that particular moment in time, attempted to explain themselves and in the process preserved their particular take on their culture and language practices for posterity. It is also our goal to converge our scholarship by communicating our research through both the written word and new media, thus signifying that knowledge, awareness and understanding are not only to be assimilated through the medium of print, but could also stand side by side with new media. Finally, we believe it is the right time to connect the astounding predisposition of digital media and technology to reshape the unique spaces of research and the dissemination of research outcomes.

THE POWERFUL CAPACITIES OF INTERMEDIALITY AS OBSERVED IN THE HC-CK

Working over the last number of years with material in the Hoffmann Collection that ranges from handwritten diaries and notes, oral transcriptions in an outdated

orthography, printed scientific articles, essays and books, sketches, black-and-white analogue photographs to digital photographs as well as digital film, indeed revealed the confluence of media and intermedial spaces where we as researchers found ourselves in-between and within the mixting of time, space, media, as well as old and new realities. To be able to deal with and explore the notion of intermediality, it was necessary to follow an interdisciplinary approach where each researcher could focus on his/her specialised field and explore the multisidedness of the material in the Hoffmann Collection, which includes linguistics, oral literature, cultural anthropology, religion, mission history and visual culture. The Hoffmann Collection has a strong visual presence and we have tried to contain that presence by assimilating the written and the visual into an intertwining network of chronologies and narratives. We hope, through the use of new technology, to open up a new creative and visual historiography that allays past and present apprehensions.

Database as archive[6]

Our objective with the database is not only to catalogue the main part of Hoffmann's Collection in a digital form, but also to create an easily accessible collection where all genera of primary and secondary productions meet – a space that offers researchers the possibility to convene multiple places. This has been made possible by technology not existing a century ago. The online digital collection encompasses a range of approximately 3 000 files containing around 10 000 images, including photographs, letters, reports, diaries, newspapers, scientific articles and books that were residing in various institutions and scattered across two continents. We made use of digitisation as a method to preserve the original archive material and to provide access to the original archival records, thereby reducing the handling of the original images. We also included video material taken during our field research in order to interlink our research with our scholarly interpretation. This layering of material should then serve as interpretative frame or filter, between researchers and research object. Of vital importance to us is to create the ability to connect our published, reworked material digitally to the variety of original material in the different archives. We seek to broach new territory in some significant manner by establishing an immediate and effortless way of referencing between our published book and the original material. This view influenced our decision to decide on open access.

Digitisation of treasured documents and archive material

We cooperated with a company in Berlin (Mikro-Univers GmbH) that specialises in the digitisation of treasured documents and archive material. They employ ultra-modern scanning equipment with which to digitise valuable material, by applying the least physical contact possible. The scanners do not emit UV-light, allowing the archive material to be processed according to international standards for digital

imaging for archival purposes. The company likewise adheres to the standards set by the German Research Foundation (Deutsche Forschungsgemeinschaft).

A DIGITAL ASSET MANAGEMENT FOR THE PRESERVATION OF CULTURAL KNOWLEDGE

To secure the collected material we saved it on the servers of the Computer and Media Service at the Humboldt-Universität zu Berlin. To make it accessible for further research purposes we decided to use the media repository of the university, which is based on open source software called 'Resource Space'. This is a distinctive digital asset management system that allows the storage and management of digital data. It is built only on open source utilities and software such as Linux, Apache, MySQL and PHP. The Computer and Media Service takes care of the maintenance, backups and long-term availability of the data. Access to the media repository is fully web based and functions with most main browsers on all operating systems. It supports a variety of file formats and metadata schemes. Public web presentations are possible as well as collaborative work in restricted groups. Open access is provided when searching for information under https://media.hu-berlin.de/hoffmanncollection.

Heading: Home page

The viewer is welcomed to the collection on the 'home page' with a slide show and a short description of the project. The workspace is clear and gives easy access to the necessary tools, e.g., searching, sharing and downloading. The page layout is optimised for various screen sizes.
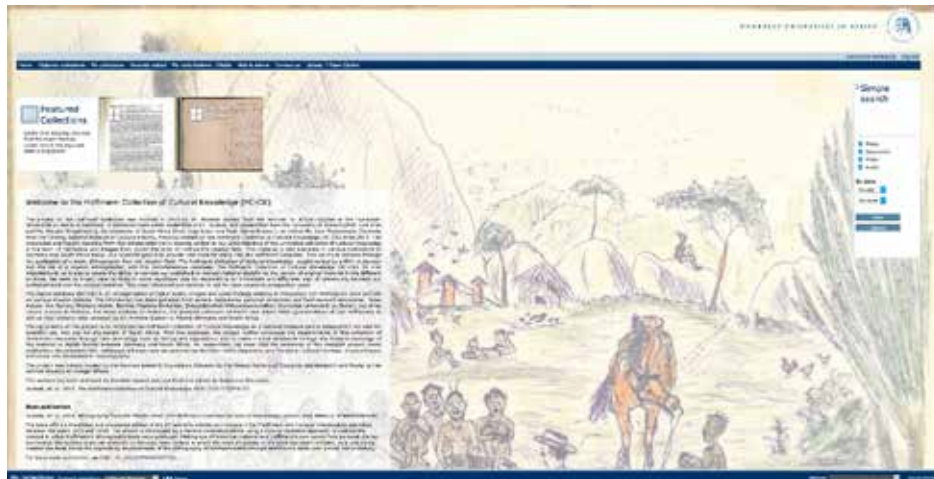

Figure 1:   Home page of the 'Hoffmann Collection of Cultural Knowledge' (HC-CK).

Source: https://media.hu-berlin.de/hoffmanncollection/pages/home.php

Heading: Themes

The easiest way to find any specific resource (files, photos, footage) in the media repository is to click on the heading 'Themes' in the main menu. In this section, the data of the entire collection are organised into four main categories, namely: files, photos, footage and backstory (see Figure 2).

Heading: Working with collections

Besides the main classification of the four categories mentioned above, the user has the possibility to create (a) user-specific collection(s) related to his/her own research focus. The resources are saved only once on the servers, but can be linked to various other collections. The created collection can be for private use only or it can be made visible to the public. Teamwork could be facilitated in this way through the mutual sharing of individual collections. Different from a private collection, a public collection can be shared with anyone who has access to the HC-CK. The administrator of the HC-CK can decide to promote some of these public collections so that they become part of the home page (see Figure 1).

Hoffmann Collection of Northern Sotho Cultural Heritage

Name

Files

    BMW Archive (Files)

    BMW Library (Files)

    UNISA Archive (Files)

    Zweigstellenbibliothek des Instituts für Asien- und Afrikawissenschaften (Files)

Photos

    BMW Archive (Photos)

    UNISA Archive (Photos)

    Private Collection (Neitz Brothers)

    Field Research (Photos)

        2011 (Photos)

        2012 (Photos)

        2013 (Photos)

Footage

    Field Research (Footage)

        2011 (Footage)

        2012 (Footage)

        2013 (Footage)

        2014 (Footage)

Backstory Hoffmann Team at Work

Figure 2: The categories of the Hoffmann Collection.

Source: https://media.hu-berlin.de/hoffmanncollection/pages/themes.php

If one clicks on the name of a private or public collection, one gets an overview of the content of that collection in the gallery view, for instance the asset type, whether it is a document, picture, video or audio file, etc. Further information includes a short preview of every resource, the title and the rating of the resource (see Figure 3). It is possible to change the order of the images in terms of popularity, ID or type.
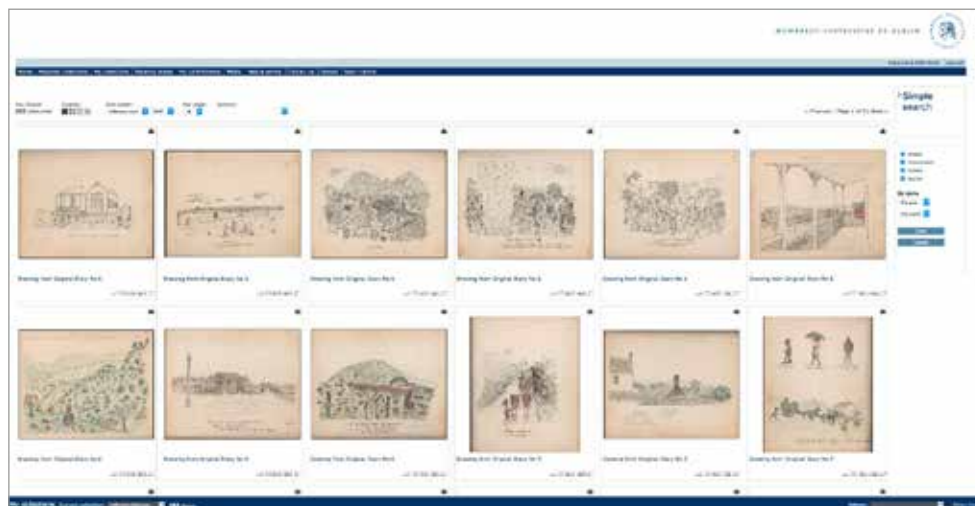

Figure 3:   Gallery view of a collection.

Source: https://media.hu-berlin.de/hoffmanncollection/pages/ search.php?search=!collection45

All collections can be shared with, and distributed to, others. Collaboration is encouraged through the use of shared resources. Photos, videos and documents can easily be embedded within other websites or exported to YouTube and Flickr.

An additional possibility for sharing the content of a collection, is by means of a PDF contact sheet. The layout of the sheet can be configured to suite the user's needs. The page size, number of columns, orientation and the number per page for thumbnails are selectable on the configuration page (see Figure 4).

Figure 4:   Configuration page for the PDF contact sheet.

Source: https://media.hu-berlin.de/hoffmanncollection/pages/contactsheet_settings.php?ref=45

Resource view

The resource details show all the important information about the resource, such as the title, date, caption and author (see Figure 5). On the resource web page one has the possibility to preview resources, enlarge them, watch video footage and download files in different sizes and resolutions.

For documents such as PDF files and Word files there are different methods of previewing. Documents consisting of more than one page can be paged through like a normal book. If it is a written PDF or a document written in one of the common text editors (Microsoft Word, OpenOffice, LibreOffice), the text of this document will automatically be extracted by the media repository and placed in the metadata, which makes every individual term in this text searchable.

Some of the metadata fields are directly visible in the 'Resource Details' under the preview. If more metadata have been saved but are not shown, the metadata are still searchable.

The 'Location Information' panel is situated directly underneath the 'Resource Details' panel and assists the user in visualising the geographical location of the resource, e.g., the archive of the Berliner Missionswerk (BMW) in Germany or of the University of South Africa (Unisa) in Pretoria. All the new cameras provide GPS information which is then automatically included in the photo resource.
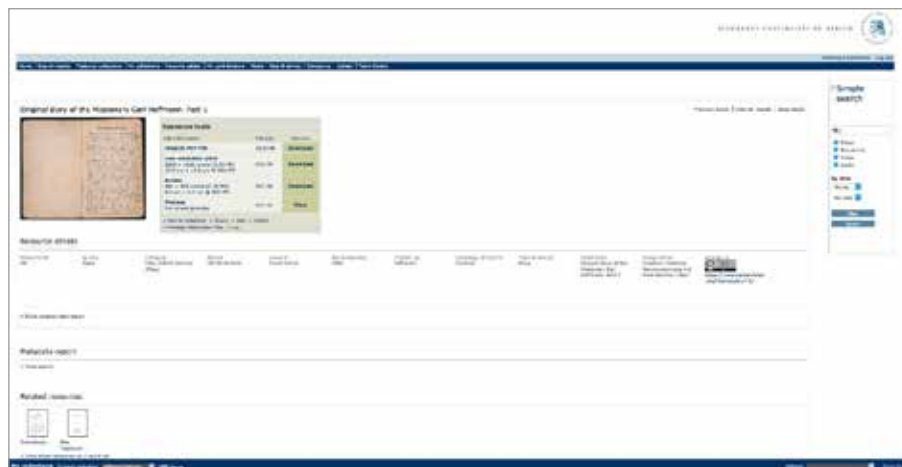
Figure 5:   Resource view of the first hand-written diary of missionary Carl
                Hoffmann.

Source: https://media.hu-berlin.de/hoffmanncollection (resource ID 481)

The 'Metadata Report' panel contains all the written metadata of the resource and shows which metadata will be saved for the user during the file download. The panel directly below the 'Metadata Report' shows thumbnails of all the resources that are marked as related to the current resource. The last panel on the page is the 'Search for Similar Resources' panel. It shows keywords that have been used in the current resource. Ticking selected words will assist the user in finding similar resources to the current one. The search button will change every time the user ticks a new keyword, showing the quantity of results for the selected term(s).

Simple search

Figure 6:   The simple search panel.

Source: https://media.hu-berlin.de/hoffmanncollection

The central aspect in the management of resources is the metadata. All the data concerning resources allows the classification of these resources in different ways. It is crucial to collect as much information as possible to improve a search action. Resources are quickly found with a simple global search that is available on every page (see Figure 6), or with an advanced search on every metadata field. If the geolocation data are given for the resource, the geographic search functionality enables one to find the resource. The results of all search requests are ordered using previous user search activities, but it is possible to order them by relevance, popularity, colour or date, too. The results can be displayed as thumbnails, small thumbnails or in the form of a list.

CONCLUSION

The collection of inherited cultural knowledge in the HC-CK forms a primary resource to the ethnology of the people amongst whom missionary Carl Hoffmann worked. This collection, consisting of the book publication, the biographical film and the digital database described above, becomes an invaluable source for future research and is probably the most auspicious to be studied since the bulk of the information was collected more than a century ago. The collection process continues to this day, as can be witnessed from the current database. This varied collection can be used by a diversity of scholars, including linguists, mission historians, anthropologists, ethnographers, folklorists and scholars in oral art and the visual arts. It has come to transcend its local significance, as it brings to light a variety of other aspects, for example, the interaction between local African communities and European colonialism; the role of missionaries as government agents, ethnographers, educators, proselytisers and guests; and impressions regarding land, access to land, disputes over land, and tensions in the lives of African communities during the late 19th century.

New technologies put tremendous pressure on the traditional custodians of cultural heritage, such as libraries, archives and museums, as they offer novel possibilities for the preservation, restoration and dissemination of inherited cultural heritage. New technologies also construct possibilities for creating bridges between the past, present and future, offering current researchers a critical understanding of how what exists as contemporary knowledge was produced, and how it could be used in the future. Our vision with the establishment of the database is the preservation of original archive material; the creation of an immediate way of referencing between our published, re-worked material and the online digitised material; the facilitation of global access to original archival records in a digital format; the international exchange of archive material and the repatriation of South African indigenous knowledge in a digital form from Germany to the country of origin.

The advantages of new technologies in the preservation of cultural heritage are manifold. Digitised information preserves data in an iconic way and by doing so reduces the handling of original material, securing its long-term existence. The process of making available these images in a digitised format makes old information 'alive' again, bringing it back into current academic discussions. New technologies create advanced communication, especially in the case of long distances where documents are scattered in different archives or where the information is far removed from researchers. A database such as the HC-CK can further assist researchers to obtain fast access to information through search engines that guide them to find such information. The media repository of the Humboldt-Universität zu Berlin offers the possibility to ordinary users to improve the Hoffmann Collection by pointing out errors, adding information and commenting on individual resources or the collection in general.

Even though a decision to engage new technologies demands innovative skills, we as researchers, strongly believe it is the right time to connect the propensity of new technologies in the form of digital media to reshape the unique spaces of research and the dissemination of research results.

NOTES

1. This article is based on the book publication *Ethnography from the mission field: The Hoffmann Collection of Cultural Knowledge* (Leiden: Brill, 2015).
2. The scholars are Prof. Gerrie Grobler (Pretoria), Prof. Inge Kosch (Pretoria) and Prof. Lize Kriel (Pretoria).
3. The term 'new technologies', as used in this article, is often referred to as 'emerging technologies'. It refers to any specific field of technology that presents new spaces in some significant way. The technological convergence of different audiovisual systems (voice, data, image, video), as employed in our research project to reach the same goal, can be perceived as a form of new technology in the preservation, restoration and dissemination of cultural knowledge. This term is referred to by Carolyn Hamilton (2011).
4. A term used by Carolyn Hamilton in her résumé at our workshop 'Past[*ssed?*] Encounters Visual(*ised*) and Digital(*ised*): On Archiving Colonial Knowledge' in October 2012 at the University of Pretoria. In her article 'Backstory, biography, and the life of the James Stuart Archive', published in the journal *History in Africa*, Hamilton (2011) argues for the use of the concept 'backstory' when trying to configure the possible meaning and significance of an object in an archive: What was the journey of a particular document/ everyday utensil/piece of adornment before it was institutionalised: to whom did it belong? Who had made and used it? How was it acquired for the purposes of science, and how was it stored, displayed and rendered meaningful during its 'life' in the institution?

5. Underberg and Zorn (2013, 12) are of the opinion that '[m]ultilinearity, immersion, and imitation enable audiences to better understand cultural knowledge by means of visual experience'.

6. Although we are reluctant to expand the notion of 'archive' too widely, in order for it not to lose its capacity and power, we do find it expedient to make the pragmatic shift from the conventional boundaries of 'archive', as fixed place, to modern notions of virtually simulated spaces, as in the form of an electronic database.

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