The Use of Non-Destructive Archaeological Methods to Digitise and Present Uncatalogued and Privately-Owned Material Culture Collections and Associated Object Biographies.

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Abstract

Attending a museum to view extensive collections of objects and learn about the Holocaust is relatively easy. But what about the unseen, private and uncatalogued collections of material culture in the possession of Holocaust survivors and their families?

This thesis proposes a foundation for presenting these collections, allowing researchers to access them, document them without the owner having to permanently 'give up' their personal objects, and present them in an informative and interactive format.

The owners of the collections were met at a Windermere Children's reunion event, and participants were later interviewed to provide unique insights and stories that will help future viewers gain a deeper understanding through the development of innovative object biographies.

In this research project, three digital reconstruction techniques (Photogrammetry, Structured-light scanning and 3D laser Scanning) were applied to private collections of Holocaust material culture to create digital reconstructions.

Combining these biographies with digital reconstructions, along with other media, enabled the development of a proof-of-concept online platform to outline a format for presenting them.

From collecting this data, it became evident that, for digital reconstruction, there is no single definitive method among the three techniques chosen for this project. It is paramount that for research of this nature, where possible, all techniques are available or that the most appropriate for the collection being documented is selected.

The object biographies created are a new way of learning about the Holocaust, by providing the unique insights explored. They provide viewers with a more relatable experience promoting a deeper understanding and empathy. It was also found that there is no definitive method for presenting the object biographies and accompanying materials. However, a format was created that future researchers

can use to develop a comprehensive digital exhibition that fits the needs of the collections they are documenting.

Finally, it can be concluded that the aims of the project were achieved through the development of a proposed foundation of presenting Holocaust Material Culture and concepts that can be taken and developed to ensure that, regardless of the private collection, they can be documented without the owners having to part with them and presenting the personal stories attached to them effectively.

Objects from private collections, along with their biographies, contribute to the Windermere Children's story and to wider Holocaust education.

The proof-of-concept platform created as part of this doctoral research is presented visually within this thesis.

Dedication/Acknowledgements

This thesis is dedicated to the Windermere Children and Holocaust survivors around the world. Your stories are unique and deserve to be heard. I hope that this thesis paves the way for people to listen and access the unique aspects of your lives.

I would like to thank my supervisory team for their continued support throughout my doctoral research journey. Without your knowledge and guidance, this opportunity would not have been possible.

Caroline, thank you for introducing me to Holocaust archaeology and for the opportunity to meet so many amazing individuals. Your support and guidance have not only assisted me throughout this project but also helped me to find my research style and to learn more about myself and realise my true capabilities in life.

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Thank you for letting me tell your stories. I can only hope that I have done them justice.

Authors Declaration

I, Alex Haycock, hereby declare that this doctoral thesis has been written as a result of my own work and has not previously been submitted for any other degree at Staffordshire University or another institution.

Where copyrighted material has been used, appropriate credit and details have been made explicit within the thesis text.

Signed: Alex Haycock  Date: 30/01/2025

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Chapter 1: Introduction

"The experience of the Holocaust – personal, private and intimate – is exceptionally difficult to tell others about, if at all possible" (Engelking, 2001).

In December 2022, Shirley Hubermann, the widow of Holocaust survivor and Windermere boy Alfred Hubermann, was interviewed regarding some of her late husband's personal belongings that she had recently donated to the Lake District Holocaust Project (LDHP). During the interview, Shirley spoke highly of Alfred's life after his arrival in the UK. She explained that he did not often speak about his experiences at first; however, later in life, Alfred made a point of giving talks wherever and whenever he could to educate younger generations and share his story.

Moëd & Conn (2023) state that "People's life stories are intertwined with objects... and it is why we cherish and take care of them." As such, after Alfred's death, Shirley preserved his tailor's workshop (within their home) out of respect for her husband. When asked about Alfred's objects in the workshop, two wheels of tailor's thread were highlighted, and Shirley gave a cheerful explanation of how, after recovering in Windermere, Alfred moved to Brighton because he had relatives there and began working as a tailor. Although he did not plan to pursue this career path, he maintained his tailoring business until his death; his home workshop remains untouched. Shirley detailed how being a tailor brought so much joy to Alfred's life and how he loved interacting with people. Shirley's story was one of the catalysts for this research project.

Figure 1.1: Equipment and materials from Alfred's Workshop, still in the position he left them before he died.

1.1 Private and Uncatalogued Collections

There are many material and cultural objects relating to the Holocaust that are currently in what can be classified as private collections (Kidron, 2012), e.g., personal collections of survivors or their families, or uncatalogued local archives such as the LDHP. The importance of recording these objects cannot be overstated, as they are a significant gateway to the past and a medium for telling the owner's personal stories and presenting Holocaust material culture in a unique and interactive form. This has been demonstrated by Kidron (2012), whose research focuses on the relationships people form with material objects and the memories they can evoke. For each object a survivor keeps, there is a reason and a personal significance. As researchers, it is essential that we document this, not only providing a voice for survivors to share their unique stories rather than predetermined narratives, but also to gain a deeper understanding of these objects. Just as photographs can "be perceived as retaining a synecdochical relationship with the dead, the image preserving a material part of the whole person" (Kidron 2012, page 18), so too can objects; they can provide unspoken insights into the experiences of individuals and, when accompanied by an appropriate context, leave an impact on the viewer, making them both memorable and relatable. Further support comes from Marianne Hirsch in her 2001 article,

where she describes how viewing photographs from Bergen-Belsen and Dachau triggered a greater understanding of her father's experiences in the Holocaust, "...I felt irrevocably grieved, wounded...". This effect is not limited to photographs; it can also be felt in objects. This allows us to understand why these objects are so important. Why, above all else, do survivors hold onto these objects, and what can we learn from them? Understanding how these objects can elevate survivors' stories and their impact on viewers is a positive step for Holocaust research, allowing a more personal insight into one of, if not the most significant, events in modern history.

In stories such as Shirley's mentioned at the start of this chapter, something as simple as a wheel of thread spool can reveal a lifetime of experiences when placed in the right context. For most, it may seem like another everyday item at home. However, when you hear the story behind it, what that meant to someone and how it allowed them a second chance at life, you begin to gain a greater understanding of a significant point in human history (Stier, 2015).

There are many published testimonies and accounts in which Holocaust survivors have publicly spoken about their experiences (Trezise, 2013; Holocaust Educational Trust, 2022). However, despite this, since the events of the Holocaust, it has been difficult for many survivors to discuss what they went through. In addition, many historians, psychologists, and second and third-generation survivors have also demonstrated the reluctance of the victims of Nazi persecution to recall the atrocities inflicted upon them and others during this period (Aarons, 2016; Aarons & Berger, 2017). Around the world, many survivors have donated objects to memorial sites and museums. This physical evidence of the genocide has enabled the curation of numerous large collections of material culture in archives, such as Yad Vashem, the USHMM (Oztig, 2022), the Holocaust Centre North, the National Holocaust Centre UK, and the Lake District Holocaust Project. These collections and museums have curated exhibitions dedicated to the Holocaust and highlighted survivors' experiences through objects they kept from the time and acquired in the years that followed (Goldberg, 2012; Sturdy Colls & Branthwaite, 2018; Tureby & Wagrell, 2020).

Before the availability and accessibility of digital documentation, objects of material culture were and are stored in numerous ways. For example, in museums, objects are stored in secure archives and displayed in controlled environment displays. This allows curators to store each object appropriately; examples can include climate control and light exposure (Shiner, 2007). In contrast, the methods used to store objects of this nature can vary and may not be to the same high standard in privately owned collections. In many instances, these will be objects that people may have just stored in a box, or drawer, or simply put out of sight. This itself could have led to damage and wear of an object, resulting in it not being in as good a condition as possible. However, deterioration can occur with a digital record. This would mean the digital record would have to be converted to new storage formats to remain widely accessible, and in doing so, quality may be lost, necessitating re-documentation of those objects. Yet in the case of private collections, their owners or custodians may be reluctant to part with them for display in museums and similar exhibitions, as discussed further in section 1.4 of this chapter.

1.2 Aims and Objectives

This project aims to explore effective means of recording, visualising, and presenting Holocaust material culture from uncatalogued, privately owned collections.

The project objectives are to:

- Review literature and digital resources/databases to understand current and past forms of recording, visualising and presenting Holocaust material culture.
- Identify current and in-development archaeological methods that facilitate the digital recording of objects.
- Conduct research on uncatalogued materials associated with the Lake District Holocaust Project that will be used as a case study for this research (see below).
- Identify and interview private collection/object owners to fully understand their context, and conduct additional research into their biographies.
- Analyse these interviews to better understand the significance of the objects to their owners.

- Use digital reconstruction methods to create accurate representations of the personal material (objects) obtained.
- Develop a proof-of-concept digital platform that demonstrates the potential for increasing access to, and ethically present, privately owned and uncatalogued collections.

Research Questions.

Throughout this project, the following research questions will be addressed:

- How can objects of Holocaust material culture from private and uncatalogued collections be accessed without the owner having to physically part with them?
- How do personal testimonies enhance the understanding and significance of Holocaust material culture objects?
- How can privately owned and uncatalogued collections of Holocaust material culture be recorded, visualised and presented digitally? Is there a definitive method?

1.3 Methodological Summary

The Lake District Holocaust Project (LDHP) was specifically chosen for this research project as the primary case study from which all the Holocaust material culture and objects are related. The LDHP and the story of the Windermere Children are what bring all the object biographies generated together, as an example of an uncatalogued collection and, through the LDHP and contacting the families of ‘The Boys’, access to related unique collections opens up.

Coordination with the LDHP and their network of contacts was used to gain privileged access to objects of Holocaust material culture and the Holocaust survivors and their relatives who own them. Such work involved various periods of archaeological work at the site of Calgarth Estate in Windermere on behalf of the LDHP, attending planned reunion events for the Windermere Children and networking with survivors and their families at these events to organise personal interviews and access to their personal collections in addition to the collections available at the LDHP exhibition. This enabled the collection of valuable data that

formed a significant part of the object biographies (case studies) developed as part of this project and provides unique insights into the lives of the survivors and their relatives who choose to participate.

Following research into the objects available at the LDHP and contact with survivors' families regarding their objects, object data was collected, demonstrating that the owners of Holocaust Material culture can ‘donate a copy of their objects’ without permanently parting with them physically. Digital reconstruction techniques such as photogrammetry, structured light Scanning, and 3D laser scanning were used to collect object data, and these techniques have been used in archaeological research for many years.

Photogrammetry involves taking photographs or videos of an object to create a digital model (Howland, Kuester & Levy, 2014; Ch’ng *et al.*, 2019; Marin-Buzón *et al.*, 2021) and is used to add greater depth to the digital presentation of Holocaust material culture objects. Research such as that by Mikrut *et al.* (2018) illustrates how the technique lends itself to the digital presentation of archaeology. Their research used the technique to document an open-air theatre and to further support a multimedia presentation of a performance, highlighting the technique's value in bridging multiple disciplines and research gaps, enabling advancements across multiple areas whilst digitally preserving subjects.

Structured light and 3D laser scanning are advanced techniques of photogrammetry (Rickon, 2017; Polyga, 2019; 3D Engineering Solutions, 2019) that use similar principles but with different equipment and can add texture and minute detail to the models produced. These techniques can be used on small objects through to buildings and whole landscapes (Abate *et al.*, 2011). Examples of their application can be found in Fragkos *et al.* (2018), who used 3D laser scanning on ceramic objects for cultural preservation, and in Graciano *et al.* (2017), who used Structured light scanning on religious artefacts and discussed the issues that can arise during the process.

The public and professionals/experts in Holocaust archaeology will have different views on the required quality of the digital models. It can be said that professionals and experts may wish to view the images at higher resolution, as micro-level details and textures can provide additional information about each object. However, the public is more likely to require a basic view of the object when it is associated with the survivor's story. It can be argued, therefore, that the use of non-destructive digital techniques for cataloguing Holocaust material culture is necessary to advance research and deepen understanding of its significance. There appears to be no 'standard' method for projects incorporating these techniques, and this project will provide comparative commentary to assist future researchers in determining those most suitable for their research. Chapter 3 will provide more detail.

To develop object biographies, interviews have been conducted with the owners of Holocaust material culture being documented to gather the personal insights and stories this project aims to curate and present. The interviews conducted form a key part of the object biographies (case studies) developed for inclusion in the proposed proof-of-concept platform. These highly personal testimonies provide the owners of the objects a platform to tell their story in their own words, demonstrating to the viewer the personal meaning and significance behind each object, adding to their relatability and providing the gateway for further survivors and their families to allow access to a world beyond comprehension and reinforce the importance of remembering the Holocaust (Shenker, 2015). These first-hand accounts from survivors and their relatives are becoming a growing educational resource (Traum *et al.,* 2015; Trezise, 2013). These accounts are undoubtedly fundamental to current and future Holocaust education and, as such, should be the focus of digital Holocaust exhibits that capture viewers' attention and provide the unique insights desired into one of the most important events in recent memory. The interviews for this research project will be conducted and recorded in person or via digital media (depending upon their availability and geographic location).

Using the object data and their attached stories, bringing together the best elements of theories by Wilson (2023), Simon (2015), Hargadon (2015),

Magnússon (2015), and Pennell (2017) allows for the development of micro historical case studies or object biographies to be developed for this project. These are discussed in more detail in Chapters 3 and 5 where the methodologies used within this thesis are explored and the object biographies curated are presented, respectively.

The curated digital scans/3D models will accurately represent the objects presented and how they, along with other media, add value to the information and stories presented. To evaluate the effectiveness of this presentation, the curated case studies will be compared with existing digital Holocaust exhibitions, such as those at the USHMM, Yad Vashem, and LDHP, among others, to develop the proof-of-concept platform this project aims to create. It is noted that, in recent years, advances in digital reconstruction technology have created a gap in current research on how to apply these methods effectively to objects of Holocaust material culture, presenting them in the most appropriate and accessible format.

For Holocaust survivors and their relatives to participate in research like this is unprecedented, and access to their personal objects will enable the creation of a proof-of-concept platform to disseminate information, support Holocaust education, and tell stories that would otherwise remain unheard.

1.4 Reluctance to Donate Objects

Notwithstanding that objects form a significant part of the material displayed in museums, many survivors and their relatives still possess objects that, understandably, they are reluctant to part with, including private collections. The reasons for this reluctance are many, including the personal, sentimental and cultural or religious significance of individual or groups of items. Alternatively, some owners of personal objects of Holocaust material culture have preferred to donate them to smaller museums whose collections may not be as well accessioned (or not accessioned at all) as those of larger institutions (Huhák & Szécsényi, 2023). This will vary from family to family, depending on the item and whether they prefer to keep it or donate it.

There are many material and cultural objects relating to the Holocaust that are currently in what can be classified as private collections (Kidron, 2012), such as survivors' personal collections or uncatalogued local archives, such as the Lake District Holocaust Project. Many owners wish to keep their objects of Holocaust material culture because they often hold great personal significance (Lonescu, 2024; Dziuban & Stańczyk, 2020), which others may struggle to grasp. For some, there is the fear that archives would lose the objects (Waligórska & Sorkina, 2022), and the sentimentality (Horowitz, 2010) attached to them. As such, it is apparent that new research frameworks are required so that this material culture can be documented and disseminated to further aid Holocaust education and ensure that the memory of those who suffered is not forgotten and that events are never repeated.

Again, these factors provide a strong basis for this research project, outlining its uniqueness and explaining why it aims to explore how archaeological researchers and museums can gain access to these private, uncatalogued collections without the owners parting with them. Creating digital representations of personal Holocaust material culture and allowing the owners to discuss their significance will offer an alternative to current practice and encourage further participation by other survivors and their families.

1.5 The Importance of Documenting Objects

The need to preserve the material culture and memory related to the Holocaust is of immense importance, so that it does not become another event lost to time (Young, 1994; Verschure & Wierenga, 2021). Weld (2014) demonstrates this in her publication Paper Cadavers, where she highlights how using the documentation left behind in Guatemala allows for the telling and documenting of the war crimes that took place. Nowadays, many Holocaust survivors are elderly, and the number of people who can tell their stories is decreasing. Although the nature and scale of the crimes committed have been well documented, recent years have seen an increase in Holocaust denial and antisemitism in many countries (ADL, 2020). This is emphasised by the recent antisemitic events of Hamas attacks in Israel, which have had a ripple effect on antisemitism around the world and have seen "Antisemitic incidents 'quadruple in the UK'" (McGarvey, 2023). This has resulted

in the need to preserve Holocaust sites, objects and material culture, and educate the world to ensure that society understands where racial hatred can lead and aid in preventing such events from happening again (IHRA, 2023). Highlighting and reinforcing past events and mistakes will help shape a society that does not repeat them and build a brighter future (OSCE, 2023; Bauer, 2020). Therefore, highlighting the Holocaust in more informative and relatable ways will encourage interaction and provide an effective way for a new generation to learn, given that they have grown up with various forms of media and benefit from their use (Cooke & Carr, 2023).

In recent years, Holocaust archaeology has emerged as a prominent subdiscipline (Sturdy Colls, 2012), creating new opportunities in the field. This includes many advances in digital techniques and in Holocaust archaeology that now offer the opportunity to capture uncatalogued material culture in private hands, allowing the owner to retain the object whilst also making it available for Holocaust research and education. These processes vary from project to project, depending on their specific aims, and are often used to preserve deteriorating objects and to analyse their morphology to further educational resources (Gomez, Bellon & Silva, 2014; Sturdy Colls, 2015). The surge in Holocaust denial and antisemitism has led many archaeological researchers to explore ways to improve Holocaust education and awareness such as the work undertaken by Sturdy Colls & Colls (2020) using aerial reconnaissance techniques such as Lidar and Geophysical surveys at Treblinka, Sturdy Colls, Colls and Kerti (2020) who employed the use of non-invasive mapping techniques such as remote sensing and geophysical survey to document the landscapes in Alderney and Sturdy Colls & Ehrenreich (2019) regarding the value of Holocaust Material Culture and how materiality can be presented and observations into current research trends in the subject area.

Material objects are valuable for interpretation studies because they often reveal the personal connections people may have had with them (Hallam & Hockey, 2020). Building biographies around the connections people form with such objects, as proposed within this thesis, will add further value to what people can currently experience. When linked to a significant personal event from the Holocaust, the object may become more understandable to the wider public (Wood & Latham,

2014), allowing them to find similarities in their own lives and develop a deeper connection with the object through personal association. In a similar context, having a physical object to view provides a more personal connection than testimonies and pictures alone (Pattakos et al., 2023; Arvanitis & Zuanni, 2021).

1.6 Proof-of-Concept Platform

It is assumed that museums display objects based on their value as reflections of significant historical events. Institutions such as the Imperial War Museum demonstrate this concept by considering how objects and memory (Stiles, 2021) can be used to tell a story, as proposed in this thesis. Gabriel Mayer (2016) summarises the significance of museums, their ability to link history and culture, and how they can be presented through objects and testimonies. This further supports the theories presented by Stier (2015), who looked at the symbolisation that can be used within Holocaust history and Shenker (2015), who explored alternative views for Holocaust testimony and their interpretation, all of which emphasise the various media that can be used to present Holocaust material culture, which this project looks to draw together. Notably and highly relevant to this project, the Lake District Holocaust Project (LDHP), an organisation focused on telling others' stories through campaigns, research projects, and exhibitions, serves as an example of how to thoroughly document the unique stories of a group of survivors and their ordeals. In doing so, they have highlighted the importance of documenting Holocaust material culture objects in preserving their legacy through the owners and the stories that are attached to them and the Windermere Children and allowing them to provide relatable and untold accounts and access to collections that would otherwise be inaccessible, all for the benefit of educating younger generations and ensuring that the unheard have a voice and are remembered on their terms in their own words. This serves as a foundation for this research and provides the primary source of the objects that form the object biographies (case studies) in this project, all linked to the Windermere Children and the Lake District Holocaust Project.

As such, this project is focused on the Holocaust post-1945 and on post-human memory. This is presented through material objects that hold significance for Holocaust Survivors and the memories they carry and provide to their owners. In

turn, this will aid in educating people on the lesser-known side of the Holocaust, the effect it had on survivors and subsequently their families, and ultimately how similar objects in modern life can constitute gateways to similar personal memory. To do this, a series of 63 objects was curated to develop a digital repository. To accompany them, five interviews with owners of some of the objects were conducted to provide greater context for their digital presentation and to give these owners a platform to tell their objects' stories in their own words. The five objects and their accompanying interviews became the focal point of the developed proof-of-concept platform, as their unique perspectives and interactivity enabled a demonstration of the proposed methods and media that underpin this thesis.

This research aims to provide researchers, curators, and other professionals with the means to preserve objects without risking damage and to more easily disseminate information about them and the unique stories that survivors and their families have to tell, for both Holocaust education and a wider audience. It seeks to overcome the need to take objects from their owners by creating digital representations of items, ensuring a legacy shared by those affected by the Holocaust for the benefit of others. This ability will be demonstrated by presenting a proof-of-concept platform that aggregates all relevant information about a given object in a single exhibit, and by showing how new knowledge can be shared and reach significantly wider audiences. This will include, where possible, the digital 3D model, owner interviews, background and other contextual information and links to relevant resources. In turn, this will inform other research and educational fields, thereby having a lasting impact on society as the platform design is adapted and improved to meet the needs of the topic. This form of dissemination is unique and combines current theories used by researchers and museums in exhibition design and curation. Chapter 2 will explore this further. As technology continues to advance, digital formats will become a necessity across every field.

1.7 Ethical Considerations

There are many ethical considerations surrounding the project, including risks of trauma for participants if the processes undertaken bring up difficult memories for them and their families, particularly when telling survivors' stories about these objects to highlight their significance for educational purposes, as well as their own

personal memories. Research by Sheftel (2019) explores the challenges of interviewing survivors of atrocity and highlights issues such as how some survivors may not wish to be labelled as such or to be seen as more than just a survivor. Therefore, as researchers, our goal should be to treat them as humans and to frame any testimony accordingly. Similarly, Richardson (2021) and Greenspan (2020) examined how interviews with Holocaust survivors can be used in education, specifically how students interact with firsthand accounts and how this can extend beyond the testimony to encourage deeper thought and collaboration. In this research project, interviews with object owners, Holocaust survivors and their relatives will be undertaken because these accounts form the core of the object biographies. This not only aids in the aims of this research to develop a proof-of-concept platform method of presenting Holocaust material culture, but is supported by other research, such as that by Tóth (2021), who has undertaken research into the analysis of oral history interviews and how digital technologies can be used to create a collective experience. The ethical considerations will be explained in more detail in Chapter 3.

1.8 Basis for Study

The need to document Holocaust material culture is ever-growing, particularly as we enter an age without survivors. However, in many cases, such as with the private and uncatalogued collections explored within this project, owners of these objects may be reluctant to part with them. From this understandable reality, the main concept for this research was formed: Is there a method that allows owners of Holocaust material culture to grant access to their objects without having to physically part with them or donate them to a public collection? If a suitable methodology is developed to document and preserve Holocaust material culture, it will enable unprecedented access to collections that could otherwise be overlooked and are certainly unknown to the wider public. Combining this with the theory of using personal stories to present these objects will add further educational value and provide survivors and their relatives with a medium to tell their stories and those of the objects in their own words.

In terms of significance to this project, the objects explored have not previously been widely accessible and are not typically seen in conventional museums.

Demonstrating access to and presenting these unique objects and collections of Holocaust material culture will lay the foundation for further documentation efforts by other researchers. The methods for demonstrating this will be outlined in greater detail in the upcoming chapters of this thesis.

This thesis, therefore, focuses on the digital preservation of objects: items that will not necessarily last forever and in some cases will slowly deteriorate and break down (Geweely, 2023; Markis, Sakellariou & Karampinis, 2021; Meister, 2019). It seeks to bring Holocaust material culture relating to the 'Windermere Children' together to further Holocaust research and education and will look at ways in which the data can be efficiently and effectively collected, processed and presented to researchers and the public digitally.

An exploration of existing research demonstrates that there is no standardised method for digitising and cataloguing objects of Holocaust material culture to achieve high-quality results, and then pair those methods with associated case studies and digital media presentation methods. As shown by Dawn & Biswas (2019), Douglass *et al.* (2019), and Guidi, Russo, and Angheleddu (2013), a range of applications can be used to generate everything from 3D models of small objects to the surveying and investigation of entire archaeological sites. Moving beyond simply the presentation of items, the aim of this research is also to develop a way of presenting Holocaust material culture digitally alongside object biographies (case studies) and accompanying media, whilst looking at the effectiveness of various digital scanning techniques for projects of this nature and how these methods will enhance Holocaust education.

Furthermore, digitising Holocaust material culture can enhance Holocaust education by making otherwise inaccessible artefacts and documents more widely available online. This will allow those in education to view and experience bespoke, curated collections, providing meaningful, relatable interactions with material culture and relaying individual stories and experiences that would otherwise be forgotten. This is highlighted by the number of objects relating to Holocaust material culture that are not digitised or are only partially digitally catalogued is vast, including but not limited to the approximate 4500 objects at the

Jüdisches Museum Berlin, the 70,000 plus collections at the United States Holocaust Memorial Museum (USHMM) and the 27,000 objects currently in the collections at Yad Vashem (not including written documents and other forms of material culture). The objects in each collection are presented to the public in varying ways. In some instances, comprehensive biographies are available online, whereas others are presented with a simple title and description. Additionally, some objects have unique stories, but these are not made public; they are in the back end of institute catalogues or museums that acquired the objects without asking for specifics about them.

Each of the objects has unique stories that have never been told outside the original owners, and those who currently own them, and the development of unique object biographies will have a profound effect on not only the documentation/presentation of these objects, but will also give them greater educational relevance and personal viewer relatability. An understanding of feelings and emotions may be impossible if biographies are not co-present with the objects they describe. The medium through which these are presented will also affect the audience's ability to understand the relationships between objects and their owners.

Using object biographies in combination with the use of digital techniques for the documentation of Holocaust material culture objects will preserve the memory of those who suffered horrifically during that time, ensuring they are not forgotten. Holcombe (2014) suggests that the time required to undertake a basic analysis of material culture objects, and that more modern techniques are needed for mass documentation. However, an adequate solution has not yet been found.

One consequence of the COVID-19 pandemic is that there has been an acceleration in the use of digital techniques and resources (King et al, 2021; Giannini & Bowen, 2022 & Noehrer et al, 2021), that had previously only been sparingly used within the emerging field of Holocaust archaeology (Vahdat, 2021; Susilawati, 2021; Walden, 2022 & Ebbrecht-Hartmann, 2020). Despite applying digital conservation techniques to Holocaust material culture, it has only just been brought into the spotlight because of recent events where museums and exhibitions have been inaccessible and private collections of Holocaust material

culture have become further isolated (Hooper, Longo & Zuccaro,2021). As such, this provides evidence that new, innovative methods for documenting and presenting material of this nature are needed globally. Creating digestible object biographies (case studies) and presenting digital versions of the objects in an easily accessible format will support future research into Holocaust material culture (Chiscano & Darcy, 2023) and enable the dissemination of these deeply personal stories to the wider public.

1.9 Thesis Structure

Overall, this thesis will comprise six further chapters.

Chapter 2 will contain a literature review on Holocaust material culture, including its nature and importance, and how it is currently presented; microhistory studies; curatorial studies on how to create an ethical and impactful proof-of-concept platform with accompanying exhibits; and the background, evolution, and application of available digital techniques. Chapter 3 will comprise the methods used throughout this research, including data collection, interview processes, and case study and platform development. Chapter 4 will encompass the results of the data collection process and the digitalisation of the objects. Chapter 5 will focus on developing the object biographies (case studies). Chapter 6 will introduce the development of the proof-of-concept platform proposed in this thesis and the decisions made during its concept and design, whilst also comparing it with other established digital platforms of leading Holocaust research institutions. Finally, Chapter 7 will provide a conclusion to the research undertaken, summarise and evaluate the preceding discussions, and propose next steps to further this research.

Chapter 2: Literature Review

The presentation of Holocaust material culture spans a range of disciplines. Hence, this project brings together research from archaeology and Holocaust studies, demonstrating curatorship and the ethics of representing sensitive topics. This chapter aims to outline the themes explored in this thesis by reviewing current literature in these fields and laying the foundations for the concepts discussed throughout the rest of the thesis. Firstly, it examines how Holocaust material culture can be defined and the 'material turn' in Holocaust studies that has taken place in recent years. This is important because it explains why this research is being undertaken.

From here, this chapter explores the current presentation methods used within and beyond Digital Holocaust studies, Digital Holocaust Memory, and Digital Humanities. This will include how techniques and approaches differ depending on the media format used, current museum curation practices and the current representation in education and the media. In addition, it discusses the ethical approaches and considerations required for this research, the dissemination of sensitive information about the Holocaust, the representation of history, and how other established institutions have addressed these issues through their physical and digital exhibitions. Finally, the chapter discusses curatorship studies, which are paramount for this research.

2.1 What is Holocaust Material Culture?

Woodward (2015) in her article 'material culture' defines material culture studies as the study of objects, specifically examining their material properties, what makes items significant, where they originate, and their societal impact. Hirst's 2018 article (para 1) emphasises the role of human beings, suggesting that material culture studies focus on “the corporeal, tangible objects created, used, kept, and left behind by people". Similarly, although the Centre of Material Culture Studies (N.D., para. 4) shows that its members define the term differently, they agree that the field focuses on "the history and philosophy of objects and the myriad relationships between people and things". When investigating material culture, researchers often focus on (but are not limited to) the materials objects are made from, what they were used for, when and how they were manufactured or created,

and by whom, as shown by Lumb & Smith's *Modern Material Culture Studies* (2014). This research may provide insight into the day-to-day lives of individuals, groups, periods, or even entire cultures, as highlighted in Robb et al's (2017) article ' Living in a material world: why ‘things’ matter'. Material culture may also provide strong physical evidence of key events, including historic crimes, supporting other available evidence, such as survivor testimonies (Schlereth, 1985; Sturdy, Colls & Branthwaite, 2018).

This also raises the question of what constitutes an object. For this, again, there are many definitions, including, amongst others:

- CIfA (2024, para 14), "Object is the term given to any material item recovered during the course of an archaeological project...".
- Parks Canada (2024, para 3), "An artefact, a sample or any material that is of archaeological interest".

In the context of this thesis, an object can be described as a physical item that has personal or cultural significance to a survivor of the Holocaust or their relatives. These objects can take various forms and may include items that were taken into, created, and kept in various types of camps, as well as items related to different religions, cultures, professions, and countries. As Latour (2004) explains in their article ' *Why Has Critique Run Out of Steam? From Matters of Fact to Matters of Concern'*, even paper documents such as letters, diaries, and maps, as well as architecture, can be classified as material culture. As such, this research project focuses on the materiality of items instead of their written content.

Research looking at Holocaust material culture has been extremely beneficial in further understanding the crimes committed by the Nazis and their collaborators and what people went through as a result. For example, the State Museum in Auschwitz-Birkenau provides clear evidence of the type of material culture and objects that the Nazis confiscated from the people they sent to the various types of camps they built (Kwiet, 2019). This highlights what was deemed valuable at any given time and which objects were considered culturally significant before their

owners were sent to the camps. In contrast, current research, such as Rydén (2017) article '*When Bereaved of Everything: Objects from the Concentration Camp of Ravensbrück as Expressions of Resistance, Memory, and Identity',* demonstrates projects examining the objects that survivors kept during their time in camps, shows what was available to them to cherish, what significance those objects may have had, and what they mean today. Such studies allow the determination of which objects are seen as significant or purely functional, and of their nature and significance.

For historical understanding, research and education, it is important to study what people experienced in greater detail, allowing for empathy with those who suffered and a greater understanding of the effect that the events of the Holocaust had on them and their families during and in the years that followed (Dashhorst et al, 2019 & Chodoff, 1997). In this instance, the Holocaust is a significant and relatively recent historical event, which in turn suggests that great significance can be placed on objects from that period (Imperial War Museum, 2025).

Concerning the presentation efforts being undertaken around Holocaust material culture and the lack of a unified method for identifying and accessing collections of Holocaust material culture objects. From this, there are numerous avenues of enquiry, such as how to undertake interviews with survivors, documenting sites of the Holocaust, and research into preserving Holocaust memory through material culture (EHRI project, 2022), amongst others. This is further demonstrated by research by Oztig (2023) and Stiles (2022), who both examine the efforts of leading institutions and museums to preserve such material and ensure lasting memory, in their article 'Holocaust Museums, Holocaust Memorial Culture, and Individuals: a Constructivist Perspective' and book 'Holocaust Memory and National Museums in Britain' respectively.

Prominent amongst these is the creation of online digital databases of objects, which forms part of this thesis, with the scope for wider dissemination of information and aid in educating more people on the importance of these objects and the role that they played (Blanke et al, 2017) and further investigating the significance of the objects to survivors, their families and the families of liberators

and victims to build up a more detailed picture of the Holocaust, demonstrated in ' Holocaust Museums, Holocaust Memorial Culture, and Individuals: a Constructivist Perspective' (Lewis, 2016). This information helps fill gaps about an object, adding context for the viewer in a digital or physical exhibition space. For example, it can help the public gain a greater understanding of an object's significance (Kopytoff, 1986). Appadurai (1986) discusses that people often need to see evidence to believe. Therefore, having the physical evidence and material culture from the Holocaust available digitally for all to view would help immensely with the 'seeing is believing' attitude people can have as explored in Kerti's, 2019 doctoral thesis ' *Exhibiting Forensic Archaeologically Derived Holocaust Data Through Virtual Heritage Technologies: An Ethical Perspective'*, as well as provide a medium in which archaeologists and anthropologists can come together for interdisciplinary research to gain further insights into the Holocaust.

In addition to information from documents and other sources, Holocaust material culture can offer a sense of what it was like during the Holocaust through people's experiences and the significance specific objects may hold, which Baines (2016), explores in their article New perspectives: The Legacy Collection and the Holocaust. The similarities that they have with objects that we also own but often overlook, such as everyday objects that are seen as a standard part of life, but during the Holocaust, for those affected, meant life or death. The emotional attachments people form with objects of this nature are examined by Sonnleitner (2024), who explored these specific attachments, in their article, *Memory and materiality: The becoming of biographic objects after war and forced displacement*.

Furthermore, Sonnleitner's article explored how these objects may always have had emotional significance to their owners, and how attachment and personal significance have evolved and been shaped by personal experiences, influencing later life. Similarly, the article '*Embroided Memories The Artwork of Miri Abramsohn, A Second-Generation Holocaust Survivor'* by Marnin-Distelfeld (2021) explores a similar context; however, whereas Sonnleitner focused on survivors and their spouses, Marnin-Distelfeld focuses on a second-generation survivor. This demonstrates that objects of this nature influence not only the original owners but also their descendants. It is an unfortunate fact that the number of Holocaust survivors still alive (as of writing) is decreasing, and Marnin-Distelfeld highlights

the fact that these objects also hold a similar emotional attachment for survivors' descendants, albeit likely from a different perspective than the original owner. It is these testimonies from First, second and even third-generation survivors that hold the potential for a deeper understanding of the Holocaust to be attained.

This, in turn, will further support educational materials that can be produced, as it can provide greater context and a sense of feeling for the viewer, whether physically or digitally, as we live in a society that can be argued to centre on material culture. This is shown in Fax (2023) article for the SHoah Foundation, *Nearly 80 Years After the Holocaust, A Survivor Tells His Story*, which highlights that, in some cases, survivors are only just speaking out about their experiences, some 80 years after the events.

2.2 What is the 'Material Turn' in Holocaust Studies?

The reasons behind the sudden shift in research focus from Holocaust studies to that of material nature are due to the diminishing number of survivors still alive today (Nesfield, 2015) and because specialists with expertise in material culture have begun to work in this area such as Clever & Ruberg (2014) and Bennett & Joyce (2013). Due to the number of people left to tell the stories of the Holocaust and educate people decreasing, it is becoming more paramount to document and preserve the events that took place.

A material turn in research can be defined as studies that 'centre on giving more prominence to matter or materiality' (Clever & Ruberg, 2014). The term is used in this project to describe the shift in research focus from events and narratives related to the Holocaust to the materiality surrounding it as explained in Sturdy Colls & Ehrenreich (2021), '*Value in Context: Material Culture and Treblinka'*. This change in research focus is of great importance to Holocaust studies in general and is forming the foundation for many new Holocaust educational materials (JDCRP, 2022). It opens up opportunities for the skills, technology and techniques from multiple research fields and disciplines to be used in tandem, to seamlessly aid in the creation of informative user experiences that present material culture both physically and digitally, highlighted in 'Digital transformation:

A multidisciplinary reflection and research agenda' (Verhoef et al, 2021), alongside the information a user would require to understand its meaning and significance.

The information obtained from previous research relates to this thesis in numerous ways. First, concerning Holocaust material culture, numerous papers looked at objects relating to the Holocaust (Kidron, 2012; Shallcross, 2012 & Ehrenreich, Goldman, & Klinger, 2020), and have given insights into the type of objects that will be used as part of this project and which techniques will be the most suitable to use. Secondly, for the techniques to be used, there has been varying research into the effectiveness and quality of results across the available digital techniques, and on how best to use them. Finally, regarding interacting with participants and presenting project results, numerous papers, such as '*Ethical Conducts in Qualitative Research Methodology: Participant Observation and Interview Process'* by Kang & Hwang (2021) and '*Research and scholarly methods: semi-structured interviews' by* Adeoye-Olatunde & Olenik (2021), address how best to present data across various platforms. They highlight that due to the sensitive nature relating to the Holocaust, care must be taken when interacting with participants and presenting the findings from said interactions. This culminates in the need for a framework that institutions and researchers can build on to develop how Holocaust material culture and other cultural studies are presented to stakeholders, improving understanding and enhancing reach and sustainability.

2.3 Digital Holocaust Memory and the Presentation of Holocaust Material Culture.

Digital Holocaust memory is a growing digital repository of Holocaust memory, comprising material culture, heritage, and other archives made available to academic researchers and the public (Digital Holocaust Memory, 2020). The main goal of the Digital Holocaust Memory Project is to improve Holocaust education further and reduce Holocaust denial while simultaneously making Holocaust memory more widely accessible to the public. In addition, Karsteiner's 2014 paper, *Genocide memory, digital cultures, and the anesthetization of violence,* explores how digital Holocaust memory allows for previously uncatalogued material culture and memory to be documented and disseminated to the public. This includes objects that survivors and liberators kept in their possession since the end of the

Holocaust. This demonstrates the shift in research towards the material aspects of the Holocaust and forms the basis for research such as this thesis in exploring new, innovative methods for recording Holocaust memory and material culture.

Current research, including that undertaken by Victoria Walden in 2021 and her 2022 paper, *Understanding Holocaust memory and education in the digital age: before and after Covid-19*, which states, "There has been a surge in interest in the potential of digital media and technologies for Holocaust memory, education and research over the last decade"(Walden, 2022, page 2). This highlights that archaeological education, including Holocaust-related education, recognises the need to become more digital to keep pace with modern educational demands. This is because education is becoming more digitally orientated as digital media becomes more accessible to the public. This will allow the public to access the same resources as researchers with ease, help museums and other institutions reach a wider audience with the material they present, and make it more engaging for all age groups, not just at a research level. As a result of this research project, a foundation for a more widely accessible digital format will be created, from which further research can be undertaken to make Holocaust material culture more widely accessible to everyone. In addition, this project will allow for numerous previously untold stories from the Holocaust to be told so that Holocaust memory is maintained and made more relatable to those who will experience it as a part of Holocaust education.

To further support the use of digital technologies in the creation and presentation of Holocaust material culture, during the curation process for creating the digital Holocaust memory currently available and for the sources of material culture yet to be collected, a variety of digital techniques have been used. A major contributor is the technique of 3D reconstruction, as demonstrated by research conducted by the Bergen-Belsen Memorial and the SPECS research group and presented by the Wiener Holocaust Library, which created and presented a 3D reconstruction of the Bergen-Belsen concentration camp. The exhibit itself allows visitors to experience the camp in a unique way, combining virtual and augmented reality to take witness testimonies and create an educational tool that "maintains and anchors facts to collective memory" (Wiener Holocaust Library, 2021, para 5). This

demonstrates just one way these methods can be utilised and integrated into the presentation of material of this nature, lending itself to this research project as a starting point for what technologies can be utilised. Whilst also providing the insight into the lesser asked question of what they do not provide, which is what forms part of this thesis, in delving into the extra detail that can make a digital exhibition more impactful and emotive.

Holocaust material culture is presented to researchers and the public in a variety of media (Kansteiner, 2017; Sturdy Colls, 2015), including professional journals, social media, and outlets such as YouTube and online services (Makhortykh, 2019). As of writing, numerous institutions have made specific efforts to reach the public through digital projects to aid the development of physical and digital Holocaust exhibitions and to further public understanding of not just the Holocaust but also specific events within it. These include the likes of the USHMM's Artefacts Unpacked digital exhibition (2024), the Montreal Holocaust Museum Objects of Interest collection (N.D), the Ordinary Objects Extraordinary Journeys resource for schools created by the Holocaust Memorial Day Trust (2025), the work undertaken by the Jewish Digital Cultural Recovery Project (N.D) and Matter of Artefact series developed by the National Holocaust Centre and Museum (2020), amongst others. All these collections highlight objects of Holocaust material culture that belong to an individual and, in many instances, provide access to background information related to them or to wider collections of similar objects. All of these are important for highlighting methods of presenting such collections and for providing insights into how world-leading organisations are addressing the issue of presentation while maintaining a high standard of informative digital exhibitions. All of which have influenced this thesis and the decisions made in building a proof-of-concept platform, as they have demonstrated aspects that effectively enable resources to be interactive whilst also providing the desired information.

Similarly, numerous research papers have examined how museums and other educational facilities present this type of research, focusing on public perception and appropriate display methods. For example, the article, *How can games in museums enhance visitor experience?*, by Styx (2022), explores how using interactive ‘games’ in displays to make displays more engaging for younger people

and children. When it comes to Holocaust education, it needs to be determined how appropriate these types of displays are for engaging a younger audience. Research such as, *The Holocaust in Virtual Reality: Ethics and Possibilities*, by Rich & Dack (2022), has shown that virtual reality (VR) can help people virtually explore a Holocaust site, so it would be worth investigating whether these other educational tools are beneficial and to what extent they are appropriate.

One such institution is Yad Vashem, the World Holocaust Remembrance Centre, which has undertaken a major initiative to expand its digital collections and educational materials. As of 2023, they have nine digital collections available for public access, including online photograph and document archives, survivor testimonies, and, most notably, their artefact collection, which boasts around 27,000 images of objects stored in their physical collections (Yad Vashem, 2023). A great number of their collections have come from years of curation and recent efforts to collect material culture objects by asking survivors and their relatives to donate to the museum's collections (Yad Vashem, 2025). Each object in the digital collection is represented by a photograph, a biography of the original owner, and details of their experiences during the Holocaust, with some exhibits more comprehensive than others. In terms of what this thesis aims to achieve, the Yad Vashem collections demonstrate that a simple approach of images and text can be effective when collections containing large numbers of objects are being digitally catalogued.

Similarly, the USC Shoah Foundation (2025) has conducted extensive research to develop interactive online resources for Holocaust education. Likewise, the National Holocaust Centre in the UK has been developing its digital educational materials, specifically those for use in UK primary schools (typically ages 5-11 years), and a significant contributor to this is the Forever Project (The National Holocaust Centre & Museum, 2016) and the 'Ordinary Objects, Extraordinary Journeys' exhibit (OOEJ, N.D). While not all of these resources focus on material culture, they highlight the varied media that can be utilised to create interactive learning environments. This remains important for this doctoral thesis, as it informs the use of digital reconstruction techniques and other media to develop the proposed proof-of-concept platform, and highlights the importance of recording

and developing the use of interviews with survivors and their descendants within Holocaust educational resources.

It can be argued that it is much easier to publish an article in a newspaper or on social media, for example, with images and text explaining what it shows and why it is relevant, than to publish in an academic journal, which is discussed by Koprowski (2015), in their article, *How to get published in an academic journal*. However, what is key is emphasising the significance of the object in the wider context of the events of the Holocaust and the lasting impact it had on people's lives. Which is something that can be missed in larger exhibitions relating to the Holocaust. In curating a bespoke presentation of an object and its accompanying information, as in this thesis, it demonstrates not only the time taken to present the information but also the care given to ensuring a lasting memory for those who suffered in the Holocaust and the lasting impact it has had on their families and society.

For researchers in many fields, there is usually a steady supply of new publications being made available within all fields which are not always readily available to the public and for Holocaust material culture this is not necessarily the case because it is relatively recent within the last few decades that this field of research has become increasingly discussed such as in, *The Future of the Past: Digital Media in Holocaust Museums* (Brown & Waterhouse-Watson, 2015) and *The Ethics of Representation in Holocaust Museums* (Carden-Coyne, 2011). For academics, these can often serve as the basis for learning materials presented in school curricula, workshops, and other educational courses (Carrier, Fuchs & Messinger, 2015), as they keep the content relevant and engaging for participants. Holocaust material culture can be used as a learning aid, like publications, and, in many cases, can be a great asset for providing context and fostering engagement and understanding (Centre of Holocaust Education, 2021). In the media, material culture is also used to demonstrate the effects of an event. Using the Holocaust as an example, material culture can be used to demonstrate the conditions people had to endure and which types of objects survived that period in history (Stiles, 2016), among other aspects. The media can also be used to tell the stories surrounding specific objects. For example, Jethro (2017) discusses that if a

survivor wishes to tell their story, an object associated with it may help people relate to it, in addition to watching interviews and reading testimonies. In their article, *the Holocaust story tells how material things make a scaffold for people's memories.* Looking at these resources shows that modern media can be used in a variety of ways and break the mould of the traditional Holocaust exhibit or exhibition. This thesis seeks to combine these media types to deliver information about Holocaust material culture and the stories attached to it, which are not always presented.

Research accomplished by others, including Kerti, Sturdy Colls and Swetnam (2021); SPECS (2021) & Sturdy Colls (2015), has also focused on the ethical considerations that are required for research of this nature and on the ethical presentation of Holocaust material culture. In, *Visualising Evidence and Landscapes of Atrocities: An Ethical Perspective,* by Kerti, Sturdy Colls and Swetnam (2021), the authors assess the impact of using virtual heritage technologies on UK secondary school students, employees, and visitors at the United States Holocaust Museum. From this, they highlighted four key themes within their data: accountability, communication, education, and presentation. From these themes, they highlight that the use of virtual heritage technologies is an effective way to disseminate Holocaust data and to consider different forms of representation. This was built on the prior research by Sturdy Colls (2015) in her book, *Holocaust Archaeologies: Approaches and Future directions,* and the work undertaken by SPECS (2021) for digitally preserving Holocaust sites, which stand as prime examples of how to effectively deliver material of this nature online. This work on how to present Holocaust material culture, both effectively and ethically, will provide a valuable framework for this study moving forward, utilising the highlighted themes as a starting point for the presentation and delivery of information in case studies and the proof-of-concept platform developed.

Ultimately, the use of Holocaust material culture in education and the media is to highlight key aspects of the Holocaust, often to tell survivors' stories and ensure that for those who did not survive, their memory lives on (Hallam & Hockey, 2020). This itself raises the question of whether there is a need for uniformity in the way Holocaust objects are presented. This is because the interpretation and

association of background information are key to the authenticity of the objects being presented. People also have preferences for how they view things; sometimes, little explanation or direct observation of an object is needed, whereas others need to ‘see to believe’ to gauge the significance of something, even when, at first glance, it appears to be of little importance, shown in *Psychology: Seeing is believing* (Weber, 2013). This highlighted that when presenting Holocaust material culture, like that selected for this thesis, the presentation used may depend on the object itself and what information surrounding it is available, with some lending themselves to more in-depth presentation with multiple media types, whereas others could benefit from a minimalist approach.

In museums, Holocaust material culture can be displayed for people to view, and online videos can be posted of interviews and documentaries to show the effect of the Holocaust and tell stories to more people because it is more widely accessible. However, there is a potential issue: access to the physical displays and objects. As of October 2020, around 4.7 billion people accessed the internet per year (Statista, 2021). This is over half the world’s population, suggesting that making Holocaust material culture available digitally will help provide educational opportunities to a wider audience. Current research such as, *Holocaust archaeology: uncovering vital evidence to prove the deniers wrong* (Mitchell, 2020) and that by English Heritage (2007), is exploring ways to digitally reconstruct and distribute large collections of material culture online, allowing anyone, from researchers to the public, to access them. Considering the COVID-19 pandemic, it is clear that Holocaust collections and exhibitions require alternate viewing formats. The creation of digital collections and the use of curated case studies on the objects presented will enable professional and educational viewing of the media (Lomas & Hutcheson, 2012; Noehrer et al., 2021). This has a significant impact on this thesis, as institutions seek ways to develop digital content for their website visitors, highlighting the variety of methods in use. Developing a proof-of-concept platform and a framework that institutions can build on would be an invaluable asset for Holocaust studies moving forward.

Overall, the reception of Holocaust material culture in education and the media varies. *Death, Memory, and Material Culture* (Hallam & Hockey, 2020) and *Holocaust Education* (Schweber, 2011), explore how in education, it is invaluable learning material and is well-received by researchers seeking to understand it further and by academics teaching younger generations, as it provides context for the subject and supports the learning process. In the media, perceptions vary widely, as some argue that researchers should use these outlets to further educate the public about one of the most significant events in human history (IHRA, 2018). Others, however, will disagree, saying that it has its place and that, on some platforms, such as social media, it may be classified as inappropriate content (Pfanzelter, 2015; Commane & Potton, 2019). While these are valid arguments, they will aid in providing a basis for a digital platform that can be widely used to present digital reconstructions of Holocaust material culture.

This also shows the potential to provide educational institutions with a wide variety of resources for developing educational materials, including interactive models and witness testimonies (presented in formats such as interviews and written accounts), among other materials. The potential of interactive resources that can be made available is endless and will allow prospective users to have a more immersive experience with objects and artefacts than they would otherwise have through traditional means, such as visiting a museum. As Lemonnier (2016) explores in *Mundane Objects: Materiality and Non-Verbal Communication*, this in turn will allow people to achieve a greater understanding of why Holocaust material culture is significant both in the present day and during the period of the Holocaust. Furthermore, as mentioned above, this new insight will likely come from demonstrating the relationship between objects and testimonies of their owners' lives and experiences. This will allow the viewer to place themselves in the position of the object's owner and to relate their experience to their own lives, identifying similarities they may share. All of this will aid in building people's understanding of the horrors of the Holocaust and in appreciating the work already completed and being undertaken to ensure the memory of those who suffered is not forgotten.

2.4 Digital Reconstruction Methods Available

This doctoral research evaluates and applies digital reconstruction techniques best suited to creating digital Holocaust material culture. Karsteiner's (2017) chapter *Transnational Holocaust Memory, Digital Culture, and the End of Reception Studies*. In: Anderson, T S & Törnquist-Plewa, B (eds) The Twentieth Century in European Memory: Transcultural Mediation and Reception, explores the aspects considered in this field, including model quality, realism, and the purpose for which it will be used. This, in itself, influences this research by examining how to best present digital Holocaust memory and material culture. It can be argued that this is necessary because no single form of presentation is the answer. Because everyone learns differently, it may be beneficial to use multiple media to achieve a wider and more impactful impact. Ultimately, to understand the effects of having digital Holocaust memory and how it can further research within the field and how it will benefit Holocaust education and preservation. The primary aspect of controversy identified in the research is the reception of such research and digital models across various media, as demonstrated by De Bruyn (2010), Pfanzelter (2015) and Menyhért (2017). This can vary from social media platforms to professional platforms used by educational institutions. Due to the nature of the research being around objects from the Holocaust, care must be taken into how the product of research is presented, as often there can be a negative public reaction, to an extent, if they don’t agree with the content presented.

Similarly, this prompts further discussion of the intellectual property (IP) of the digital materials created and presented. It is established that once something is on the internet, it is accessible by all and thus potentially prone to misuse. This is explored by Marek (2022) in their article, *Navigating intellectual property in the landscape of digital culture heritage sites*, who discusses the challenges that are brought about when navigating IP in digital cultural heritage, specifically websites and digital exhibitions, similar to the focus of this thesis, including the themes of ownership, presentation and use. The misuse of IP is also discussed by Omer Bartov's (2024) paper on how Holocaust memory is misused. They discuss how, in modern times, it is quite common that Holocaust memory is weaponised in antisemitic propaganda. As a result, the methods and ethical considerations in this thesis were tailored to ensure the ethical and appropriate educational use of all materials produced in this project and in future applications by others.

Digital innovation in archaeology enables the application of methods to collections of Holocaust material culture, with the aim of enhancing education on the subject through these media formats, demonstrated through the articles written by Daly & Evans (2004), Pearce (2020) and Pearce & Chapman (2017). Both methods of viewing material culture have strengths, as De et al (2012) explain in their article, *An Internet of Things platform for real-world and digital objects*: with physical objects, people can see them as they are and, in some cases, have uses demonstrated, and with digital materials, they can be made widely available. However, as Auslander et al (2009) explain in the article, *Historians and the Study of Material Culture,* the main limitation of physical objects is that many will perish over time. However, digital reconstructions remove this issue to an extent, as they will always be available if they are in a usable format. On the other hand, this is also a limitation of digital material culture: over time and as technology advances, it may need to be recreated in a current digital format, which may not be possible if the object is no longer available (Chakravorty, 2019). From considering these arguments and applications, it becomes clear that even today, there is no clear 'standard' method to do this. Thus, this research aims to fill the knowledge gap for a 'standard method' of presentation, in a format that can be expanded and evolved as technologies advance and additional information becomes available. This is achievable by taking the ideas of Daly & Evans (2004); Pearce (2020); Pearce & Chapman (2017) & De et al (2012), and developing a platform for presentation that highlights the object in question and enhances it with various media types to create the most impactful exhibition of information, whilst at the same time considering Auslander et al (2019), and being designed in a way that can be added to and tailored to the needs of the presentation, to ensure that content remains up to date and relevant.

Non-destructive archaeological techniques are investigative methods that do not damage or destroy the archaeological subject, as discussed in *The use of NDT in Archaeological Analysis* (Pilkington, 2022). They are particularly useful when handling fragile or extremely old artefacts. Common non-destructive techniques include methods for the digital reconstruction of objects (Moropoulou et al., 2013), and the resulting products will provide immense value to research because, if stored appropriately, they will always be accessible (Sholts, 2016). Common methods, including photogrammetry and laser scanning, can be defined as the

process of recreating an object in a digital format, as demonstrated by Spallone (2015) in their article, *Digital Reconstruction of Demolished Architectural Masterpieces, 3D modelling, and Animation: The case study of Turin Horse Racing by Mollino*. This can take various forms, including data capture methods such as digital 3D models, images, and videos, depending on the nature of the subject being recorded.

For example, photogrammetry uses a series of images to stitch them together digitally (Formlabs, 2023) and create a digital representation. This can be applied to small objects and subjects up to the size of whole areas of land, should appropriate equipment be available, such as drones.

Scholars and practitioners have also argued that Photogrammetry is the most used digital technique due to it being the most versatile, viable, accessible, cost-effective, easily understandable and least time-consuming (Historic England, 2017), in that it requires the least amount of specialist equipment (digital camera and stitching software), in addition to the accessibility of free software and smartphone apps (that were developed during the course of this research), which themselves support the notion of citizen science and has the potential to further increase the data set produced. It also forms the basis for use with more advanced techniques such as laser scanning and structured light scanning, which El-Din Fawzy (2019), compares and discusses in their article, *3D laser scanning and close-range photogrammetry for buildings documentation: a hybrid technique towards better accuracy*. There have been numerous research projects using this technique, including but not limited to Grama et al (2022) who explored the use of digital technologies for preserving Jewish Cultural Heritage in Romania; McClymont et al (2024) who used digital reconstruction at various stages of their research specifically using Lidar (a form of aerial photogrammetry) to create a digital reconstruction of a Holocaust site and Kraft et al (2024) who evaluated the digital presentation of Holocaust presented by musea online, that was created as a result of the COVID-19 pandemic. These projects examined objects of varying nature, but they suggest that highly detailed objects can lose detail when digitally reconstructed. This is a risk that, as technology evolves, is mitigated as the quality of digital cameras increases, leading to a corresponding improvement in photo quality for photogrammetry to create accurate models for presentation. As it is such a widely used technique, it has also served as a baseline for the digital

reconstruction aspects of this thesis, as it has been shown to provide high-quality results and can be argued to be a technique that should be in the skill set of anyone curating exhibits of the nature discussed throughout this thesis.

In recent years, these techniques have become widely used in archaeology to document archaeological sites, artefacts, and material culture (Dawn & Biswas, 2019). For instance, Abate et al. (2011) examined the process from creating a 3D digital model to uploading it to an online domain without losing any detail or accuracy. Despite the material culture used in the project by Abate et al. being vastly different from the objects that will be used in this project in terms of size and detail, since they were structures such as statues and buildings, the overall process will be similar and therefore will help formulate a plan for how to undertake the practical data collection and processing aspects required.

The scope of surveys and scans within projects utilising these digital techniques (Photogrammetry, Structured-Light Scanning & 3D-Laser Scanning) is vast, ranging from large open outdoor sites utilising drones (Campana, 2017), structural remains (Abate et al, 2011), marine archaeology (Repola et al, 2018) and even small objects of material culture (Molloy & Milić, 2018; Knibbe et al, 2014). There are many reasons for this research, ranging from cultural preservation to site documentation, to gain a more detailed understanding of events and various cultures and societies, while also ensuring that the memory they provide is not lost to time or to the use of more destructive techniques. Another example is furthering research opportunities and conducting in-depth analyses of objects. It can be argued that the use of digital reconstruction aids in furthering archaeological research in numerous ways. Studies of these techniques have advanced the discipline of producing digital reconstructions of objects, with each offering benefits relative to the others. This has posed the theme of this thesis: 'Is the standard method to use a combination of those that are available?' This formed part of the methodology for scanning objects outlined in Chapter 3.

Overall, across the field of digital archaeology, researchers generally agree that non-destructive digital techniques for reconstructing objects are beneficial to research (Griffin, 2019; Worthington Galleries, 2019; Tsiafaki & Michailidou, 2015).

The techniques available, for the most part, are becoming faster and more efficient, but they require more time to process the data than the scanning process itself. This allows more objects to be documented than manual methods. They also mean that researchers will always have access to the objects, even if the real objects deteriorate. In addition, researchers agree that digital models enable more detailed analysis, as they allow viewing objects in ways previously not possible, such as at high zoom levels to the surface and detecting striations not visible to the human eye, which was explored by Barszcz et al. (2021), in their article, *Comparative Analysis of Digital Models of Objects of Cultural Heritage Obtained by the "3D SLS" and "SfM" Methods*. Additionally, the efficiency of these methods allows larger collections of objects, such as those typically seen in larger institutions, to be digitally documented significantly more quickly than previous research shows. This, at a time when institutions and researchers are seeking to adopt these methods, is an invaluable asset in this field.

Furthermore, there has been additional research, such as that by Pires, Rubio, and Arana (2015), on how this application of 3D Reconstruction techniques can be further developed and used. Their research determined that the equipment they used (RTI-viewer) was effective for the task at hand, and they suggested that, in archaeology and other fields, it could greatly benefit research. This forms part of the basis for this project, which will test and compare other techniques for similar tasks.

In comparison, techniques such as laser scanning and structured light scanning use different frequencies of light (Tong, 2019), allowing accurate measurements of an object's surface morphology, detection of minute surface changes, and digital plotting. An additional advantage of Structured light scanning is that, because digital cameras are used to capture the images for digital reconstruction, colour and texture can be added to the resulting digital model. This is not easily applied to a model created by a laser scanner, as demonstrated by Polo, Felicísimo & Durán-Domínguez (2022), who investigated creating 3D models with both accurate geometry and texture. They determined that the technique required typically depends on the scan requirements, but often a combination of techniques provides the best results, with structured light scanning balancing the investigated factors.

Laser scanners can add surface detail to digital models by measuring the time and distance it takes for the emitted light to reach the object and return to a sensor (SurvTech Solutions, 2020). This is demonstrated by Lorenzo, Roberta & Silvia (2019), who have worked on documenting complete inscribed objects using this technique and comparing the results to those obtained using photogrammetry. Their results showed that one limitation of this method is that any colour or texture of the subject is lost.

The various techniques available each have their own successes and limitations, depending on the project they are used in; these will be detailed in Chapter 3 and evaluated in Chapter 5. Reuver, Sørensen & Basole (2018) examine the key considerations researchers should consider before undertaking work using visualisation techniques. They take care to examine the challenges that recent years' digital platform innovation poses, which could limit which visualisation techniques can be used to present information across different digital platforms.

Additionally, these techniques are also beneficial to other research fields, such as Forensic Science, where such techniques have been applied to crime scenes and pieces of evidence for use in the courtroom (Santamaría et al, 2018), where 3D scanning was used to recreate key evidence for juries to view as an investigator did when responding. From this, it was established that it allowed the jury to gain a deeper understanding of the evidence, much as this project aims to do with Holocaust material culture. Furthermore, the principles and techniques used in this project for Holocaust material culture can be applied to objects from any historical period, nature, or size, provided that those undertaking the research have the equipment to facilitate data collection and processing. Additionally, Vilbrandt et al. (2004) demonstrate in *Cultural Heritage Preservation Using Constructive Shape Modeling*, that a more technical discipline, such as engineering, pioneered the use of advanced modelling techniques to understand how things worked, explore how objects were created, and determine their use when not previously known. In addition, it also lends itself to aid in reverse engineering, such as taking a digital model and 3D printing new parts for various machinery (EVO3D, 2023).

Finally, with regard to using the techniques for documenting Holocaust material culture, as already mentioned, it is becoming more necessary to do so. It can be said that this is not due to a lack of objects to display in museums and other educational forums, but rather that many of these objects have significant personal value to survivors, liberators, and their families. The amount and reasons for value can vary from being a source of memory of events or to memorialise a family member to various other reasons (Carr, 2018), but a factor in why museums do not already have these objects is that families do not want to part with them. However, they may be willing to have the objects they own scanned to help preserve Holocaust material culture for educational purposes, which this research project aims to do.

2.5 Curatorship

Curatorship forms a significant element of this thesis. When considering that the main aim is to gain access to uncatalogued privately owned collections of Holocaust material culture, it is important to understand the process of curating an exhibition and how leading research institutions undertake the process. From this, it will be possible to discuss the use of digital techniques to facilitate the overall curation of collections of this nature.

Many scholarly studies and media reports have discussed the ethics of representation in Holocaust exhibitions, including what information to include, how best to represent the various groups that suffered, and the medium used, such as physical or digital formats. In the first instance, Bernard-Donals & Glejzer (2012) discuss the ethical and pedagogical stakes of representing the Holocaust across various media. They have explored methods for displaying Holocaust material culture and for presenting it and its accompanying information in engaging ways. They highlight how prominent Holocaust museums such as Yad Vashem and the United States Holocaust Memorial Museum (USHMM) have addressed these issues and use these specific examples to build the ethics surrounding Holocaust representation, specifically the importance of memory and that representations put forward must be understood as such, bringing balance between the object, the horrors that potentially surround it and the transformation of the events into knowledge. These examples are reiterated in the work undertaken by Dreyfuss &

Langton (2011), Hanson-Glucklich (2014), Jaeger (2020), Linenthal, (2001) and Sadaro (2018), all of whom provide an academic analysis of representation in an educational format which aids in forming the basis for this research project, in that it looks to build on these established examples and guide the development of a platform which successfully handles the intricate nature of the Holocaust.

Dreyfuss & Langton (eds.) (2011) discuss key themes related to the Holocaust, such as gender, cinematic representation, and museum ethics of representation, which are sometimes overlooked or not considered by other researchers and the public. Where it can be argued that the ethical theme of representation forms a large proportion of research in this field, this supports the rationale for this research project in developing ethical approaches to presenting Holocaust material culture in digital formats. Dreyfuss & Langton also discuss the USHMM and how it tackles representation by focusing on a narrative and using case-study examples in its exhibits to highlight this narrative and engage viewers. This highlights a significant method that leading researchers use to present innovative theories and approaches and to create interactive and relatable content for viewers. By tailoring exhibits, they attract interest and develop an understanding of a given event. This methodology forms part of the framework that this research aims to use as the foundation for the exhibits of the proposed proof-of-concept platform. A point that stands out from the findings is that the USHMM aim to offer "a universal message: the Holocaust as a 'supreme example' of inhumanity and a warning against evil" (Carden-Coyne, 2011, page 170), which can be argued to be a fundamental aspect that is required of all representations of the Holocaust and how this should be a central theme to this research project and the representation of survivor's stories and experiences.

In terms of physical exhibitions, Hansen-Glucklich (2014) discusses the difficulties museum curators face in commemorating and documenting horror, and how they do so without using clichéd or dehumanising portrayals of victims. They focus on three specific case studies, including Yad Vashem and the USHMM, as in Bernard-Donals & Glejzer (2012) and Dreyfuss & Langton (2011), but also examine the German Jewish Museum in Berlin. They compare how each of these museums designs and presents their exhibits in line with a specific narrative to benefit the

visitor experience. This supports this research project because it highlights that a storied exhibit can often be more emotive and provide impactful experiences that stay with visitors. They highlight the focus on individual survivor stories in contrast to presenting the 'well-known' events from the Holocaust, although these are still of key importance. This again contributes to the design of this research project by providing an interpretation of how to ensure that those who suffered are represented appropriately and ethically.

This is further corroborated by Jaeger (2020), who goes a step further and analyses twelve prominent permanent exhibitions in Europe and North America to reflect on and shape cultural memory. This included a focus on the cognitive, ethical, and emotional potential and effects. In addition, Sodaro (2018) examined five memorial museums that emerged around the world and how they addressed the atrocities. These include the USHMM, the House of Terror (Budapest), the Kigali Genocide Memorial Centre (Rwanda), the Museum of Memory and Human Rights (Santiago, Chile) and the National September 11th Memorial Museum (New York, US).

Throughout each case study Sodaro discusses the emergence of each museum; tackling the events that led to their creation and the significance attributed to each respectively in addition to the intended use and representation of the exhibits This is done by a careful curation process of materials and then the ethical representation within the museum, to not only respect those who did and suffered but also the cultures and societies that were and have been affected as a result. This has inspired this research project by highlighting how each object in a collection can be made to stand out and put its uniqueness in the spotlight, and how this can influence what knowledge can be drawn from the exhibit. This will influence the proof-of-concept platform, specifically how object presentation is achieved.

Despite some of the case studies highlighted by Sodaro being unrelated to Holocaust material culture, they provide evidence in support of this research in that they provide information on how material culture from other atrocities is presented and how this can be applied to Holocaust material culture. They provide

examples of how to present atrocities in contemporary society. This, in turn, will help guide the presentation of the data collected during this research project in ways that would not typically be applied to material culture related to the Holocaust. Two key lessons to take from this research are:

1. that there is no definitive limit on the ethical considerations that need to take place within research of this nature and

2. that a respectful and informative method of representation should be at the forefront of any exhibition of this nature.

Linenthal's book, *Preserving Memory: The Struggle to Create America's Holocaust Museum* (2001) discusses the long process involved in designing and creating the USHMM. Specifically, it examines the challenges of determining what should be put on exhibit and how to present each object appropriately. This is a key issue this research project faced, and Linenthal provides a valuable resource on the considerations required for the selection process and the subsequent presentation of Holocaust material culture. This work by Linenthal provides a strong foundation for selecting which objects are suitable for this project and determining their relevance and impact on viewers. In addition, a detailed account of how the USHMM was designed will inform the proof-of-concept platform's design, enabling it to build on that framework and provide another perspective for future researchers.

Linenthal's research also aided in shaping this research project, regarding the nature of the objects that were encountered. It will impact the decision-making process for which scanning techniques are appropriate for each object type and how to adapt to unknown variables such as size, shape, and physical state. It also highlights the various forms of data representation used in this research, such as whether a static photograph would suffice for an object or a digital 3D model would be more appropriate. Analysis of Linenthal's research has also raised questions for this project, such as the level or amount of detail needed for each exhibit/object and whether one scanning technique is more valuable than another, both integral to the decision-making process.

Another key aspect of Linenthal's book, *Preserving Memory: The Struggle to Create America's Holocaust Museum,* is the highlighting of what information the academics involved sought to convey at the USHMM and how they curated their displays. Again, this is an invaluable resource for this research project when designing a digital museum for private collections of Holocaust material culture. This book also highlights how best to avoid using a shock-and-awe approach to difficult histories, which again benefits this research project, which is tackling a delicate period in modern history. This is to be achieved by effectively presenting the facts, using first-hand accounts. Using first-hand accounts, events are not exaggerated but presented in as raw a form as possible. Additionally, using resources like this is more likely to encourage interaction because the viewer is not 'put off' by a historian giving an account; they are engaging with someone's story, which will catch their attention.

Linenthal's book, *Preserving Memory: The Struggle to Create America's Holocaust Museum*, in and of itself, highlights how exhibits are ever-changing: static exhibits are gradually becoming more interactive and, at present, have an ever-increasing digital aspect to their presentation. All museums will need to adapt to advances in presentation and representation technologies, which raises ethical questions about these aspects that will be addressed in this research.

Fugo, Presner & Karsteiner's book, *Probing the Ethics of Holocaust Culture* (2016) and Marstine (2012) delve more into the ethics surrounding the various aspects of museums and how different institutions and researchers have developed standards of practice for curating, exhibiting knowledge, and developing educational material. Marstine (2012) presents twenty-seven chapters by a multidisciplinary group of academics that address the ethical considerations required across all aspects of a museum. Each chapter breaks down various aspects, including how to apply practical ethics to the representation of data, from data collection to exhibition, ensuring that the exhibits are appropriate for the target audience (researchers and the public alike) and explaining how a focused audience can be more beneficial than a broad one. By targeting a specific group, it allows different resource types to be used that they are familiar with and more likely to engage with. The level of censorship warranted depends on the nature of

the research. In this, they outline that some themes may require more censorship, but this will also depend on the target audience, which ties in with the previous points they have made about appropriate exhibiting.

Both Fugo, Presner & Karsteiner (2016) and Marstine (2012) address the changing nature of ethics in museums depending on the museum's nature and how to adapt accordingly. They also address the social responsibility, transparency and heritage guardianship required of museums of any nature. Specifically, Marstine highlights in her preface on page xxiii that “Museum ethics is more than the personal and professional ethics of individuals,” which stands out for this doctoral research project as it reminds us that, in addition to representing the individual participants, the outcome of this research can be applied to all events relating to those who suffered the Holocaust. Therefore, it is paramount that the ethical guidelines provided in this source and others be applied when curating the selection of Holocaust material culture to ensure all these issues are addressed.

Whereas Fugo, Presner & Karsteiner's, *Probing the Ethics of Holocaust Culture* (2016) outline how the Holocaust has been depicted across various media forms, which for many people is the main form of exposure they get to the subject and how, at present, the decreasing number of eyewitnesses. The rise of comparative genocide studies has brought into question the Holocaust’s place in scholarly discourse and Western society. This provides evidence that emphasises the necessity of this research project in ensuring that the events and survivors of the Holocaust are heard and represented. It also aims to tackle the growing prevalence of Holocaust denial and the lack of Holocaust knowledge in mainstream modern society, which this research will achieve by creating an interactive digital proof-of-concept platform accessible to the public and academics, whilst maintaining an ethically sound approach to presenting all information.

The research undertaken by Fugo, Presner & Karsteiner (2016) examines how Holocaust culture has gradually become institutionalised, globalised, and contested in various ways. This is done by presenting contrasting viewpoints on various aspects of the ethics and representation of Holocaust cultures, such as

how to present information and research appropriately and the technologies and methods used to do so. This, in turn, affects this research project by highlighting ethical considerations to be addressed at each stage of research, including which technologies to use and how to present the data obtained in the final output of the project. In addition, they bring into question “the if and why the Holocaust should remain the ultimate test case for ethics.” (Fugo, Presner & Karsteiner, 2016, p2). This itself aids this research in that it adds support to this argument so that Holocaust material culture can be curated in a way to not only be an effective, ethical representation of events but to emphasise that these events should never be repeated and that the results of this research will demonstrate why it is necessary to keep the Holocaust at the forefront of mainstream culture.

2.6 Survivor and Descendants Testimonies - How Can They Shape the Future of Holocaust Education?

This thesis will include interviews with the owners of the objects presented from private, uncatalogued collections; these will include Holocaust survivors, their close family members, such as spouses and their descendants (i.e., children and grandchildren), regarding the objects they present. The details of how these interviews will be conducted are detailed in Chapter 3.

Interviews with Holocaust survivors are widely used when disseminating information about the Holocaust, as detailed by Hogervorst (2019), who explored how the use of online access can influence the contextualisation of Holocaust testimonies. A key aspect she highlights is the growing number of museums that incorporate video testimonies into both their online and in-person exhibitions. By exploring how interviews influenced the context of cultural memory, she found that collections, users, and technology work together. This can be viewed from two perspectives:

1. It allows for interaction with the experiences and narrative in new ways and

2. The use of interviews and collections together can confirm existing views on the experiences and narratives. This ties into one of the project's aims: to design a framework for digital exhibits to follow.

Hogervorst has highlighted the benefits of using interviews in presenting Holocaust cultural memory, and by applying this theory to material culture objects, the viewer will undoubtedly gain a deeper understanding of their significance. This theory is explored through the object biographies developed for this thesis and detailed in Chapter 5. This theory has also influenced this research, which aims to create a more impactful digital exhibit by using personal stories from the owner, as told in the interviews, which add an extra level of understanding that you can only obtain from speaking with or listening to someone.

This theory is also further supported when interviews have also previously been used as a research tool in understanding the effects of the Holocaust on different groups of people. For example, Greenfield, Reupert & Jacobs (2022) examine the lived experiences of grandchildren of Holocaust survivors; Duchin & Wiseman (2019) and Farber, Smith & Eagle (2021) explore the experiences of child survivors of the Holocaust from various perspectives. In all instances, the researchers used qualitative methods in the interviews they collected, which were similarly utilised in Chapter 5.

Greenfield, Reupert & Jacobs (2022) used qualitative analysis to identify six main themes across the interviews conducted with the third generation of Holocaust survivors' families: knowledge of the past, communication methods regarding the Holocaust, kinship with other descendants, emotional reactions, meaning of the Holocaust and the impact on present life. They concluded that these six themes highlight and demonstrate how trauma can be transmitted across generations. The paper goes on to discuss clinical and research guidelines that future research should consider, including how to deal with the issue of trauma faced during the interviews themselves. Though it should be said, this paper simply highlights the need for further research on this matter, with the thought that survivors and their descendants may find interviews difficult, cathartic or potentially unsettling, depending on the potential for primary and intergenerational trauma and the nature of the conversation that is to take place, for example, wartime and post-war life experiences. All aspects considered throughout this thesis are documented in both the ethical considerations and the thematic analysis undertaken.

Comparatively, Duchin & Wiseman (2019) and Farber, Smith & Eagle (2021) also use interviews with survivors who were children during the Holocaust to delve into various aspects and themes. Again, the use of qualitative analysis methods yielded the themes that the papers then discuss. They find results similar to those of Greenfield, Reupert & Jacobs, whilst highlighting the significant difference between writing down versions of events and orally dictating them. The interviews enable a deeper connection and understanding, not always achieved through reading, which is a fundamental part of the proof-of-concept platform proposed in this research project. The use of interviews, combined with other media such as digital objects, is a unique approach that allows viewers to observe the object while hearing its story, something that, moving forward in the field of Holocaust material culture research, will prove invaluable for the preservation of memory.

Finally, Bonnesoeur, F, Wilson, H & Zühlke, C (2023) discuss a different approach to how testimonies and survivors' stories can be presented, specifically in Dr Hannah Wilson's chapter '2.3: Fragmented Families and Material Memory: The Striped Trousers of Juda van der Velde and an Excavated Nametag from Sobibór Death Camp'. Within this chapter, Wilson (2023) discusses a microhistorical approach in which a more personal presentation can be applied to a testimony. Her research outlines five key themes (detailed in the methodology in chapter 3), which can be used to develop biographies rather than stories to allow for survivors and their descendants to not only provide testimony but to develop them into deeper personal stories that can delve deeper into their family lives, providing a deeper understanding to the viewer. This will form a significant part of this doctoral research, and Chapter 5 will explore how this concept has been adapted to the object biographies generated as part of this project to ensure informative output.

2.7 Closing Remarks.

When evaluating the literature currently available, it can be argued that in recent years there has been a plethora of work undertaken in the implication of digital techniques for the documentation of material culture as part of the 'material turn' in Holocaust studies and into the numerous ethical considerations that are required for research, development, and presentation of such materials/resources. It is from

considering all these elements that the next logical step in the process is to effectively bring these various aspects together. By drawing on the past research outlined throughout this chapter, this thesis will not only evaluate available techniques but also develop the 'traditional' presentation methods into a foundation that not only Holocaust researchers can use, but also that can be applied across multiple research fields. It will not only highlight objects of significance from the Holocaust, but more importantly, it will provide survivors and their relatives a voice and input into their legacy and ultimately influence and further Holocaust education for the better.

Due to Holocaust education being an ever-developing field of research, a significant area of this field revolves around Holocaust material culture and the use of digital techniques to further understand it (Noroozi et al, 2011). This project will focus on uncatalogued, privately owned collections that are typically inaccessible to both researchers and the public. These collections are primarily owned by survivors, liberators of the Holocaust and their relatives, in addition to private collectors. They provide a basis for telling stories that would otherwise go unheard and present unique Holocaust objects that would not necessarily be accessible through traditional means, such as physical museums and exhibitions. The number of these uncatalogued collections is vast, and this project aims to further develop the presentation of such materials. Once data on these collections has been acquired, it will become an inventory of digital reconstructions of objects, interviews, witness testimony, and other forms of material culture, granting researchers across multiple disciplines and the wider public unparalleled access to unique insights into arguably one of the most significant periods in modern history.

Chapter 3: Methodology

3.1 Introduction

Building upon the literature review in the previous chapter, this research addresses an identified gap in how private collections of material culture, can be simultaneously presented to the public whilst ensuring that their current owners of them do not have to part with them t It also complements existing Holocaust research and education because the objects used in this research – which are derived from individuals with a connection to, or from the archives of, the Lake District Holocaust Project (LDHP) – have never been catalogued or had their story told. This will be achieved through the combined use of various non-destructive digital reconstruction techniques to produce high-quality digital reconstructions of the objects, and through their co-presentation with contextual information on an innovative digital platform.

The LDHP was specifically chosen for this research project as the primary case study from which all the Holocaust material culture and objects are related. The LDHP and the story of the Windermere Children brought together all the object biographies generated, serving as an example of uncatalogued collections. Through the LDHP, it also became possible to contact survivors' families and access additional unique, private collections. All participants were connected to the LDHP and the Windermere Children through their family members who survived the Holocaust and came to the UK. The Centre of Archaeology (formerly at the University of Staffordshire and now at the University of Huddersfield) and its strong collaboration with the LDHP and the various periods of excavation in the Lake District at the Calgarth Estate in Windermere, where the child refugees lived, was another key driver behind this research and facilitated many of the encounters with survivors presented in this study. This included, for example, a reunion event in May 2022 for the Windermere Children. Specific interviews were then set up so that object owners could tell their stories about their objects and the person to whom they related.

Digital reconstruction techniques such as photogrammetry, structured light scanning, and 3D laser scanning were used to collect object data and create the

digital models of the objects each participant possessed and wished to provide for this research. Figure 3.1 shows the office used in Windermere at the LDHP, along with the equipment set up for Structured light scanning and Photogrammetry.

Figure 3.1 – LDHP office containing (left to right) the Scan-in-a-Box FX set up in front of the window at the rear and Photogrammetry set up (tripod, camera, and LED lights), desk area (Copyright: Alex Haycock).

The development of the object biographies followed scanning and interviews with the owners of Holocaust material culture being documented to gather the personal insights and stories that this project aims to curate and present. The object biographies were then finalised using the best elements of theories from published testimonies and secondary literature to create a unique story, as presented in Chapter 5. Finally, bringing the digital reconstructions of the objects and their associated object biographies together resulted in the proof-of-concept platform described in Chapter 6, by comparing and learning from other online collections for a bespoke presentation, that will allow researchers, academics of all ages and the public to fully interact with the resources and experience the emotion and personal feelings attached to them and that of the owners of the objects.

This research supports the archiving of material culture in general and provides a framework and proposed foundation for a presentation that outlines how to interact with private collections and fully document them to enable preservation and use in education. These private collections could form part of an ever-evolving digital collection due to their uniqueness, which would otherwise remain unseen and unexplored. The concept is that, as private collections are encountered, stories about Holocaust survivors and digital models are created, and the catalogue grows in real time, adding new object biographies from anywhere in the world.

3.2 Ethical Considerations

In the early stages of this doctoral research, it was identified that various aspects of the project would require ethical approval. Specifically identified for this was the interaction with survivors and their families for the digital reconstruction of their objects and any subsequent interviews. As such, all aspects of this doctoral research's methodology were undertaken in line with the Ethics procedures set out by the University of Staffordshire [Appendix 1 details a copy of the ethics form used for this research]. The University of Staffordshire Proportionate Review Form and process was used because it was expected that only minimal ethical risk would be raised. Whilst the research topic was sensitive in that it relates to the Holocaust, there would be minimal disruption or intrusion to others, and the participants were not considered vulnerable in the context of the research. Ethical considerations were subject to continual review throughout the research project.

An early part of the project identified the need to consider future ethical issues surrounding the use of non-destructive digital methods for the visualisation, analysis, and dissemination of Holocaust material culture. This was established through desk-based research and feedback once the platform outlined in this project has been created. The aim was to evaluate whether these techniques were an appropriate way to digitally preserve Holocaust material culture and heritage.

During the research, COVID-19 restrictions were fully considered, and all guidelines and legislation regarding face-to-face contact with those involved were followed, and appropriate risk assessments were conducted.

The use and storage of data were key ethical considerations in the Proportionate Review Form, ensuring compliance with relevant legislation and University of Staffordshire policies.

3.3 Objects Chosen

Sixty-three objects were examined during this research. All of which were subject to the three chosen techniques for digital reconstruction used within this thesis. All objects were either accessed during archaeological fieldwork undertaken at Calgarth Estate, accessing the Lake District Holocaust project collection or from being presented as part of this doctoral research project at the Windermere Children reunion in 2023. Of these, the five that provided the most significant and interesting insights into the Windermere Children's story were selected. The five objects were:

1. A Passover Cup
2. A locket and family photographs
3. A wedding ring
4. Thread wheels
5. A Tefillin

Digital reconstructions were created for each of these five objects using Photogrammetry, Structured-light scanning, and 3D laser scanning. Arrangements were made directly with the participants to bring their Holocaust-related objects of material culture to an agreed location and, where possible, to be physically present for the digital reconstruction process so they could see what was involved. This was achieved in person with three of the five participants (one of whom witnessed the process via video call because they currently live in the USA). All participants were happy for their object to be scanned, provided it was returned in the same physical condition and undamaged.

The remaining objects from the overall sample have been used to demonstrate the quality of the models generated by using the chosen digital reconstruction methods, and a further sample of these reconstructions has been displayed on the proof-of-concept platform developed.

3.4 Participant Interviews

Whilst there are different interview techniques documented, Schaeffer *et al.* (2020) outline the use of probing questions and offering the interviewee reassurance. The approach taken was to keep questions open to encourage more of a conversation from the participant, rather than a direct question-and-answer.

That said, a set of guide questions (as set out in Appendix 2) was available for use in the interviews and varied depending on the participant's role (survivor, liberator, or relative). The interviews aimed to obtain as much information as possible regarding each object the participants presented. It was expected that some participants wanted to tell their whole story or discuss other topics, which may or may not have included the required information. When this arose, the sample questions were used to gather more information about the objects themselves. The interviews were scheduled to last 30-60 minutes, but because some participants' stories were longer than others', this was not always possible. The set of questions used in the interviews was shared with and agreed upon by the participants before the interview began. This meant that participants were fully aware of the questions they would be asked, so they could politely decline to answer any questions or topics that, for example, might be upsetting or that they wished to keep confidential.

During the interviews, participants were informed of where support was available in case they were adversely affected by participating in the research project. Each participant was made fully aware of the nature of the interview and that it may lead to distress when talking about their own experiences at the following various stages: (1) via the information sheet and consent form, (2) during the pre-interview phone conversation and (3) when they were met in person by the interviewer. This

allowed them to make a fully informed decision before consenting to participate in the interview process.

All information provided in the consent form was confirmed in person before any interviews took place. None of the participants experienced distress during the interview process; however, it was important to be aware of the possibility of distress when planning the interviews.

All the participants were reminded throughout the interview process that the researcher would undertake further research to validate the information provided during the interview and that if any sensitive information arose, then the participant it related to would be informed and given the option for this new information to be published as part of the final platform and/or thesis.

When participants signed the consent form, they could opt to have any interview information uploaded to the platform alongside the digital object reconstruction. These permissions included recording any interviews conducted about the object they presented. This was done in various ways, including recording virtual meetings, using a digital camera, and using recording equipment.

Whilst using only a more formal, structured set of questions (e.g., closed or direct) may assist under different interview conditions, depending on the researcher's aims, the conversational approach proved most effective because it allowed participants to speak freely. It was evident that their voice, emotion, memories of loved ones, and factual recall were often raw, yet it allowed for a high level of personal quotes to be recorded. This is reflected in the object biographies and the emotion invoked in the reader. It was important to remain flexible with the interview approach so that the best data could be obtained whilst maintaining an ethical approach.

The five participants chosen and who agreed to be interviewed, whose testimonies and stories relate to the object biographies presented in this research were.

1. Judith Novice Roth - Passover Cup given to her by her father, Michael Novice.
2. Debbie Lewis - locket and family photographs that belonged to her mother, Rosa Dajch.
3. Judy Glicksohn Pasternak – wedding ring specially made for her father, Jacob Glicksohn.
4. Shirley Huberman – thread wheels that belonged to her husband, Alfred Huberman.
5. Ester Peerbaryosef – Tefillin that belonged to her father, Menachem Silberstein.

Figure 3.2 shows the researcher conducting a participant interview with Debbie Lewis (out of camera), and Figure 3.3 shows a photograph being taken of the locket and family photographs belonging to Debbie Lewis. The purpose of the colour checker behind the locket is to aid colour control from capture to editing.

Figure 3.2 – researcher conducting a participant interview with Debbie Lewis (out of camera) (Copyright: Caroline Sturdy Colls)

Figure 3.3 – photograph being taken of the locket and family photographs belonging to Debbie Lewis. (Copyright: Kevin Colls)

The five participant interviews were a vitally important part of the research data collection, and without them, the object biographies created to tell the stories of the survivors and their objects and contribute to the story of the Windermere Children would not have been at all possible, and this new contribution to existing research would have been missed. Analysis of the interviews revealed that all of them contained significant personal testimony that was able to be directly quoted as part of the story of the object and the Holocaust survivor associated with it. Additionally, research on the objects presented and their family members helped determine whether any additional data or narrative could be included in the object biographies to provide wider contextual information. Any details obtained through further research on the wider context of the objects or the individuals who owned them are referenced in the object biographies in Chapter 5. This varied, and for some, no further data or information could be obtained, which makes the object biographies more important in their contribution to Holocaust research and education.

Analysis of the interviews revealed that all of them contained significant personal testimony that was able to be directly quoted as part of the story of the object and the Holocaust survivor associated with it.

3.5 Digital Reconstruction of the Objects Chosen.

Photogrammetry, structured-light laser scanning and 3D laser scanning can be classed as standard techniques used within industries, such as automotive and aerospace engineering, as well as fields such as special effects that use digital reconstruction for various purposes, including reverse engineering parts, among others (Aniwaa, 2021), with each method having benefits and limitations when compared to the others. However, all serve the same goal: to produce accurate digital reconstructions of a subject (Kivolya, 2019). This process is becoming increasingly important for the preservation of historical artefacts and education (Factum arte, 2021).

These techniques lend themselves to finding new ways in which presenting content relating to the Holocaust can be more engaging and interactive, which is a current issue within education and requires continual development and evolution to meet the needs of each generation, for example, interactive digital 3D models, video interviews and image galleries to create a unique user experience. The scanning methods used and their technical specifications for creating the digital models detail the conditions under which they were conducted.

Whilst there are workflow representations for each scanning method used, as detailed in other publications, the ones presented in the next sections were those specifically followed and developed during this research project.

Photogrammetry

Photogrammetry is a process in which overlapping images or photos are stitched together using common points to create a larger image, or, in the case of this research project, digital 3D models (Luhmann, 2011; Shashank *et al.*, 2014). The technique uses photos of a subject and passes them through various processing stages using specialised software, allowing a digital model to be generated.

Figure 3.3, above, shows an example of Photogrammetry being undertaken with the locket and family photographs belonging to Debbie Lewis, as later detailed in the object biography in Chapter 5.

As Linder (2003) explained, this process involves identifying identical points across images and using them to create a point cloud that forms the mesh of the digital model. This resulted in a visually accurate model based on the images' quality, rather than simply creating a diorama.

Figure 3.4 below shows a simple workflow, developed in this research, for image acquisition in the photogrammetry process. This process was used to obtain accurate images for generating digital 3D models. The process involved taking images of the subject from every possible angle to ensure sufficient data for an accurate representation. This can also be achieved by either moving the subject physically or placing it on a turntable to ensure consistent rotation angles for each image.

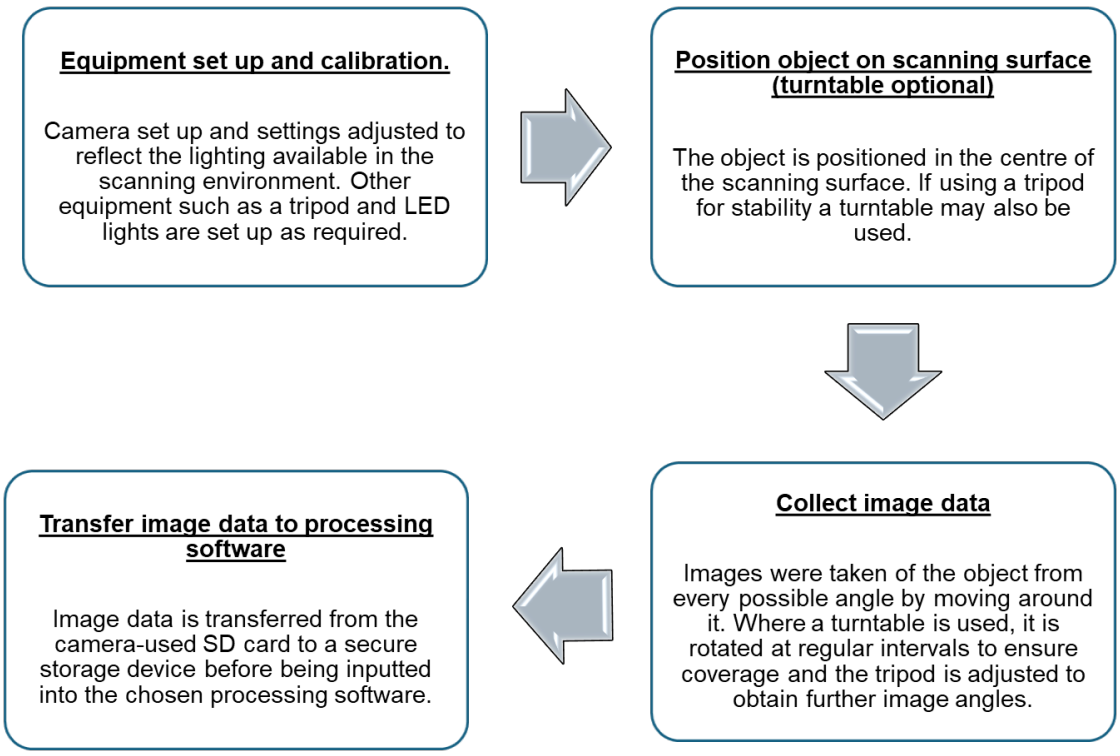

Figure 3.4 Simple workflow for image acquisition for the photogrammetry process. (Copyright: Alex Haycock)

Throughout the photogrammetry data acquisition process, a variety of digital cameras were used, including a Nikon D610, Nikon D750, Nikon D3300, and Canon EOS 5D Mark IV, ranging from standard to professional models.

A breakdown of the technical specifications for each of these cameras is provided in Table 3.1. Initially, for these cameras, a standard lens was used to capture images of the subjects, and variable zoom lenses were used depending on the nature of the object being reconstructed. Where possible, a smartphone photogrammetry app (Reality Scan) was used, following the same process as with digital cameras, but being more portable and accessible due to its mobile nature (on a smartphone).

Table 3.1 – breakdown of key technical specifications for the cameras used in Photogrammetry.

Camera	**Nikon D610**	**Nikon D750**	**Nikon D3300**	**Canon EOS 5D Mark IV**
Camera type	Single lens digital reflex	Single lens digital reflex	Single lens digital reflex	Single lens digital reflex
Pixels	24.7 million	24.93 million	24.78 million	31.6 million
Storage file format	NEF (RAW) JPEG NEF (RAW) + JPEG	NEF (RAW) JPEG NEF (RAW) + JPEG	NEF (RAW) JPEG NEF (RAW) + JPEG	NEF (RAW) JPEG NEF (RAW) + JPEG
Magnification	approx. 0.7 x (50mm f/1.4 lens at infinity, -1.0m-1)	approx. 0.7 x (50mm f/1.4 lens at infinity, -1.0m-1)	approx. 0.85 x (50mm f/1.4 lens at infinity, -1.0m-1)	approx. 0.71 x (50mm f/1.4 lens at infinity, -1.0m-1)
Lens aperture	Instant return electronically controlled	Instant return electronically controlled	Instant return electronically controlled	Instant return electronically controlled
Shutter speed	1/4000 - 30 s in steps of 1/3 or 1/2 EV, bulb, time (ML-L3 remote), X200	1/4000 - 30 s in steps of 1/3 or 1/2 EV, bulb, time X200	1/4000 - 30 s in steps of 1/3 or 1/2 EV, bulb, time	30-1/8000s in steps of 1/2 or 1/3 EV bulb, time
ISO sensitivity	ISO 100-6400 in steps of 1/3 or 1/2 EV	ISO 100 - 12800 in steps of 1/3 or 1/2 EV	ISO 100 - 12800 in steps of 1EV	ISO 100-32000 in steps of 1/3 or 1 EV
Live view	Still images, movies	Still images, movies	Still images	Still images, movies

Figure 3.5 shows the workflow for the image processing stage in photogrammetry.

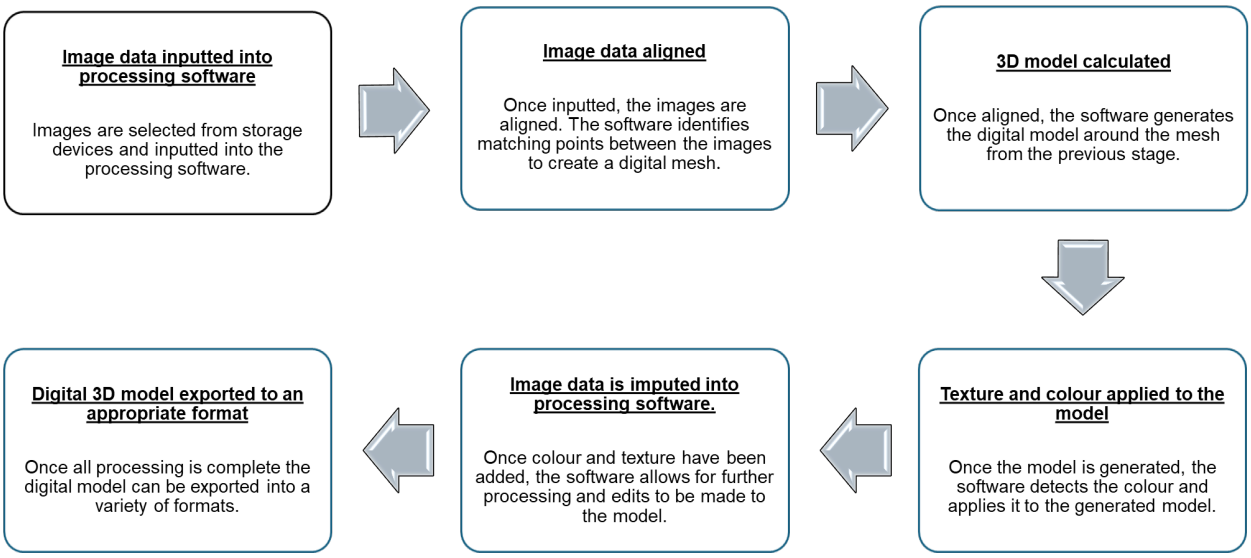

Figure 3.5: Workflow for the image processing stage of Photogrammetry, (Copyright: Alex Haycock)

Reality Capture

Reality Capture was the Photogrammetry processing tool developed by Capturing Reality and used throughout this research project. The decision to use it was made because it is easily accessible and widely used across a range of industries, including cultural heritage, surveying, mapping, and visual effects. The software works by stitching each photo to the next in the series by identifying 'like points' to align them, creating a point cloud of data that can generate the mesh that forms part of the 3D model. The software is user-friendly, with an easy-to-follow workflow along the toolbar that guides users step by step through the process, from importing images to exporting the final model. The process is also relatively quick and often only takes a longer time to process images when they are in high volume, usually due to the level of detail present on or within an object.

Kingsland (2020) evaluated three of the frequently utilised digital photogrammetry processing software solutions, including Reality Capture, which was used throughout this research project, as mentioned earlier. In their evaluations, Kingsland highlighted that, on the surface, Reality Capture is arguably the most

successful in the overall photogrammetry process. However, they stated that, for small-scale artefact digitisation, there are several factors to consider, including the time required and variations in photo alignment quality. Finally, they highlighted the benefits of using this technique for archaeological documentation, noting that analogue methods take longer and that current literature indicates a primary use of the technique is UAV integration to cover larger sites and subjects.

Reality scan

Reality Scan is a smartphone photogrammetry app developed by Capturing Reality, which uses the same processing functions as the Reality Capture software. This app was developed during this research project and only became available in the later stages of data collection. As a result, it was not possible to use this additional technique for a substantial proportion of the sample. However, when trialled on a smaller sample of objects, it produced positive results for objects that traditional Photogrammetry may have struggled to digitise, as discussed further in Chapter 4.

In addition to Reality Capture, there are other software programmes offering similar functionality to that used in this project, including more advanced packages such as 3DF Zephyr, Visual SFM, and Photomodeler. These more advanced software packages were not included in this project because they were less accessible and therefore were not tested on any objects relevant to this project.

3D Laser Scanning

Laser scanning works differently from photogrammetry. Instead of using images to record an object, it uses various light frequencies, usually red, blue, or green, in the form of a laser to measure distance to the object and, from that, form a 3D recreation based upon the measurements obtained (Thomson, 2019).

This method of using laser scanning is faster than photogrammetry and can produce high-quality, accurate models (Lanmar Services, 2014). One disadvantage of this method is that, as of now, the models produced are

monochrome (Barsanti, Remondino & Visintini, 2012), resulting in models that only capture the object's shape, with other details, such as colour, being lost. However, it should be noted that this issue was observed with the model used in this project, and other equipment may yield different results.

For the data acquisition, a HandyScan handheld laser scanner was used. This was a portable, lightweight laser scanner that could be set up quickly and provided rapid, accurate results. It can be applied to a variety of subjects, including shiny and metallic objects, whereas Photogrammetry and Structured light scanning are not always successful for metallic or shiny objects – this will be discussed further in Chapter 4. A further point to note is that, typically, no additional lighting equipment is needed for this technique, provided the room already has a good light source. A comparison of the technical specifications between the equipment used for 3D laser scanning and structured light scanning is shown in Table 3.2.

Table 3.2: Comparison of the technical specification between equipment used for Laser and Structured Light scanning.

Technique	**3D laser scanning**	**Structured light scanning**
Equipment	HandyScan	Scan-in-a-Box FX
Accuracy (mm)	0.025 – 0.035	0.04
Measurement resolution (mm)	0.025	0.062 – 0.375
Measurement rate (per second)	800,000 – 1,300,000	0.5
Light source	7 to 11 blue laser crosses	1280 x 800 LED 450 Lumen projector
Scanning area (mm)	310 x 350	100 x 75 to 600 x 480
Target size range (m)	0.05 - 4	0.001 - 3
Processing software	VX Elements	Idea 1.1
Output formats	.dae, .fbx, .ma, .obj, .ply, .stl, .txt, .wrl, .x3d, .x3dz, .zpr, .3mf	.obj, .stl, .ply, .asc

The HandyScan equipment included processing software called VFX Elements, used during data collection, that allowed a real-time scan to be produced and viewed on the computer. The software package also included other applications for editing the models produced after data collection.

The overall 3D laser scanning process for this project is summarised in Figure 3.6, which shows the typical workflow for data acquisition and subsequent processing. This equipment also has an easy-to-follow process built into the software to help users navigate it to meet their specific needs.

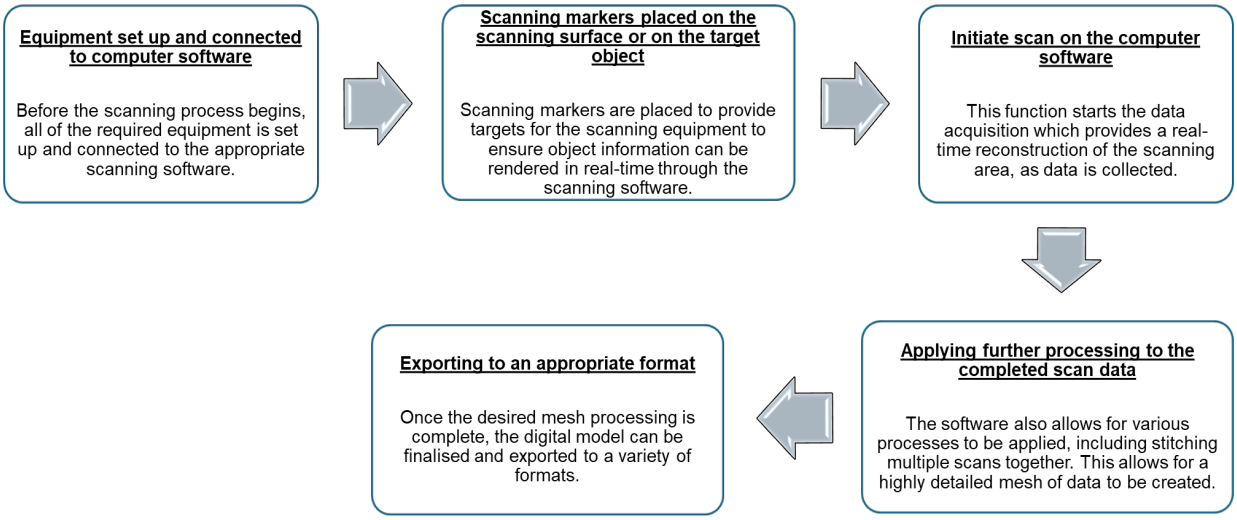

Figure 3.6: The workflow for the data acquisition and processing involved in the 3D laser scanning process. (Copyright: Alex Haycock)

Structured Light Scanning

Structured light scanning uses aspects of both Photogrammetry and Laser scanning. This combines the use of light to measure distance to the object, as in laser scanning, with digital cameras to capture texture and colour, as in photogrammetry. Combining the two methods does not necessarily make this more accurate overall but offers the best of both methods. There is an accuracy compromise, as shown in Table 3.2 above: Comparison of the technical specifications between the equipment used for Laser and Structured light scanning.

The Structured light scanning process involves projecting a pattern of light blue or white light onto an object. This pattern is typically a series of stripes but can also be configured as a matrix of dots or other shapes, depending on the subjects being scanned and the scanner being used (Bell, Li & Zhang, 2016). The scanner then uses two or more cameras or sensors to analyse the light pattern on the object and thus calculate the distance to every point within their field of view

(Hamidi, 2021). Throughout this project, the Scan-in-a-box FX Structured light scanner was used with the accompanying processing software, IDEA 1.1. The equipment for this technique was typically used at short ranges on small to mid-sized objects mounted on a tripod, as in this research project, but the objects could also be handheld if required. Like 3D laser scanners, the scanning process was quick, and many scans could be taken in a short space of time.

As with the other techniques used in this project, Structured-light scanning has a simple workflow for collecting data on a subject, as shown in Figure 3.7. This workflow was created and used during this research to guide the collection of relevant scan data using the Structured-light scanning equipment (Scan-in-a-box FX), in addition to the easy-to-follow guides provided with the equipment.

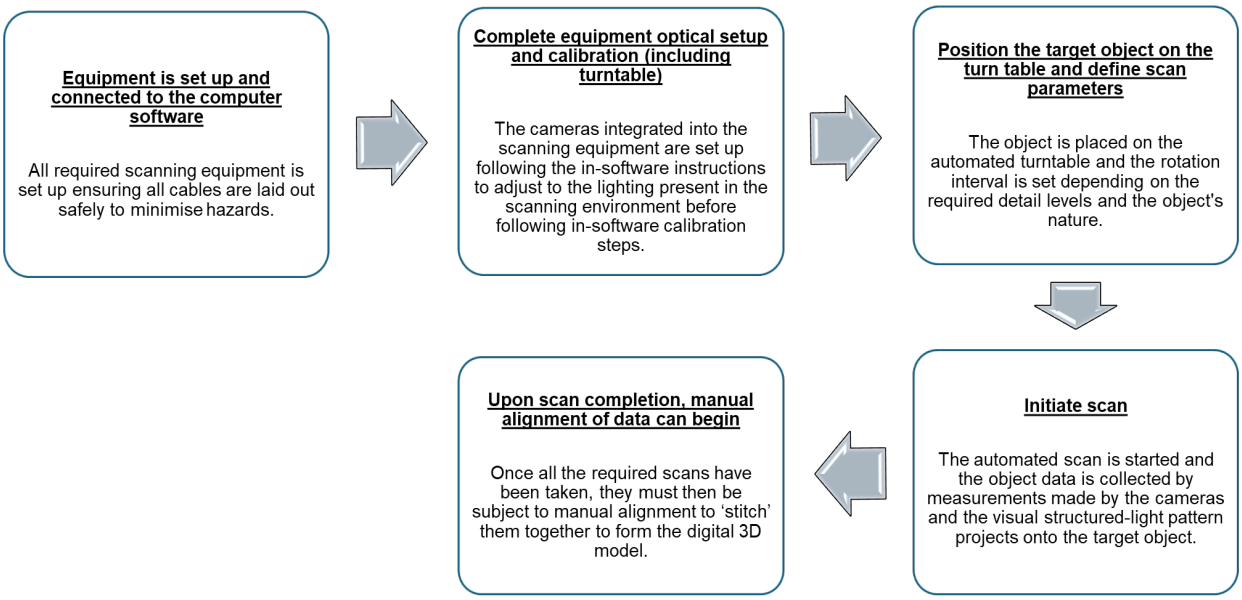

Figure 3.7: Workflow for undertaking the data acquisition for Structured-light scanning. (Copyright: Alex Haycock)

As with the other scanning techniques, the processing stage is undertaken using a package unique to the equipment, in this case, IDEA 1.1. Figure 3.8 shows the workflow for this process. The software IDEA 1.1 provided an easy-to-follow user guide for this process, which follows a logical sequence to create a digital model

from the scans. This includes aligning the scans to form a point cloud from which a mesh can be created.

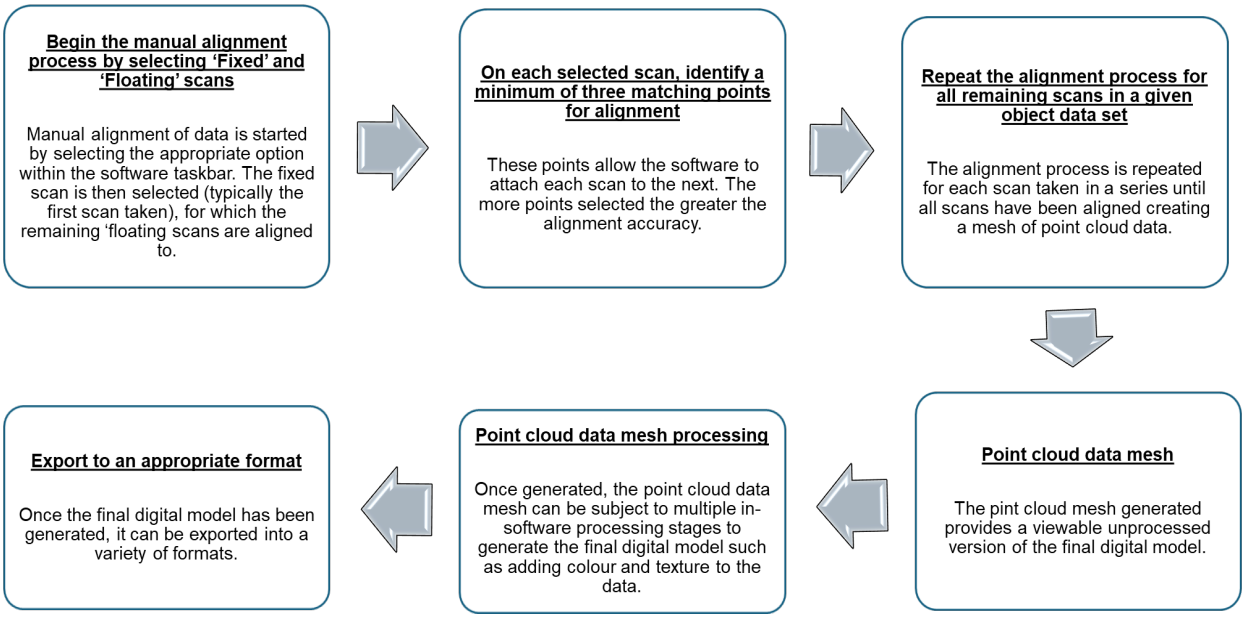

Figure 3.8: Workflow for undertaking data processing during the Structured-light scanning process. (Copyright: Alex Haycock)

Figures 3.9–3.13 are examples of the Scanner setup taken on-site at the LDHP during excavation, with the University of Staffordshire Centre of Archaeology.

Figure 3.9 - Scan in a box FX Structured light scanner calibration set-up. (Copyright: Alex Haycock)

Figure 3.10 - Scan in a box FX Structured light scan in progress on an excavated object from the LDHP excavations. (Copyright: Alex Haycock)

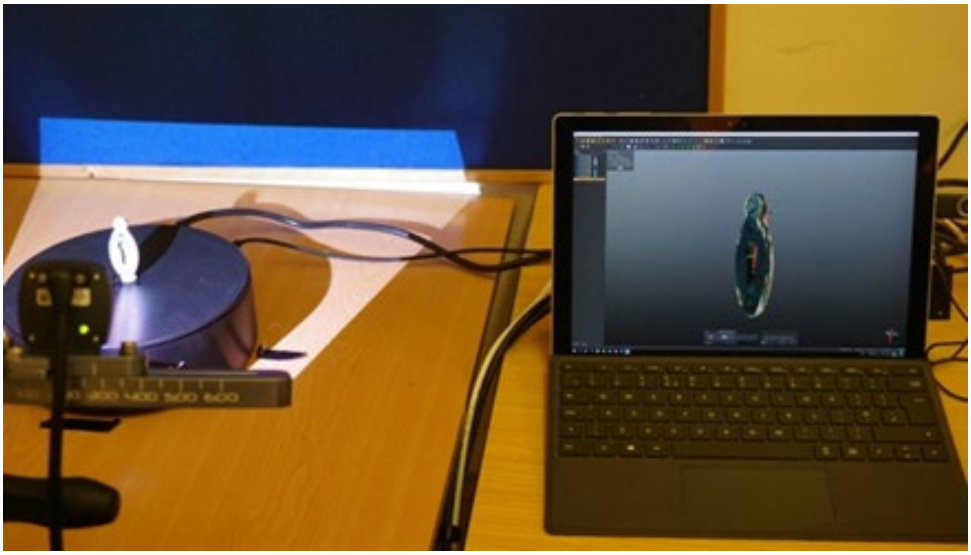

Figure 3.11 - Scan in a box FX scan in process versus aligned model mesh generated during the processing of data. (Copyright: Alex Haycock)

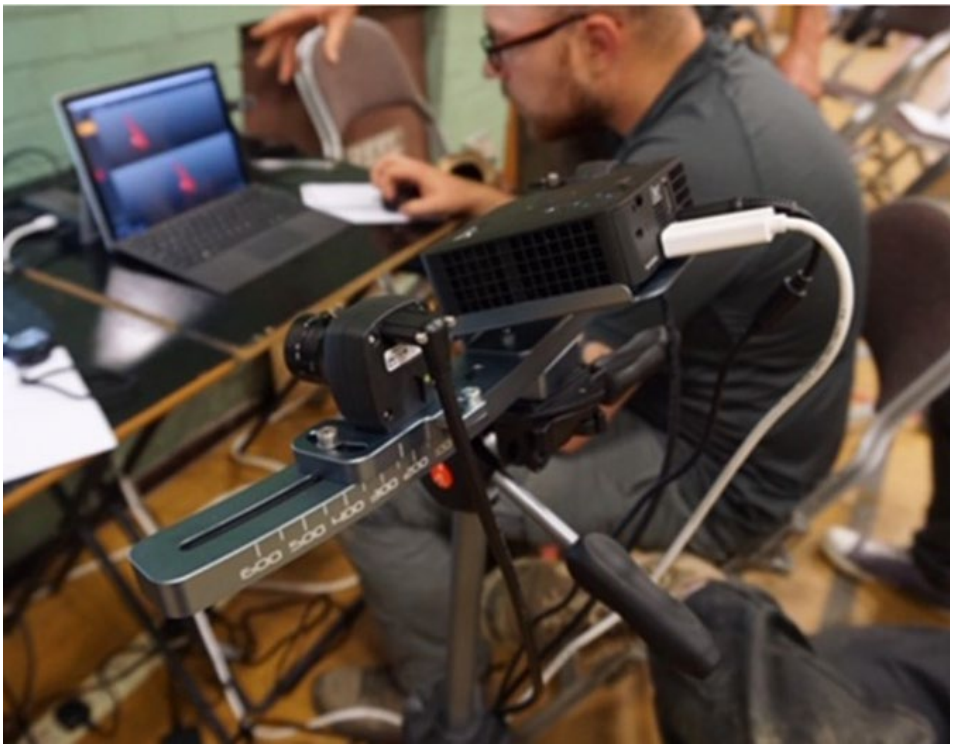

Figure 3.12 - Scan in a box FX set up on site at the LDHP excavations. (Copyright: Alex Haycock)

Figure 3.13 - HandyScan laser scanner. (Copyright: Alex Haycock)

3.6 Object Biography Development.

The next step was to research how to create object biographies, considering elements of previous and current approaches to produce a unique story that was more personal in terms of the impact on the reader, yet brought out the survivor's story, ensuring it was memorable through emotions presented and the direct quotes from the five participant interviews.

A new and current approach, published just before the writing of the object biographies, prompted reflection and influenced the approach taken in producing the five detailed in this research. This inspirational text titled ‘New Microhistorical Approaches to an Integrated History of the Holocaust’ (Edited by Frédéric Bonnesoeur, Hannah Wilson and Christin Zühlke, 2023) enabled a new dimension to be added to the biographies when considering the data collected from the participant interviews. The fact that all participants were able to freely tell their stories naturally brought out some of the key thematic areas addressed in the five object biographies presented in Chapter 5.

This doctoral research combines contemporary, microhistorical, and integrated approaches to Holocaust research and seeks to fill a recognised gap in combined methodologies in Holocaust studies. It builds on the earlier adoption (1979, by Italian pioneers Carlo Ginzburg and Carlo Poni) and expansions (Claire Zalc and Tal Bruttmann, and later Alexandra Garbarini and Paul Jaskot) of microhistorical approaches as tools for Holocaust research and related research opportunities.

This approach focuses research on the individual and personal responses or actions of single persons and investigates five thematic areas, providing a much deeper understanding of the Holocaust, which has previously been overlooked or generalised in historical research. There are similarities between this research project and the five individual object biographies presented in Chapter 5.

The five thematic areas (materiality, space, sound, gender, and social history) are summarised below, followed by a specific microhistorical case study by Dr Hannah Wilson. These five areas provide a structured approach to presenting a well-rounded personal story that contributes to Holocaust history. These five areas would assist future researchers in delving deeper into the lives of Holocaust survivors, whether that be first-hand or through surviving relatives.

Materiality.

By studying material culture, one naturally draws attention to the objects and their stories because they are associated with a human; they are powerful in their existence and reflect authentic life experiences (Auslander, 2012).

Space.

Hearing where people came from, their towns, and the lives they led enriches the objects with colour. Knowing where people were forcibly sent, the different concentration camps, the places they had to wait in before they were killed, the death marches they endured and how some of these spaces developed over time enabled their Holocaust story to be told.

Understanding what is described as the ‘spatial turn’ or ‘space of killing’ allows for an understanding of different victim groups and their histories.

Space can include the places people moved to after liberation (O'Toole & Were, 2008), for example, Windermere, the focus of this research project or settling into new lives in new countries.

Sound.

Sound can be a powerful stimulant for emotions (Papenburg & Schulze, N.D.), transporting one back in time. Describing the sounds experienced can remind people of the horrors they faced during the Holocaust or their new life after liberation. The use of song, for example, as a survival mechanism or morale boost, will bring back those memories. We can ask: What else did people hear that helped them tell their stories or those of survivors?

Gender.

People of different genders will have different experiences, and the levels of violence and the treatment they experienced may also differ (Priyadarshini, 2020).

Gender equality is much more widely considered today, but in the 1930s and 1940s, the balance of power between men and women was very different.

Social History.

In addition to personal experiences, personal possessions such as letters and other documents provide a picture of everyday life and add further human elements to case studies. Dr Hannah Wilson outlines the importance and value of materiality, and her words strike home the significance of the objects and the memories associated with them for family members of survivors.

“Materiality and the 'forensic turn” have become some of the most significant factors in shaping the future of Holocaust memory and museum studies, for which much scholarship exists. Yet, there is still much research to be done concerning the concept of home, internment, and displacement in the memory of Holocaust survivors, and how personal objects or artefacts have influenced this. The case studies presented here investigate how materiality has helped shape the narrative of the Holocaust experience and its aftermath. These objects, I argue, are carriers of lived memory and present the sensual experience of survival within the neutral home. The meanings they possess, first to the survivor and then to their family, are multi-layered and embody the complexity of inherited trauma, and what it meant to confront the Holocaust in private, familial, and individual spaces. They become “testimonial objects.” Following the emigration of Holocaust survivors after the war, I seek to emphasise the increasing importance of material culture within the “home,” where the transmission of memory and experience is often accessed through the presence of microhistorical objects.” (pages 55-56)

Dr Hannah Wilson quoted anthropologist Carol A. Kidron (2012): “Descendant narratives describe artefacts or ‘souvenirs’ carried away ‘in flight’ from the ‘death world.’ These objects function to make the absent past present for the family… such artefacts evoke the past through the imagination of kinetics of everyday material activity and object-related practices.”

The influence of this microhistorical approach and the elements of the five thematic areas described above is evident in the data collected for the five object biographies presented in this research.

3.7 Proof-of-Concept Platform

Whilst Chapter 6 provides more detail and a wider discussion of the proof-of-concept platform, it also includes a summary of the process involved in creating it.

To develop the proof-of-concept platform for presenting the five object biographies and the digital models created, research was firstly conducted to see how other online collections presented Holocaust material culture; the aim being to see which of those areas in the collections that worked well and those areas where improvements could be made in terms of presentation, ease of access to the site and the information presented to ensure a unique user experience for the proof-of-concept platform for this research.

Next, in designing the proof-of-concept platform and having no prior knowledge or experience of digital platform design and build, a decision was taken to outsource the process by contacting Creative Resolve LTD (CRL), who had previously aided in the creation of another digital platform for the Centre of Archaeology as part of their Recording Cultural Genocide project. The decision to use CRL would ensure a fully functional platform that not only houses the data acquired from this project but also supports additions from future projects, allowing the repository to grow and adapt to each desired type of digital exhibit (i.e., futureproofing). A series of professional discussions was held with CRL regarding the overall structure and page layout, and CRL's technical advice was invaluable. Key to ensuring an effective platform layout was actively working with CRL to guide them on the requirements, and, as a researcher, I personally entered the content.

CRL used an open-source web design software called WordPress. WordPress is a platform for designing and publishing websites with a domain for various purposes (WordPress, 2022), and it can be tailored to specific needs.

Following the discussions and agreement with CRL on the overall structure and page layout, further discussions centred on which objects and stories would be included in the proof-of-concept platform. Having curated the five unique object biographies presented in chapter 5, primacy and focus were afforded to their inclusion as the first exhibits. This made perfect sense, as they form the core of

the data obtained, and those stories can be presented proudly with the blessing of the survivor's family members. Further objects selected for the platform's initial population include items from the Lake District Holocaust Project (LDHP) collection and from archaeological excavations conducted by the Centre of Archaeology at the University of Staffordshire.

As many different forms of media as feasibly possible within the constraints of this project were used, including images, text, digital 3D models, videos and links to external sources and publications and were chosen specifically due to them being a combination of standard forms of presentation and/or facilitating a level of interactivity aimed for within the exhibits.

All relevant sections on each page of the proof-of-concept platform were manually inserted and edited using the easy-to-follow workflow, which enabled seamless transitions from section to section and allowed linking multiple pages to create a more immersive experience. This also allowed for the precise placement of the information and features within the platform, whilst simultaneously maximising the content available per page.

Because WordPress is not known as a platform for presenting 3D models, the proof-of-concept platform used SketchFab to present the 3D models, which is also used by other established institutions. Sketchfab is an open-access platform for presenting digital 3D models created using various methods. It was chosen to host the digital models created in this project due to its accessibility, ease of use, and ability to be embedded within other platforms. The platform also supports basic interaction with 3D models, such as adding interactive ins, rotation, and zoom functions. This is a key function of the proposed proof-of-concept platform, as one of its aims is to enable interaction with 3D models, which SketchFab facilitates. A consideration for using SketchFab was whether others could download the objects and emotive material and use them however they liked, which may have ethical implications for family members who have consented to the use of their data, objects, and stories, or for them being inappropriately used or misrepresented in other media. It was therefore important that the proof-of-concept platform and its

content were created in line with participants' expectations, following their agreement to allow their stories and objects to be published and displayed.

The proof-of-concept platform contains models that are both accurate with respect to the technical information provided for those who require it, whilst also being visually accurate to all, so it is clear what is being presented. In addition, where possible, multiple models have been presented to show the differences between the scanning techniques. To achieve this, each scanning technique was applied to as many of the sample objects as possible to ensure the best possible experience for the viewer.

This includes sections dedicated to survivor objects and objects relating to the Lake District Holocaust Project (LDHP). Each object is selectable via a thumbnail image and a brief description, which will load up the interactive digital 3D model. When loaded, the model is fully interactive, with rotation and zoom functions that simulate holding the object and allow for up-close inspection that would otherwise not be possible. As mentioned, detailed information on each object is provided alongside the object being viewed. This includes, but is not limited to, the owner(s), the object's journey, the object's dimensions, and descriptions. This information is detailed enough to provide the viewer with relevant details about each object, providing background, relatability, and, where needed, technical data for further investigations and comparisons for researchers.

3.8 Challenges Associated with This Research Area.

When undertaking research within the realm of Holocaust material culture, numerous challenges require consideration and acknowledgement. These include, but are not limited to:

- Knowing that private collections of Holocaust material culture exist and where they are located.
- Gaining access to private collections of Holocaust material culture.
- Acquiring participants to take part in the research project and to give consent for use and access to their collections, as well as consent to discuss the collections with them.

- Understanding how the materials of the objects in these private collections will affect the chosen scanning techniques.
- Having access to up-to-date and appropriate equipment for creating digital models.

These challenges come about because the collections required are private, often being in the possession of Holocaust survivors and/or their relatives. As previously stated, many of these individuals are reluctant to part with any objects of significant personal value.

To encourage future participation and agreement to use such objects, the challenge lies in demonstrating how the techniques work and that no damage will occur to their objects, nor will they lose possession of the original. Throughout this project, this was demonstrated to participants through different media: an explanation, a presentation of prior examples of digital 3D models, and/or the opportunity to be present during the digitalisation process, or a combination of these media. Continuing to demonstrate success will help secure permission to document their objects, though it does not guarantee that they will consent to oral testimony about their experiences with them or to being questioned about them. Each case must be carefully considered.

If the challenges are overcome and successful documentation takes place, it will provide invaluable resources for Holocaust research and education at a time when the number of Holocaust survivors around the world is decreasing. It should be noted that many of these individuals wished to discuss their stories and experiences but did not wish to part with any objects, so they potentially lack the means to have their voices heard. This is likely to be the case in the future too. This, in turn, supports research of this nature, satisfying both requirements.

Another key issue faced in this type of research is the very nature of the objects being documented. Because these objects are often delicate and fragile, this research applied photogrammetry, Structured-Light scanning, and 3D laser scanning to minimise contact with the objects and potential damage. To limit this,

extra care was taken when handling objects, and, where necessary, protective clothing, such as gloves, was worn. Considerations are that, for highly fragile objects, owners may be asked to handle them, or they shall be documented in their storage containers. This will cause no damage to the objects while allowing full documentation. In addition, any objects that are already in a deteriorated physical state will allow for full documentation and digital preservation of their current form.

Another factor to be considered is the material of the objects being scanned. This is because not every scanning technique is compatible with every material type. For example, highly reflective materials, including metals such as gold and silver, can have adverse effects on the data obtained, including over- and under-exposure, as shown by Tóth & Živčák (2014) and, in some cases, causing some objects to be unscannable.

3.9 Closing Summary

Overall, the techniques for each aspect of this project's methodology were selected to enable meaningful comparisons and provide a benchmark for scholars and practitioners seeking to create digital object collections. This can be broken down into three aspects:

- A comparison of 3D scanning techniques for user needs.
- The idea that owners of private collections do not have to permanently part with Holocaust material culture that is of such high sentimental value, yet can be shared along with its story in a highly personal way.
- A demonstration of how the material culture of this nature can be effectively displayed digitally.

A wide range of technical equipment was available at the University of Staffordshire throughout this research project for producing the 3D models. Upon reflection, the other equipment that would have been beneficial in Windermere was HandyScan; however, it was not possible to take this away from the University campus, a limiting factor when the objects and their owners were unable or

unwilling (because of the fragility of the objects) to travel. The versatility and portability of the available and used equipment demonstrated that in situ scanning can take place outside a museum setting. In the future, this would enable the development and expansion of the living catalogue concept for private collections referenced earlier in this chapter.

The participant interview process worked well, and the approach taken to creating the object biographies was supported by the microhistorical approach and the thematic areas described in their development. Whilst no ethics-related problems were encountered, careful planning for potential ethical issues meant they could have been identified and addressed early if they arose or began to emerge, ensuring the research remained on track in line with the overall aims and objectives.

Outsourcing the proof-of-concept platform design to Creative Resolve LTD (CRL) not only saved a great deal of time during the project, but importantly, their technical expertise allowed the researcher to guide them with the specific layout requirements to meet the aims of the proof-of-concept platform. Finally, the methods used have aided in the development of the proposed proof-of-concept platform. The goal is to serve as a foundation for future researchers and to be further developed as more private collections are identified, creating either a single or multiple online repositories that will be valuable not only to Holocaust education but also to education across multiple disciplines.

Chapter 4: The Lake District Holocaust Project Archives & Privately owned Collections - Digital Reconstruction Techniques.

4.1 Research Origins

Despite recent extensive media attention in the UK, the story of the Windemere Children is relatively unknown. At first glance, upon visiting Windermere, it would seemingly be impossible to know or even think that the effects of the Holocaust reached such a stunning natural landscape. The arrival of 300 child refugees in the Lake District in August 1945 set off a sequence of events described in this chapter, culminating in a unique archive that includes objects connected to this incredible story. For several reasons described below, most of this collection remains unseen. Therefore, the question has emerged: how can this uncatalogued and privately owned collection be made widely accessible, and how can these objects aid in telling this amazing story of hope connected with the sheer horror and sadness of the Holocaust?

The origins of this doctoral research date to 2018, when Trevor Avery, Director of the Lake District Holocaust Project (LDHP), contacted the Centre of Archaeology at Staffordshire University after visiting a Holocaust exhibition at the Treblinka extermination camp that the Centre's Director, Professor Caroline Sturdy Colls, had designed with her team. At first glance, Trevor’s email detailing that there was a Holocaust site, not only in the UK but in Windermere in the Lake District, shocked the project team. A quick round of research and conversation with Trevor led to the creation of an amazing, unique joint research project centred on community archaeology work at the site where the child refugees lived: Calgarth in Windermere. This strong collaboration continues to thrive and will do so for many years. This unique story planted the seed and presented a real opportunity for this doctoral research project, as the story of the LDHP is of critical importance not just for Holocaust studies but for remembrance and education around the world.

This chapter will detail the research undertaken around the LDHP archive and the privately owned collections of Holocaust material culture associated with it. This encompasses applying the digital reconstruction methods presented in Chapter 3 and discussing the results of their use, the challenges faced and how they can be used to enhance the object biographies created, which are discussed in Chapter 5.

4.2: The Story of the Windermere Children and the Lake District Holocaust Project

The story of the Windermere Children began in May 1945, upon their liberation from the Theresienstadt ghetto camp near Prague in the Czech Republic and the Home Office's decision to permit one thousand Jewish orphans to be brought to the UK for recuperation. On 14th August 1945, the first Stirling Aircraft bringing three hundred children to the UK arrived. Their next destination was the Calgarth Estate, a village purpose-built during the war to house workers of the Short Sunderland plane factory in Windermere (From Troutbeck to Treblinka, N.D; The Jewish Museum London, 2021; BBC, 2024 & History Extra, 2020).

The children were initially housed in what factory workers called hostels. However, suppose you talk to one of the “children” who are still alive. In that case, they will tell you that they were not hostels, they were chalets, because the children thought they were so grand compared to what they had been through, a fact many chose to point out at the reunion event attended in 2022, where it was possible to meet families. More will be discussed about the reunion and how it enhanced and brought real life to this research and the development of an IT-based platform in Chapters 5 and 6.

Over the next six months, the children were thoroughly supported and offered opportunities for sport, education, and health care. Gradually, they were moved to other homes throughout the UK and had all left Calgarth Estate by early 1946 (Holocaust Survivors '45 Aid Society, N.D.). It is at this point that the story of the Windermere Children seemingly fell into obscurity for everyone outside the local area around Calgarth Estate, at least until Trevor Avery and Rosemary Smith came across it decades later.

For many of the children, Windermere is where their life truly began. Having suffered through the horrors of the Holocaust and losing their families, the children

grabbed life with both hands. Some stayed in the UK and made a living in all paths of life, from doctors to tailors. Others travelled to America, Israel, and other countries. Some went to find distant relatives, and others began new lives (Jewish Museum London, 2021). One factor remained the same however, the strong unique bond that they all forged during their time in Windermere never faltered and this is seen at the various reunion events that take place to celebrate and commemorate them (Holocaust Survivors '45 Aid Society, N.D.(2)). Where it could easily be mistaken as a family reunion, this is a lesson, of the highest order, in true friendship stemming from a significant historical period, that current and future generations should look at and learn from.

When meeting Trevor Avery (in 2018), he spoke at length about the connection between the Holocaust and Windermere, the standout aspect being the story of the Windermere Children. Additionally, he talked about the even lesser-known story of the friendships he and his collaborator Rose have formed with the survivors, which have ultimately led to the donation of objects to the LDHP.

This story began with Trevor being given objects related to the Windermere Children: how he learnt their stories and how this remarkable group came to the UK. In 2013, after 8 years of intensive research on them and countless oral history interviews and Holocaust education work, the LDHP was born. Following the success of the LDHP's touring exhibition "Auschwitz to Ambleside", a permanent exhibition was erected in the local library at Windermere (LDHP, N.D.). Since then and the development of the subsequent partnership with the Centre of Archaeology, the LDHP has gone from strength to strength in telling the personal stories of the Windermere Children's experiences and how, in their own words, they were given a second chance at life. In response to the 2020 BBC Two Show 'The Windermere Children', two of 'The Boys', Harry Olmer and Sam Laskier, spoke of their arrival and time in Windermere. Harry said, *"Places we were before were just under hardship and hunger... Windermere was absolutely fantastic",* and Sam added, *"We had every opportunity to do whatever we are capable of doing ..."* (Rajani, 2020).

Over the years, Trevor Avery has received thousands of objects, kindly gifted to him by survivors, their family members, and locals with a connection to the children. These objects vary in nature, but each one tells a unique story. This

collection is ever-growing with more objects continuing to be donated, and in recent years, more families of the Windermere Children have 'returned the objects to Windermere' (the object biography – Tefillin, presented in Chapter 5, is a perfect example of this), to aid in the story's legacy and to honour their relatives. These objects eventually became the focus of this research. Despite the vast number of objects, Trevor never truly had a way to document them all and to let people see everything that had accumulated so far. Given the aims of this project, one may wonder how access can be granted, especially for objects that carry such personal significance for the children and their families. How better to enable people to interact with the story than to see the most unique of insights? Their object, their story, their words.

Trevor Avery carries out extensive educational work related to the children's story, including giving talks across the UK and at international events, and working with local schools to tutor students on their local history and help them discover a history they might not have expected. Ultimately, Trevor and the LDHP are an outstanding long-term project going from strength to strength, with visitors from over thirty countries coming to see the exhibition in Windermere and learning about the children. Through regular collaborations with artists, writers, musicians, academics, and schoolchildren, the number of people involved in the story is inspiring. Notable results of this include documentaries and even a TV adaptation (Robinson, N.D.).

This research project seeks to take that accessibility to the story and the objects worldwide without the need to visit Windermere recognising that whilst such a stunning location is always well worth visiting, some people unfortunately cannot, as well as aiding the LDHP and Trevor Avery in managing the demand they face with people wishing to see all of the objects in the collection at all times. Furthermore, it aids in the conservation of objects within the collection, as physical objects on display pose challenges, as shown by Terras (2022), who explores expanding museums' digital literacy and discusses how inexpensive techniques such as 3D scanning have become. This is further supported by Acke *et al.* (2021), who highlight the positive trend in the application of such technologies for the conservation of objects.

4.3: Archaeological Work

Following that initial meeting with Trevor Avery in 2018, the Centre of Archaeology began its research into the Calgarth Estate and prepared for initial geophysical surveys and test pit excavations. Soon after, the Centre, students from the University of Staffordshire, and many volunteers, including third-, fourth-, and fifth-generation descendants of Holocaust survivors, arrived at the Calgarth Estate site, now home to the Lakes School in Troutbeck Bridge, to undertake fieldwork. This created a unique community aspect of the work, bringing a sense of the story coming full circle as the boys' families interacted with the archaeological work, allowing others to further engage with their story and legacy.

First Period of Excavation

This two-week fieldwork period was split into two phases. Phase one included initial geophysical surveys, a non-invasive technique that involves detecting changes in the physical properties of a geological structure or area (Historic England 2025). To highlight points of interest at the site to be targeted for localised excavations (Haycock, 2020). Phase Two included excavations of the identified areas (Sturdy Colls, Colls & Mitchell, 2019).

The geophysics results highlighted areas that corresponded to the building where some of the Windermere Children were housed during their time there, and subsequent test trenches were dug. The excavations yielded promising results, including large quantities of various building materials and more unique finds, such as a penknife, a key, and a belt buckle. Despite these finds (which added to the ever-growing collection of the LDHP), no in situ structural remains were found except drainpipes. However, it showed that, after the children left, the Calgarth Estate was returned to its natural state above ground, and that this was done thoroughly (Sturdy Colls, Colls & Mitchell, 2019). The sheer number of finds provided the evidence needed to say this was indeed where the Estate had been located. In addition to the excavation work, the Centre of Archaeology trialled its new structured light scanning equipment, which served as a precursor to the use of the technology in this research.

Further archaeological investigations were planned for 2020; however, due to COVID-19 pandemic restrictions, they were put on hold until it was deemed safe to resume excavation.

Second Period of Excavation

The second excavation period took place in April 2022, again at the site of the Calgarth Estate in Windermere. This second investigation phase aimed to:

- build upon the previous work undertaken by the Centre of Archaeology and target new areas of interest as determined from the geophysical survey results from 2019; and

- undertake the process of 3D scanning of significant finds from the 2019 excavations and other notable objects within the LDHP collection.

During this second period of investigation, the Centre of Archaeology split into two teams; the first team was based at the site of the Calgarth Estate and worked on further geophysical surveys and the excavation of test trenches. The second team was based at Windermere Library and the LDHP exhibition, to digitise notable objects from the collection. The first team primarily implemented the same standard archaeological techniques used in 2019, building on previous work, whilst also aiming to provide further support for the location of buildings in the estate. Overall, positive results were found, with the main finding being the potential discovery of a concrete yard next to the education building used by the Windermere Children during their stay at Calgarth.

Meanwhile, the second team, whose members rotated daily to introduce students to the photogrammetry and structured light scanning techniques, digitally reconstructed a good range of objects, including the thread wheels from one of the five object biographies presented in Chapter 5.

Following this second period of fieldwork, the Centre determined that further excavations and geophysical surveys were needed based on the results obtained (Sturdy Colls, C., Colls, K, & Mitchell, W, 2022). In terms of the digital reconstruction of objects, it laid the foundation for data collection for this research project, and further planned work was to return to and work with the more unique

objects in the care of the LDHP, specifically those identified as having direct connections to the Windermere Children.

Third Period of Excavation

The third excavation period took place in April 2023 at the Calgarth Estate site. This third investigative phase aimed to undertake similar work to that conducted during the second period (in April 2022) but build on the results from that period of investigation. Specific focus was given to a team based at the LDHP exhibition in the Windermere library, who were tasked with 3D scanning as many of the unique objects of Holocaust material culture present in the collection.

As in April 2022, one team focused on further test trenches at the site of Calgarth Estate.

The team working on 3D scanning objects of Holocaust material culture implemented photogrammetry and structured light scanning throughout, as detailed in Chapter 3. The main difference is that in this period of investigation, smartphone apps for undertaking photogrammetry were also used alongside conventional methods. Specifically, the app called RealityScan, produced by the same developers as Reality Capture used for processing photogrammetry models. Following this work, the dataset of scanned objects for this project was expanded from approximately 12 to 63, and the Centre of Archaeology plans to return to the site to undertake further work. Additionally, the LDHP has enlisted their services to professionally archive and catalogue their entire collection.

N.B. As of writing, the report for this excavation period is still being generated by the Centre of Archaeology.

4.4: The Windermere Children Reunion May 2022

A reunion for the Windermere Children was held at Windermere in May 2022. It was identified that this provided an excellent opportunity to further this research and to meet survivors and their families to hear their stories firsthand and begin to shape the initial concept for how they could help represent Holocaust material culture objects.

The reunion was planned around the Windermere Children and their families. This involved many of them mentally travelling back in time to when they first came to Windermere reminiscing about the good times they experienced there, taking a tour of where the Centre of Archaeology had excavated, unveiling the plans for a new state-of-the-art exhibition, taking a trip on Lake Windermere (where they had previously played as children), and visiting the LDHP exhibition at the library (BBC News, 2022; Windermere Lake Cruises, 2022). At the reunion, the aim was to meet as many of the Windermere Children as possible to demonstrate the digitisation process, and to potentially interview them and organise access to any objects they may be willing to present as part of this research.

During the reunion, a 'hub' was set up in a side room at the LDHP exhibition at Windermere Library. In this room, equipment for both photogrammetry and structured light scanning was set up, and the LDHP office was prepared with the interview equipment outlined in Chapter 3. This was done so that the Windermere Children and their relatives could see the work being undertaken in this project during the exhibition tour, obtain potential participant contact details for future digitisation events, and examine the portability and adaptability of the techniques.

During this time, a notable visitor to the demonstration was Harry Olmer, a member of the Windermere Children. Harry was very keen to learn what was happening in the side rooms at the LDHP exhibition and made a point of coming to observe some object scans. Upon his arrival, he was talked through what each piece of equipment does and given a demonstration. After which, he was shown some models that had been made before the reunion. From observing Harry's reaction, it can be said that he appeared to enjoy watching the process and hearing an explanation of how it can be used to tell the story of the Windermere Children.

Meeting Harry and having him spend so much time observing the digitisation process was a unique experience. Harry was a Holocaust survivor who lived through being held in Płaszów, Skarżysko-Kamienna and Buchenwald camps, before being sent to Terezín. After arriving in the UK in 1945 as one of 'The Boys', he moved to Glasgow and, despite not knowing any English when he arrived, he

completed his higher exams in 1947 and became a dentist and later served as an army dentist (Holocaust Educational Trust, ND). In 2023, Harry was awarded an MBE for services to Holocaust education (Mountney, 2024).

Throughout the reunion weekend, various family members of the Windermere Children engaged with this research. Contacts for potential participants were obtained, including a list from Trevor Avery of people who did not have a chance to see the technique demonstrations but were interested in learning more about them. Following the reunion, several people were contacted, and, where possible, further interviews were conducted to hear their relatives' stories about the specific objects that meant something to them. Further periods of object scanning were also undertaken, as outlined above in the third season of excavation by the Centre of Archaeology.

4.5 Scanning Techniques Analysis Overview.

Photogrammetry (traditional methods & newly developed smartphone apps).

During this research, the results of the photogrammetry process varied. With the final digital model, image quality varied throughout each wave of data collection and from the technique version used, with the nature of the scanning environment (e.g., lighting settings) and the target object's size and material influencing quality (e.g., metal objects having a high reflective surface hindering photo quality). However, where this technique was successful, the results highlighted the high level of visual accuracy and detail that can be achieved, with arguably a simple process.

For photogrammetry, the main available approach was to use traditional methods, such as a DSLR (digital single-lens reflex) camera and bespoke software (Autodesk, 2024). This was because newer approaches, such as smartphone apps, were in early development and not widely available. However, during the last phase of data collection in April 2023, new smartphone apps for this technique were developed, and an app called Reality Scan, developed by the creators of Reality Capture (the photogrammetry processing software used in this project), was trialled (Epic Games, 2024). The purpose of this was to observe any

noticeable differences between the two photogrammetry methods and to comment on whether one is better suited to this type of research than the other. However, this comparative testing was limited by time constraints with the objects towards the end of the data collection stage of this project.

For traditional photogrammetric methods, some digital models could be created with high visual detail, while others could not be processed. No metallic objects could be digitalised using traditional photogrammetry in this research, but this was not the case with smartphone apps.

3D Laser Scanning

Overall, in terms of the quality of the digital models, 3D laser scanning proved the most consistent of the three techniques, as it can produce high-quality models in just a few minutes, which is beneficial when time and access to the object are limited. Before entering the data collection phase, prior research supported providing highly detailed digital models in a short timeframe, even when testing repeatability (Scanlab, 2024) by scanning some objects with different resolution settings to obtain smaller details on objects, which is also demonstrated in the work undertaken by Polo & Felicísimo (2012), who specifically looked at the use of portable 3D scanners, focusing on the repeatability and uncertainty in the resolution of the scans obtained. Thus, both demonstrate and support the use of the technique for rapid data collection with consistent results.

Unlike traditional photogrammetry, the object’s material did not affect the equipment's capability or its high-definition settings in producing accurate digital representations of even metallic objects. This is an important factor to consider because there appear to be no restrictions on the types of objects that can be digitised using this technique.

Structured Light Scanning

Of the three scanning techniques, Structured light scanning was used the most. This was based on experience at the Centre of Archaeology with other research

projects, and the equipment was widely accessible. This technique produced high-quality scans of the target objects and appeared to bridge photogrammetry and 3D laser scanning by combining the scan speed of 3D laser scanning with the colour information (data) from traditional photogrammetry (Scantech, 2024). This was beneficial, enabling the rapid and accurate digitisation of objects in the data sample.

Based on research such as that undertaken by Liu, Lin & Chen (2023), which looked at how the reflectivity of metal surfaces affected structured light scanning and how to mitigate the effect it has, and prior experience with the technique, metallic objects were not expected to produce usable results; however, the opposite was observed in this project. A particular example of this anomaly is shown in Figure 4.1 (model short Sunderland aeroplane), which is a silver metallic model, except for a small number of patches, that produced good-quality digital data. These patches were ‘filled’ using the scan-in-a-box computer software processing features. A greater number of metallic objects would need to be tested to explore this anomaly further; however, this did not form part of the scope of this project.

Figure 4.1: Structured light model of a metallic model of a short Sunderland plane with gaps in the data filled using the scan-in-a-box software (highlighted in red). (Copyright: Alex Haycock)

As noted earlier in this chapter, the development of a smartphone app, Reality Scan, has taken technology to a new, more accessible level. Although this project commenced before its development, it is important to provide a comparison with traditional methods. Note that this was tested only on a small sample to compare contemporary and traditional methods, as discussed later in section 4.7.

4.6 Project Data

Sixty-three objects (detailed in Appendix 3) of differing types and materials were scanned as part of this research and included:

- Jewellery

- Building materials

- Archaeological trenches

- Books/other documents (Siddur)

- Clothing (Various shoes and 45 Aid Society Cap)

- Religious artefacts

- Other miscellaneous objects (e.g., a metal playing card tin, an Altimeter from a Short Sunderland aircraft, and a penknife, amongst others)

Where possible, multiple techniques were applied to objects of diverse materials, types and functions within the sample available and can be broken down by technique used:

- 33 of the objects were subjected to photogrammetry using a combination of traditional methods and newly developed smartphone apps.
- 59 of the objects were subject to Structured Light Scanning.
- 12 of the objects were subject to 3D Laser Scanning.

The technical specifications for the methods used to scan objects varied depending on the object's nature and the light required to produce the best representation. A breakdown of the technical specifications for each technique is

detailed in Chapter 3, Tables 3.1 and 3.2. The specifications demonstrate the capabilities of each technique, for example, target size ranges and accuracy.

Object Material

Before digitising objects brought forward during this project, research into the application of the chosen techniques highlighted that the material an object is made of may affect the quality of the scan results. Most of the test sample consisted of building materials excavated during the previously mentioned archaeological investigations by the Centre of Archaeology, and thus included brick, ceramic pipe fragments, mortar, wood, and metal. The more unique items were made from paper, plastic, and metal, among other miscellaneous materials. Of these materials, metallic objects, particularly gold, proved to provide extra challenges when compared to the rest (Ferkova, 2022 & Matter and Form, 2018), which provided further support for the use of structured light scanning by research undertaken by (Motley, 2021 and Rachakonda, Muralikrishnan and Sawyer, ND), which showed that reflective metals are difficult to document using this method. The loss of scan accuracy in these instances results from techniques that require sophisticated light calibration and image alignment, which reflection hinders, as the equipment and software struggle to identify the information needed to process the scan data.

In this project, for objects outside the LDHP archive that belonged to participants from the Windermere Children reunion and were invited to present, it was not known in advance what materials would be brought. As a result, the use of all three chosen techniques was not possible on every object, and, where required, the available techniques had to be adapted to accommodate each object as best possible.

To obtain the best results, specialist training in scene lighting for photography and guidance from recent research by Pareas (2018) on trialling varying light conditions, background colour, and camera settings across different waves of data collection were undertaken. Towards the end of the project, in the final wave of data collection in March 2023, the development of Reality Capture's smartphone

app, RealityScan, used the same processes as its computer software at a basic level, removing features such as mesh-editing capabilities. The scans created by the smartphone app yielded results that stood out from what was expected and observed during the first 24 months of research. The app was applied to a few metallic objects, namely a gold necklace and, notably, a playing-card tin, as shown in Figure 4.2. The smartphone app has provided near-perfect results for metallic objects, with the only lost data being the underside of the objects. The app itself was unavailable until the latter stages of data collection and therefore could not be applied to some of the more unique objects used within the object sample because they had been returned to their owners, who, in some instances, lived in other countries. Ideally, these objects would have been rescanned using the app to see whether similar results for metallic objects were achieved; however, this itself raises questions for further research beyond this project on the use of smartphone apps and their capabilities, which will be explored in Chapter 7.

Figure 4.2: Photogrammetry model of a metal playing card tin obtained using the Reality Scan smartphone app. (Copyright: Alex Haycock)

In contrast to the other two techniques, a smaller sample of six metallic objects was scanned with the HandyScan handheld laser scanner, achieving a 100% success rate and producing six complete digital models. In addition, these models were represented more quickly than the other two techniques, and their scanning

resolution could be adjusted during the scan. Thus, demonstrating that, when available, a 3D laser scanner can provide rapid results, albeit at the expense of some visual details, such as colour and texture. Examples of these successful scans are shown in Figures 4.3 and 4.4, which depict a metal fork and a metal key, respectively, excavated during site visits to the Calgarth Estate.

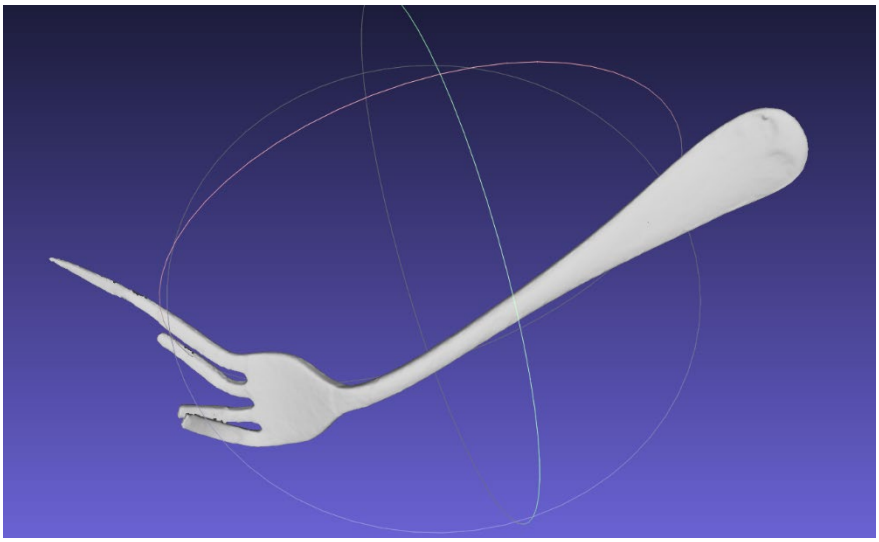

Figure 4.3: 3D laser scan of a metal fork excavated at the Calgarth Estate, by the Centre of Archaeology. (Copyright: Alex Haycock)

Figure 4.4: 3D laser scan of a metal key excavated at the Calgarth Estate, by the Centre of Archaeology. (Copyright: Alex Haycock)

To further improve the quality of models produced by 3D laser scanning, it would be to combine them with photogrammetric data, a process that, although possible, was not used in this research project. This was because part of the project's aims was to compare and evaluate research techniques for objects of Holocaust material culture. However, it should be noted that this process would prove highly beneficial for future research and exhibition curation if explored and how readily available and accessible it could become.

Results from other materials scanned varied in quality throughout the data sample. For example, brick and plastic showed consistent results for completed models; when they lacked reflectivity and were more 'matte' in colour, the objects were successfully scanned using all three techniques. However, there were some instances for photogrammetry and Structured-light scanning where data was acquired but could not be processed. For example, this was often seen in dark objects, as in Figure 4.5, where the lighting would have needed to be brighter to capture more detail.

Figure 4.5: Structured light scan of a 45 Aid society cap. Due to the object being a dark material, some detail from the object is lost or hard to see. (Copyright: Alex Haycock)

A point of consideration for future research is undoubtedly gaining as much information as possible about an object of Holocaust material culture to prepare the most appropriate technique for that object's material nature and obtain the desired results for a given project. This is demonstrated by the data obtained: for objects from the archive, more time was available for preparing what could be argued to be the most appropriate technique, which yielded more data of the desired accuracy for developing the object biographies. When scanning objects of this nature, the user should be confident they can consistently obtain the desired results, regardless of the object's material. During the data collection, the only methods to reduce reflectivity available were the adjustments of scene lighting and matte sprays which were avoided in this instance due to the special nature of the objects provided and the commitment given to not risk damaging or altering the objects, which was a key part of the ethical considerations in this research and why participants granted access to their objects. To further test the use of this technique with metallic objects, it would have been ideal to compare it with other equipment. Unfortunately, this was not possible for this research project, but potential further work is referenced in Chapter 7.

Object Size

Within Holocaust material culture, objects range in size from photos smaller than a British one-pence coin to archaeological trenches (Figure 4.6) to whole landscapes. Throughout this project, the overall object size was observed to have little impact on whether an object could be digitally reconstructed.

Figure 4.6: Photogrammetry model of a trench from the 2023 Archaeological excavations undertaken at the Calgarth Estate site by the Centre of Archaeology using the RealityScan smartphone app. (Copyright: Alex Haycock)

However, in some cases, for smaller objects where scans could be processed, it was noted that some details became blurred or distorted during processing. This was demonstrated with two objects: a thread belonging to Alfred Hubermann and the Jewish Tefillin, which form part of the five object biographies in Chapter 5, where labels and engraved patterns were less visible. Although this is not necessarily an issue caused by the object, factors to consider include the equipment's technical parameters and natural changes in environmental lighting that require constant recalibration.

In summary, it was observed that, for smaller objects, Photogrammetry yielded mixed results: many of the objects were partially processed, but not all could be fully processed. Often, personal objects of Holocaust material culture can fall into this category because they are small in nature, as they were hidden throughout the events of the Holocaust.

Similarly, with the Structured-Light scanning equipment used in this project, successful scans of smaller objects were achieved only with the correct calibration

settings and technical specifications that allowed for objects of specific sizes. As outlined in Chapter 3, this process can be time-consuming.

In contrast, when using 3D laser scanning, the object's size did not affect the overall outcome of the scans. The required resolution settings were higher than normal to capture the details of the objects.

When applying the chosen techniques to a variety of objects of different sizes, the material the objects are made of and the object's size also need to be known, as these can influence which technique is most appropriate. All three techniques can be used on objects of any size. However, the equipment's technical specifications will be a key factor in the end product. To reiterate, to obtain the best results for a given project, as much detail as possible about each object must be determined so that appropriate techniques can be applied when objects are presented.

Object Unique Features

Another important factor when considering any Holocaust material culture is the unique details or features it contains, which, for this project, were defined as engravings, maker marks, writing, stickers, and other unique details on the objects in the data sample. These features had both positive and negative effects on the chosen scanning techniques.

For all objects subject to 3D laser scanning, those with additional (key unique) details, including engravings, maker marks, and stickers, were captured in great detail. In some cases, the engravings and maker marks appeared more visible than on the physical object itself, as seen in figures 4.7 and 4.8, which demonstrate these features. However, due to the loss of visual detail (colour, etc.) as outlined in Chapter 3, some information is lost on how they relate to the rest of the object. It is with Photogrammetry and Structured light scanning that these features were prominent.

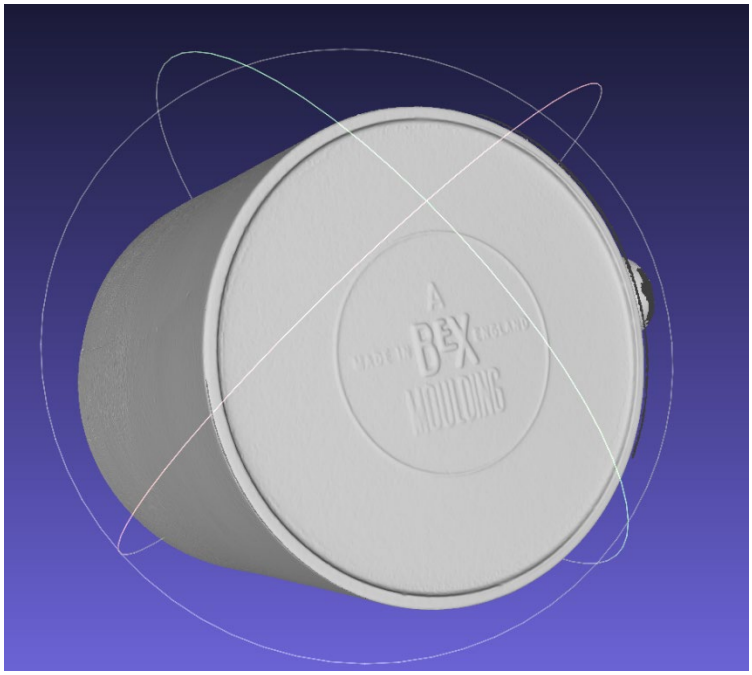

Figure 4.7: 3D laser scan of a pink plastic Passover cup demonstrating the detections of key details present on the object. (Copyright: Alex Haycock)

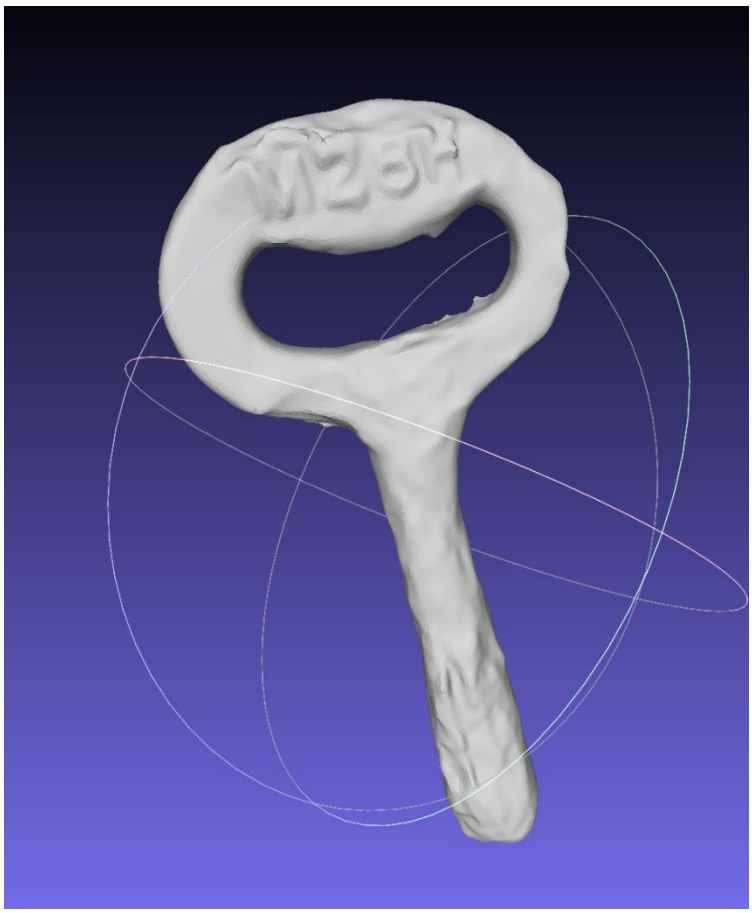

Figure 4.8: 3D laser scan of a metal key excavated at Calgarth Estate by the Centre of Archaeology, which highlights letters and numbers not visible on the original object (alternative view of the same metal key shown earlier in Figure 4.4) (Copyright: Alex Haycock)

In structured light scanning, unique details can serve as identifying markers that assist in aligning individual scans (Messer et al., 2021). However, in this project, this was only observed when the scans were taken from the same angle or from angles close together. It was observed that as an object was rotated, features such as engravings appeared at different angles in each scan. Thus, when aligned, the features became distorted and hindered subsequent alignment as the scans became out of phase with each other. The reason was largely that the cameras in the structured light array were static and, as such, captured the object's position as it appeared. Other structured light scanners, such as the Handheld Artech Eva, do not suffer from these problems because they combine the technology used within handheld laser scanners to measure curvature. In addition, it should be noted that these errors did not mean the technique had failed; they only indicated that there would be discrepancies in the final model if alignment could be completed. This is a factor to consider for research projects such as this one, where these details are key to adding deeper meaning and context to the object, but even then, the models generated could still serve as representations of these objects or as examples from which standards can be drawn. Apollonio, Bajena & Cazzaro (2023) explored the need for scientific reference models; therefore, models incorporating errors due to object curvature and similar factors could be built into these standards to aid further archaeological understanding of these techniques and their better application.

In contrast, where structured light scanning produced complete models with these features, the accompanying processing software allowed for the texture to be removed, leaving a model like the one produced by 3D laser scanning and allowing features such as writing to become more visible (base of the pink Passover Cup depicted in Figure 4.7).

Scanning Environment and Conditions

One of the main variables during the data collection phase of this research was the location where it took place. As outlined in Chapter 3, scanning took place at two locations: the first in a bespoke scanning suite at the University of Staffordshire, and the second in the office facilities at the LDHP.

The main condition for the scanning processes was the ability to control the room lighting as this was an impact factor for all scanning methods (Thongma-Eng et al, 2022 & Sachs, 2016). From the training undertaken, prior research and user manuals for the specialist equipment outlined, ensuring the correct lighting for each object was key to obtaining accurate results. This is because the correct lighting reduced the visibility of shadows and highlighted points of interest.

The scanning suite at the University of Staffordshire provided controlled lighting and was equipped with blackout blinds to maintain a controlled environment, with portable LED lights used to illuminate the target object as required.

The portable LED lights were only needed for photogrammetry because the structured light scanner had its own light source, and the 3D laser scanner did not require a lighting-controlled environment to operate.

By contrast, the office space kindly provided by the LDHP for on-site scanning was limited to standard room lighting and uncovered windows, which brought the room's natural light into play. To control this as best as possible, an old desktop (wooden slab) was used to limit the variation in room lighting from the window as the day progressed.

During data collection, several interesting observations were made about the lighting conditions and the scanning techniques used. As mentioned, the scanning environment conditions did not affect the 3D laser scanner, which produced consistent results for each object. With structured light scanning, the user manual stated that the equipment could be used under any lighting conditions, which proved to be true. However, where possible, when the scanning environment was darker and used only the Scan-in-a-box equipment's light source, scan quality and completeness appeared to improve. This was likely due to less interference from background lighting. The only issue with the equipment was observed whilst working in the office space provided by the LDHP, because the room's natural lighting required the equipment to be recalibrated each day to ensure optimal settings.

4.7 Techniques Comparison

Whilst they were not the primary focus of this project, it is important to briefly compare the non-destructive digital archaeological scanning techniques used and their application, considering more recent, easily accessible, and rapid methods that have developed since the project began in 2020, which is unsurprising given the exponential advances in technology that most mobile telephones can handle nowadays.

Photogrammetry, structured light scanning, and 3D laser scanning were the three main traditional techniques used in this project. Brunetaud et al (2012) defined effectiveness with research of this nature as the ability of the method to generate a visually accurate digital representation of the subject-object. The accuracy of the digital representations of the objects in this research and for the future development of the platform is a critical factor. The closer objects/material culture can appear to the viewer as though they are virtually handling them, without actually doing so, would surely vastly improve the user experience and interest in Holocaust history.

As noted earlier, the total number of objects in the data sample was 63, with all but one related to a survivor or a location from the Holocaust. The one remaining object was a personal item used in the training process for the chosen techniques. However, it must be noted that the three chosen techniques could not be applied to every object in the sample because some were inaccessible, and on other occasions, the equipment was unavailable. However, where possible, to endeavour to obtain the best digital representation, combinations of the three techniques were applied.

The 63 objects used originated from 12 different owners or collections, and, understandably, given their age and the journeys they often made across continents, they were presented in varying physical condition. It was recognised and emotionally appreciated that objects belonging to Holocaust survivors were typically, in as pristine a condition as they could be, considering their age. The artefacts from the three excavation periods undertaken by the Centre of Archaeology at the Calgarth Estate site had deteriorated, which is understandable

given the natural elements to which they had been exposed for a considerable time.

Whilst the physical condition of the objects generally did not hinder their ability to be scanned, the nature of the materials they were made from, their surface texture or specific identifying features affected the quality of the digital representation and the level of visual detail present.

The other factor to consider with this type of research, aside from being able to gain access to private and uncatalogued collections of Holocaust material culture, is the time that is allowed with them. Often, when visiting Holocaust survivors, the time available to observe, document, and discuss the objects is limited, especially given the theory proposed in this research project, which takes place in a single visit. As a result, sufficient preparation is required to ensure that not only the correct technique is utilised but also that equipment appropriate to the required environment is available. Additionally, it is required that sufficient training on the equipment is completed before visiting sites for data collection to ensure accurate results and to be time-efficient, maximising the data collected within the allotted time and minimising disruption to the owners.

In comparing traditional Photogrammetry methods with the new smartphone applications, Photogrammetry used a DSLR camera, and the RealityScan smartphone app (developed by Capturing Reality, the developers of Reality Capture) used a smartphone camera. Both used the Reality Capture computer software.

In terms of visual detail, both were equitable. However, the main difference observed between the two was the time taken to complete the full reconstruction. A 'full reconstruction' is the time required to obtain images and fully process them to create a digital 3D model. It was found that when using the traditional form of photogrammetry, the time taken to complete the whole process for a given object could vary, with some of the more complex objects taking closer to an hour or more to process, though this can be argued to be a result of the hardware being

used for processing the images based on the information provided in the Reality capture Datasheet (Reality Capture, 2024).

In contrast, the app appeared to excel by applying all processing stages in real time as images were collected via a smartphone (Epic Games, 2024). This considerably shortened the time required to undertake the process, even on larger examples such as the trench from the Calgarth Estate shown earlier in Figure 4.6, which was completed in under 30 minutes. Some differences were noted, including the inability to scan the underside of objects via the app (as mentioned earlier in this chapter), but these did not detract from the quality of the objects or their visual accuracy.

Across the three techniques used (Photogrammetry, 3D laser scanning, and Structured light scanning), each was fit for purpose, offering several similarities whilst excelling in aspects that make them unique. For example, both Photogrammetry and 3D laser scanning provided high levels of surface texture detail but differed in that Photogrammetry adds colour to the texture, making the object more visually accurate, whereas 3D laser scanning was monochrome (McMillion & Hanaphy, 2023). Structured light scanning provides a ‘halfway house’ between Photogrammetry and 3D laser scanning, balancing detail and visual colour/textural accuracy (McMillion, 2022).

All three techniques were found to be extremely versatile (Haleem *et al.*, 2022), both in the range of object types that can be subjected to them and in the speed and ease of use of the associated equipment. It is recommended that a combination of techniques be used to obtain the best and most accurate digital representations of Holocaust material culture objects.

Naturally, all three techniques are constantly evolving, as demonstrated by Photogrammetry, in the timeframe of this project, along with the development of the RealityScan smartphone app. In turn, this supports the further development of digital collections of Holocaust material culture.

A key aspect of presenting them in this manner, alongside witness testimony, is to give viewers interactivity and a deeper understanding. As the techniques continue to evolve, so will the quality of resources available to viewers, providing an even more immersive experience. Similarly, it is of key importance to do the survivors and their relatives justice by creating as accurate a representation as possible of their objects, not only for public use but to ensure a lasting memory.

4.8 Summary

The main points to consider when using the three techniques chosen for this project were researching the objects in advance, adapting the techniques to the situation as required, and, where possible, always having multiple techniques and equipment available. Understanding the nature of the objects to be digitised and having clearly defined goal parameters in terms of the desired scans allows for the best possible results in creating a representation of the object, while also allowing the owner of the object to see how effective it is and potentially be open to further work or recommend other Holocaust material culture objects to take part.

It was important to have received sufficient training in each technique. Understanding how they worked enabled adaptation to the key variables mentioned above and, again, produced accurate results with scan data, even when the optimal technique was not available at the time. It also allows the user to get the most out of the technique, providing data that accurately represents the subject.

As this type of research requires applying these techniques in non-traditional settings, such as a photography studio, appropriate equipment and alternatives must be available on short notice. Not only does this show preparedness to the owners of the objects, but it also allows alternative solutions to obtain accurate data and enables multiple techniques to be applied if required or if access to the object allows. This would ensure that, in theory, a detailed scan of a piece of Holocaust Material culture is possible, whenever or wherever scanning takes place.

Overall, the scanning techniques used provided strong results regarding the digital models created. For each method, models were created to demonstrate its capabilities. The generated models are accurate representations of the original and are interactive, highlighting key details that may interest a viewer.

Another positive demonstrated during data collection was the equipment's portability. A key part of the project was to travel to privately owned collections of Holocaust material culture; the fact that the equipment used was portable to the LDHP archive in Windermere, UK, demonstrates this. This shows that, where necessary, the equipment can be taken to and adapted to any environment, including survivors' homes, to access further collections.

Like most things, there are limitations, and naturally, some were found during this research. The first limitation of the chosen techniques was the availability and transportation of the required equipment. For this research project, equipment had to be booked from the university equipment store, subject to availability. There were times when some equipment, namely the 3D laser scanning equipment, was unavailable for use off campus. As a result, this did reduce data collection on occasions.

In addition to equipment availability, some required items, such as lighting equipment, were cumbersome. This presented transportation issues in moving the equipment to and from the university campus. In many cases, some equipment cannot be taken into people's homes due to logistics and limited space to set it up. This is another factor to consider when accessing other private collections, as it will be required to have sufficient equipment whilst also providing minimal disruption to the owner's home or the scanning environment.

Overall, the range of scanning techniques used in this research were used to explore and provide a strong contribution to the aims of this research and the development of the case studies and the creation of high-quality digital models to be used in the proof-of-concept platform (Chapter 6) and in Holocaust Educational materials (Bodziany & Matkowska, 2023; Kolb & Kranzlmüller (2021). The scope and potential of their application are shown by Muenster (2022) and Erolin (2019),

who have applied the techniques in humanities and medical research respectively, thereby demonstrating that the creation of digital Holocaust material culture is achievable on a large scale, making all of these materials available to the public for the first time (Gross, 2017 and Marcus et al., 2021).

Chapter 5: Thematic Analysis - Object Biographies

Material culture is often the only gateway to the lives and experiences of people who suffered during genocides and other conflicts. The remaining objects and documents tell stories that otherwise remain untold and often become lost to time. As Weld has argued in the publication 'Paper Cadavers', sometimes the only evidence is the memory we have of the people who suffered during genocides and mass violence events are the documents and objects that are left behind, as opposed to other typical evidence such as human remains and personal memories of survivors and victims. She highlighted the importance of documenting these individuals, which presents a foundation for this doctoral research. Highlighting objects and the stories they hold, it will allow for personal memory to be preserved and ensure that, unlike so many, names will not be forgotten but will provide a well-deserved legacy.

Similar observations can be made from the Bosnian Genocide, where in many cases, the only things people must remember their relatives and friends by are the belongings they left behind or passed on before the events that took place. The witness testimony of Senadin Selimić (Remembering Srebrenica, 2021) details how the only object they brought to the UK was a Hamjlija (an amulet), which to this day remains a link for the family who still reside in Bosnia. This highlights the significance of such objects and how they can become a large part of someone’s life, even when others take them for granted.

All of this ties into this doctoral research, as it highlights how, in many cases, the only evidence we have is the material culture left behind, with each object having its own story to tell in addition to the events that have taken place. From this notion, this chapter focuses on the development of unique object biographies that delve into the significance that such objects hold for survivors and their

descendants. It will detail the five object biographies created in this project, observations made from them and the thoughts the participants and their families have on research of this nature and the development of Holocaust Education.

5.1 The Five Most Significant Objects and Their Biographies

As referenced in Chapter 4, of the sixty-three objects obtained during this research, five objects and their associated biographies were selected as the most significant and interesting, making a strong contribution to the Windemere Children's story and the LDHP. Personal testimonies from the interviews conducted with families, which lasted approximately 30 to 60 minutes depending on how much the participant wished to say regarding their relative and object being presented, bring each story to life, enabling a richer understanding of personal experiences of the Holocaust and how they influenced the life experiences of the object owners.

For each object biography, the items vary widely, and each story is highly personal and emotional. The stories presented emerged from a detailed analysis of the interview content and associated research.

Object Biography 1 - Passover Cup

"…it has a close association for me with my father… when I look at it, it reminds me a lot of my dad..." (Judith Novice Roth). This is Judith Roth's heartfelt story.

In May 2022, at the belated 75th-anniversary reunion marking the arrival of the child refugees to Windermere, Judi Novice Roth (Judi) presented her Passover Cup (Figure 5.1) for digitisation.

Figure 5.1– Structured light scanned image of the Passover cup belonging to Judith Roth, a gift from her father, Michael Novice. (Copyright: Alex Haycock)

The story of this Passover Cup begins with Judi, who lives in the USA, and she is the daughter of Michael Novice, a survivor of the Auschwitz, Buchenwald and Theresienstadt camps during the Holocaust. Judi was born only 11 years after Michael was liberated from Auschwitz.

The cup was Judi's when she was a child, a gift from her father. Although the cup was not directly from the Holocaust, Judi said, ".it has a close association with my father. I don't have anything my father had during the Holocaust. He didn't have anything…." It symbolises the special relationship between Judi and her father and the pain and trauma he would have suffered to survive the Holocaust and bring her into the world. The cup itself is made from opaque pink plastic. It features a sticker of a lamb on the side and has the dimensions: 6.9cm (height) x 6.4cm (diameter at the base) and 7cm (diameter at the rim).

Judi recalled her childhood memories from Passover and how her family (and other traditional Jewish families) had a whole different set of dishes (crockery) specifically for this celebration. These were separate from those used the rest of the year at mealtimes: "the 8 days of Passover, we would have had a whole different set of dishes, and so that cup and a matching bowl, they were my very favourites". Unfortunately, the bowl was broken and lost many years ago, and the Passover cup is the only item from Judi's childhood Passover dishes. The sentiment this holds for Judi is immeasurable: "It's the only thing I have from the Passover dishes of my childhood. When I look at it, it reminds me a lot of my dad… it reminds me very much of my dad's personality, which is quite amazing

given what he went through that he is not angry, he's sweet and kind and generous and caring, and that's it's pretty incredible."

The Passover was Judi's favourite holiday period, and her special cup and bowl were an important part of the 8 days of Passover for many years.

Judi compared the story of the Passover where Jewish people escaped from Egypt and were able to become free people with her father's plight in the Holocaust: "There's a parallel to me with my dad being in the Holocaust and then becoming a free person…he worked as a slave labourer in a little town in Poland…in an ironworks factory….for about two and a half years and then he went to Auschwitz and worked as a slave and then he went to Buchenwald and worked as a slave, so I see some parallels between the Passover and my dad's story."

Despite Michael's suffering during the Holocaust, Judi grew up in a safe family environment, referencing the positive impact her father had on her and the family: "I don't know how he did it, but he always made me feel safe. I always had a roof over my head. I always had food on the table." Michael protected the family a great deal from the trauma associated with the Holocaust, barely speaking about it unless she asked something relating to him during that time, with Judi adding, "I don't know if that kind of explains my feeling about the cup and why it reminds me of him."

Judi vividly remembered her first memory when she realised her father was a Holocaust survivor, when she was a child and refused to eat a meal her mother had made. The reply from her mother left an indelible mark on Judi: "You know you should eat that because a lot of times your father had nothing to eat except grass."

Judi went on to explain, "It's on this train where they didn't give them any food, and they let them off. I guess maybe once a day or something, and all they could find was grass and so it, it's so, so, so traumatic."

Judi said that when her father spoke of the Holocaust, he did so only at what she described as high levels. In the words of her father, "I went to Auschwitz. And they made us work hard, and we worked here, and we worked there, and there wasn't enough food, and we were hungry. Then we run on a death march."

Judi further recollected, "My father would never say, you know, that they were beaten on the head or that they were, you know, hung up by a rope…. No, my father would say they had no food, and his cousin said we had nothing to eat. We

claimed one potato that we stole somehow or another, and we cut it into little, tiny pieces to make it last for several days."

Aged only 17 years old, four months after Michael Novice was liberated from Auschwitz, he came to England and Windermere. Michael's parents and brother were murdered during the Holocaust. Michael went through the Nazi Occupation with two cousins, one of whom was killed before the end of the war.

Having been in England for a month, Michael became ill with tuberculosis and was looked after for a long time in a sanatorium, where people were always brought in to help, including teachers who taught him English and History: "the people who are mentors to him, he had all the bonds of bonding with the other boys who survived."

Michael eventually found his brother, and the people helping him whilst he recovered helped bring him over to England.

Michael's recovery took about seven years, and he eventually went to the USA, having pondered between going to Palestine or Paris with his brother. Michael married and had a family, and whilst working, earned a bachelor's degree, a master's degree, and a PhD. Quite remarkable by any standards, but for a Holocaust survivor to go on and make a whole new life and instil into and protect his family with values and integrity is more inspiring.

Thirty-seven great-grandchildren now exist because Michael and Judi touchingly acknowledge the fragility and value of human life, being so precious, "if you save one life, it's as if you save the world and I see that with my father, because his one life. All the direct descendants are because he was able to live, and we could do so."

Although Michael was very reluctant to speak to his family about the Holocaust due to the traumatic effects it had on him, he was interviewed twice during the 1990s about his experiences. Judi says her father is a very emotional man, and even when they (the family) would ask him anything, he would steer away from such upsetting and harrowing details, showing that protection for his family.

Judi has watched the video recordings of her father's interviews "Recently, I rewatched his videotape recording; in it, the interviewer asked him. He said, Did

you tell your family about what happened to you? He said not very much, and the interviewer said Did they ask you about it and my father said Yes, sometimes they did. I did ask him, I sat him down probably three or four times over the course of my childhood, and I said Yeah, tell me what happened to you?"

Judi's father said in that interview, "I tried to send them off. I didn't want to tell them…"

Judi went on to explain, "..it was very hard for my dad and even in the 90s when he gave these interviews, which was more or less 50 years after the end of the war, he would break down and cry, you know, and 50 years later, it was so painful that he still had trouble and he wanted to give the interviews in the 1990s because he knew that if he didn't speak, then stories might be lost. So, I think they said my dad is a very emotionally balanced, very healthy, emotional person. And my take on him is that he kind of conceptually put his trauma in a box and closed the box. It wasn't sealed up. The trauma was in there, but he didn't get mired in it. He had to move forward with his life."

Judi has read some articles written by her father which showed the strong connection the Windemere children had with each other, "I recently came across some articles that he wrote and in one of them, particularly if he wrote about how important the for the family of the boys was for him, because I think they used to talk with each other in a way that you or I or anyone else who didn't go through the Holocaust, we could never understand because we fortunately never experienced it, but they had the support of each other as well as the support."

In 2022, Judi visited Windermere. She was taken by Trevor Avery (LDHP) to the first sanatorium her father had been taken to, where she felt as if she were walking in her father's footsteps from all those years ago when he came to England. The added sentiment of Judi's Passover cup displaying the lamb coupled with the Windermere setting of beautiful natural hills and landscape brought an even stronger connection, which could never have been predicted at the time she was given the cup, "the setting maybe the cup came from, but you know, I came to Windermere in May and in the hills…lambs and sheep…feel like beautiful, you

know, none of the trauma of the Holocaust because really, my dad protected us a lot from the trauma of the Holocaust."

More information about Michael's life can be found in the book 'Life of Michael Novice,' published in 2017 by his family.

Understanding the Passover

To better grasp the relevance of the Passover cup, it is helpful to briefly review the Jewish celebration of Passover, which will aid in understanding Judith's story.

A Passover cup is a central symbol of the Jewish holiday known as the Feast of Redemption. Although there is no mention of a cup in the original Passover story, the only biblical reference to a cup appears in the New Testament, where Jesus celebrated this feast with his disciples. However, throughout Hebrew scripture, the cup is used to symbolise God's judgement. This symbol is often depicted as wrath, redemption, judgment, and blessing, and, despite not being mentioned in the Passover story, these themes are woven throughout it.

Passover itself is the Jewish celebration of the Hebrew liberation from slavery in Egypt. It is the commemoration of the 'passing over' of forces of destruction and the sparing of the firstborn Israelites. The celebration typically starts on the 15th and ends on the 21st (22nd outside of Israel) of the month of Nisan (March or April). During this time, all leaven is prohibited, and only unleavened bread (Matzo) may be consumed. This is done to symbolise the suffering the Hebrews endured in bondage and in their haste to leave Egypt (Reform Judaism, 2024; Chabad, 2024).

How the use of the cup became a symbol for Passover is a mystery; however, within an ancient rabbinic source, the Mishnah, there is instruction to drink from the cup four times a day during the feast. A tradition that is still upheld today (Curt Landry Ministries, 2024 & St John Neumann Catholic Church, ND).

Each time the cup is filled it is given a different name.

1. The cup of sanctification (Kiddush).
2. The cup of judgment or deliverance.
3. The Cup of Redemption.

4. The cup of praise (Hallel) or Consummation.

Objects such as this Passover cup have significant religious connotations and, as such, hold sacred meaning; those who practice the Jewish faith hold them in great importance. For example, without this cup, the owner could not complete the religious rituals involved in the Passover feast.

The cup presented here was given to the current owner as a child by their parents, who were survivors of the Holocaust, thus adding an even greater personal connection to the object in addition to the religious ones. This transforms what many see as a common religious object into something with profound meaning. For the Holocaust survivor that presented this, it was likely the first time their child was taking part in the feast and having not been able to undertake the feast during the years of the Holocaust and now with their children, would have been a largely significant even, that has become a cherished memory for the objects current owner and is still used during the feast today. Judith's story highlighted this.

Object Biography 2 - Locket and family photographs

"…my mother carried it with her through Auschwitz and through the labour camps, through liberation all the way to England." (Debbie Lewis (*nee Debbie Fogel*), daughter of Rosa Dajch).

Figure 5.2: Photograph of the locket now belonging to Debbie Lewis – depicting her grandfather on the left and her mother on the right. (Copyright: Alex Haycock)

Figure 5.3: Photograph of Debbie Lewis proudly showing her mother's locket. (Copyright: Alex Haycock)

This square-shaped locket (Figure 5.2), dating to around 1946, is made of gold with filigree along the outer edges, decorated with a small horseshoe-shaped band of rubies, and is attached to a chain. The width of the locket measures around 5cm when fully opened. It contains two black and white photographs, which are of significant sentimental value to Debbie (Figure 5.3):

- On the right is a horseshoe-shaped photograph of Rosa Dajch, Debbie's mother, taken around 1945/46.
- On the left is a thumbnail photograph of Debbie's grandfather, Gdaliah Dajch, that Rosa carried with her during her time in Auschwitz, during the liberation and then to England. This tiny thumbnail photograph was detached from a larger group photograph using a pin.

With a strong feeling of pure love and admiration for her mother, Debbie Lewis's story begins. Here is the story of Rosa Dajch's locket and photograph of her grandfather, enriched with an unparalleled friendship that would last a lifetime, and a sheer will to survive the horrors of Auschwitz.

Although Rosa Dajch sadly passed away in 2020, she was one of the Southampton Girls following liberation from Auschwitz. This group of survivors was part of the second group to come to the UK following liberation at the end of WW2. This group encountered 'the boys' through various societies that organised reunions and other events that they attended. A predominant organisation is the 45

Aid Society, which has detailed archives for everyone who was included in these groups, allowing further detail to be added to the case studies presented here. Additionally, it was determined to include this story despite not being directly related to 'the boys' due to Rosa Dajch's connection to the Holocaust and through meeting her daughter Debbie at the reunion event held in Windermere. Debbie provided the interview included here.

The locket is an item she saw her mother wear often, and for Debbie, it has a strong, unbreakable connection between them, “…when I wear it, I feel like I have her next to my heart, which may sound soppy, but it's true.”

Debbie describes that the locket and necklace made her mother feel very emotional, and that she wore them to honour one of the other girls, Estera Warszawskah. Each girl bought the other an identical necklace, such was their bond forged through friendship, and Debbie recalls that in some later photographs she saw her mother wearing the necklace, and in others, Estera wearing hers.

Debbie said, “My mother met her best friend Estera in the barracks of Birkenau on the day that they both lost their sisters in a selection…. a man in a white coat took them away.”

It was this friendship that enabled Rosa to survive. Debbie was unsure of her mother’s true age but recalls she may have been aged around 13-15 years when Rosa met her best friend “I don't know what her true age was at the time, both of them reached out to the other and never let go, and they swore to each other that they would stay friends, that they would never be apart and coming to England was a watershed moment for them because it gave them new life and every girl had another girl. Everyone in Herne Hill, where my mother was hostelled, had a best friend.”

Even though Rosa eventually went to Canada and Estera to Israel, their friendship lasted until Estera passed away, quite young, from cancer.

Debbie added, “Although my mother passed away…. had a family…. but never gave up her connection to the boys, to this experience of being given a gift of new life and the generosity of the English people who welcomed her into Southampton and then ultimately into the hostels.”

Returning to Rosa Dajch and her life to understand her journey.

Rosa Dajch was the youngest in her family, born in 1927. She had two sisters and an older brother and grew up in Lodz, Poland. Rosa's father was described as a house painter and a 'jack of all trades.' However, when the Second World War broke out, because he worked in a cash-only business, his income collapsed almost immediately. Rosa worked in a factory (a resort) as a shoemaker. One of her sisters worked in a toy factory, the other sister was a furniture maker and her brother, the oldest sibling, went to Russia with four friends and sadly died in Leningrad (now St. Petersburg). Debbie's grandmother was called Nacha Dajch (nee Morgenstern).

The family then lived in the ghetto for 4.5 years. Rosa's father was always very politically active, and he became an important member of the community. He was asked to join the Jewish Police in the ghetto, but refused because it meant, in Debbie's words, he would have to "rat out his friends, and that was something he wasn't going to do."

In August 1944, Debbie's grandfather, grandmother, her mother Rosa and her two sisters Esther and Cecil were taken to Auschwitz. One cannot even imagine the distress that followed, "when they got to the platform…during the selection, the first people to go were my grandmother and my grandfather and my mother told the story that at the platform someone official came, they had a cane with a hook on the end and pulled away my grandfather in one direction pulled my grandmother in the other direction. She didn't have a chance to say goodbye."

However, Debbie fondly and sadly recalls the kindness and sheer spirit her grandfather showed at that time before he and others were murdered in Auschwitz, an account mixed with atrocity and highlighting a man's leadership and sheer human qualities to help reduce the natural fear those with him were suffering.

"On the train to Auschwitz, my grandfather, who was a very well-read man, had a suitcase. You were told you could pack one suitcase and given a short amount of time to pack. My mother packed a doll, a comb…she didn't see what my grandfather brought, and they got on the train and the first thing he did was he

found a cooking pot and put it into the corner of the train and found a blanket to make a corner. He said that we should not be animals, even in the situation, we should live like people and have privacy for our most private needs.

People were crying and screaming…it was a terrible atmosphere because the trip to Auschwitz lasted maybe 3 days...you stopped, you started. He opened his suitcase at one point and cleared a space, and he said I'm going to read you stories and he opened up his suitcase, and it was filled with books.

There was no money in there, there was no food, and there was no clothing. It was just books, and he pulled out a book by Sholem Aleichem and started to read these stories, which are satire and comedy…my mother said…the car became quiet as a library, and he was able to calm people's nerves, to soothe them and to distract them from what was coming.

So, I don't know much about my grandfather, but I think knowing that story, I didn't need to know much more about him. He was a gentle man. He was a kind man. He always gave to his community. He was not a religious man, but he was deeply spiritual and his own way and believed in Yiddishkeit, in continuing the culture of Yiddish is very vital to him……my father's whole family was taken away. He had no one. Nothing. His whole town was taken away to Treblinka."

It is suspected that Rosa kept her father's photograph (the one in this locket) in one of her shoes when she was taken to Auschwitz. Although she was stripped of all other clothing, her shoes were not taken from her. "*The picture itself was valuable as gold…to her….and it was really the only object that we had…my grandfather's whole family was taken away.*"

Although the locket was made from gold, and during times of hardship when it would have been so easy to trade for basic food, it was never sold. Such was its importance and the priceless value of this locket, and the photographs in it are very much part of Debbie's family and will be for future generations. "As a child of survivors, I don't have heirlooms like perhaps other people of my generation do. There are no family heirlooms. This object is something that I will pass on to my daughter, and I hope that she will treasure it as much as I do."

Debbie Lewis lives in the USA and was honoured to be able to tell her story so that others could learn more about the Holocaust and remember the millions of people who died far too soon.

“I think that, especially when educating young people, if you consider six million dead, it's too big a number for kids to wrap their heads around, and one of the best ways to teach kids is through an artefact. The artefact tells a story. The artefact can be described as tangible. It's real.

The six million are too many, but through this object, you can tell the story of one person. It has a history to it, so to speak. What became of my mother? How did she survive? Where is she from? Why would something gold be valuable? Let's look at the details of the thing and what made that so important to her, and I believe that again, objects are the best way to do this.

Well, we're talking about a generation of students now who are digitally knowledgeable. They are not going to go to the Encyclopaedia Britannica to look for information. They're going to go online, and they're going to know how to use it with some agility.

They are hard-wired now to do research in a more sophisticated way than my generation ever was, and I think that as more comes online, it's available to more people. The other important piece of this is in terms of preservation of memory. If you have these objects, you can't deny the history. We know that it's there.”

Object Biography 3 - Wedding Ring

“I was liberated. We were happy that the war was over. It was my birthday, and I realised that I'm all alone in the world.” (Jacob Glicksohn, aged 18 years)

From loneliness after the devastation of the Holocaust to hope and love, Judy Glicksohn Pasternak tells, with immense pride, the story of her father, Jacob Glicksohn and his beautiful relationship and marriage with her mother.

Figure 5.4: Photograph of Jacob Glicksohn’s wedding ring. (Copyright: Alex Haycock)

This 24-carat gold wedding ring (Figure 5.4) is the only one in the world. It was specially made in Burma for Jacob Glicksohn, by Judy’s great-grandmother (mother’s grandmother's side of the family) and bears his initials JG on both sides of the small, clear diamond.

The journey and the story behind this ring truly are remarkable.

Jacob Glicksohn was born in Częstochowa, Poland and lived in the ghetto there. From forced labour in the Hasag camp, he was then sent to Buchenwald in January 1945. From Buchenwald, he was later transported by train to Theresienstadt.

As a little boy, Jacob was thrown into a game of survival, with no instructions, just intuition. He believed that luck was with him all the time because when he was in the concentration camps, and ten people were selected to march out, they did not know if they would survive or be killed. Judy explained more, “Our surname is Glicksohn, and Glick is luck. He always felt that he was a lucky man. He said luck was with me. Luck was on my side. I didn't know why I did things, but I felt that this was it, and I'll do anything just to live, even if he was.

He had typhus; he was so weak he couldn't even cook his own cocoa when he was in Theresienstadt. They gave them cocoa and sweets and whatever he used to exchange something for somebody else to go and boil his cocoa or boil his

potato. He would give something else because he was so weak, and he said I'd never give up hope."

Jacob came to Windermere and wrote a diary in 1946, and when his family later had the entries translated, it was then that they discovered Jacob's mother had died in Treblinka. From that diary, Judy explained that "his hair turned white, and he never laughed and smiled from that day onwards."

However, Jacob's story of love and hope began when he met his future wife-to-be, Judy's mother.

Judy proudly recalls, "When he met my mother…his life changed. He was back to life, and although he died at the age of fifty-nine, every night, he would thank my mother for being her, his wife, his friend, his sister, his mother, his companion…. My parents' story is a wonderful love story."

Jacob's wonderful values and remarkable respect and gratitude for his wife are lessons that would benefit many today, where various forms of hatred and discriminatory cultures occur in some sections of society.

We learn how Jacob met his wife.

Judy, "My father sat with a Polish-English Dictionary on the weekends and translated little portions of the newspaper, The Jewish Chronicle, and he was also a stamp collector. One day, he found a small ad in the newspaper that somebody from Burma wants to correspond with a stamp collector. So, he thought I'll practise my English, and I'll exchange stamps, and he wrote a letter…they corresponded for four years."

After four years of writing to each other, Jacob proposed to Judy's mother, "My father proposed to my mother by letter, "…he said to her, "If I could have whatever I need, it's just to marry you…and my mother answered back, You're crazy (more or less)…I'm Sephardic, I'm not Ashkenazi, which was not regular at that time……I'm eight years older than you, and you don't even know me, and it's not logical.

My father answered her back (more or less), and my whole life was not logical. The only logical part of my life is that I've fallen in love with you, and I want to marry you. So, my mother told her grandmother, and my mother came from a very rich family in Burma.

And her grandmother said as she looked up in the sky…this is what my mother told me…. She looked up in the sky and said, Thank God… and my mother was just so shocked, she said, Why are you saying this? She said Because this is what we call the bashert."

The bashert is a person's soulmate, especially when considered as an ideal or predestined marriage partner.

Judy still has those letters written between her father and her mother, items of personal treasure. Correspondence between two people deeply in love with each other, capturing written memories and the excitement of a new life felt between them, "…they exchanged stamps, they exchanged stories, they exchanged photographs, and they fell in love."

The path to love wasn't always plain sailing and Jacob first had to undergo some scrutiny from the grandmother of his future wife-to-be, to determine if he was suitable as Judy recalls, "…my father was a refugee from the pogroms in Russia…he fled to Iraq and a Jewish couple that had a grocery store took him in and in exchange for bed and food he worked for them.

They had one daughter, and he fell in love with their daughter, and he got buried with her, and they had one daughter, Rachel Rosenberg, born in Iraq…and she was my mother's grandmother. So, she felt that this was like a closure, and she said I will pay for Jack's fees to come to Burma, and I'll even send him money to buy clothes. He can come here for a month, and we'll give him a good time, and if after one month you still want to marry this man, I'll agree, but I have to test him….and so my father arrived in Burma for a month, and my mother's grandmother was testing him in different ways.

She saw that he put on Tefillin in the morning, so that was it, a good thing…and then she asked him about his family, and he told her that he is a Cohen, a priest in…a Jewish priest. She said he's a Cohen, which means he's important, and she herself was the daughter of a Cohen, so this is a sign from God.

Then one day she sat him down, and this is how my father told the story.

She took out a little handkerchief from there, and she opened the handkerchief, and it was full of diamonds. She said Choose the stone… and for my father, these

were just stones; they're not gems because the most precious things that he had he already lost in the Holocaust, so he didn't want to offend the old lady.

He took the smallest diamond, and she said, I like your modesty, and I'll make you your wedding ring with this diamond and then he said to me, Judy, if you ever offered diamonds, go for the big ones, don't take the small one."

Judy wears her parents' wedding rings to this day, "…, and after he died, I took the ring, and I've been wearing that ring ever since, and in November, my mother died. She was almost 103 years old, my father was 59, and I'm wearing her wedding ring, so I wear both my parents' wedding rings, and I feel that they're with me all the time."

Judy has authored a book based on her father's diary, and there are photographs of both her parents in the book and of their wedding, where, in 1952, seven years after the horrors of the Holocaust, her father is sitting with one of the richest girls in Burma, with an orchestra playing just for him. "An amazing love story," says Judy.

Judy's parents' wedding rings bring her much strength in life, "with both rings, I feel my parents are with me…and as my father wasn't afraid of anything. That's how I feel when I feel the ring like you can do it. Whenever anybody asks me how I can manage this, how can you manage that? It's always there; I'm a survivor's daughter. I can do it."

Jacob understandably protected his family from hearing about the Holocaust and tried to try and move on in life himself, "...my father didn't tell me anything about the Holocaust. Whenever I asked him, he said it's like a sore, like an ulcer with pus, and I've got a plaster on it…and what you're doing is you're ripping it open, and you want to dig in."

In 1946, Jacob wrote a diary in Polish; at the time, everything was fresh in his mind.

Judy recalled, "…he said to me, you will translate the diary after I die, and then you can, you'll know the story and you can do whatever you want with it, but don't give it to Yad Vashem. So, I promised him that I would keep the diary. I have it, and it took me quite a while because only 20 years after he died, I decided that I'm going to translate it.

And when I read it, I left it closed again for another 20 years. I lost too much.

Eight years ago, I wrote a book…and it's based on my father's diary…and it's called, in Hebrew, ‘on behalf of my father.’ That’s what I’m doing, I’m telling his story on his behalf.” Judy's book is shown below in Figure 5.5.

Figure 5.5: Photograph of the book written in Hebrew, “On Behalf of My Father,” by Judy Glicksohn Pasternak based upon her father’s diary that was written in Polish (1946). (Copyright: Judy Glicksohn Pasternak)

Judy said her father always mentioned Windemere, “…it was lovely. It was like heaven, and that was it. Windemere brought me back to life. That's what he said.”

Judy eventually visited Windemere, having looked it up on Google several years previously when she wanted to visit, “..I looked it up on Google, Windermere, and then I saw they have the Lake District, the library, and I looked there and at the exhibition, and…my father's picture from the boat, this picture and I didn't have it, so I sent an email. Can I have a copy of the photo? I didn't even think about this. I just wanted a copy of the photo that I didn’t have, and I'm so happy that I corresponded with Rose and with Trevor.” (Figure 5.6 shows the photo Judy refers to).

Figure 5.6: A copy of the photograph containing Jacob Glicksohn along with several of the other boys that Judy obtained from Rose Smith and Trevor Avery at the Lake District Holocaust Project. (Copyright: Lake District Holocaust Project)

From visiting Windemere, Judy has been able to meet other survivors' families that she describes as 'cousins' and a 'big family,' which shows the unique bond they have and how they wish for their relatives to be remembered, and their lives and stories help educate future generations.

Jacob's wedding ring and story will help to educate people more about the Holocaust, as Judy explained, "We have a project in Israel called Remembrance in the Living Room. Basically, people invite people to their homes, and they invite a survivor or a second gen to tell the personal story, and there's always something optimistic.

You always have to believe that it'll be okay, you don't lose faith, and when I look at the wedding ring, and I see my father, how he was, he lost everyone, his whole family. He thought he lost his whole family, and seven years later, he is married and has a family.

The wedding ring resembles family and the continuation. It's especially for the children when they come to hear the story because he was just 12 years old when the world, when the war broke out, he used to say, I didn't even have a bar mitzvah, and I was forced to be a man.

So, I tell these children he was your age, but he didn't give up. There's always hope, and you can see he survived. He got married; he had a family. He had a good life.

That's what the wedding ring is, just something that is with me all the time.

Even if I have a dilemma of something, it's like, what would you say? What would you do now you know?" (Talking to the ring for inspiration from her father)

Judy believes there are many ways for people to learn about the Holocaust, and was immensely proud and supportive of being involved in this research project as a way of presenting Holocaust-related objects and their associated stories.

Judy explained, "Those stories, everything is a suitable way. Anything you do to bring up the Holocaust. See, everybody finds their own. Each one finds its own path to learn about the Holocaust. Some people, through books, some people through films. Some people need Instagram. They're doing all these little things. Some people go to museums, and some people need to see objects that belonged to survivors.

Yad Vashem did the same thing with my father's diary, because I wouldn't give it to them, so they scanned it 3D, so they have it there.

And I think it's important, these are objects of real people."

Judy later found her grandfather's grave in Częstochowa, having looked his name up on a site called Find-A-Grave. When she attended, the graveyard was in a terrible state, and a major cleanup project was underway. Judy asked them to send her a photograph if they found the grave. Three years later, they did, and she has that photograph of her grandfather's final resting place.

The 3D scan of her father's Holocaust diary and Judy's book, based on the diary and translated into Polish, are now helping students learn about the history of Częstochowa.

There are plans to translate Judy's book into English, which will broaden the scope of contributions to educating people about the Holocaust.

Judy's final thoughts brought home why this research is important, "…when they learn about Czestochowa's history, their learning is through my book. Wow, so I think I'm doing my part."

Object Biography 4 - Thread Wheels

"…to me he was perfect…" (Shirley Huberman, wife of Alfred Huberman, Holocaust survivor).

The two wheels of thread (one orange-coloured, the other silver-coloured) depicted in Figures 5.7, 5.8 and 5.9 belonged to Auschwitz survivor Alfred Huberman. Their significance lies in their simplicity: it is Alfred's memories that bring smiles to his wife's and son's faces, and waves of fondness flood through their minds.

Figure 5.7: Photograph of the top of the orange thread wheel. (Copyright: Alex Haycock)

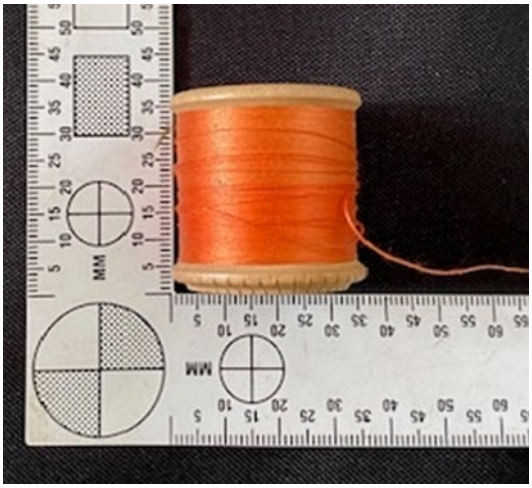

Figure 5.8: Photograph of the orange thread wheel side profile. (Copyright: Alex Haycock)

Figure 5.9: Photograph of the silver thread wheel – side profile. (Copyright: Alex Haycock)

This story is a perfect example of how to be a good person and not let bitterness rule despite the suffering in Auschwitz. Alfred and his sister were the only two from the family who survived Auschwitz. Following WW2, his sister went to France, and he came to the UK as one of the Windermere Children, which brought him a second chance at life.

However, whilst in Windemere, Alfred was ill with tuberculosis (TB) and suffered a lung haemorrhage while playing football. He was very much one of "the boys" and made many friends with them in Windermere.

After a period of respite in Windermere, Alfred travelled south to the coastal town of Brighton, where he had relatives and needed a job. He began working as an apprentice at a tailor's shop, where the significance of the thread wheel begins.

Shirley recalls, “By the time I met him, he was a tailor…he’d done evening classes, he’d done cutting classes and went through the whole gambit. When I first knew him, he was a men's tailor and then gradually, he learned to be a lady’s sailor so he could do anything if it was silk or wool or whatever it was…. just you give it to Alfred, he could do it.”

Shirley was in real awe of Alfred and saw no wrong in him, “I still say absolutely amazing, he was kind, he was thoughtful…he did kind things without mentioning it, help people…he was an all-round good egg as they say.”

Alfred seldom spoke about his experiences during the Holocaust, as Shirley remembered, “He didn’t like to even when he was giving talks. He didn't. He didn't really want to, but he felt that he had to go and talk and just spread the message so that people would know about it.”

It was as if Alfred felt a strong sense of duty to those who had died and survived the Holocaust to tell their stories so that people could believe what had occurred by hearing it firsthand.

Alfred loved his job as a tailor not only because he was earning money, having come from nothing, but more so for his customers, as Shirley recalls, “he liked the customers. It was the people, definitely the people. He was so satisfied that he could do something to please them because he'd get the most outlandish things and make them fit the customer…and they were so delighted with his work. That's so good to hear…in his work room I've got a of bag of letters that I got when he died and that gives you a good idea of what people thought of him.”

Alfred had his workshop in a large store in Brighton called Hannington’s, and when it closed, his customers followed him to his workshop, at his home address, where he continued working for them.

Alfred was such a friendly man who saw no harm in anyone, Shirley adds, “You might imagine that having been in the camps, he'd be a bit (standoff motion mimicked), but he wasn't. He was friendly, open, and talkative…and if I said I don't like her, he'd say no, don't dislike people, don't be bitter inside, because if you're bitter inside, it just eats you up.”

Shirley said that Alfred was a good father and spoke about his experiences and story at universities, prisons, and at work. He was also interviewed by a journalist; the article can be found online (The Keep, 2024). Alfred was interested in people’s reactions to his story and embraced the idea that it should live on after he was gone.

Alfred’s son explained, “he never came from a position of pity or anything like that. He came from a position of…education and used to have a sort of stock saying, if I don't talk about it, who will? I never got the impression he sort of told the story for himself…it was always for all the people…I've heard him interviewed, and he said, as the years have gone past, I can't believe that I went through that, so to expect

someone who hasn't been through it to even believe…that anybody could survive that. That's why it was, you know, important for him to sort of have confirmation and evidence that it had happened.

Sometimes I'd go with him, and he did his talks, and I'm always quite amazed, even from young kids…that it does seem to sort of resonate with people. Unfortunately, having lost dad, we can't do that now, but there was nothing more impactful than having a real person standing in front of you…so them telling their story, and I think this is probably just the next stage using technology."

Shirley added, "And at Windemere, Rose ran a writing competition for children to write essays and one time they wrote a letter to Alfred, and I've got those, so they must have related to what they'd heard."

Alfred's son believes that academics should personalise individual experiences because the magnitude of the Holocaust is too big to comprehend. This research intends to do this.

Shirley holds the same view, "…and all stories are different. Every survivor that you hear talking they didn't have the same experience. They might then end up in the same place…they might have gone on a march, but how they were treated by different groups of people and neighbours and, so-called friends, and I think all these films like The Boy in the Striped Pyjamas, some said that couldn't possibly have happened, and people believe that."

Alfred Huberman was just a normal man speaking about his experiences, far more impactful than anyone who was used to teaching or presenting. When he began talking about his life and experiences, other topics would naturally follow, giving his talks a real human element and engaging his audiences well.

Hearing first-hand stories enabled listeners to understand what life was really like, and had they not gone through the Holocaust, one can only wonder what direction each person's life would have taken.

In Shirley's words, "he said he didn't know he wanted to be a tailor and maybe could've done better if he didn't. He did so well with what he did, and I think he just liked people. He was a good communicator.

To me, he was perfect. When I hear other women saying nasty things about their husbands…I just don't understand it."

To preserve Alfred's memory, Shirley and her son have kept the room at the back of his house, which he converted into a workshop, exactly as he left it before he sadly died.

Object Biography 5 - Tefillin

"I saw that it will be the most important thing I can do for my father to bring it here to Windermere, the place that he got it, and it will be a memory for him here."

(Ester Peerbaryosef, daughter of Holocaust survivor, Menachem Silberstein).

Figure 5.10: Photograph of the Tefillin that belonged to Menachem Silberstein, donated to the Lake District Holocaust Project by his daughter Ester Peerbaryosef. It is still in pristine condition. (Copyright: Alex Haycock)

Menachem Silberstein was born in Łódź in 1927. Throughout the Holocaust, he was a forced labourer in the Mniszew ghetto until 1941. Before being moved to the Skarzysko-Kamienna, Czestochowa and Buchenwald camps, he was sent on a death march to the Theresienstadt camp in 1944. He was liberated and came to Windermere as one of the boys (Yad Vashem, 2011).

To provide context for the Tefillin (Figure 5.10), note their religious significance. Traditionally, they are a pair of black leather boxes containing Hebrew scrolls, connected by a leather strap, which are worn by all Jewish males over the age of

13. However, in modern times, people of all genders can use them in their prayers (Medwed, 2024).

They are most frequently used during morning prayers and are worn as it is a mitzvah (commandment) in the Torah (Jewish Museum London, 2021). The Torah mentions the mitzvah of Tefillin on four occasions. Therefore, each of these four texts is inscribed on parchment and placed in leather boxes. The texts themselves included verses that sum up the fundamentals of the Jewish faith (Chabad, 2024).

The four texts are:

1-2) Kadesh and Vehayah ki yeviacha - the duty of Jewish people to remember the redemption from Egyptian bondage, and to educate children about this and God's Commandments.

3) Shema - Unity of one God, commands to love and fear him.

4) Vehayah - assurance of reward that follows observing the Torah's mitzvahs.

The meaning behind the Tefillin and these scriptures is to 'bind oneself to God' and aid in keeping this belief in a person's thoughts during times of prayer, reflection and in day-to-day life. To bring people closer to their faith (Chabad, 2024; Friedmen, 2017; Medwed, 2024). This Tefillin, along with a tallit katan, was originally gifted to Menachem in the Lake District in 1945 by Rabbi Weiss, who was from the Gateshead Yeshiva community and was part of the care team that came to help the newly arrived Windermere Children.

The story behind this Tefillin has parallels with life: we often return to a place of significance for our final resting place after we die, and the Tefillin is eventually returned, full circle, to Windermere, where it remains for all who visit to see.

Menachem missed the Jewish tradition of his bar mitzvah because of the Holocaust, and so, the Tefillin was deeply treasured by him, believing it would protect him from the dangers in the world and bring him future good luck.

Ester said it was important to Menachem that people learned about the Holocaust and the people affected by it," he said all the time we need to tell the story. We need to tell what happened to us because people must know what it means, and

people will forget, and we have to tell the story from generation to generation to imagine that never again something like this will happen."

Menachem came to Windermere, where he was given a new life along with the other children and from there, he went to London to learn to be a dental technician. In 1948, he went to Israel as a volunteer during the War of Independence and later met his wife (Ester's mother). Some of the other boys who also came to Israel returned to England; however, Menachem remained in Israel with his wife. The Tefillin travelled with Menachem; he would never let it go, holding it precious.

Ester proudly explained that her father spoke to children in schools, spoke highly of his time in Windermere, how he and the other children came to be there, and what it meant to him. He even went to the army where his son was posted to tell his story of how he ended up in Windemere and what the place meant to him.

Before Menachem died, the family visited Poland as Ester recalled, "We went to Poland, we went to his place where he was born, and we made him a big tour of the Holocaust places. It was very important to him. We took all the grandchildren then to tell the story and everything, but to Windermere, he never came back."

His memories of Windermere are indelibly stored in vivid colour in his mind, playing out scenes from his new life away from the horrors he had previously experienced. A life shared and experienced through the special bond he had with the other boys.

Ester said that her father wanted her to place the Tefillin with him in his grave after his death; however, she explained that the Rabbi conducting his funeral ceremony said that it could not be placed in a grave because of its holy nature.

Ester decided to keep it and return it to Windermere, where he had originally been gifted it. When Ester discovered there was a survivors' reunion in London and realised many survivors were no longer alive, she had to attend and felt a strong sense of duty to travel up to Windermere, where she was able to tell her father's wonderful story and gain a sense of closure for herself.

"It (Windemere) was a very, very big place for him and made a lot of difference to his life, so I saw it for me…and I knew in May there was a reunion in London. A lot of survivors are not with us anymore. So, I said to my husband, We have to go to the reunion, and then I will go to meet Trevor."

Ester said that to understand her father's story and the significance of this Tefillin, people must first understand what it means to Jewish people, children, and the bar mitzvah and then the influence Windermere had upon Menachem, keeping this Tefillin with him as he travelled to Israel. She said that telling his story will allow people to understand both sides, one as a Holocaust survivor who kept it and the other as a Jew and what it means for Jewish people.

"It was in a special place at home…and once he told me about it, you know, when I pass away, you'll have to put it in my grave. I couldn't put it in the grave, but I think I put it in a place that is very important for him."

Everyone will remember his name as one of the boys now that the Tefillin is back at Windermere, on display in the Lake District Holocaust Project.

Ester said that in Israel, a lot of schoolchildren visit some of the camps (for example, Theresienstadt and Auschwitz) to learn about the Holocaust, but they do not go to Windermere to learn about the support provided by the British Government for so many children. A digital online resource to tell these important stories of survival is something Ester believes will make this possible.

5.2 Object Biographies Observations

In this section, an analysis of the object biographies created for this project highlights commonalities and differences among them. This is done to allow for a deeper understanding of the interactions with the owners and the significance the objects hold to them. Additionally, it will discuss how the application of microhistorical theory influenced the composition. Including how it provided an avenue for further research into the objects and their owners.

All five object biographies contain significant direct and personal quotes from the survivor's family member who told their story in great detail, bringing out the meaning of each object and the person to whom it originally belonged. The biographies detail life before, during and after the Holocaust when they came to Windermere and the UK, and the influence the survivors had on their families, they went on to have. All originated from different areas of Poland and had varied backgrounds and life experiences before the Holocaust, but there was a strong correlation with some of the camps they were sent to. There was no doubt that the

one thing they all later had in common was surviving the Holocaust and making new lives in the UK, all deeply cherishing life as one of ‘the Boys.’ All had proud families who, when much younger, may not have understood or known of the true suffering their relatives went through, but now they are adults, and all have a greater understanding of the Holocaust and could personally relate to it through learning about their loved ones' previous lives.

Chapter 3 detailed how Bonneseur, Wilson & Zühlke’s (2023) microhistorical approach positively influenced the development and creation of the object biographies by enabling each story to be told as set out in this chapter, adding an innovative dimension to the Windermere Children’s story and the LDHP. Dr Wilson’s (2023) approach to creating unique and engaging case studies raised the proposal of how that methodology could be developed and integrated with the individual personal interviews conducted with survivors’ family members and the associated digital models collected. This provoked thought and structure for how the five object biographies from this project were to be presented, strongly focussing more on the personal stories and journeys told, as opposed to wider historical aspects, to highlight what those objects meant at the time of the Holocaust, what did they mean after the Holocaust and what do they mean now that they have been passed onto survivor’s families?

Raising these questions allowed more depth to be given to each object's biography and brought together the side of the story not typically seen, the personal one, their life expressed in their words and allowed the owner and their relatives to tell their story exactly how they wanted.

Each of the object biographies sparked a desire to learn more about the individuals in other online collections, including testimonies from those who might have spoken firsthand with the survivors, rather than from the one-to-one, highly personal, and privileged settings of this research. Additional online research was conducted to add to the information provided by the survivor’s family members during these one-to-one interviews. For some, there was more detail; for others, further detail was limited. What was evident was that the case studies were jewels of history previously encapsulated and preserved within families’ minds, but now released to the world.

Further information on the observations surrounding the object biographies can be found in Appendix 4. It details the key themes observed in the interviews and other information about the objects presented when developing the biographies. These observations highlight the various aspects of the survivors detailed in each object's biography and allow for a personal emotional dimension that, in turn, provides a deeper understanding of their experiences and how they have shaped their lives.

5.3 Families' Views on Continued Holocaust Education and This Research

There was overwhelming support from the five object biographies and the associated survivors' families for this research and the concepts presented, which together provide a strong contribution to future Holocaust education. Notwithstanding the personal and sensitive nature of the subject matter, almost all felt and spoke with pride about telling their stories.

- Judi Roth and her family have always been proud of their heritage, and they still give talks about their father, Michael Novice, today.
- Shirley Huberman wants the family to continue to honour Alfred Huberman's legacy, telling his story and encouraging his message of communication.
- Judy Glicksohn-Pasternak glowed with pride at being her father's (Jacob Glicksohn) daughter, to tell his story and for further advancements in telling the story of the 'boys' and the Holocaust.
- Debbie Lewis, daughter of Rosa Dajch, thought that the concept of having an object digitally represented without having to donate it is a good one and supports any method that can be used to do so.
- Menachem Silberstein's daughter, Ester Peerbaryosef, was pleased that this research was taking place and that she could participate.

One noteworthy aspect is that the object biographies did not necessarily tell the entire story. For example, Object Biography One, which included an interview with Judi Roth, provided in-depth insight into her understanding of her father's story and the significance of the object she presented. In discussing the Holocaust and offering a 'different take' on the traditional narrative, her account served as an

invaluable 'entry point' into her father's story. She gave the viewer an initial glimpse into his life after the Holocaust through a point of view that undoubtedly enabled the reader to feel her connection with him and how that relates to our relationships.

However, though only briefly touched on within her interview, Judi mentioned telling her father's story, which she indeed published along with her family in a book titled 'Life of Michael Novice'. This book delves further into Michael's story and details his whole life and experiences of the Holocaust. In all, it truly serves as a humble and respectful way to tell his story in his own words and through the stories he told his family. Resources such as this enhance the case studies regardless of the presentation format. Again, where an object biography opens the door, by presenting the information presented within the associated interview and further object information, it is these other biographies and autobiographies, their story in their words, which capture the viewer and promote learning in a relatable and enjoyable way. Furthermore, when combined with other media, such as interview videos and digital 3D models, it enhances the overall user experience.

5.4 Summary

It became clear that the strong combination of personal objects from Holocaust material culture, their associated personal stories, and their journey provided evidence supporting the conclusion that participants did not have to part with their objects whilst contributing to the Windermere Children’s story. As such, it was both an absolute privilege and an extremely humbling experience to be allowed into the personal lives of the families and to be granted their trust and permission to share such profoundly sensitive moments. Hearing these interpersonal accounts brought home the reality that even small, delicate objects that may not have had much monetary value hold priceless value in remembrance and in familial connections.

The microhistorical approach used by Bonneseur, Wilson & Zühlke (2023) proved an excellent model for developing object biographies. Based on this model, the analysis of the object biographies receives strong support from the survivors’ families for this project to contribute to Holocaust education and to the

development of the proof-of-concept platform from which to do so. Additionally, all the survivors' family members interviewed were proud to share their stories and the fascinating objects they had kept, adding value not only to this work but also to broader Holocaust research and future education. Without their explicit consent, this would not be possible, and publishing such personal accounts without their blessing would be ethically wrong and an incomprehensibly unacceptable invasion of their privacy. Inspired by the range of objects and their stories, enriched with pride and personal meaning, and by how other online digital collections were currently presented, the proof-of-concept platform could be taken to a new level. The development of the proof-of-concept platform began to take shape. Chapter 6 will explore the platform and bring it to life.

Chapter 6: Proof-of-Concept Platform Development

Digital Holocaust Memory can be defined as the growing digital repository of Holocaust memory, comprising material culture, heritage, and other archives, made available to academic researchers and the public (Digital Holocaust Memory, 2020), as highlighted in Chapter 2. Opening the door to opportunities and theories, such as those presented in this thesis, for documenting and disseminating previously uncatalogued material culture and memory to the public (Karsteiner, 2014) enabled the development of the five object biographies presented in Chapter 5. Therefore, Digital Holocaust Memory can be said to aid in the preservation and documentation of the lives and stories of not only the survivors but everyone affected by the horrific events that took place.

As the field of Digital Holocaust Memory develops, digital reconstruction of material culture is increasingly used, as demonstrated in this thesis. Additionally, modern technology enables reaching wider audiences through the Internet and digital platforms. Though digital platforms are needed and can arguably be a standard tool for any academic institution, they must be delivered effectively. Current platforms, including those detailed below, are tailored to present various aspects of Holocaust Memory in digital form. With simple observations highlighting how different they all are to each other, but with each following a unique method of presentation to achieve a desired goal. Of the current digital collections of Holocaust Material Culture available from world-leading institutions, all are effective in documenting and presenting the desired information. However, the issues arise in user engagement and information retention. Whether it is information overload from vast blocks of text or minimalist approaches that focus on an image or an object, what is needed is a universal approach to presenting Digital Holocaust Memory that is not only engaging but also pushes the limits of available technology to enhance digital exhibits compared to physical exhibitions.

It is from this question that a method, a concept or a foundation from which future and potentially even existing digital exhibitions or researchers looking to create digital repositories are proposed as part of this doctoral research. Achieved by designing a proof-of-concept platform that can demonstrate the effective delivery

of information and cultivate a methodology that is both universal, whilst also being adaptable to the researcher's or user's needs, while ensuring the main purpose of Holocaust Memory and documentation is maintained.

To achieve this development, this doctoral thesis provided an opportunity to evaluate existing platforms, as developed by leading researchers and exhibitions, for how they present both Holocaust objects and testimony. This can inform the development of the proposed proof-of-concept digital platform, which can serve as the foundation for future Digital Holocaust Memory exhibitions. In doing so, this chapter can be divided into two parts: Part 1 will review existing digital collections, and Part 2 will examine the design and construction of the proof-of-concept platform. All of these will aid in the continued development of Digital Holocaust Memory by exploring the various media types that can be utilised to create an immersive and informative experience for viewers, whilst also maintaining the key function of preserving Holocaust memory.

Part 1: Reviews of existing digital collections

6.1 Evaluating Existing Digital Online Collections to Form a Foundation for a New Concept.

In developing the proof-of-concept platform, it was important to research other online collections to see how material and exhibits were presented. This enabled the ‘best of’ each online collection to be considered and helped shape the proof-of-concept platform into its own unique experience, with the five object biographies from Chapter 5 as the primary starting material for inclusion.

When analysing aspects of existing platforms, it was important to note the purpose of the platform, how they have integrated survivors' voices, the role of images and media on the platforms, whether any search mechanisms are present, and, importantly, what objects are displayed. It was also important here to evaluate platforms that currently present either Holocaust Material Culture objects or Holocaust survivor testimony, because a key aspect of this thesis was to explore ways to integrate the differing presentation styles into a single format for a more complete and interactive approach.

Where possible, screenshots of examples from other online collections are provided to highlight how they present their materials and exhibits.

The Lake District Holocaust Project (LDHP)

The LDHP provided invaluable assistance with this thesis in many ways, including access to objects and survivors for data collection. A factor of their work that is noteworthy is that their website and, as such, their online digital collection is ever-growing (LDHP, 2024). Currently on their platform are various exhibits that detail the different projects and research they have undertaken, as well as recorded oral testimonies from survivors and detailed case studies relating to members of 'The Boys'.

The screenshot below from the LDHP website (figure 6.1) is an example of a survivor's oral testimony (video) and a short overview of the person and their journey to Windermere.

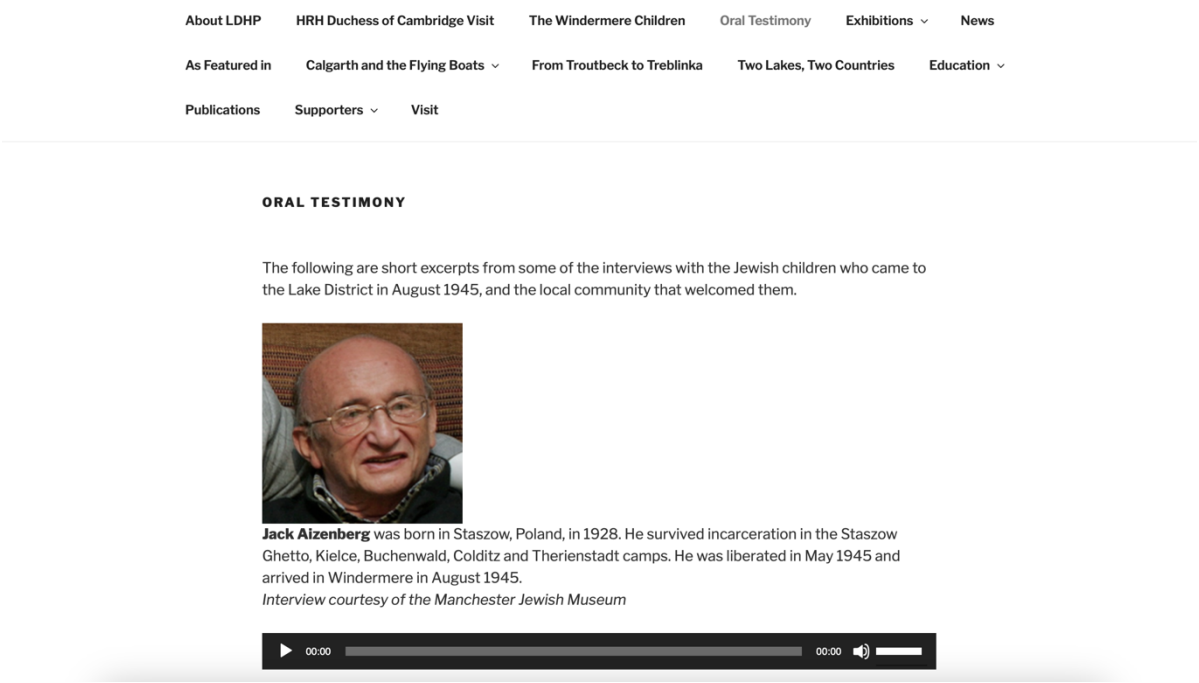

Figure 6.1: Screenshot of the Oral testimony collection available on the LDHP website as an example of their various collections. (Copyright: LDHP)

As of writing, across the LDHP platform, some exhibits are more detailed than others, and much of the focus is on the projects they have completed.

The LDHP platform still has several exhibits under development; however, a number are very detailed, and a great deal of focus is proudly placed upon the projects they have completed. The LDHP platform is a prime example of using various types of media to present material of this nature. They allow viewers to explore many different aspects of the Windermere Children and provide access to unique perspectives from individuals who have worked on their various projects and, more significantly, from the individuals they are working to provide a legacy for.

The LDHP platform has greatly influenced this thesis, as its demonstration of various media types provided a basis on which to build. Where, for example, the oral testimonies presented offer only brief descriptions of their content, this was incorporated into the interviews and subsequent object biographies created in this project to ensure a comprehensive user experience. Additionally, as many of the objects used in this project have direct links to the LDHP and the Windermere Children, this provides an opportunity to further enhance the materials they are already presenting, demonstrating how this field of research lends itself to collaborative work to create high-quality resources for all.

Though it could be argued that the fact that different exhibits available on their platform are at different levels of completeness, it can also be said that they are designed to raise awareness of the story of the Windermere Children and the work the LDHP undertakes. From this aspect, the platform they present is fit for purpose, and the addition of the other media forms presented in the proof-of-concept platform created as part of this is just one interpretation of how it can elevate the material the LDHP presents moving forward.

The United States Holocaust Memorial Museum (USHMM)

The USHMM is one of the world's leading institutions for Holocaust education and research. They have countless well-curated collections on various projects, stories, and events related to the Holocaust, and their work is a cornerstone of the Holocaust research community. One of their notable collections is the Artefacts Unpacked exhibition (Figure 6.2) (USHMM, 2024), which is a varied collection of objects of Holocaust material culture and is similar in some ways to this research project because it does not have any pre-determined theme other than that they

are objects of Holocaust material culture. Each is different from the next, but all have a story to tell.

In terms of presentation, the collection is laid out in a simple yet structured format, with the main collection page consisting of the object page title, a thumbnail image, and a very brief overview of the object. Upon selecting an object, the viewer is taken to a page specific to that object, where a short description of the object is provided, its origin, and a short video (typically 30 to 60 seconds) that provides an overview of the object and some background information. The videos have no voices, but various images and informative text are used throughout. This is a good demonstration of using another medium to enhance the text on the page, as in the proof-of-concept platform designed for this project. However, the videos are short, and the overview is still somewhat brief.

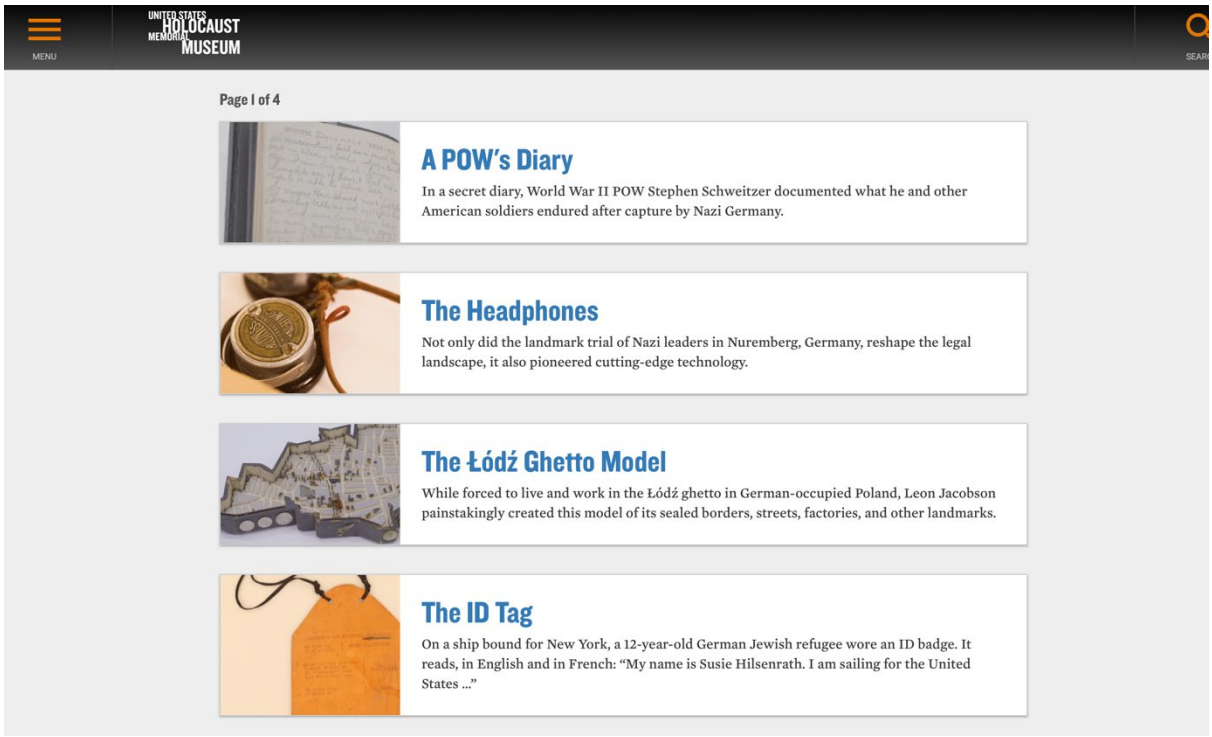

Figure 6.2: Screenshot of the USHMM Artefacts Unpacked collection. (Copyright: USHMM)

Using Figure 6.3 as an example, selecting The Headphones on the above takes the viewer into the following:

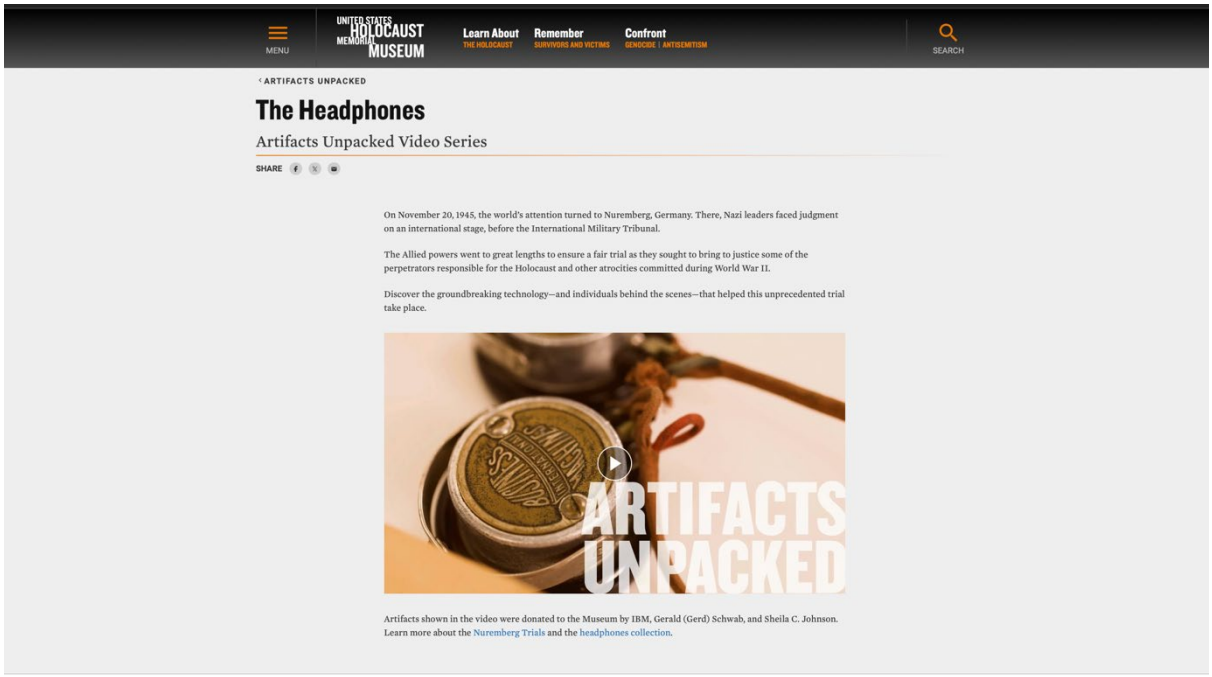

Figure 6.3: Screenshot of 'The Headphones' exhibit in the Artefacts Unpacked collection. (Copyright: USHMM)

Each page then offers links to other collections that specifically relate to the highlighted object. These collections often include further objects of a similar nature, and each exhibit presented provides more 'technical data' such as where it originated, who owned it and some contextual information surrounding the object, owner, or both. For example, the screenshot below (Figure 6.4) was obtained by clicking the additional links beneath the image on the Headphones page above.

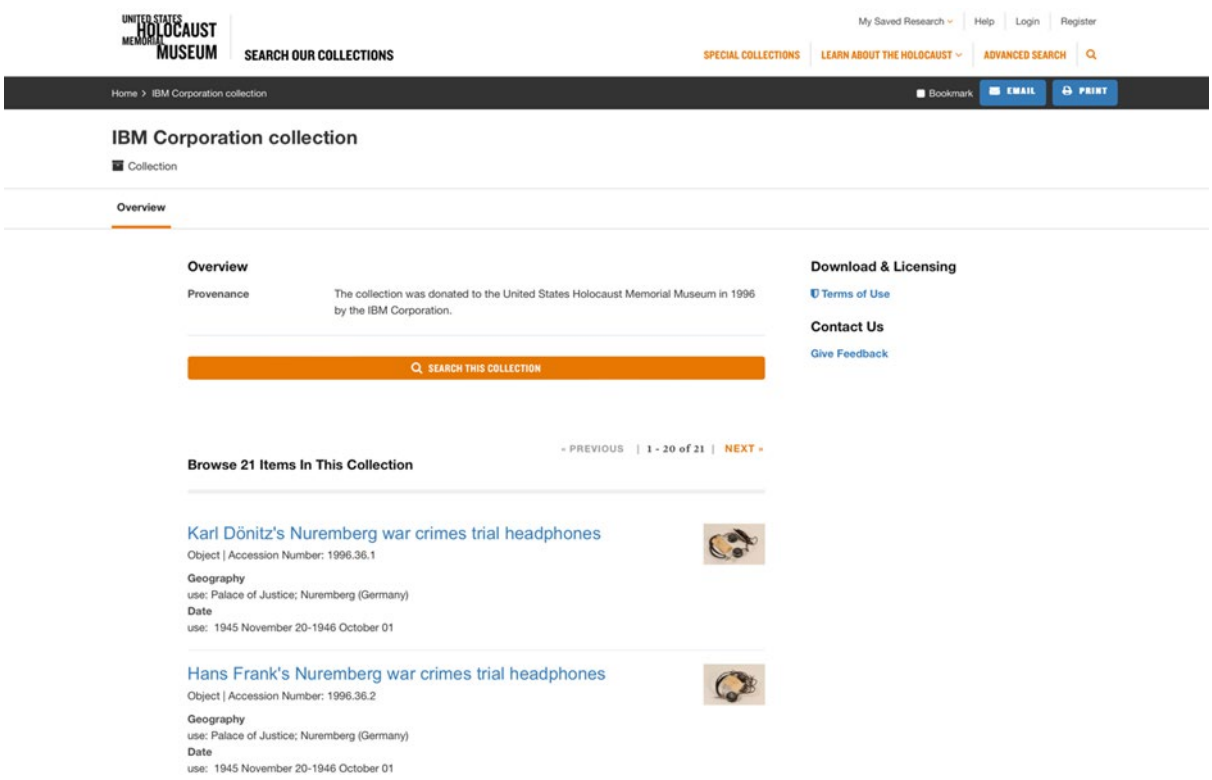

Figure 6.4: Screenshot of the USHMM Artefacts Unpacked collection further links within an exhibit. (Copyright: USHMM)

One limitation of this form of presentation is that viewers must navigate through multiple pages and collections to find what they are looking for about a given object. However, while this can be beneficial, it also broadens the scope of the larger collections hosted by the USHMM and may leave the viewer feeling overwhelmed. The fact that not all information about an object displayed is in one location created an opportunity to change that with the proof-of-concept platform. It is this aspect of Artefact's Unpacked collection that influenced this project and the proof-of-concept platform design, aiming to include as much information as possible in one location to keep the viewer as engaged as possible.

However, this limitation can also be seen as a deliberate design feature. The Artefact's Unpacked collection is purposely easy to navigate and user-friendly. This allows viewers to freely sample specific collections within the vast USHMM archives. By having what could be described as an entryway to the archives through the collection, it does not overwhelm the viewer, as the entire archive collection would, and in addition, directs the viewers to the collections of interest rather than forcing them to manually search for them.

Yad Vashem

Yad Vashem is another world-leading institute in Holocaust research, and, like the USHMM, it has an array of digital collections available to view, including oral testimonies, documents, and artefacts (Yad Vashem, 2024). However, these are presented in different collections.

Within the artefact collection, for example, there are over 1200 objects presented digitally; however, their presentation feels limited based on the sample examined in this thesis. It was noted that the presentation style is to provide an image of the object, an embedded map showing its origin, and a description of varying length and content (example below). The collection itself is simple and to the point, showing the objects and providing a relevant amount of contextual information, which is an effective way to present such a vast collection of objects. The limitation observed, however, is the varying lengths of the descriptions/contextual information provided. Some of the objects' exhibits feel incomplete compared to those that include more detailed and extensive information. There may be a good reason for the observed incompleteness (further research into its history is needed, subject to source availability); however, this led to the desire for the object biographies produced in Chapter 5 to be as complete as possible to do each object justice.

The screenshot below (Figure 6.5) is an example from the Yad Vashem artefact collection.

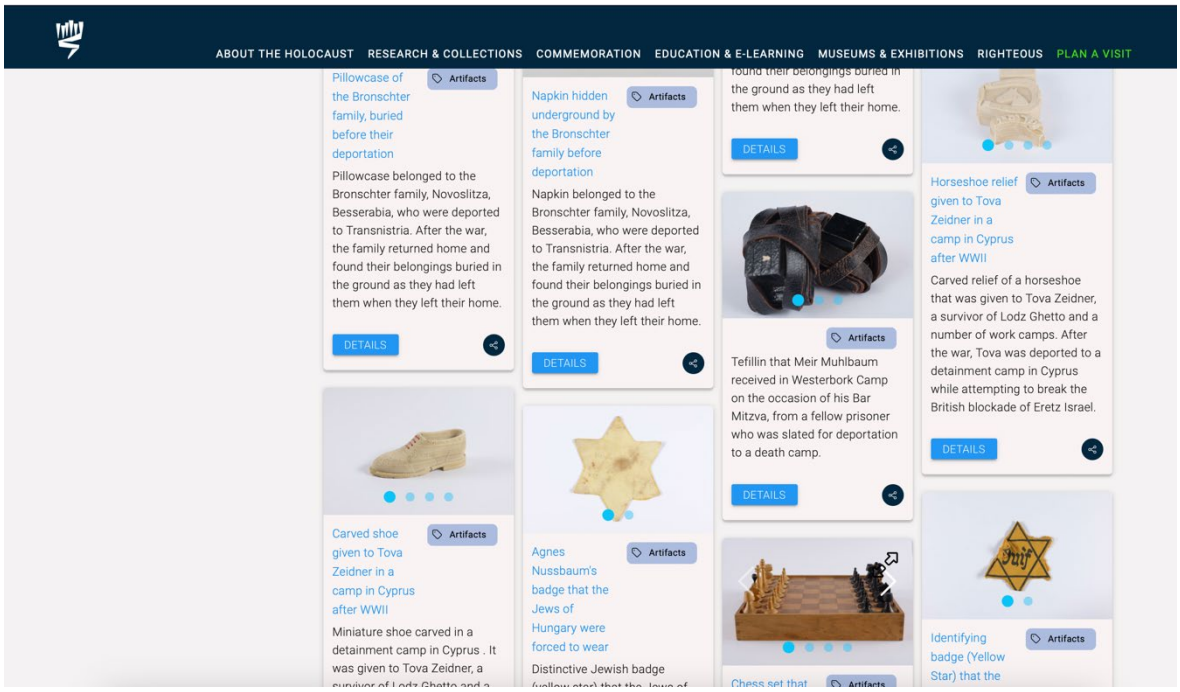

Figure 6.5: Screenshot of the Yad Vashem Digital Objects collection. (Copyright: Yad Vashem)

Clicking on an object from the above landing page example then brings the below up for the viewer (Figure 6.6)

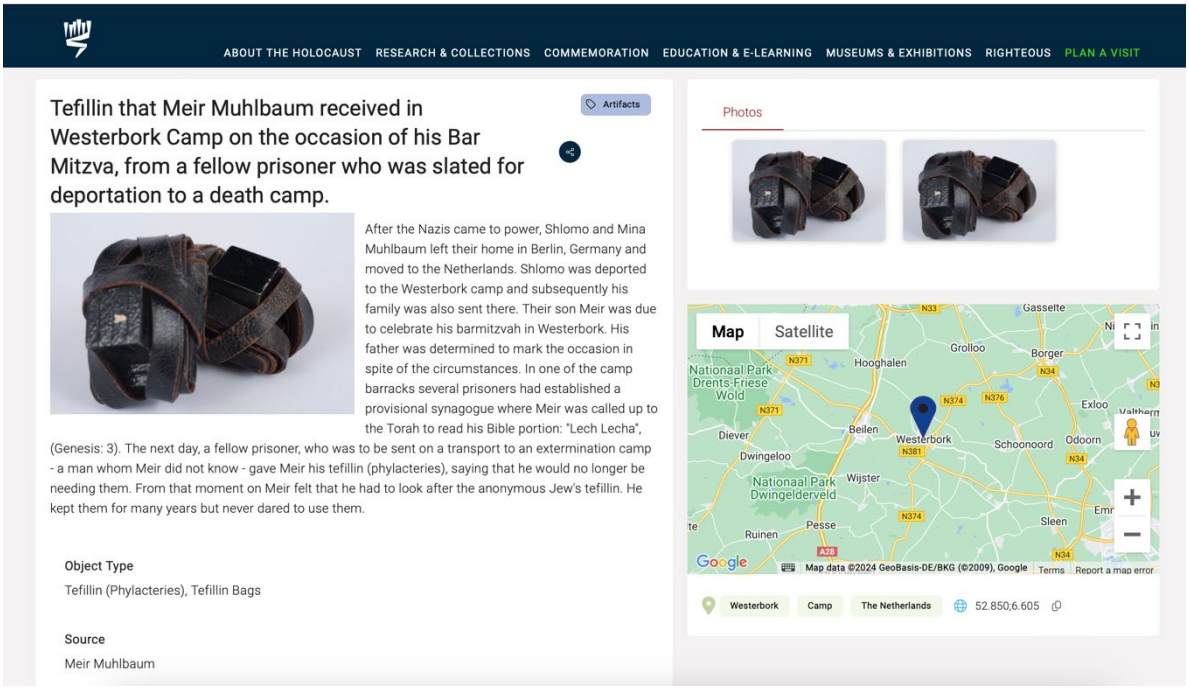

Figure 6.6: Screenshot of an example exhibit from the Yad Vashem Digital Objects collection. (Copyright: Yad Vashem)

When sampling the documents archive and oral testimonies, varying levels of detail are provided, resulting in the feeling that some are better presented than others. Regarding the recorded oral testimonies, the interviews focus on the survivor rather than the object. These testimonies are of the highest significance and demonstrate the unique approach this thesis has taken by allowing the owners of objects to talk about them, the stories of their lives, and the significance the objects hold. How the object biographies in Chapter 5 are presented adds a level of innovation, not by presenting the conversations in a traditional set of questions and answers, by weaving in highly personal quotes and experiences to leave the viewer with as much of a lived-in experience as possible, as the survivor or their family had.

Holocaust Centre North

Another recently developed online exhibit belongs to the Holocaust Centre North in the UK. Though still limited by the amount of content currently available online, it serves as another example of how to effectively deliver information uniquely. Their uniqueness comes in the form of how the information is presented (forming almost a storybook setting) (Holocaust Centre North, 2024). While still following a more traditional presentation of text and images to tell a survivor's story, the innovation lies in how it appears on the user's screen. As one scrolls through the pages, the information slowly appears with relevant images that relate to the aspect of a survivor's testimony or quote, and in doing so, it does not overwhelm the viewer with a mass of information and provides a sense of discovery as one progresses at a pace set by the viewer.

Overall, this is an effective method for disseminating survivor stories. It holds viewers' attention and, after viewing one story, makes them want to view the others available. It is interactivity like this that the project seeks to achieve. A modern challenge, especially with younger generations, is keeping them interested and engaged with the content presented to them (Garett *et al*, 2016). As such, these forms of presentation provided further support for presenting personal stories interactively, creating digital media to facilitate this, and presenting them on the proof-of-concept platform.

The screenshots below (Figures 6.7, 6.8, and 6.9) highlight this form of presentation, which uses a progressive graphic approach with appropriate quotes and images throughout, creating a unique viewing experience that is engaging and encourages the viewer to read on and learn more about a survivor's experiences.

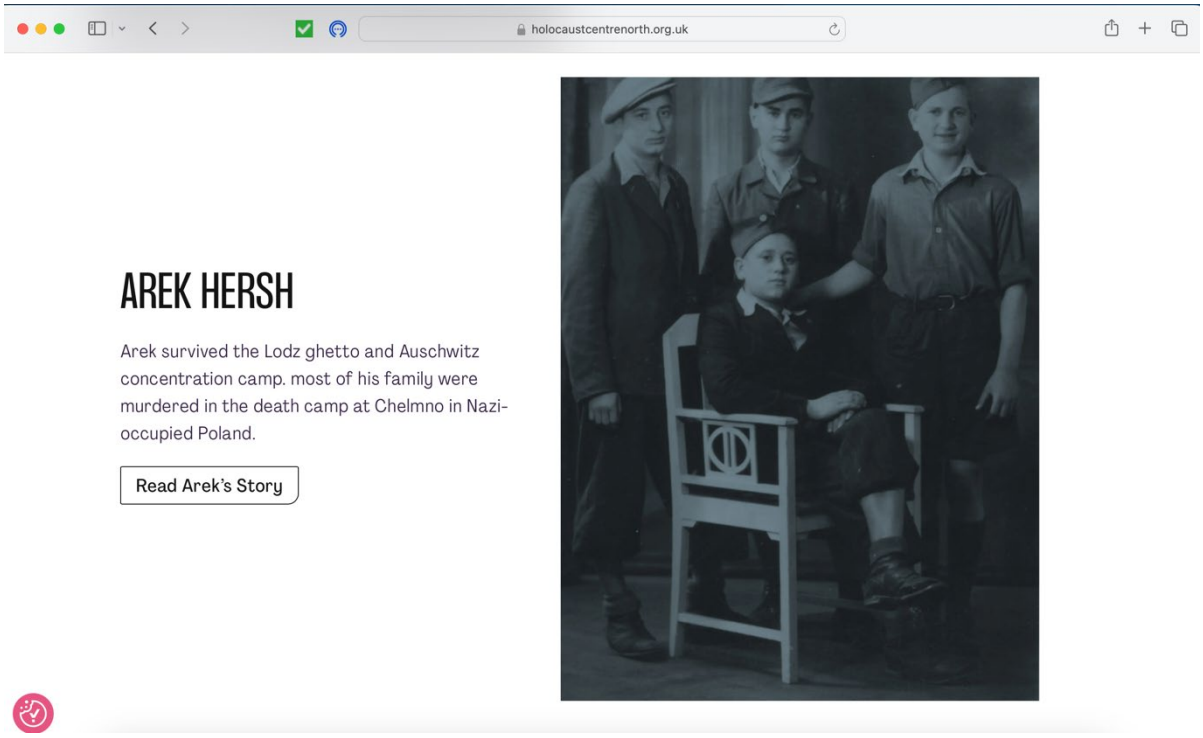

Figure 6.7: Screenshot of the opening presentation of a story in the Holocaust Centre North Digital collection. (Copyright: Holocaust Centre North)

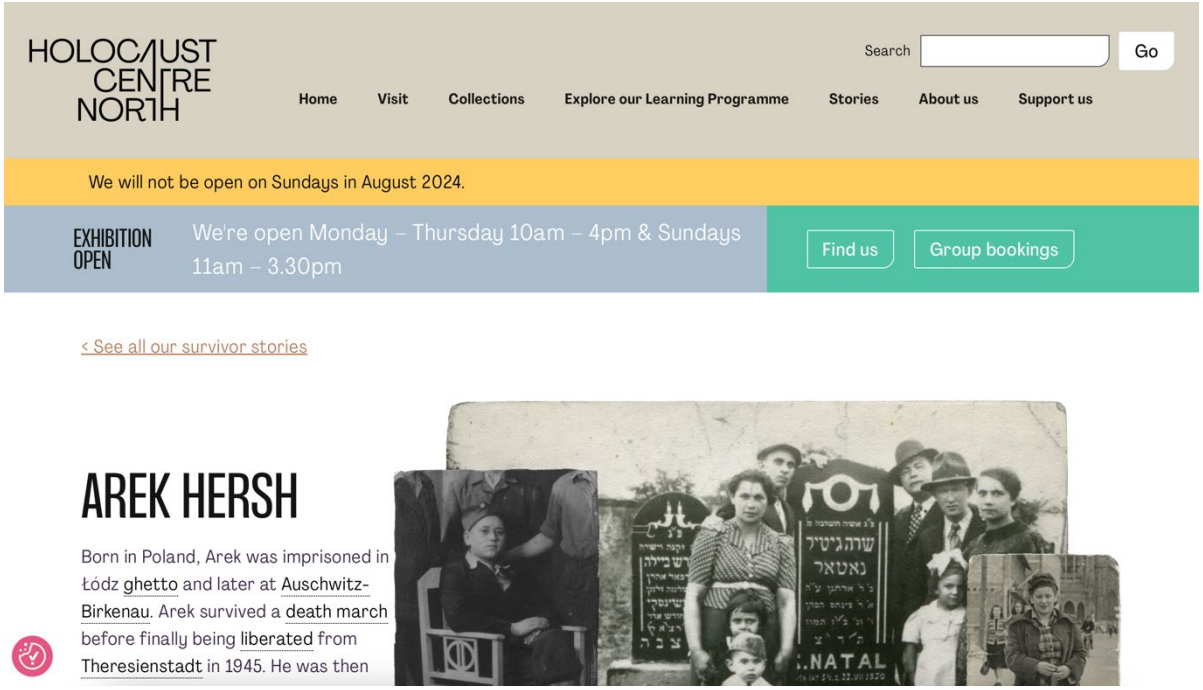

Figure 6.8: Screenshot of the progression of presentation of a story in the Holocaust Centre North Digital collection, incorporating other media types. (Copyright: Holocaust Centre North)

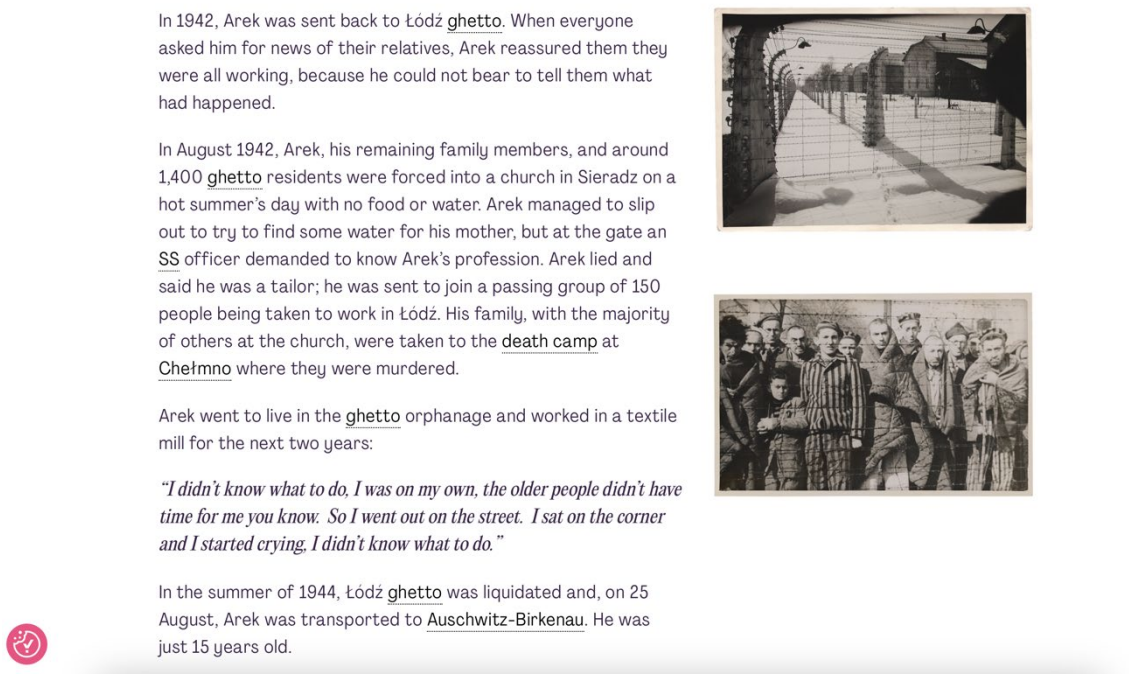

Figure 6.9: Screenshot of the continued presentation of a story in the Holocaust Centre North Digital collection, progressing the narrative presented. (Copyright: Holocaust Centre North)

The main difference between the current digital collections at the Holocaust Centre North and this research project is that the former focuses on survivors' stories rather than specific objects, which remains an important factor in Holocaust research and preservation. However, this approach also demonstrates the desire for the proof-of-concept platform to be engaging for viewers and to maintain the attention of the focal point of each exhibit. Similarly, it demonstrates how graphics can enhance the user experience, rather than the standard, plain backgrounds often seen in other digital collections. This aspect, while not explored in this thesis, prompted strong consideration of potential design additions to the proof-of-concept platform in the future.

National Holocaust Centre UK

The National Holocaust Centre in the UK again has various digital exhibitions available for the public, most notably 'The Forever Project' (Figure 6.10), as well as a multitude of digital object-based resources, including but not limited to the 'Ordinary Objects, Extraordinary Journeys' digital exhibition (OOEJ, N.D).

The Forever Project has been designed to create a legacy for Holocaust survivors through a unique, highly interactive format (National Holocaust Centre & Museum, 2016). Focusing on interactive interviews with Holocaust survivors, the recordings show the survivors not only telling their stories but also asking a predetermined series of questions, allowing those interacting with the material to participate in question-and-answer sessions that feel as though they are the ones conducting the interview.

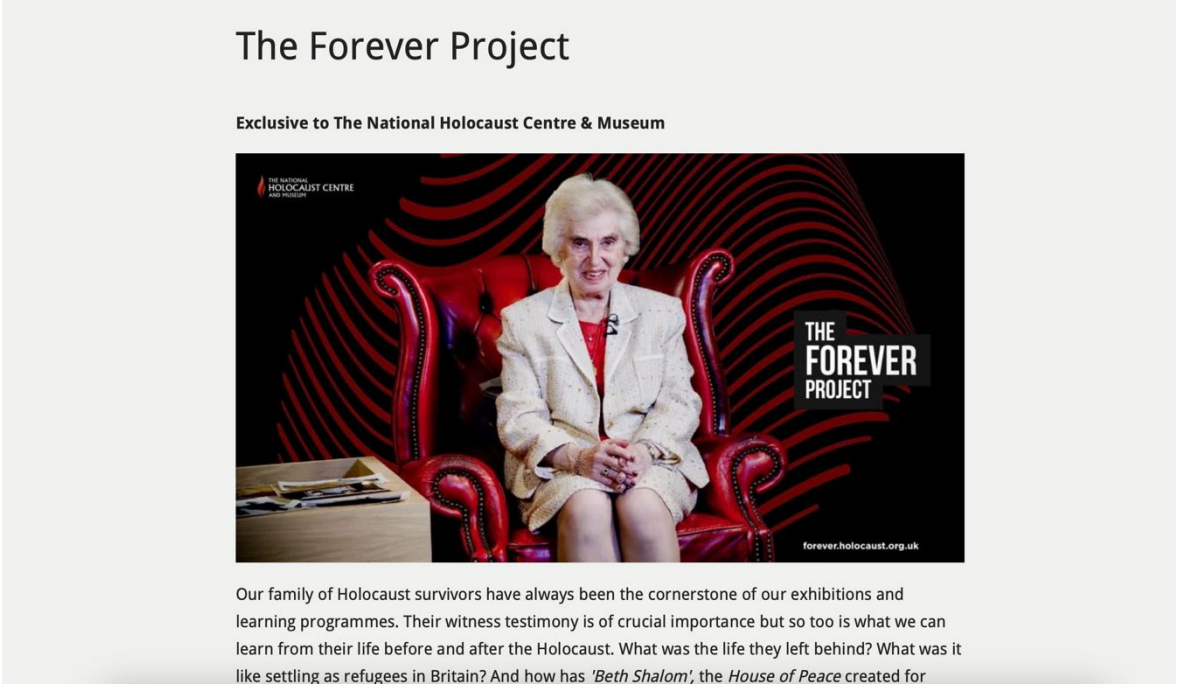

Figure 6.10: Screenshot of the welcome page to the Forever Project. (Copyright: National Holocaust Centre and Museum)

The 'Ordinary Objects, Extraordinary Journeys' exhibition, however, focuses on objects from six Holocaust survivors (Figure 6.11), which have been presented digitally to tell their remarkable journeys. The exhibition is easy to follow and guides you through each journey using a combination of text and other media such as photographs and embedded 3D models. However, the text is to the point, used descriptively, with quotes from the owner used periodically to emphasise aspects of the journey's story. This method of presentation allows the effective, non-overwhelming presentation of unique objects, with easy-to-digest amounts of information that keep the viewer's attention whilst guiding them chronologically through each object's journey.

Figure 6.11: A Screenshot of the object's landing page on the 'Ordinary Objects, Extraordinary Journeys' exhibit. (Copyright: National Holocaust Centre and Museum)

It is this interactivity between the two exhibitions that demonstrates the effectiveness of such media for Holocaust preservation research, and by creating an interactive environment, it encourages participation, allowing the viewer to decide what and how they will learn.

For example, with The Forever Project, the question-and-answer experience allows viewers to feel as if they are undertaking the interview for the first time and that they have control over the experience. Overall, this breaks the mould of simply being provided with a testimony to read or watch. Similar to this thesis it provides a first-hand account of events that the viewer controls at their own pace. Additionally, it shows that a combination of media types has a greater impact on viewers, with overall feedback for The Forever Project, available on the National Holocaust Centre website, being positive. Likewise, the 'Ordinary Objects, Extraordinary Journeys' exhibit informs this doctoral research with regard to the effective integration of different media types to a digital exhibition, including that of digital 3D reconstructions of objects, adding an extra layer of interaction to engage the viewer.

The limitation of the Forever Project experience is that it currently has restricted access, requiring a booking and a login. However, given the nature of the material and voice it has given Holocaust survivors, this limitation is not overly restrictive. Furthermore, the National Holocaust Centre has specific instructions for the application of the project and for educational organisations that wish to use the available resources, ensuring the materials are used securely and appropriately. Whereas the 'Ordinary Objects, Extraordinary Journeys' exhibit is open access and readily available for viewing and access.

These exhibitions strongly influenced the design of this thesis by giving a voice to Holocaust survivors and integrating diverse media. The Forever Project allowed participants to tell their stories their way, without compromise, which was incorporated into the interviews undertaken in this thesis to ensure an authentic experience and into the five object biographies in Chapter 5. While the 'Ordinary Objects, Extraordinary Journeys' exhibit influences the proof-of-platform design process for the integration of digital 3D models and other media.

45 Aid Society

The 45 Aid Society is a charitable organisation. Established in 1963, its founders were members of 'The Boys' (Windermere Children) who came to the UK after World War 2 to be able to "*say thank you and give back to the society that has welcomed them*" (45 Aid Society, 2024). Recently, the organisation has been run by the children of 'The Boys', also known as the second generation, who class themselves as the custodians of the life stories of 'The Boys' to keep their testimonies relevant for future generations through various educational activities and community events, thereby building a thriving community from which others can learn a great deal.

The 45 Aid Society website contains an extensive archive of materials specifically relating to 'The Boys', including biographies (arguably the largest collection of Holocaust survivor biographies) and related media that are connected to them. This also explores the history of 'The Boys', with first-hand accounts and descriptions of various events, in addition to providing educational materials and information relating to media posts and events they have organised. The story of 'The Boys' is presented in a way that is understandable and digestible by viewers

and is free to access and explore. Some pages in their collections require an account to access, though this is easily requested.

Overall, the information within the collection is well presented and, without going into too much depth, keeps the reader engaged, and the site makes use of additional interactive media in the form of maps and images which belonged to 'The Boys' and/or their relatives. However, this approach is limited in holding a person's attention, and blocks of text can be overwhelming and off-putting for readers (Zhang, Gong & Liu, 2024; Dudley, 2010), especially if it is their first time interacting with such materials.

There is a dedicated page to each of 'The Boys', including those who came after the widely publicised first wave who arrived at Windermere. Each page features the same design with images of the survivor, either made available from various archives or donations from relatives, along with a biography that details their life before, during and after WW2. Some pages are more detailed than others because more information is available about them.

Figure 6.12 below relates to Jacob Glicksohn, whose story is told by his daughter Judy Glicksohn-Pasternak in one of the five object biographies presented in Chapter 5 (The Wedding Ring)

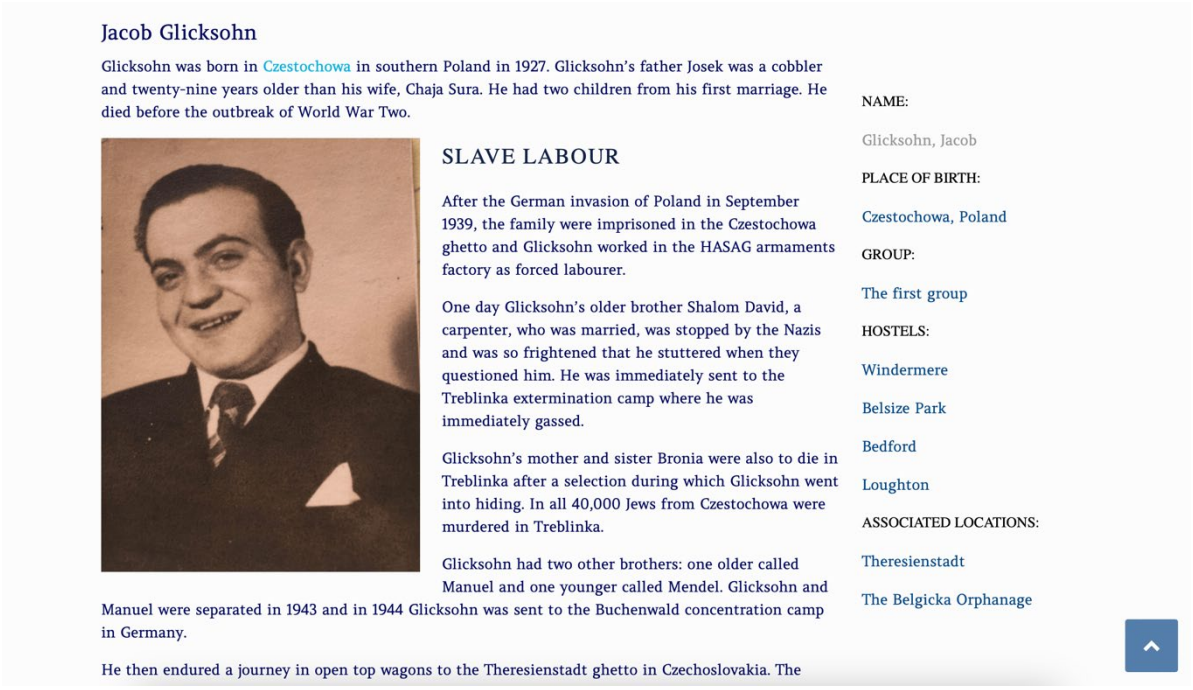

Figure 6.12: Screenshot of the exhibit relating to Jacob Glicksohn. (Copyright: 45 Aid Society)

The pages are curated to their intended purpose and provide the reader with all the information they need to understand the life and story of whichever survivor they are exploring. They also include a wide range of links to other relevant pages on the platform that hold information about significant locations and other survivor stories, to both offer a more in-depth experience and provide greater context for the story presented.

One main limitation of the platform, despite most exhibits and projects being open access, is that access to the survivors' biographies is restricted: it must be requested, and details of an academic institution and the reasons for viewing the information are required. Whilst this appears to be a positive in ensuring the information is used for the correct reasons, such as research, it does limit wider public access unless they meet the criteria for access.

The proof-of-concept platform is designed to take an open-access approach whilst providing the same level of detail for the case studies presented. It was also noted that the 45 Aid Society platform does not include any additional media for each survivor biography, even though some survivors have known interview testimonies that could be linked to the page for further detail and context. Their platform is a standout example of how to present the life of an individual who has survived the Holocaust; the main difference to the theories presented in this thesis is that this research focuses on a survivor’s object, the significance it holds and how it has influenced their lives.

Arguably, the combination of these two forms of presentation would provide viewers with the most comprehensive experiences; however, both serve as examples for the information they present, with the 45 Aid Society focusing on the person and their experiences around the Holocaust and the proof-of-concept platform focusing on the story the survivor wants to tell, away from that narrative. The platform presented by the 45 Aid Society enabled the development of a streamlined approach and logical layout for digital exhibits of this nature, which was invaluable to this thesis.

It should also be noted that as part of this doctoral research, there was the question of whether to integrate digital objects into existing platforms. However, in this instance, it was decided not to integrate them, to demonstrate how they can be presented as digital collections of Holocaust material culture. Additionally, it was

felt that integrating objects into existing digital exhibits could detract from the purpose and information they are designed to present.

6.2 Brief Comparison of the Online Collections Researched.

Similarities

When comparing the various digital platforms available for Holocaust education and those specific to Holocaust material culture, the main similarities include the use of images, text, and occasionally other forms of media. Often, each platform will include an image of a subject, be it a person, object, or other form of material culture and accompanying text. Naturally, this image highlights the focal point of the exhibit and is chosen to draw the viewer's attention, which it does. Where they differ is in the depth of the accompanying contextual information. In some instances, the viewer is given only a brief overview, whereas others offer in-depth accounts of the subject that cover all the themes and facts a viewer needs to understand the exhibition. Research such as that undertaken by Reitstätter, Galter & Bakondi (2022) and Spadoni *et al* (2022) adds support to this, as both sets of researchers have looked at using alternative media types in two alternative-themed museums (art and science, respectively) and how their use can attract viewers to specific exhibits.

Similarly, some online collection platforms use a variety of media types to ensure the material is curated to enhance the digital exhibit experience. In some cases, such as The Forever Project (discussed above), the media format is designed for that exhibit and is not recreated elsewhere. This provides a level of strength, as it is likely to have a lasting impact compared to a traditional image-and-text approach (Lee *et al.,* 2021).

Other similarities include the overall layout of these platforms, in which the subject is always the focal point. Everything presented is carefully curated to highlight its key aspects and significance (Persohn, 2020). The online collection platforms researched were found to excel in the discipline they aim to serve. If the exhibits and platforms are not presented in a format that viewers are unable to understand, then they will not have succeeded in educating others and remembering the survivors and Holocaust victims.

All these aspects have contributed to the development of the proof-of-concept platform presented in this thesis. By combining the positive aspects of these presentation methods, it has formed a framework for a unique user experience that brings together leading theories to create a focused, interactive, and informative presentation.

Differences

The main difference across the platforms explored is how they present information in their exhibits, often due to the nature of the material and/or the purpose of the platform. It is this lack of a 'standard' method which stimulated thinking about the challenges faced when determining how to present objects of Holocaust material culture. For example, no platform presents its images and text with the same level of detail as another. This could be seen as a hindrance for the viewer, who may wish to know more about an object or story but lacks the means to do so. Applying the lack of a standard approach to the proof-of-concept platform has enabled a more complete user experience through case studies and other forms of presentation (Piacente, 2022).

Another main difference observed, aside from the media types chosen, is the nature of the exhibit, which varies across platforms and is also true for the proof-of-concept platform. Often, a platform selects a specific survivor story or narrative from the Holocaust (Penrose, 2020), which, on occasion, can be argued to be ‘mass presented’, with different institutions presenting the same information, just using a different medium. Whilst the proof-of-concept platform is no different in this regard, choosing to focus on objects and their significance to the owners, what makes it unique is that rather than providing the narrative that many would expect, it provides a more personal experience, which can be said to be not as present in other digital collections.

Part 2: Building and Design for a Presentation Format.

6.3 Introduction to the Proof-of-Concept Platform.

In today’s modern age, and especially since the COVID-19 pandemic, the ability for museums and other educational exhibitions/sites to have a wider access reach

appears to be more crucial than ever. For the Holocaust and the material culture attributed to it, this reaps huge rewards in terms of accessibility and being able to experience the associated stories and demonstrating the theory presented in this thesis of survivors being able to donate objects without having to physically part with them.

Based on the research, it can be said that if a Holocaust-related exhibition, museum, or site had a website or other digital platform, it provided information on what is available to view, and to varying degrees of detail. In numerous instances, access to content was unfortunately either behind a paywall or required a user account or institutional access, which may not be available to the everyday person. There are likely many reasons some sources have chosen these methods of access, e.g., to provide continued funding to effectively run the exhibition/site or to ensure the information provided is accessed in a moral and ethical manner and is not subject to misrepresentation in other media. However, considering these access restrictions, the proof-of-concept platform theorised in this thesis should be accessible to all, free of charge.

Interestingly, from all the current online presentations of Holocaust material culture researched, it was found that no two are the same. Each institution approaches material presentation differently from more traditional methods, such as the United States Holocaust Memorial Museum (USHMM) and Yad Vashem, which present the facts straightforwardly and directly, often under the banner of a specific event or theme. More contemporary methods, demonstrated by institutions such as the UK’s National Holocaust Centre and the Museums Forever project, use innovative technologies, including voice recognition and artificial intelligence (National Holocaust Centre & Museum, 2016), to create interactive exhibitions.

It would be easy to point at these ‘newer methods’ to define what should be a modern 'standard' approach to presenting any aspect of the Holocaust digitally. However, given the wide range of variation among the aspects researchers aim to present, there should not be a 'definitive' method for presenting information. It depends on what is being presented and the intended effect the creator wants to have on the viewer. Subject to opinion and argument, of course, a stronger product would be the result of combining newer techniques such as digital reconstruction with other media types to create a more comprehensive experience for the viewer, and this proof-of-concept platform is the foundation of that.

A key focus of the proof-of-concept platform is to keep viewers engaged and leave a memorable, long-lasting impact on the objects and personal stories presented. Intended is the combination of more 'traditional' and contemporary digital methods available that form this concept, alongside the theory presented in this thesis, that will create the desired unique viewing experience whilst also drawing theories from other current research, as shown in Chapter 5, to consolidate and strengthen its arguments for widespread implementation. Building on all of this, the decision was made to implement 3D scanning of objects of material culture, combined with deeply personal micro-histories of the objects and their original owners who survived the Holocaust, to form the platform material. Here, the key insights from the interviews will be introduced into the platform design, bringing the participants' ideas and thoughts into the decision process. Thus, further promoting the use of survivors and their relatives' voices to ultimately present their stories in a format they want to see.

By allowing the conversation to flow during the interviews, survivors and their relatives were more likely to open up about their experiences and stories, rather than simply answering questions about a topic. This project aims to give them a platform to have a voice, and the interview methodology facilitated this. Overall, there was more freedom for discussion: removing a fixed script for a specific topic or event opened up learning about events and perspectives that would otherwise have remained unseen. Participants reported that, because the interviews were more conversation-based, they felt more at ease throughout the process. Finally, this form of interviewing allowed participants to ask their own probing questions about the Holocaust and the research being undertaken, fostering a deeper understanding for both parties.

Embryonically, the platform concept began to grow and take shape. It needed to have the functionality to be able to present various media types (text, videos, digital 3D models, photographs), be user-friendly and have a presentation style which solely focuses on what is being presented whilst allowing for adaptation as per the needs of each unique exhibit to be collated into this repository of survivor stories and legacy (Aitchison & Chadwick, 2023).

(N.B. – the actual interviews undertaken for the five object biographies will be provided on an external media drive/USB/link).

6.4 Proof-of-Concept Platform Design Process

Because the personal stories and their associated objects were required to be presented on the proof-of-concept platform, they needed to be presented in as professional a manner as possible. Consultation with Creative Resole Limited (CRL), as discussed in Chapter 3, resulted in a similar overall platform structure as a previous platform created for the Centre of Archaeology. This allowed the platform to be built more quickly, whilst also giving more time to design how different pages would function. Initially, this overall structure worked well, as it allowed for the clear presentation of information and included various embedded media types.

The next aspect tackled was the page layout. The initial structure had each page arranged in a specific order, such as image, text, and embedded media. However, it quickly became clear that, for different objects and types of information, this 'set order' did not provide the functionality needed for effective representation and presentation. Therefore, further discussion with CRL led to the implementation of ‘feature toggles’, which not only allow the curator to select which information and media types can be added to a set page/exhibition but also reorder them and add as many of each type as deemed necessary for each exhibit. This is important for what the proof-of-concept platform aims to do. Furthermore, as mentioned earlier in this chapter, there is arguably no definitive method for presenting this type of information. Allowing each page on the platform to be unique and designed for its requirements enables each object, story, and interaction to come to life and have its own impact, resulting in greater interactivity and learning.

A key reason the proof-of-concept platform is necessary is to demonstrate the versatility of these presentation methods and to provide curators with greater freedom of expression. Furthermore, with this type of platform, new forms of media can be added, embedded, and integrated into the platform's current format through ‘plug-ins’. This reinforces the value of a platform foundation (IONOS, 2021) that can evolve and adapt to the subject's needs in an exhibition rather than an overarching theme (i.e., futureproofing, as noted earlier).

Once the overall structure and page layout were decided and agreed upon, subsequent decisions centred around which objects and stories would be included on the proof-of-concept platform and how they would be presented. Having curated the five unique object biographies presented in Chapter 5, primacy and focus were afforded to their inclusion as the first exhibits. This made perfect sense, as they form the core of the data obtained, and those stories can be presented proudly with the blessing of the survivor's family members.

Further objects selected for the platform's initial population include items from the sample of 63 objects obtained during this doctoral research, drawn from the Lake District Holocaust Project (LDHP) collection and the archaeological excavations outlined in Chapter 4. Again, these objects demonstrate the data acquired from the 3D scanning aspect of this project, with particular focus on the objects, for which background information can be provided to give their exhibitions depth rather than leaving them as stagnant models with a basic description. Each of these exhibits informed decisions about how it would be presented, whilst providing a varied range of object types to demonstrate the scope of object types and materials that could be present on a proof-of-concept platform such as this, with Figure 6.13 showing how the object gallery could look.

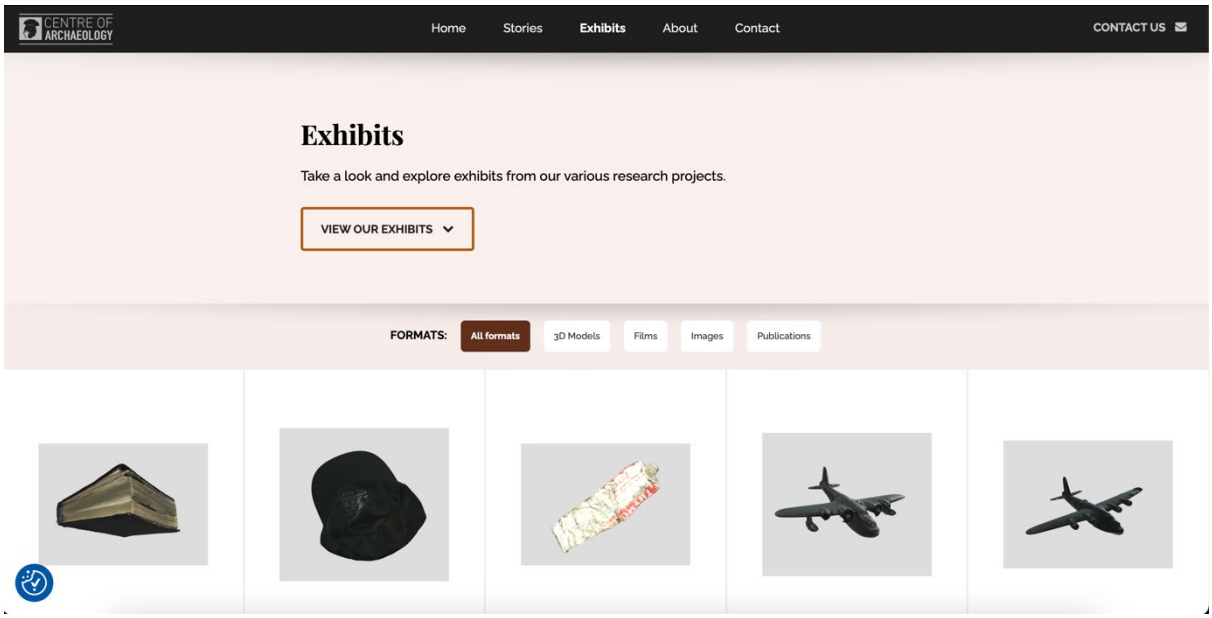

Figure 6.13: Exhibits gallery on this project's proof-of-concept platform. (Copyright: Alex Haycock & Centre of Archaeology)

6.5 Proof-of-Concept Platform Structure and Layout

The proof-of-concept platform is intentionally basic, demonstrating the simplicity of the final product and how effective that approach can be. A simple, user-friendly look makes the accessibility more appealing to viewers and, more importantly, lets the exhibits be the outstanding aspects. The individual pages are stripped down to a simpler look to present the required information and media in an understandable, engaging format (*Garett et al.*, 2016) that promotes a desire to learn more about the Holocaust and the various objects of material culture.

Another interesting feature of the proof-of-concept platform's design is not just telling individual stories but also helping to weave them into a bigger picture for greater educational understanding. Using a simple feature of any good online exhibition, which is to use *'you may also like'* and/or *'learn more about'* areas on each page (Figure 6.14), does exactly that and allows viewers to have a virtual guided tour of the platform, whilst having full control of their journey.

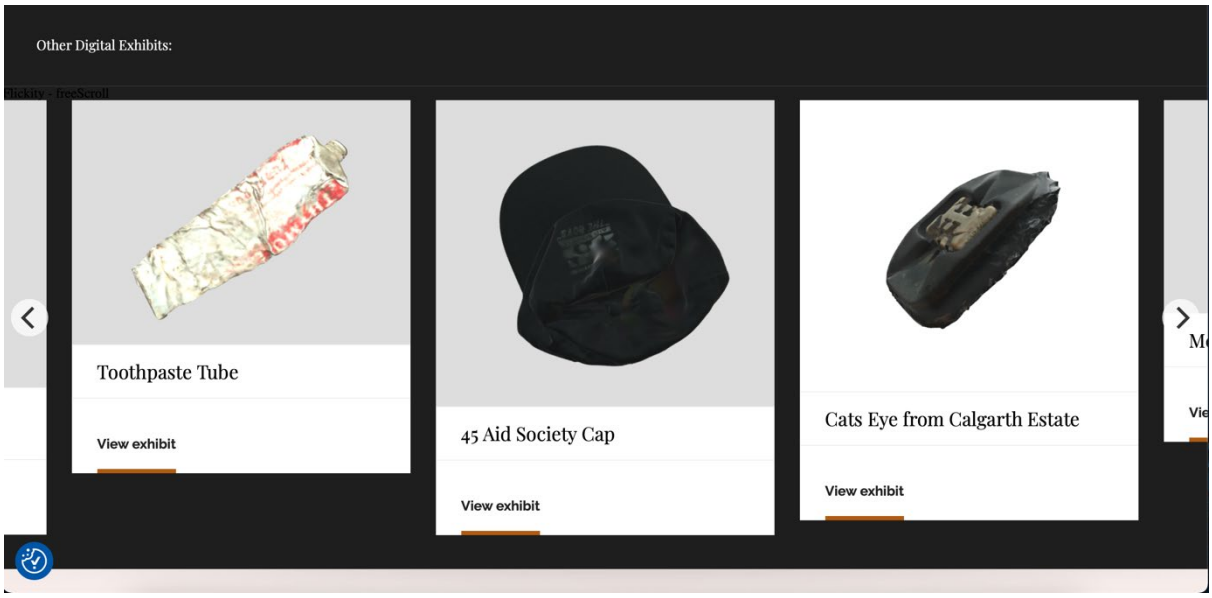

Figure 6.14 is an example of the suggestions for further exploration presented on the developed proof-of-concept platform. (Copyright: Alex Haycock & Centre of Archaeology)

A viewer selecting their first exhibit or story will be presented with options either to view more exhibits, such as the one currently being viewed, or be taken to internal areas of the platform, which may add more context to various aspects presented.

For example, in this research, the pink Passover cup: if a viewer wanted to learn more about the Passover, links would take them either to an internal page explaining it or to external educational/religious sites that can explain it in greater depth (Figure 6.15). This journey through the platform's pages and exhibits would be unique to each viewer and encourage them to explore survivors' stories further, learning more about the individual and the vast number of events and locations of the Holocaust. Additional benefits could include promoting learning and developing research skills. Schoolchildren (for example) would no longer have content purely dictated to them but would be free to explore at their own pace (within any tutor-set parameters and in line with educational guidance).

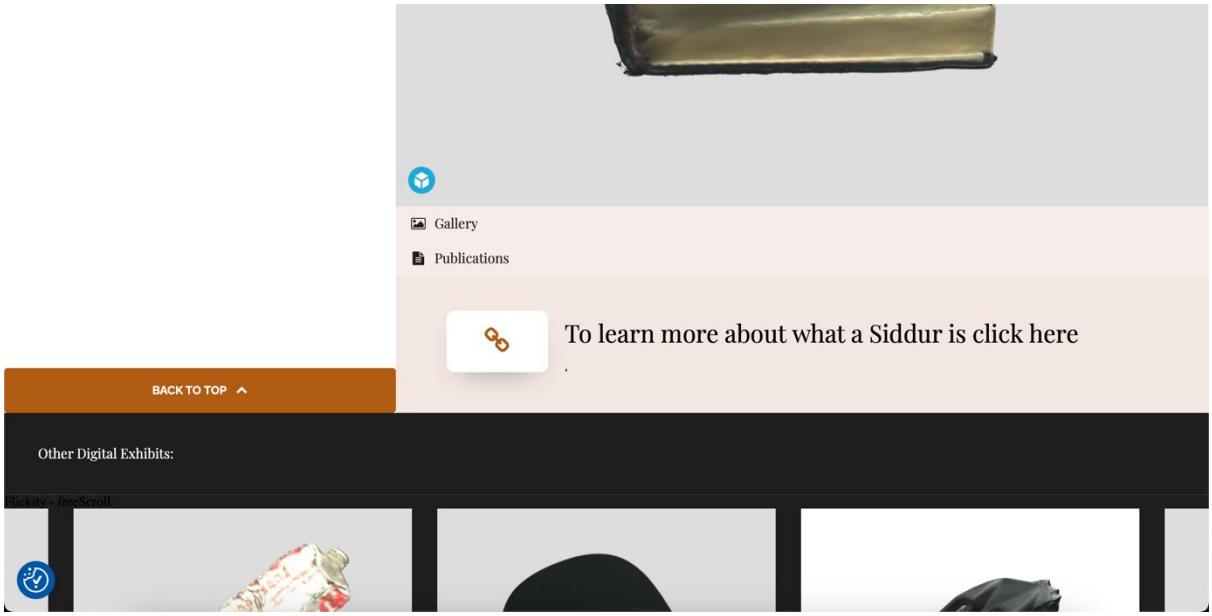

Figure 6.15: Example of a further learning option on the developed proof-of-concept platform. (Copyright: Alex Haycock & Centre of Archaeology)

6.6 Use of Media in the Proof-of-Concept Platform

Within the proof-of-concept platform, it was decided that, as many different forms of media as feasible within the constraints of this project, would be used to achieve the educational effect for viewers. Media forms included images, text, digital 3D models, videos, and links to external sources and publications, and were chosen specifically because they combine standard forms of presentation and/or facilitate the level of interactivity intended for the exhibits.

The reasons behind the different media types used are discussed.

Images were used in two ways: as an initial image and as an image gallery for each object or story. For the initial image, the focus was on an image of the object to capture the viewer's attention and encourage them to explore what the object is. Using an eye-catching image is more likely to encourage someone to view it than using something deemed more stock or just a title linked to the corresponding page (Verma & Monga, 2023). Once the viewer has navigated to the main page, the same image is presented to remind the viewer of what the object is as they learn about it and to reinforce the similarities it may have with objects in their own lives and to display the objects that are so precious to survivors of the Holocaust and their families.

For each object, an image gallery is available on each page (example in Figure 6.16), which gives the viewer different visual perspectives on the object from various angles (without physically touching them), allowing for any key or interesting features to be highlighted, which may have been described on the page either in the text available or if included in the attached video interview. A key difference here is that this adds to what is often seen on other websites and digital exhibitions, where only one image is often presented, which means that viewers can miss out on exploring the more intricate details of the objects and those unseen areas where other features come to life.

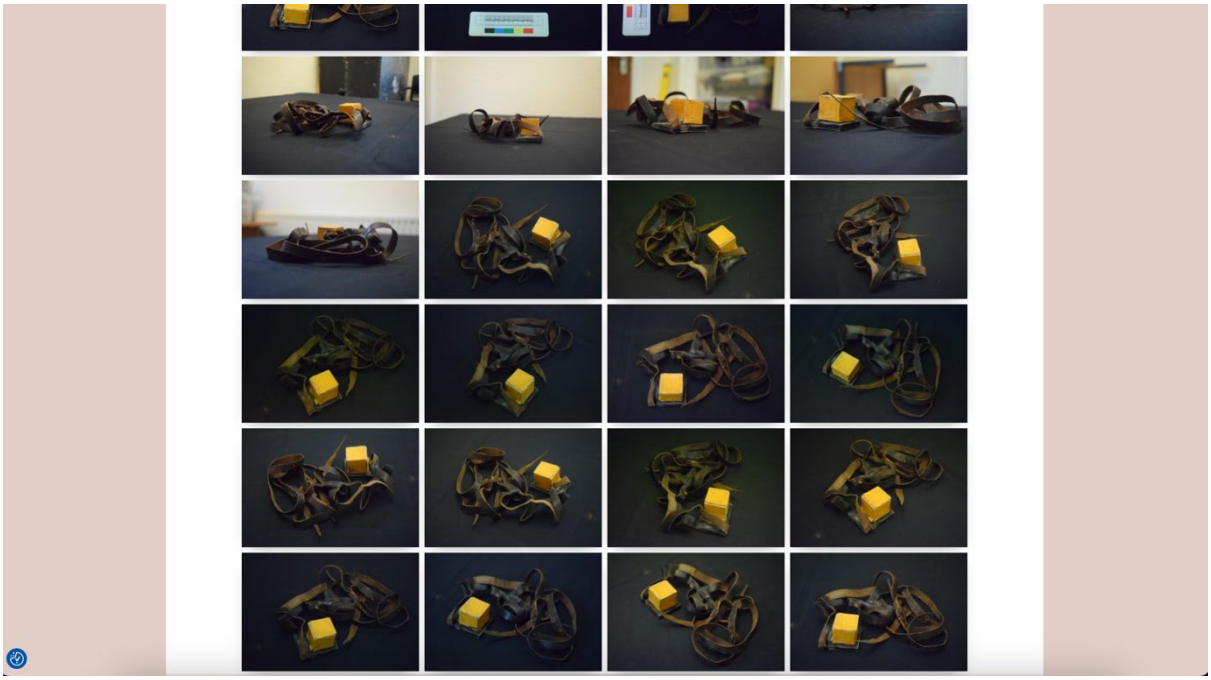

Figure 6.16: An example of an image gallery for an exhibit on the proof-of-concept platform. (Copyright: Alex Haycock & Centre of Archaeology)

The use of text is arguably the most essential, as it provides words that colour the stories and bring the objects to life. Text for objects of Holocaust material culture is vital because it is the primary way, without physically speaking to a Holocaust survivor, that someone can learn about an object or the Holocaust itself. In this proof-of-concept platform, the text focuses on providing the viewer with three elements (Latos *et al.*, 2018).

1) The key information surrounding the object itself.

2) Where possible, a case study about the original owner and the personal story and journey that is associated with the object.

3) Additional contextual information that may be of benefit to the viewer relating to the object or its significance, i.e., if it is a religious object, how it is used and its meaning (personally and in the wider context of what it is).

The text on the proof-of-concept platform page is written to ensure it is easily understandable and to include as much as possible from witness testimony or personal interviews, including direct quotes that are often haunting, hard-hitting, or evoke feelings of hope and love (Schultz, 2021; Arrigoni & Galani, 2020). This ensures that the information provided is as authentic as possible so that the viewer can easily know that this is the story of a survivor and how they wanted to tell it or for it to be told on their relative's behalf. Additionally, it ensures that not only are people seeing accurate representations of objects from Holocaust material culture, but it also adds further layers by incorporating the owner's attached story without sacrificing its authenticity or raw emotion – this is what makes these exhibits extremely emotive and impactful.

Video is another conventional media type. Typically, this might be a video highlighting the object or someone giving a brief overview of it and its significance (Anton *et al,* 2018). However, for this project, the aim is to highlight the stories of the survivors and the significance these objects hold either for them or their relatives. The use of videos in this research project was limited. It was decided that only videos that are either externally linked to partners of the Centre of

Archaeology or from the personal interviews undertaken to form the five object biographies presented within Chapter 5 of this thesis would be used.

The main point of these videos is to consolidate the information presented in the five object biographies and provide firsthand testimony about the object. It is theorised that providing this form of testimony is more beneficial for the viewer. Whereas some people may expect an expert on the subject to provide a summary of the object, here they have a priceless, firsthand, and unique interaction with the object's current owner. This level of personal and privileged interaction is not widely available, and with the decreasing number of Holocaust survivors, as time passes, it will become even more of a vital and limited resource to have available. It is widely believed that such accounts from the owners make the objects more relatable to viewers and promote a deeper sense of empathy and understanding than simply viewing an object, providing an unexpected new perspective (Sylaiou *et al.,* 2017).

The use of digital 3D models was a significant and invaluable aspect of this project (and of wider Holocaust material culture studies and preservation) (Barszcz *et al.*, 2023; Lo Turco & Calvano, 2019; Meier *et al.*, 2021). Digital 3D models offer the level of interactivity this proof-of-concept platform aims to demonstrate. The fact that a digital 3D model allows a viewer to interact with (from home or other remote location) and get as close as possible to a given object by being able to virtually manipulate its position and viewing aspect is what formed a key part of displaying the objects for a new level of museum experience. Another benefit of using digital 3D models is that it allows the viewer to explore objects at their own pace through greater interactivity than, say, a physical curator-led tour of a museum might otherwise provide (although these are highly effective as they allow for that personal interaction and the ability to have ongoing dialogue and question and answer experiences). Digital 3D models offer a much more realistic representation and viewing experience of an object than a photograph (Carvajal, Morita & Bilmes, 2020). It is the increased interactivity that drives the proof-of-concept platform to encourage people to learn more about an object.

Finally, deciding whether to use external links and publications was challenging. However, when deciding what information should be presented on the platform, it

was proving difficult to draft the required information to include every single aspect that could be attributed to an object or story, specifically, extra contextual information. To limit congestion on a page of the platform, for topics that were not explicitly related to the object, such as the religious significance an object may have, it was decided that the best course of action would be to provide the viewer with external links to established resources that present the required information effectively.

Information directing the viewer to other academic publications related to the original object owner and their story followed a similar approach to external links. The approach is to sit within the proof-of-concept platform's aim of promoting self-learning. Providing these resources allows viewers to explore an exhibit at their own pace, learn about these remarkable stories, and discover other online collections and resources.

6.7 Deciding Upon the Proof-of-Concept Platform Content.

Content for the proof-of-concept was influenced by the positive elements of other online collection platforms, and the apparent drawbacks could be turned into an improved, unique educational experience. Table 6.1 summarises these elements.

Table 6.1 – Summary of areas of other online collection platforms that influenced the proof-of-concept platform.

Online Collection	**Influence on this proof-of-concept platform**
USHMM	Lack of information in one accessible place.
Yad Vashem	Survivor focussed testimonies.
Holocaust Centre North	High viewer engagement and focus on survivor stories.
National Holocaust Centre	Giving a voice to survivors. High level of interactivity. Has booking and log-on access.
LDHP	Demonstration of different types of media. Access to materials and survivors for the case studies. Many of the objects used within this project have direct links to the LDHP and the Windermere Children.

45 Aid Society	How to present the life of an individual. Streamlined approach and logical layout of digital exhibits. Has restricted access to survivors' biographies. Strong links to 'The Boys' and Windermere.

The five object biographies presented in Chapter 5 are the focus of the initial content of the proof-of-concept platform (Figure 6.17) and, naturally, form the main basis for the data and information collected in this thesis. The key focus and uniqueness here lie in the five object biographies, which tell the personal stories of the objects and the individuals they relate to. This adds to the unique level of interactivity, as viewers can hear personal quotes in the interview videos, which do not follow the traditional pure question-and-answer format found in other online collections.

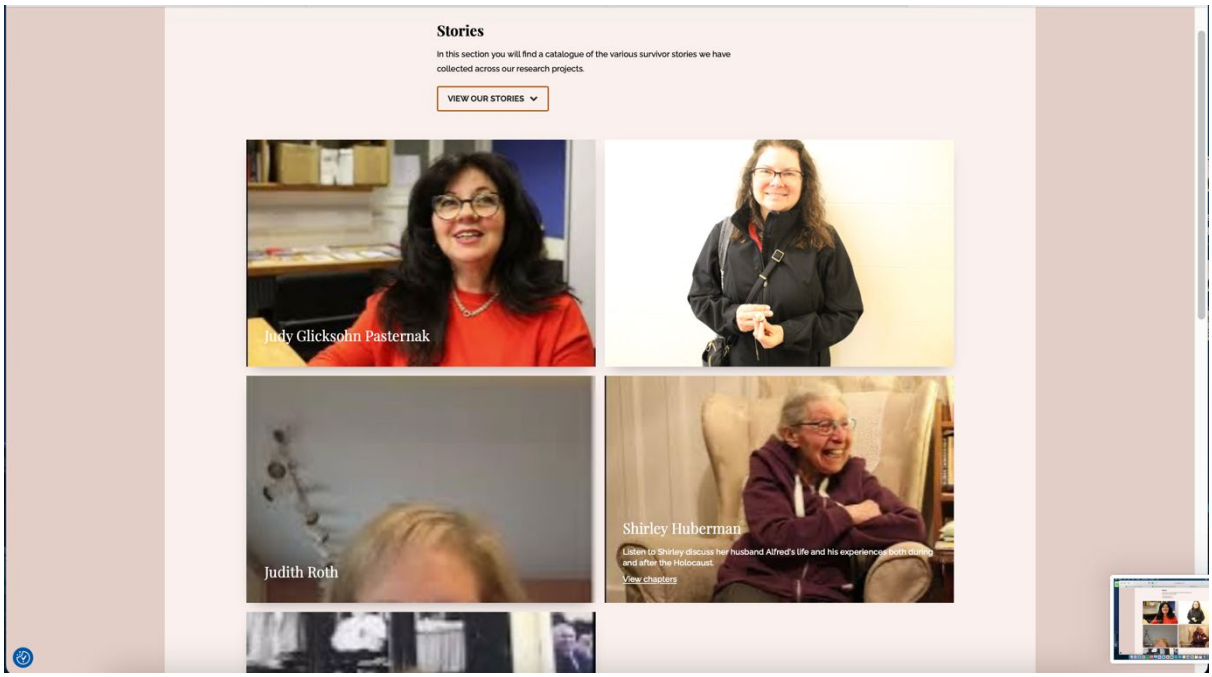

Figure 6.17: Screenshot of the 'Stories' page present on the proof-of-concept platform. (Copyright: Alex Haycock & Centre of Archaeology)

Not every media type detailed in this project was available for all five object biographies presented in Chapter 5, but as many as possible were used for the proof-of-concept platform. To aid this, Dr Hannah Wilson's theories allowed each object's biography to be developed in a manner that was not necessarily required for each exhibit. This further demonstrates that, despite their use and value, not

every media type is necessary on every occasion, and the true value lies in the presentation. However, for the proof-of-concept platform, as many as possible were used. An example of an object biography is shown in Figures 6.18, 6.19, and 6.20.

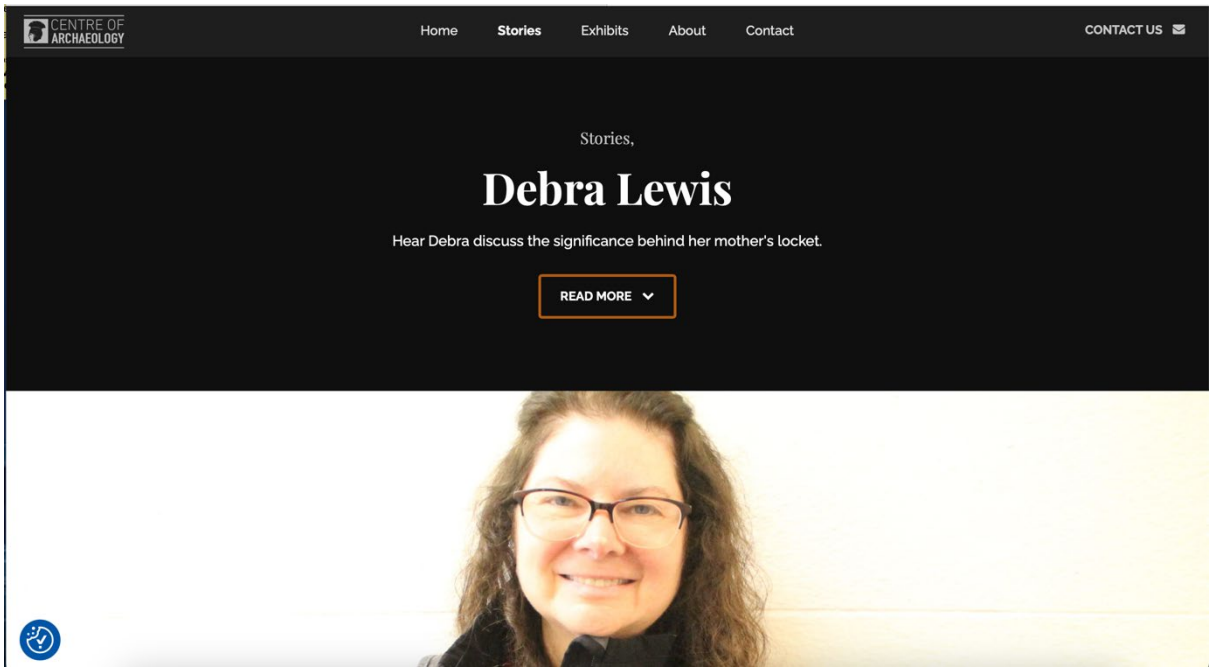

Figure 6.18: Screenshot from the 'Debra Lewis' Case study on the proof-of-concept platform opening header. (Copyright: Alex Haycock & Centre of Archaeology)

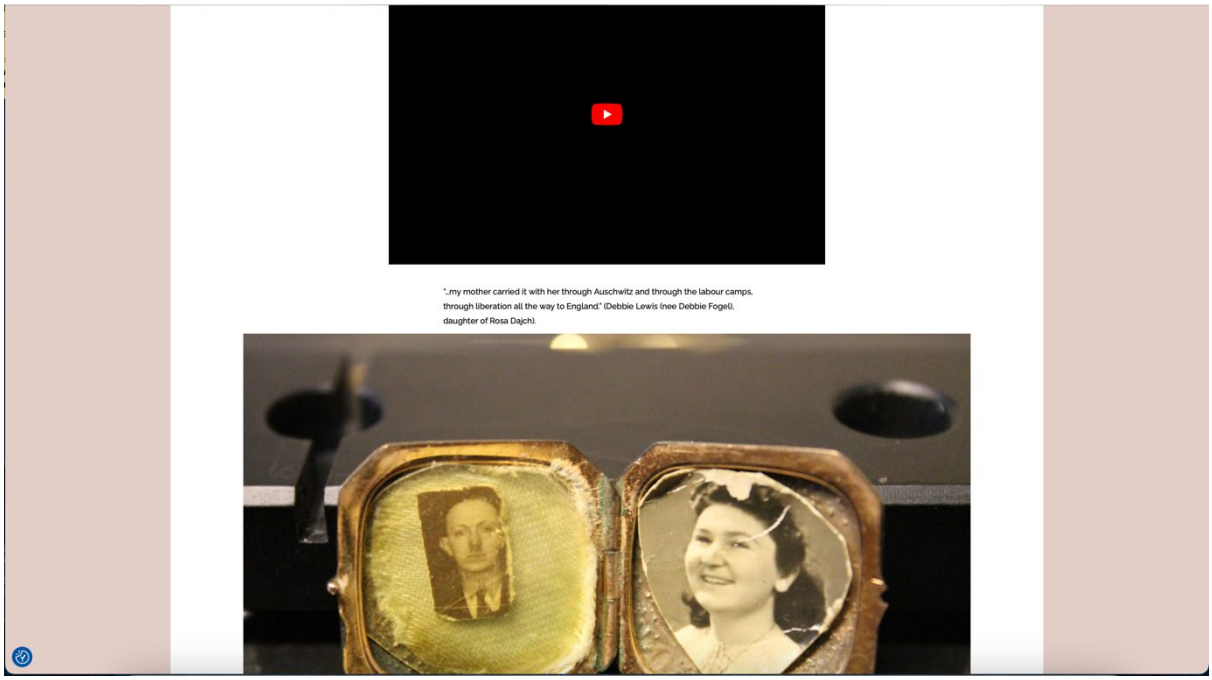

Figure 6.19: Screenshot from the 'Debra Lewis' Case study on the proof-of-concept platform, showing the embedded interview and focal image. (Copyright: Alex Haycock & Centre of Archaeology)

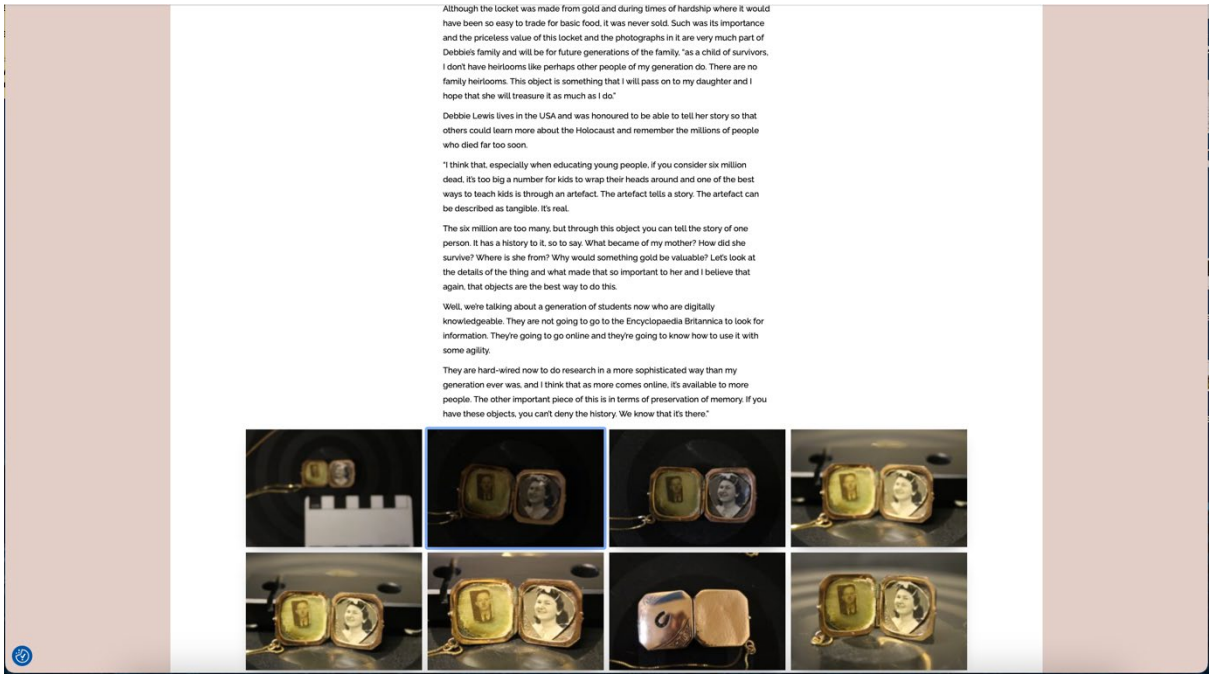

Figure 6.20: Screenshot from the 'Debra Lewis' case study on the proof-of-concept platform, showing text and an image gallery. (Copyright: Alex Haycock & Centre of Archaeology)

The next collection of objects initially selected to be presented on the proof-of-concept platform included objects from the LDHP collection that have either been donated by relatives of 'The Boys' or have resulted from the different phases of excavations undertaken by the Centre of Archaeology, described earlier in this thesis. This naturally follows the five object biographies when considering the strong connection to ‘The Boys’ and Windermere.

Where possible, a 3D model has been displayed for the given object; however, this was not possible for all 63 objects that were subject to the chosen scanning techniques. Reasons for this included the nature of the material the objects were made from (Mulahusić et al, 2020) e.g., the wedding ring and locket are gold, and when they were scanned, at the very early stage of the project, before the advancement in photogrammetry, detailed in Chapter 4 to include a smartphone app, which could quickly achieve scans of this material. When the smartphone app advancement was made, these objects, in particular, were no longer accessible

because the survivor's family members had returned home with them. However, future work would focus on regaining access and adding digital models to the exhibits.

Each page on the proof-of-concept platform shows a focal image of the object, followed by an embedded interview video and the corresponding case study, shown in the figures above. All are designed to focus on viewer engagement. Where available, an interactive digital 3D model of the object is displayed, enabling the viewer to virtually pick it up and handle it, examine it from different angles, and build a deeper understanding of its significance, as shown in Figure 6.21. Figures 6.22 to 6.24 demonstrate the different media types available across the exhibits and how they are interwoven.

Figure 6.21: Screenshot from the proof-of-concept platform, highlighting an embedded digital 3D model. (Copyright: Alex Haycock & Centre of Archaeology)

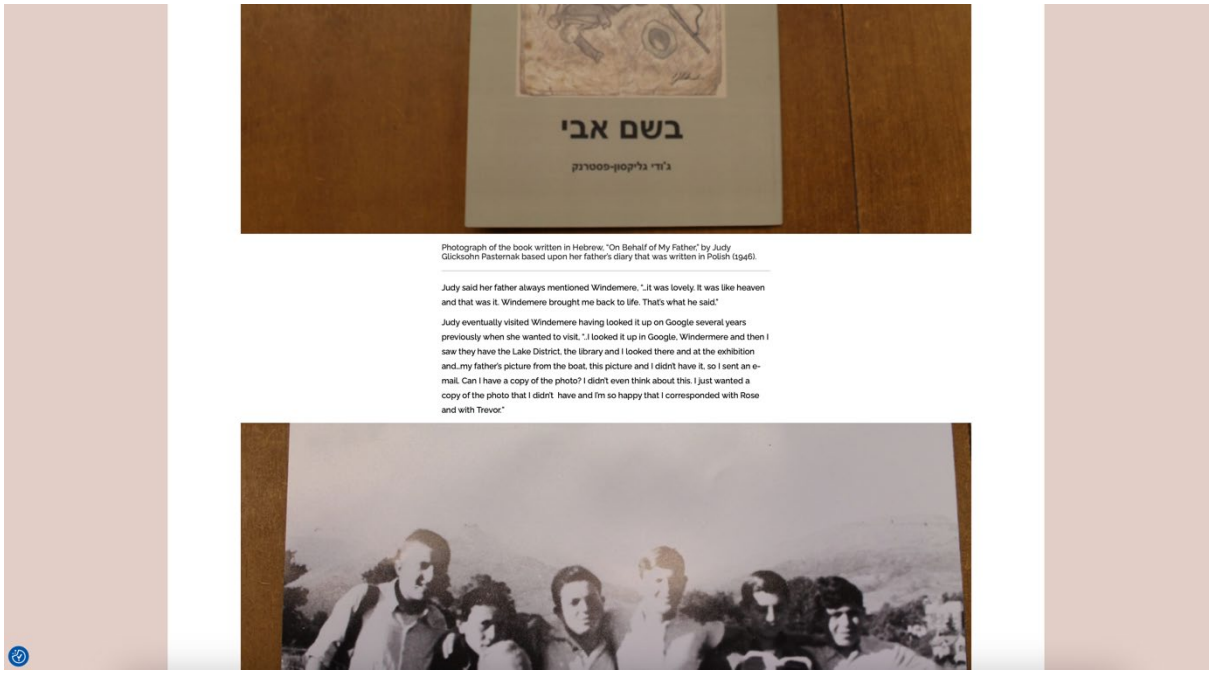

Figure 6.22: Screenshot from the proof-of-concept platform, highlighting focal images of artefacts relating to the story presented and descriptive text. (Copyright: Alex Haycock & Centre of Archaeology)

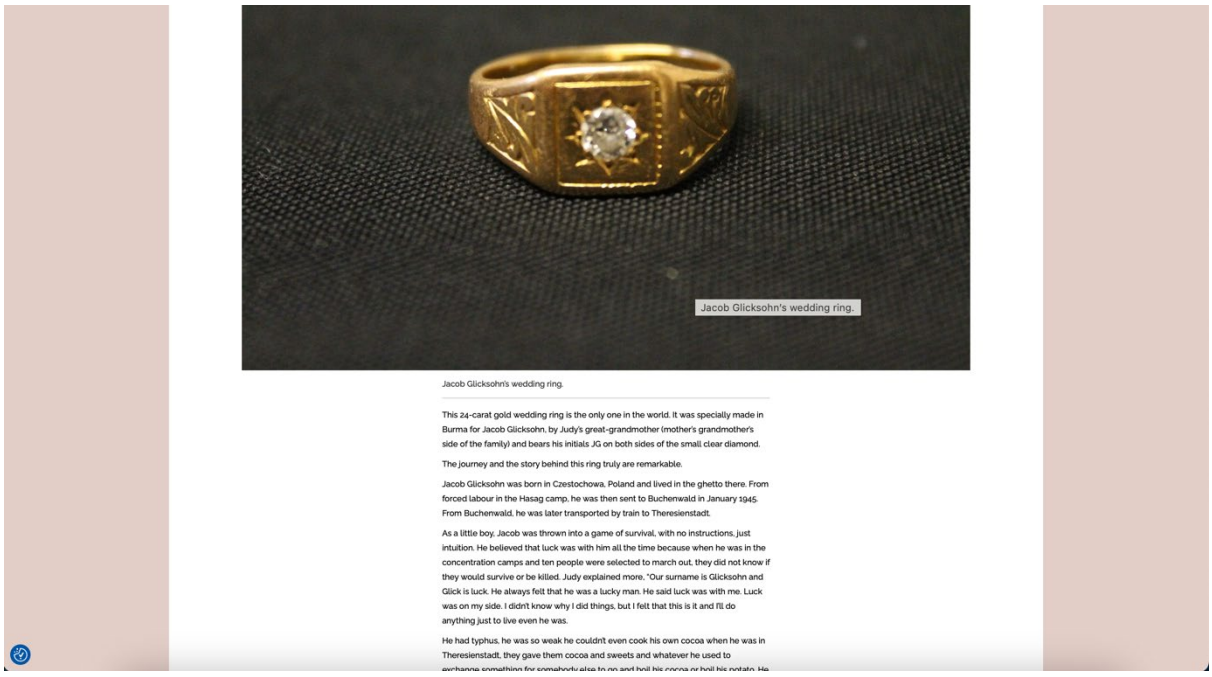

Figure 6.23: Screenshot from the proof-of-concept platform, highlighting focal images on an object and descriptive text. (Copyright: Alex Haycock & Centre of Archaeology)

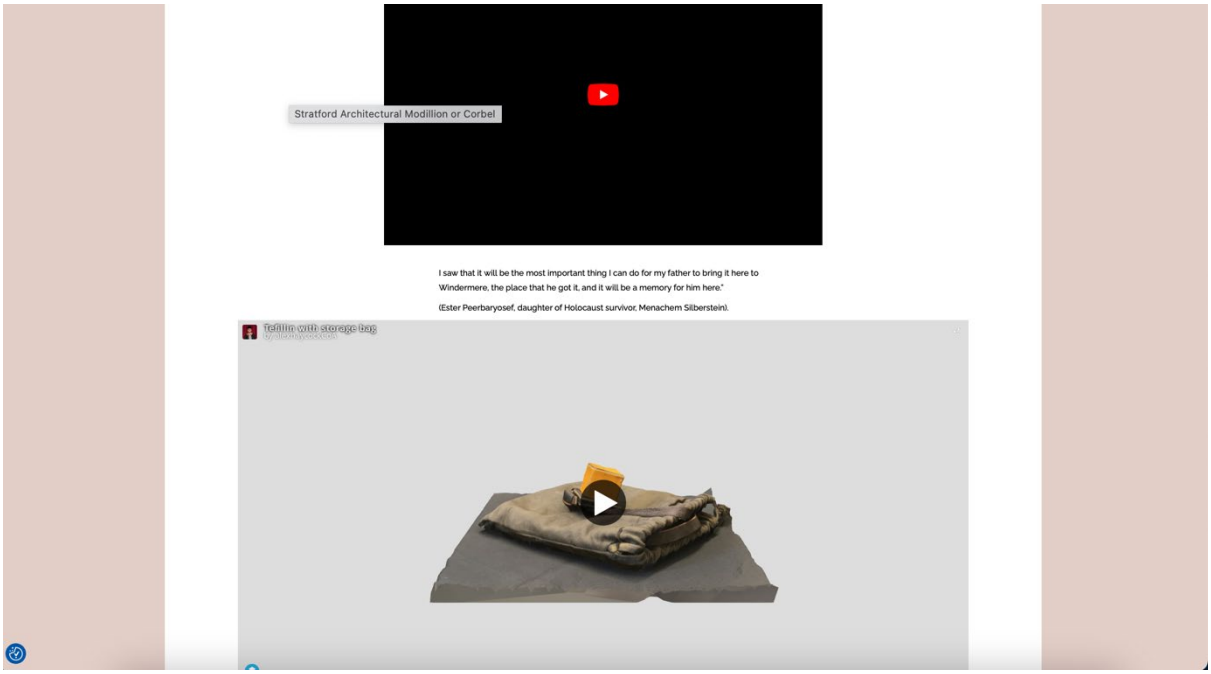

Figure 6.24: Screenshot from the proof-of-concept platform, further highlighting the combination of a digital 3D model and related interview with the owner. (Copyright: Alex Haycock & Centre of Archaeology)

In some cases, with the donated objects, the donators provided summaries of what the objects were, which formed the base of the information presented and where names of the original survivors were available, research was undertaken so that at the very least some background on the survivor could be provided to add more context to the object and aid in building a picture of what it may have meant to them and what significance they may hold.

Further examples of how the proof-of-concept platform looks and presents information are available in the image gallery in Appendix 5.

6.8 Summary

Comparing this range of other online digital collections discussed in this chapter enabled the positive elements of those sites to be used as effective practice for developing the proof-of-concept digital platform this research set out to build. Conversely, the limitations of those other online digital collections were seen as opportunities to inform the design of the proof-of-concept platform and to present the stories and objects in a more interactive way. Different types of platforms, for example, those created as catalogues or others created as being user-friendly,

tended to have fewer objects on display and might link to other websites, which was what this platform intended to steer away from.

The development of the proof-of-concept platform partially demonstrated that participants could donate their objects without permanently losing ownership, as this was only tested on a small sample of objects. However, application to larger collections would likely be required to prove this point. The proof-of-concept platform has demonstrated how different types of media can be merged to improve the user experience, with all information in one easy-to-find, easy-to-navigate place.

The object biographies were informed by what the objects meant to their owners, who proudly shared their stories through interactive one-to-one interviews. As a result, the content of those initial stories and the development of the object biographies, drawing on the microhistorical approach, gave further depth and highlighted their significance, both in the survivor's memory and in their continued legacy for their families. This approach provided context for those objects and for the survivors and their families, helping them be understood within the Windermere Children’s story and wider Holocaust education, culminating in a final display on the proof-of-concept platform.

Chapter 7: Conclusions

7.1 Aims of the Project

This project focused on the Holocaust post-1945 and on post-human memory. This was presented digitally through material objects that are significant to Holocaust Survivors and to the memories they hold and the memories they provide to their owners. The goal of this was to provide a foundation for how such resources can aid in educating people on the lesser-known side of the Holocaust, the effect it had on survivors and subsequently their families, and ultimately how similar objects in modern life can constitute gateways to similar personal memory. To do this, a series of 63 objects was curated to develop a digital repository and accompanied by five interviews with owners of some of the objects were undertaken to allow for greater context around them to be presented digitally and to give these owners a platform to tell the story of the object in their own words. These five objects and their accompanying interviews then became the focal point of the developed proof-of-concept platform, due to the unique perspectives they brought and the interactions they enabled, which allowed a demonstration of the proposed methods and media that form this thesis.

This doctoral thesis aimed to explore effective means of recording, visualising, and presenting Holocaust material culture from uncatalogued, privately owned collections.

This has been achieved through the various stages outlined in this doctoral thesis and by demonstrating how the different techniques and theories behind each stage can be used together.

Successful access was gained to uncatalogued and privately owned collections of Holocaust material culture, specifically those relating to and including the Lake District Holocaust Project. Recording the objects in digital format, using both digital reconstruction techniques and other media, informed the development of a digital platform that provides a proof of concept for how all the gathered information can be presented effectively and informatively.

First, the objectives outlined in Chapter 1 provided a strong basis for the approach and for the final contribution this research makes. Throughout this research, these objectives were kept under constant review to ensure they supported the overall delivery. It is concluded that each was met as a key stage of the project, as detailed in the six main chapters of this thesis.

The literature review then examined how current digital Holocaust exhibits are presented and the challenges encountered in documenting privately owned, uncatalogued collections of Holocaust material culture. In turn, identifying methods to bridge these knowledge gaps and presenting a methodology to achieve a further level of curatorship within Holocaust studies.

Additionally, given the vastness of Holocaust material culture collections worldwide, from institutional exhibits to survivors' private collections, this project offered the opportunity to collaborate with a single unique collection and the extraordinary group of Holocaust survivors associated with it, namely the LDHP and the Windermere Children. This collaboration enabled unique personal case studies and object biographies to be created, which formed the spine of this research and helped achieve the project's overall aims. This was achieved by employing innovative, non-interventional techniques in private collections to document them digitally before conducting intimate interviews with the object owners to gain a deeper understanding of the significance of these objects and to highlight the human aspect of their material culture. This dual approach can benefit Holocaust education and the preservation of material culture by not only providing access to untold personal stories and associated private collections but also aiding the development of digital platforms and interactive media that make Holocaust education more engaging for viewers. Overall, this will potentially encourage both survivors and their descendants to interact with future research projects with the peace of mind that they do not have to donate or part with their object and also encourage younger generations to interact with the literature and education materials available in a more contemporary manner than reading a textbook or looking at static exhibits in a physical museum.

The digital reconstructions, interviews, and biographies created alongside them enabled the development of a proof-of-concept platform that will aid scholars in expanding the scope of this project to a larger collection. Future application of the proof-of-concept platform is designed for further research to look at gaining access to and presenting even more privately owned, uncatalogued collections of Holocaust material culture, both effectively and ethically, whilst adapting to an ever-changing landscape and evolving techniques to provide the best results and formats for the viewer to digitally interact with the material present in a more intimate and interactive form than which exists to the traditional museum visitor.

7.2 Research Questions

This research project contained three research questions relating to access to privately owned collections of uncatalogued Holocaust material culture, the personal testimonies attributed to them, and the preservation and presentation of these collections, respectively.

The first question, *'How can objects of Holocaust material culture from private and uncatalogued collections be accessed without the owner having to physically part with them?*', formed the initial stages of this project and focused on accessing collections and how to undertake the main concept presented throughout the project on how survivors and their families can donate personal objects to archives without having to part with them. The answer to this came in the form of digital reconstruction methods, specifically those outlined in Chapter 3. Each technique demonstrated its effectiveness for digital reconstruction and its potential for portability and accessibility. The ease of applying these techniques demonstrated that survivors' family members could donate objects without parting with them. The ability to take these techniques into their homes, undertake data collection and process the data all in a short space of time, without causing any damage to the objects, was found to be a strong finding from this research and provides evidence to encourage other owners of such collections to come forward and participate in this type of research as it develops.

The second question focused on "*understanding the significance of Holocaust material culture through personal testimonies, which can be attributed to them*." This was achieved through the interviews undertaken and detailed in Chapter 5. In

each instance, the owner of the objects was able to give a highly personal account of not only the object's journey and experiences but also their relatives and the significance it held for them and still holds now. As already discussed, this is a new outlook on how objects are presented and on the relatability of these testimonies, leaving a lasting impression. Rather than simply retelling the events of the Holocaust through objects, it allows a more personal retelling of a specific period. The approach taken to obtain these testimonies allowed the participants to speak their story with no pre-determined theme or event, allowing for their or their relative's story in their own unedited words. Taking inspiration from the microhistorical approach referenced in Chapter 3 added immense value to the content and approach used in writing the object biographies in this research.

The final research question asked, '*How this material culture and testimony could be recorded, visualised, and presented digitally, and was purposely left open-ended with the question, 'Is there a definitive method?*' This project has presented a proof-of-concept platform that combines digital reconstructions, personal testimonies, and other contextual information to create an interactive and engaging user experience. It draws on concepts tested by other researchers and institutions to present a complete exhibition of information. Whilst this is, at present, an untested platform, it serves as an example of how it can be done and has the potential to provide future scholars with a foundation on which to build and adapt, ensuring the effective delivery of Holocaust education and remembrance. It can be concluded that there is no definitive method for presenting such material culture in an ever-evolving field, but the proof-of-concept platform can provide a foundation for presenting Holocaust Material Culture for further development and innovation.

7.3 Research Contribution

The 63 objects brought forward in this doctoral research, all of which originated from previously uncatalogued private collections, added value by demonstrating the capabilities of the digital reconstruction techniques applied throughout this project, by showing the levels of detail and visual accuracy they can provide. This enabled a fair evaluation of how they can be applied to collections of this nature

and highlighted how, moving forward, researchers can get the most out of each technique.

Additionally, the five objects presented in Chapter 5, along with their biographies created during this research, had never been told in such a highly personal way, in the words of the survivors' family members. This research lays out their introduction to the wider world. Consequently, they all provide a valuable contribution to the Lake District Holocaust Project and the overall Windermere Children's story, providing unique insights in to the lives of the families of the Windermere children and their experiences. Whilst adding to the vast existing repositories of Holocaust research and education, each object and its story is unique – often, the objects are so unique in that they are the only ones in the world, for example, Jacob Glicksohn's wedding ring (See Section 5.1 - object biography 3). Uncovering such treasures and learning about the family story behind them was a real pleasure and an honour to share their significance with them. The object biographies allow the reader to immerse themselves in imagining what life was like during and after the Holocaust. These objects brought about hope and a new life for survivors and inspired their families to live a good life, notwithstanding the horrors and trauma they suffered.

Continuing to uncover and access other private, uncatalogued collections and writing object biographies for them will undoubtedly deepen that personal appreciation of what each object meant during the Holocaust, today, and in the future for the families of survivors. There is no doubt that more objects related to the LDHP and the Windermere Children's story could be accessed; the key is to do so using the approach set out in this research to continue the contribution it provides.

7.4 Digital Reconstruction Considerations

The scanning techniques used in this research yielded mixed results for the overall quality of the generated digital models across the entire sample. However, for each technique, a sample of objects demonstrating its capabilities was generated. This consolidated past research, such as Brunetaud et al's 2022 paper,

Comparison between photomodelling and laser scanning to create a 3D model for a digital health record, Haleen et al's, *Exploring the potential of 3D scanning in Industry 4.0: An overview*, from 2022 and McMillion & Hanaphy (2022), *Photogrammetry vs 3D scanning for creating a 3D model*. This shows that these techniques are indeed a useful part of any archaeologist's foundation for presenting material culture objects. Additionally, their versatility enabled the digital documentation of any object, provided the appropriate technique was selected and the conditions were met. This point forms part of the conclusions regarding the scanning techniques applied. Preparation is key. Throughout this project, there were two elements to the scanning that brought limitations, namely:

1. The unknown nature of the object in advance of the meeting at which they were scanned.

2. Not always having all three chosen techniques immediately available.

It is paramount that the context of each object within a given private collection is identified before undertaking any digital reconstruction, to ensure that the viewer understands what is being presented. This will, in turn, allow researchers to create accurate, consistent models for their project needs, providing the best possible digital representation of an object. Furthermore, when multiple techniques are available for projects such as this, it is essential that the required equipment is readily available and transportable. This will allow further adaptation as needed, especially when an object's nature does not match expectations, and an alternative digital reconstruction method is better suited.

As discussed above, there is no definitive method for the digital presentation of Holocaust material culture. However, this research demonstrated how multiple types of media can be combined to create an interactive, personal user experience, enabling people who previously did not have a voice to speak about their experiences. The overall presentation can be built upon depending on the needs of the research.

7.5 Object Biography Considerations

As mentioned above, the object biographies curated as part of this project were key to demonstrating how survivors and their relatives can speak freely and tell

their stories as they wish. One factor in the object biographies that stands above the others is that, when creating biographies of this nature, they should be informed by what the items mean to their owners. These are the most unique testimonies that can be given. In many cases, objects so small that others have in their own lives and may take for granted, for some, mean more than life itself. It not only serves as a memory of a loved one but also as a unique gateway into the past, telling the story of a person and providing insights into the remarkable, ensuring a legacy beyond the documented horrors. A person immortalised in a single object speaks louder than any textbook or memorial and holds the key to improving education and leaving a lasting, relatable impact on future viewers. These types of biographies allowed survivors' families to have a real say in how their objects were presented and the information they wanted others to know, rather than scholars and museums deciding for themselves.

A key finding (learning) from this research was that, where possible, having multiple techniques available for collecting object data ensures the best possible results and the most accurate representation of the objects. Similarly, in interviews with object owners, it was advantageous to take an open approach, allowing them to speak as naturally as possible and express what they wanted to convey. Guide questions helped as prompts for the interviewer but were only used as a guide for the conversation.

7.6 User Testing for the Proof-of-Concept Platform

It was not possible to conduct user testing requirements for the proof-of-concept platform within the timescales of this research. However, the considerations for the approach that ideally could have been taken are set out.

The initial ethical approval for this research project focused on gaining access to collections of Holocaust material culture objects and undertaking interviews with Holocaust survivors and their relatives.

As the project progressed and the proof-of-concept platform began to develop, it began to emerge that the most appropriate method of user testing within the approved parameters within this project's ethical approval (Appendix 1) would have been to seek direct feedback from those who were interviewed for the five

case studies on how their family objects and stories have been written and presented. The thought process behind this initial approach would have allowed future viewers to see the objects and stories through the family's approved lens. This allowed participants to proudly present information in their own way, and they should have the opportunity to influence this. As part of their interviews, the fact that they could provide objects without permanently parting with them was explained to them, and, in extension of that, discussions were held about their thoughts on the value of such a resource.

The three key groups of people identified to be involved in potential user testing were:

- Holocaust survivors and their relatives.
- School children/young adults who have the subject of the Holocaust included within their curriculum.
- Other academics within the research field.

These three broad groups are of key importance for different reasons.

1. The opinions of survivors and their relatives are important because they give them the opportunity to influence how their stories are presented. Based on the interviews conducted for the five case studies and the impressions gained from their responses, this is a welcome factor. Additionally, it will provide an opportunity to demonstrate the work undertaken for other survivors and their relatives and to potentially gain their involvement beyond this project, expanding the resources available on the proof-of-concept platform and growing its repository of objects and stories.
2. The opinions of children/young adults are important because the proof-of-concept platform could be implemented in educational curricula as a learning tool or aid. It has the potential for teachers and academics to build sessions and tasks around the platform. Gaining feedback on how the information is presented and on its ease of use is important.
3. Likewise, for other academics in education, a key point of feedback would be similar to the feedback from survivors and their relatives, and how future educational development and research could advance.

This project aimed to make such material accessible and interactive, so who better to provide feedback than those who are most likely to use the platform regularly?

Overall, user testing is a key aspect of any educational platform, and obtaining feedback from peers and other academics would provide great value to such platforms. Primarily, it would serve to gather feedback on the presentation and the information provided, as well as potential improvements and the integration of other media and future technological advancements that could be included throughout. Additionally, user testing with this group could open the door to further research on developing the platform and on how this concept could be integrated into general practice for other museums and exhibitions, not only concerning the Holocaust but also other applicable research fields.

The key points that would have been sought from feedback for this proof-of-concept platform would broadly be:

- The effectiveness of the presentation and ease of navigation.
- The value of the content and why.
- The level of interactivity of the media presented.
- functionality as an educational aid; and
- opinions on how this concept can be developed and integrated into general curation practices.

The expected outcome from user testing feedback would ultimately lend itself to developing not only the concept of families being able to donate objects without permanently parting with them, but also provide Holocaust survivors, their relatives and those that are likely to have frequent interactions with the platform the ability to shape its design and create a fully collaborative and interactive experience for all. Thus, this resource, designed by academics and developed by those whose lives have shaped this research, gives them the voice to tell their story and the deserved voice to influence the education related to it.

7.7 Further Research Questions

The scope of this research focused only on the LDHP and related collections. Notwithstanding the contribution it has made to the LDHP, the Windermere Children’s story, and wider Holocaust research and education, further

opportunities exist to examine national and even international private, uncatalogued collections.

Ideally, it would have been of great value to have had more participants to add to the five object biographies presented, without taking away from their contributions.

It follows that thousands of unknown and undiscovered stories await telling, and further research questions are raised.

- How can other privately uncatalogued collections from around the world be accessed and represented in the same way as the five object biographies documented in this research, thereby contributing to Holocaust education and research?
- Who are the other undiscovered families linked to the Windermere Children's story and the LDHP, and how can any objects they possess along their stories be told?

The importance of objects in uncatalogued, privately owned collections of Holocaust material culture cannot be overstated. These objects do not just represent a period and events that have taken place, but also represent a person and the incredible life they have lived. They do not tell just another story; they represent a life and a voice that deserve to be heard. This project has enabled techniques that allow survivors and their relatives to influence how these representations are presented, and, in turn, has made possible a legacy previously available only to a family to be displayed proudly for the world to see and ensure it is never forgotten.

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Appendices

Appendix 1: Submitted Ethical approval form and Ethical approval letter.

Submitted ethical approval form

RESEARCH ETHICS

Proportionate Review Form

The Proportionate Review process may be used where the proposed research raises only minimal ethical risk. This research must: focus on minimally sensitive topics; entail minimal intrusion or disruption to others; and involve participants who would not be considered vulnerable in the context of the research.

PART A: TO BE COMPLETED BY RESEARCHER

Name of Researcher:	Alex Haycock
School	Law, Policing and Forensic Science

Student/Course Details (If Applicable)			
Student ID Number:			16027156
Name of Supervisor(s)/Module Tutor:			Prof Caroline Sturdy Colls, Willam Mitchell, Dr Rachel Bolton-King
PhD/MPhil project:	☒		
Taught Postgraduate Project/Assignment:	☐	Award Title:	
Undergraduate Project/Assignment:	☐	Module Title:	

Project Title:	An investigation of how non-destructive archaeological methods can assist in the digitalisation of uncatalogued and privately-owned Holocaust material culture collections.
Project Outline:	This research project is looking to bring multiple collections of Holocaust material culture together into a single digital domain. This will allow the furthering of Holocaust research and education within a society where Holocaust denial and antisemitism has surged in numerous countries (ADL, 2020). The project will also look at ways the consolidated data can be presented to the public effectively and how using digital methods can unlock an even greater understanding of Holocaust material Culture. This research project will be applying non-destructive methods for digitising Holocaust material culture collections within the UK. This includes but is not limited to, a privately owned collection belonging to the Lake District Holocaust Project and objects in private hands, for which access will be facilitated by working with the UK Holocaust Memorial Foundation. The aim of the project is to determine the effectiveness of non-destructive digital techniques for object reconstruction to aid in gaining a greater understanding of Holocaust material culture objects via digitalisation of uncatalogued and privately owned collections. This process will ultimately improve understanding and the research value attributed to Holocaust material culture collections before which would have been inaccessible to researchers and the public alike.

University Research Ethics Committee (February 2018)

	The objectives of the project are: - To identify private and uncatalogued Holocaust material via various research methods. - To utilise digital techniques for Holocaust material culture object reconstruction. - To identify how the techniques aid in researching the collections with regards to what new information can be learned from the digital reconstruction in addition to and in comparison to the physical object. - To evaluate how Holocaust material culture can aid Holocaust education. - To identify how these techniques can be used to further research and understanding across multiple disciplines relating to but not exclusivley Holocaust material culture studies. Project research questions: - How can all the Holocaust material culture collections identified be consolidated into a single source using digital techniques available? - How can digital archaeological techniques be utilised to preserve, document and digitise uncatalogued and privately-owned Holocaust material culture collections? -How can the digital techniques applied, aid in telling lesser known and forgotten material culture and stories from the Holocaust? References: ADL (2020) Audit of Antisemitic Incidents 2019. [online] Available at: https://www.adl.org/audit2019 [accessed: 10/11/2020]
Give a brief description of participants and procedure (methods, tests etc.)	Part of the project will be to reflect on the ethical issues surrounding the use of non-destructive digital methods for the visualisation, analysis and dissemination of Holocaust material culture, which will be established following desk-based research and via feedback once the platform outlined in this project has been created. This will evaluate whether these techniques are an appropriate method for maintaining Holocaust material culture and heritage digitally. Participants for the data collection will come via the Lake District Holocaust project (LDHP),who alread have a large collection of objects donated by survivors, liberators and their families but have not yet been catalogued and from the wider public who will be recruited with the help of contacts of UK Holocaust Memorial Foundation (UKHMF). Participants recruitment from the wider public may also be undertaken by putting out a poster/leaflet to be circulated by museums and other noteable institutes to their members and in their newsletters to ask people with objects they feel are suitable for the project to come forward for more information. Following this, the objects they present will be assessed to determine whether they are objects that were kept by survivors and/or liberators. Another aspect of this project will include visiting survivors, liberators and their relatives which will involve both informal conversation and formal interview. This will involve physically and virtual meetings depending on preference, availability of individuals and current COVID-19 guidelines. Whenever participants are visited in person a normal risk assessment and COVID risk assessment will be completed prior to the meeting taking place as this may include visiting their homes or other locations such as museums.

	This will be to assess safety due to COVID-19 and whether there is a suitable environment present for the digital techniques to be applied during the same physical meeting as some participants may not wish for their objects to be transferred to another site for the digitalisation process. In order to undertake any risk assessments of participants' houses, contact will be made with the participants and/or their relatives in order to ask questions concerning the spaces available for the interview and scanning activities, paying particular attention to the size of spaces and any obstructions or hazards present. This can be achieved by asking participants prior to a visit, to provide photgraphs of the spaces which would be then deleted following my visit. In the instances where an external vanue such as a museum or community hall is used, a site visit will be made to complete a risk assessment again to ensure that all equipment and survays can be undertaken safely. Photographs can also be requested again if a site visit is not possible, in addition to corispondance with the facilitators at the museum or community hall to determine if they are aware of any hazards and if they have any existing risk assessments I can draw upon. When talking to participants, whether informally or as part of an interview, ethical consideration is taken regarding the nature and topic of conversation as it may lead to distress when talking about their experiences. Participants will be made aware of where support is available should they be adversley affected by participation in the research project. Participants will be made fully aware of the nature of the interview and that it may lead to distress when talking about their own personal experiences at various stages: (1) via the information sheet and concent form, (2) during the pre-interview phone conversation and (3) when they are met in person by the interviewer. This will allow them to make a fully informed decision when consenting to participating in the interview process. The level of distress that could occur will be detremined before interview based on the information provided by participants in their declaration forms that will be completed in advance. Should any level of distress occur during the interview process, reassurance will be provided to participants that they can take their time answering and they will be reminded that they can end the interview should they wish in order to prevent any escalation to the distress experienced. In addition, before interviews take place, it is possible that a third party can be identified who can aid participants in the event of any distress. This third party could take the form of a relative, spiritual adviser, counsellor or someone else and if any concerns about the physical or mental health of the participants arise, medical advice will be sought. The process for limiting the amount of emotional distress during the interviews will be repeated with regards to the scanning activities where the participant wishes to be present. In addition, a guide set of questions will be used in the interview, which will vary depending on the nature of the participant (survivor, liberator or relative), A sample of which will be attached to this form as an appendix. The primary aim of these interview is to obtain as much information feesably possible regarding the object the participent has presented. It can be expected that some participants will want to tell their whole story or discuss other topics which may or may not include the information required and so if this arises the sample questions will be used in attempt to gain more information about the objects themselves. The time for the interviews will also be planned to last 30-60 minutes but again as some participants stories may be longer than others this will not always be possible. The sample set of

	questions that will be used to guide the interview will be shared and agreed on with the participant prior to the interview commencing, so that participants are fully aware of the questions they will be asked and so that they can veto any questions or topics they do not wish to answer or discuss. In addition, it must be noted that it is likely that most of the information required will have been provided by the participants (survivors, liberators and descendents) who have opted into the project with the knowledge that this information is required. Therefore, should they deem the information to be too sensitive or traumatic that can withdraw from any interviews and the project at any time without penalty. However, there are many survivor and liberator stories already available within the public domain due to the target groups being people who regularly speak about their experiences publicaly. An example of this is the nationwide programme regarding Holocaust survivors and liberators currently living in Britain run by UKHMF, many of which may volunteer to participate in this project. As a result of this many of them will have told their stories before and even though they may still get distressed during the recollection of events, the fact they have done so before reduces the risk. When signing the concent form for participation there will be an option for permission to upload any information given in interviews to the platform along side the digital object reconstruction. With regards to the questions that will be asked, upon starting the interview stage of research, if the nature of the questions and topics to discuss changes, the ethics form for them will be reviewed and resubmitted accordingly. In addition, the participant will be reminded that the researcher will undertake further research to validate the information provided during the interviews. If any sensitive information arises from this research, the participant in question will be made aware and given the option for this new information to be published as part of the final platform and/or thesis. The digital visualisation aspect of the project will be undertaken using equipment available at Staffordshire University including: MechScan Macro, HandyScan, Scan in a Box FX edition, FaroArm and Faro S70 terrestrial laser scanner. The piece of equipment used will be dependent on the nature of the object, i.e. its size and morphology, as each piece of equipment can cater to various degrees of detail depending on these factors. Photgrametry will also be used in the project which will utilise DSLR cameras with varying zoom lenses to photograph objects from multiple angles to create a digital reconstructions with them. A sample of the objects scanned via the other methods will also be captured using photogrammetry and the quality of the reconstructions will be compared in the same way as the other methods; focusing on quality and accuracy of the techniques and digital models produced. These pieces of equipment will be used either on site at Staffordshire University or signed out and used on site when the objects are stored where possible, for example, at a participants residence or at a museum or public space (community hall etc) within their local area. In addition, some museums may allow for objects to be scanned in the facilities they have at their disposal, which in turn would provide a secure safe space to conduct

	'scanning workshops' whereby participants bring their objects to the museum for scanning and then take them home if they are objects they are not donating. Throughout the scanning process participants may wish to be present during the scanning stage itself once interviews are complete. This is why it is important to secure a secure space so that scanning can be completed effectively whilst also providing ample room for all those present to observe the process. For these instances any health and safety relating to the equipment will be explained such as trip hazards from cables and avoiding eye contact with any lasers/lights from the equipment. In instances where travel to these locations is not possible due to COVID or otherwise, it will be negotiated with the owners of the objects to have the objects safely and securely transported to the Centre of Archaeology at Staffordshire University to be stored in their secure archive until in house scanning can take place. Upon completion of the visualisation methods at Staffordshire University all objects will be safely and securely returned to their respective owners. An example for this is the collection held by the Lake District Holocaust Project (LDHP) all the digital visualisation techniques will be undertaken at their premises unless agreed otherwise to transport them to the Centre of Archaeology. The methods used will be compared with regards to ease of use and the quality and accuracy of scan data produced. Following the visualisation of the objects, all data will be processed and analysed using computer software available at Staffordshire University such as Mesh Lab an open sources piece of downloadable software which will only require scan data to be imported, which is not stored or copied to their servers it is only stored on the users device. Issues with this include booking out a computer with the software as other students will also require them for their own courses and projects. Also, the amount of data files may be large resulting in an extended time need to complete this stage of the project. Following this, all information will be disseminated with supervisors, other researchers and participants so they can see the results and give any feedback they have. An issue with this is how to disseminate this information as the participants will be located all around the UK and so either further meetings will be needed with each participant or centralised meetings can be arranged at museums where a mock collection/display can be set up. The data collected throughout this project will be used to populate a mock online platform that can be used as an example for how a larger type of database would potentially function. In this, the digital reconstructions will be presented with information relating to it that was obtained through the interview stage of the project. Permissions for the use of this information will be given when signing the concent forms for participation. Reflection will also be undertaken on whether the methods applied for data acquisition and processing are suitable for this type of research and the larger project as a whole by having participants observe and assess the digital reconstructions on the mock platform crreated based on the digitalisation process of the digital reconstruction techniques applied to the physical object, the information gained from the digital models produced compared to the physical objects and the accessibility of the digital models.

	This reflection will take into account: - The success of the techniques based on accuracy and quality of the final digital models. - How well participants can identify the models without prompts and what information they can acquire from the data presented to them. From this further interviews will take place with the participants taking part in assessing the mock platform. For this a further ethics form will be submitted at a later date outlining the aims of the interviews and provide a sample of questions. This will be done following the first stage of the research projects once the assessment criteria for this evaluation have been better defined. With regards to the data collection in which physical interaction with participants is required and for any interviews that take place, full ethical review will be completed should further ethical issues or information arise. It is appreciated that the nature of this project is of a very sensitive nature and following advice from supervisors, it has been determined that the measures that have been set out within this Proportionate ethics form ensure these are taken into account without the need for a full ethics application. Finally, as previously stated, all practical based work at present is COVID-19 dependent and will only take place once COVID risk assessements for where scanning and physical interactions take place in addition to other risk assessments and complies with current government guidelines.		
Expected Start Date:	January 2021	Expected End Date:	August 2023

Relevant professional body ethical guidelines should be consulted when completing this form.

Please seek guidance from the School Ethics Coordinator if you are uncertain about any ethical issues arising from this application.

There is an obligation on the researcher and supervisor (where applicable) to bring to the attention of the School Ethics Coordinator any issues with ethical implications not identified by this form.

Researcher Declaration

I consider that this project has no significant ethical implications requiring full ethical review	☒

I confirm that:		
1.	The research will **NOT** involve members of vulnerable groups. Vulnerable groups include but are not limited to: children and young people (under 18 years of age), those with a learning disability or cognitive impairment, patients, people in custody, people engaged in illegal activities (e.g. drug taking), or individuals in a dependent or unequal relationship.	☒
2.	The research will **NOT** involve sensitive topics. Sensitive topics include, but are not limited to: participants' sexual behaviour, their illegal or political behaviour, their experience of violence, their abuse or exploitation, their mental health, their gender or ethnic status. The research must not involve groups where permission of a gatekeeper is normally required for initial access to members, for example,	☒

	ethnic or cultural groups, native peoples or indigenous communities.	
3.	The research will **NOT** deliberately mislead participants in any way.	☒
4.	The research will **NOT** involve access to records of personal or confidential information, including genetic or other biological information, concerning identifiable individuals.	☒
5.	The research will **NOT** induce psychological stress, anxiety or humiliation, cause more than minimal pain, or involve intrusive interventions. This includes, but is not limited to: the administration of drugs or other substances, vigorous physical exercise, or techniques such as hypnotherapy which may cause participants to reveal information which could cause concern, in the course of their everyday life.	☒
6.	The research **WILL** be conducted with participants' full and informed consent at the time the study is carried out: • The main procedure will be explained to participants in advance, so that they are informed about what to expect. ☒ • Participants will be told their involvement in the research is voluntary. ☒ • Written consent will be obtained from participants. *(This is not required for self-completion questionnaires as submission of the completed questionnaire implies consent to participate)*. ☒ • Participants will be informed about how they may withdraw from the research at any time and for any reason. ☒ • For questionnaires and interviews: Participants will be given the option of omitting questions they do not want to answer. ☒ • Participants will be told that their data will be treated with full confidentiality and that, if published, every effort will be made to ensure it will not be identifiable as theirs. ☒ • Participants will be given the opportunity to be debriefed i.e. to find out more about the study and its results. ☒	YES ☒ N/A ☐
7.	A risk assessment has been completed for this research project	YES ☒ N/A ☐

If you are unable to confirm any of the above statements, please complete a **Full Ethical Review Form**. If the research will include participants that are **patients,** please complete the Independent Peer Review process.

8. Information and Data Please provide answers to the following questions regarding the handling and storage of information and data:
a) How will research data be stored (manually or electronically)? Electronically, on a secure hard drive.

b) How is protection given to the participants (e.g. by being made anonymous through coding and with a participant identifier code being kept separately and securely)? All paricipants will be given a numerical identification code which will be used in place of names should they opt to have there identitiy be annonymous.
c) What assurance will be given to the participant about the confidentiality of this data and the security of its storage? Participants will be assured that all personal data will be stored securely and only relevent data will be used in results if permission is given.
d) Is assurance given to the participant that they cannot be identified from any publication or dissemination of the results of the project? Yes, unless they opt to allow their details can be used within the results of the project.
e) Who will have access to this data, and for what purposes? All project supervisors will have access to the data for the purpose of checking it is stored securely and check the data throughoutn the project.
f) How will the data be stored, for how long, and how will it be discarded? On a secure server located at staffordshire univeristy and on a secure portable hard-drive and will be kept for the duration of the project and will be disposed of when no longer required for this project or any subsequent further research.

Supporting Documentation

All key documents e.g. consent form, information sheet, questionnaire/interview schedule are appended to this application.	☒

Signature of Researcher:	ACH	Date:	16/03/2021

NB: If the research departs from the protocol which provides the basis for this proportionate review, then further review will be required and the applicant and supervisor(s) should consider whether or not the proportionate review remains appropriate. If it is no longer appropriate a full ethical review form **MUST** be submitted for consideration by the School Ethics Coordinator .

Next Step:

STUDENTS: Please submit this form (and supporting documentation) for consideration by your Supervisor/ Module Tutor.

STAFF: Please submit this form to your Head of Department or a Senior Researcher in your School. Once they have reviewed the form, this should be forwarded to the Research Administrators in RIIS (ethics@staffs.ac.uk) who will arrange for it to be considered by an independent member of the School's College of Reviewers .

PART B: TO BE COMPLETED BY SUPERVISOR/MODULE TUTOR (If student) OR Head of Department/ Senior Researcher (if staff)

I consider that this project has no significant ethical implications requiring full ethical review by the Faculty Research Ethics Committee.	☐

I have checked and approved the key documents required for this proposal (e.g. consent form, information sheet, questionnaire, interview schedule).	☐

Signature of Supervisor/ Head of Department/ Senior Researcher:		Date:	

Next Step: Please forward this form to the Research Administrators in RIIS (ethics@staffs.ac.uk) who will arrange for it to be considered by an independent member of the School's College of Ethical Reviewers , having no direct connection with the researcher or his/her programme of study.

PART C: TO BE COMPLETED BY A MEMBER OF THE SCHOOL'S COLLEGE OF ETHICAL REVIEWERS

This research proposal has been considered using agreed University Procedures and is now approved. **Or** This research proposal has not been approved due to the reasons given below. **Recommendation (delete as appropriate)**: Approve/ Amendments required/ Reject	☐ ☐

Name of Reviewer:		Date:	
Signature:			

Signed (School Ethical Coordinator)		Date:	

University Research Ethics Committee (February 2018)

Ethical Approval Letter

Law, Policing and Forensics

ETHICAL APPROVAL FEEDBACK

Researcher name:	Alex Haycock
Title of Study:	SU_20_105 An investigation of how non-destructive archaeological methods can assist in the digitalisation of uncatalogued and privately-owned Holocaust material culture collections
Status of approval:	Approved

Thank you for addressing the committee's comments. Your research proposal has now been approved by the Ethics Panel and you may commence the implementation phase of your study. You should note that any divergence from the approved procedures and research method will invalidate any insurance and liability cover from the University. You should, therefore, notify the Panel of any significant divergence from this approved proposal.

You should arrange to meet with your supervisor for support during the process of completing your study and writing your dissertation.

When your study is complete, please send the ethics committee an end of study report. A template can be found on the ethics BlackBoard site.

Signed: **Date: 31st March 2021**

Professor John Cassella

Chair of the Law, Policing and Forensics Ethics Panel

Appendix 2: Guide questions for participant interviews

Participant Questionnaire/ interview –

Please note: most of the information to be obtained via interview is likely to have been provided before the interview by participants who have opted to take part in the project, knowing that it is required, and that should they deem the interview as too sensitive or traumatic, they can withdraw at any time

Survivor

Participant name:

Nature of object (brief description):

- Are you happy to talk about your experiences? (Note: this is to confirm what has already been agreed on the participant information/consent forms.)
- What is the nature and size of the object that you have brought for use within this project?
- What were your experiences in the holocaust regarding this object?
- How did you come into possession of this object?
- How do you feel about this object? How does it make you feel?
- How does this object make you feel when you see it now? What emotions does it bring?
- Do you think this object and your experiences will aid in Holocaust education?
- Do you think this type of research/resource may influence Holocaust education and material culture preservation?
- Do you think that this type of research/resource is suitable for the nature of the history it is trying to preserve?
- Are you happy for your details (name, experience, etc) to be used I the final product of the project to add more context to your object and tell your story? (This will also be on the consent/information form and is just to reconfirm permission.)

Survivor's relatives

Participant name:

Nature of object (brief description):

- Are you happy to talk about your relative's experiences? (Note: this is to confirm what has already been agreed on the participant information/consent forms)
- What is the nature and size of the object that you have brought for use within this project?
- How did you and/or your ancestor/family member come into possession of this object?
- Have you done any research into the object/family member/ancestor? And does what you found differ from what you have been told about or by them? (if applicable)
- How do you feel about this object? Do you know how it made your relative feel?
- What do you think your relative felt when they looked at this object after what they had experienced?

- How do you think this object and your relatives' experiences will aid in Holocaust education?
- How do you think this type of research/resource may influence Holocaust education and material culture preservation?
- Do you think that this type of research/resource is suitable for the nature of the history it is trying to preserve?
- Are you happy for your details or those of your relatives (name, experience, etc) to be used I the final product of the project to add more context to your object and tell your story? (This will also be on the consent/information form and is just to reconfirm permission

Liberators

Participant name:

Nature of object (brief description):

- Are you happy to talk about your experiences? (Note: this is to confirm what has already been agreed on the participant information/consent forms.)
- What is the object that you have brought for use within this project?

Liberator background:

- What unit were you with?
- Which places did you visit?
- What were your impressions of these places?
- How did you come into possession of this object? Did you find it, did someone give it to you, or was it via other means?
- If object given – What did this object mean to the person that gave it to you, and why did they give it to you?

Other questions:

- What significance does this object have to you?
- Does it bring back memories of that time period and what you experienced?
- When you see this object now, how does it make you feel? What emotions does it bring to the surface?
- How do you think this object and your experiences will aid in Holocaust education?
- How do you think this type of research/resource may influence Holocaust education and material culture preservation?
- Do you think that this type of research/resource is suitable for the nature of the history it is trying to preserve?
- Are you happy for your details (name, experience, etc) to be used I the final product of the project to add more context to your object and tell your story? (This will also be on the consent/information form and is just to reconfirm permission.)

Liberators family

Participant name:

Nature of object (brief description):

- Are you happy to talk about your relative's experiences? (Note: this is to confirm what has already been agreed on the participant information/consent forms)
- What is the object that you have brought for use within this project?

Liberator background:

- What unit was your relative with?
- Which places did they visit?
- What were their impressions of these places?
- How did they come into possession of this object? Did they find it, did someone give it to them, or was it via other means?
- If object given – What did this object mean to the person that gave it to your relative/ancestor, and why were they given it?

Other questions:

- What significance does this object have to you?
- Did this object bring back memories of that time period and what experiences your relative had?
- How do you think this object made them feel when they looked at it after what they went through?
- How do you think this object and your relatives' experiences will aid in Holocaust education?
- How do you think this type of research/resource may influence Holocaust education and material culture preservation?
- Do you think that this type of research/resource is suitable for the nature of the history it is trying to preserve?
- Are you happy for your details or those of your relatives (name, experience, etc) to be used I the final product of the project to add more context to your object and tell your story? This will also be on the consent/information form and is just to reconfirm permission.)

Appendix 3: Table detailing objects within the sample data set and what digital reconstruction techniques they were subject to.

Object Name	Owner	Reference code	Photogrammetry	Laser scanning	Structure Light
Key	LDHP	1001			
Metal Tube	LDHP	1002			
Penknife	LDHP	1003			
Metal Fork	LDHP	1004			
Belt Buckle	LDHP	1005			
Veno's bottle top	LDHP	1006			
Metal Drain Cover	LDHP	1007			
Ceramic Drain Fragment 1	LDHP	1008			
Ceramic Drain Fragment 2	LDHP	1009			
Ceramic Drain Fragment 3	LDHP	1010			
Cats eye	LDHP	1011			
Plane model	Mayer Hersh	1012			
Metallic plane model	Alan King	1013			
Lighter	Alan King	1014			
Thread wheel	Alfred Huberman	1015			
Bolt	LDHP	1016			Not enough data to complete mesh
Comb	LDHP	1017			Not enough data to complete mesh
Jeyes bottle top	LDHP	1018			Due to nature of object alignment could not be completed
11' brick fragment	LDHP	1019			
Bone fragment (1)	LDHP	1020			
Thread wheel 2	Alfred Huberman	1021			
Wood Fragment	LDHP	1022			some errors due to missing data
Bone Fragment (2)	LDHP	1023			Error with alignment
Wall Fragment	LDHP	1024			Issues with alignment
CLAU brick	LDHP	1025			Stitch needed - some error with alignment
Painted brick fragment	LDHP	1026			Two halves created with some issues with alignment preventing mesh
Locket	Debra Lewis	1027			partial scan
Wedding ring	Judy Glicksohn Pasternak	1028			
Plastic pink passover cup	Judi Roth	1029			
Gold Necklace	Other	1030			
Siddur (Jewish Prayer Book)	Chaim Olmer	1031	partial		Mesh and export
Tefillin (With strap)	Menachem Silberstein	1032			
Tefillin (With bag)	Menachem Silberstein	1033			Stitch needed
Teffelin bag	LDHP	1034			Data acquires but unable to allign due to uniform nature
Aushwits-Burkenau object	LDHP	1035			Data acquires but unable to allign due to uniform nature
Sundland plane altimetre	LDHP	1036			
Brick fragment	LDHP	1037			stitch needed
Metal Bolt	LDHP	1038			
Brick fragment 'CLA'	LDHP	1039			Export needed
Brick	LDHP	1040			stitch needed
Brick fragment T16003	LDHP	1041			Export needed
Playing Card Tin	Minia Jay	1042			Data collected but issues aligning all sides (appears warped)
Child shoe (left)	LDHP	1043			Data collected but issues aligning scans due to object complexity
Child Shoe (Right)	LDHP	1044			Data collected but issues aligning scans due to object complexity
Child shoes (pair)	LDHP	1045			Data collected but issues aligning scans due to object complexity
Cream brick shard	LDHP	1046			Export needed
45 Aid society Hat	Kopel Kendall	1047			
Womans left shoe	LDHP	1048			Data collected but issues aligning scans due to object complexity
Light cord holder?	LDHP	1049			Due to uniform nature and lack of unique features there is difficulty with stitching process
Silver figure	Minia Jay	1050			
Metal spring	LDHP	1051			Scan data acquired but difficult to stitch due to nature of the object
Metal tag	LDHP	1052			
Metal nail	LDHP	1053			scan data acquired but difficult to stitch due to the nature of the object
Brick fragment 'PRES'	LDHP	1054			Export needed
Brick Fragment 'RICK'	LDHP	1055			Export needed
Womans right shoe	LDHP	1056			stitch needed
Toothpaste tube	LDHP	1057			Process and export
Brick Airvent Fragment	LDHP	1058			Export needed
White Dish	Minia Jay	1059			Not enough data acquired in scan to attempt alignment
Wood nail	LDHP	1060			Scan data acquired but difficult to stitch due to the nature of the object
Hostel wall fragment	LDHP	1061			
LDHP23 trench 16	Other/LDHP	1062			
Silver candlestick	Minia Jay	1063			

Appendix 4: Supplementary Themes from within the Five Object Biographies Created in This Doctoral Research.

Several supplementary themes emerged from further analysis of the five object biographies presented in Chapter 5, namely:

1. The locations where the survivors originated and where they went post-Holocaust.
2. Gender and ages.
3. Survivors' employment both pre- and post-Holocaust.
4. Family life pre- and post-Holocaust and the influence they had on their families.
5. Object types and their origin.
6. What the objects meant to survivors and their families.
7. Life in the camps (jobs, roles, experiences, survival motivation).
8. Life as one of 'the Windermere Children'.
9. Similarities in the personal quotes, emotional impact, and survivors need to tell their stories.

Each of the five object biographies really drove a desire to learn more about each of the individuals from other online collections, which included testimonies from those who might have spoken firsthand with the survivors.

Additional online research was conducted to add to the information provided by the survivor's family members. Where possible, the additional relevant information is included within the above nine theme areas to enrich the life story that the survivor's family members had talked about during these one-to-one interviews. For some, there was more detail; for others, further detail was limited.

The 5 microhistorical themes that were discussed in Chapter 5 were mapped against the 9 key themes identified in this research from the object biographies in Chapter 5 to show this, in Table A4.1.

Table A4.1: Microhistorical themes mapped against these research themes.

Microhistorical Theme	**This Research Theme**
Materiality	5. Object types and their origin. 6. What the objects meant to survivors and their families.
Space	1. The locations where the survivors originated and where they went post Holocaust.
Sound	9. Similarities in the personal quotes, emotional impact, survivors need to tell their stories.
Gender	2. Gender and ages.
Social History	3. Survivors' employment both pre and post Holocaust. 4. Family life pre and post Holocaust and the influence they had on their families. 7. Life in the camps (jobs, roles, experiences, survival motivation). 8. Life as one of 'the Windermere Children'.

1. The locations where the survivors originated and where they went post Holocaust.

All five survivors from each of the object biographies were born in Poland, and after liberation, they were all sent to safety and the beginnings of their new lives in the United Kingdom. The majority lived in different ghettos, and from the ghettos, they were then deported to camps across Europe. During the Holocaust, it was found that they all spent time in more than one cam , predominantly located in Poland, the Czech Republic and Germany. The locations their journeys took them to are detailed in Table A4.2 below.

Table A4.2: The various locations the survivors from the Chapter 5 object biographies went to during and post-Holocaust.

Survivor	**Michael Novice**	**Alfred Huberman**	**Jacob Glicksohn**	**Rosa Dajch**	**Menachem Silberstein**
Place of birth	Warsaw	Pulawy	Czestochowa	Lodz	Lodz
Ghettos	Warsaw (Poland) Theresienstadt (Czech Republic)	Theresienstadt (Czech Republic)	Czestochowa (Poland) Theresienstadt (Czech Republic)	Lodz (Poland)	Minishow Kozienice (Poland)
Camps	Crawinkel (Germany) Buchenwald (Germany) Auschwitz 2 + 3 (Poland) Ostrowiec (Poland)	Skarzysko-Kamienna (Poland) Czestochowa (Poland) Buchenwald (Germany) Rhemsdorf (Germany) Lietmerits (Czech Republic)	Buchenwald (Germany)	Auschwitz-Birkenau (Poland) Flossenburg + Oederan (Germany)	Skaryysko-kamienna (Poland) Czestochowa (Poland) Buchenwald (Germany) Rhemsdorf (Germany) Theresienstadt (Czech Republic).
UK place first sent to upon liberation	Windermere	Windermere (first group)	Windermere	Southampton (second group)	Windermere (first group)
Places later lived in after first arrival in the UK	London, UK Chelmsford, UK New York, USA	Brighton, UK	Bedford, UK Loughton, (Essex, UK) Israel	London, UK Canada	London, UK Israel

2. Gender and ages.

Table A4.3: The ages of the survivors from the Chapter 5 object biographies at various key points in life.

Survivor	**Michael Novice**	**Alfred Huberman**	**Jacob Glicksohn**	**Rosa Dajch**	**Menachem Silberstein**
Gender	Male	Male	Male	Female	Male
Age at start of World War II (in 1939)	12 years	12 years	12 years	12 years	12 years
Age at time of liberation (1945)	17 years	17 years	18 years	18 years	18 years
Age lived until	Still alive aged 97 years (at time of writing)	84 years	59 years	92 years	95 years

Most of the survivors from the five object biographies lived long lives (Table A4.3). All were aged 12 years at the start of World War II and were taken into camps by the time they were aged 14 years in 1941, and all five of them were aged 17-18 years old when liberated from the camps in 1945. For children to have gone through such atrocities at an age when, in today's society, their lives would be expected to be enjoyed to the full, of an enrichment of experiences as part of their adolescent development and growth towards adulthood, really is incomprehensible.

3. Survivors' employment both pre- and post-Holocaust.

All survivors from the five object biographies in chapter 5 were children before the Holocaust; however, they would have had to perform various jobs in the camps, for example, Alfred Huberman fetched soup so he could receive an extra ration of it, Jacob Glicksohn, Menachem Silberstein, Michael Novice, and Rosa Dajch were effectively child (slave) labourers in various factories. All were performing very hard work on very little sleep or food.

Post Holocaust, successful careers in well-respected jobs were evident. Michael Novice went on to obtain degrees (B.Sc. and M.Sc.) and a PhD and worked in the scientific and electrical industries in the USA before his retirement in 1993. Alfred

Huberman became a tailor until he died with his wife and son keeping his home workshop untouched in his memory, whereas Menachem Silberstein studied as a dental technician and served in the Israeli Defence Forces. Unfortunately, no employment records for Rosa Dajch or Jacob Glicksohn post-Holocaust could be found.

4. Family life pre and post Holocaust and the influence they had on their families.

All five survivors in these object biographies were happy children from good, caring backgrounds before the Holocaust. Their parents worked hard in a range of occupations, providing a sound contribution to their communities.

Menachem Silberstein's father was a fruit wholesaler, and whilst the family were not considered to be religious, it is interesting that he kept a religious object (Tefillin) despite not practising. Post-war, he married and had two children and made 16 separate trips to Poland for Holocaust education.

Before the war, Rosa Dajch's father, Gdalia, had a decorating business and her mother, Nacha, was a busy housewife. However, Rosa's family situation was drenched in tragedy once the Holocaust began. Her brother, Shlomo, was sent to dig trenches and died in Russia trying to escape, and her mother and father were gassed at Auschwitz-Birkenau upon arrival. Her sisters Ester and Zysl were also gassed at Auschwitz-Birkenau when Ester became sick.

Jacob Glicksohn's father was a shoemaker (cobbler), the same as Alfred Huberman's father, albeit in a different town. Although Jacob never spoke about his experiences of the Holocaust, and his family respected that, they did tell his story after he died.

After the war, Alfred Huberman was reunited with his sister Ides in 1946, and there are no records for his other family members (parents and four more sisters) because he never saw them after they were separated. His wife, Shirley, whom he married in 1953 and had three children with (Caroline, Maurice and Brian), worked at a local telephone exchange in Brighton. Emphasising the importance of communication, Alfred gave talks to both adults and children about his experiences.

Pre-Holocaust, Michael Novice lived a traditional life, and after the Holocaust, he eventually moved to the USA, having obtained his three degrees in the UK. His

positive influence on his family can be read in the book “Life of Michael Novice – Before, During and After the Holocaust”. This book also contains letters from all four of his children expressing their amazement, thanks and love for him in celebration of his 90th birthday.

All five survivors really influenced their families to live their best lives to the fullest. Having been through the atrocities in camps, they did not let this unduly affect their spouses and children. It is reasonable to infer that their survival meant that they knew what the worst in humanity could bring, and yet they would not let that directly impact the lives of their families and children, having spent their childhood and adolescent years in camps.

5. Object types and their origin.

Table A4.4: Summaries of the objects included in the Chapter 5 object biographies.

Survivor	**Michael Novice**	**Alfred Huberman**	**Jacob Glicksohn**	**Rosa Dajch**	**Menachem Silberstein**
Family member presenting the object	Judi Roth (daughter)	Shirley Huberman (wife)	Judy Glicksohn-Pasternak (daughter)	Debbie Lewis (daughter)	Ester Peerbaryosef (daughter)
Object	Pink Passover Cup	Thread wheels	Wedding ring (24 carat gold)	Photo of Rosa’s parents in a golden locket	Tefillin (Jewish)
Origin of the object	Purchased as a set after liberation originally for observing Passover.	Alfred’s tailoring office and workshop.	Made specially in Burma by Judy’s great-grandmother and is the only one in the world.	Photos were kept throughout Holocaust in the sole of a shoe and the locket was purchased on arrival to UK.	Given to Menachem by a local Rabbi when he arrived in Windemere. Later returned to Windermere by Ester.

6. What the objects meant to survivors and their families.

All survivors’ family members interviewed for the object biographies described the objects as having a profound sentimental value in terms of their memories of their parents and the new lives they went on to lead after liberation. They are a

personal connection to them and their respective legacies. The objects will remain as priceless and irreplaceable heirlooms that will be passed down to future generations to keep their memories alive.

7. Life in the camps (jobs, roles, experiences, survival motivation).

Life in the camps was described as hell. People were deported from good homes and livelihoods to places where human beings were treated in arguably the most inhumane and degrading ways ever seen in history. Most roles they undertook in camps were manual, factory-based slave labour.

For example, Alfred Huberman bored holes into shells for detonators and worked in a room where women melted TNT (tri-nitrotoluene, explosive) into liquid. He was also forced to fill in holes in the field that had occurred from bombardment. When he first went into Buchenwald, his captors plunged him into a vat of disinfectant, with the Germans using sticks to push his head under the surface. His ordeal was then extended to Remsdorf, a camp that was not finished, meaning his first night was spent sleeping in a field in the snow. Once, when Alfred had an abscess in his tooth, he had to pass it off as a toothache after a guard questioned his swollen face. His wife, Shirley, said: “When you were sent out to work, you couldn't come back empty-handed. You either had to carry back a dead body or some bricks. And there was no reason; it was just cruelty.”

Jacob Glicksohn’s mother, brother and sister all died at Treblinka. He was transported to the Theresienstadt ghetto in open-top wagons; however, he saw that the journey killed many through a lack of food and water.

Rosa Dajch was ‘forced’ to survive by her sisters, who told her that someone must survive to tell the story, and she spent 4.5 years as a slave labourer in various factories, including one for shoes.

Menachem Silberstein was subjected to slave labour and lost all of his family. He was sent on a ‘death march’ to Theresienstadt, where only 75 of 2775 persons survived the march.

Michael Novice’s work in camps included a smelting factory, and in his book described witnessing selections and executions of others and cruelty to children on an unimaginable scale. He recalled not wanting to live as they had no family to

live for, but did not want to commit suicide, so continued going through whatever befell them. He thought only of survival, a natural or animal instinct.

8. Life as one of ‘the Windermere Children’.

All five survivors loved their new life in England as one of ‘the Windermere Children’ with many of them remaining in contact with other children for years to come. Opportunities were maximised when presented to study or learn new trades.

As one of the Windermere Children, through the 45 Aid Society, Jacob Glicksohn reunited with his older brother after the Holocaust in 1969 in Brazil. After his death (aged only 59 years), one of the boys arrived from London with an envelope of cash for Jacob’s wife, demonstrating their strong bond even decades later.

Debbie Lewis’s story of her mother, Rosa Dajch, contained in this research, is the only record of her life as one of ‘the Windermere Children’, which really strikes home the value of the case study and telling Rosa’s story.

Menachem Silberstein gave Holocaust education talks with many other boys at various events.

9. Similarities in the personal quotes, emotional impact, and survivors need to tell their stories.

All survivors felt a real need to ensure their stories were told, to highlight the emotional impact of the Holocaust upon them and others, but also to ensure that their families were their voice to ensure people were educated to never forget the Holocaust.

The personal quotes really are deeply moving and individual to each of the five stories; they bring about the reality of the Holocaust, and the eternal hope they had after liberation. The quotes hit the reader hard, stirring a range of internal emotional responses, and so they should.

Whilst Jacob Glicksohn did not talk about his experiences to his family, he wrote them down. Menachem Silberstein’s educational talks were not recorded.

The Imperial War Museum potentially has further oral testimony relating to Alfred Huberman, but the content is inaccessible. An additional testimony by Alfred's wife, Shirley Huberman (2017), about his life adds to the quotes in the case study.

“He had all these scars from the things that happened, but he was the kindest person you could know. He wasn’t bitter. He said if you are bitter, it eats you up. You would imagine he had all sorts of hang-ups, but he didn’t. He didn’t want to talk about it, but he thought he should because he wanted the world to know what was going on. A lot of people didn’t know anything about it, and he was pleased to tell it. Of course, he never made it as bad as it obviously was, because it was hell."

As a young teenager, Alfred (Abram) thought his journey at the hands of the Nazis was a big adventure.... “One of the men onboard the lorry bribed the German guard to let him jump off. But when he did, the guard shot him,” said Shirley. “That’s when Alfred grew up,” she added, “That’s when he knew it was real and not an adventure anymore.”

“The survival rate in the camps was just six weeks, but he lasted 18 months. He said it was out of sheer luck.”

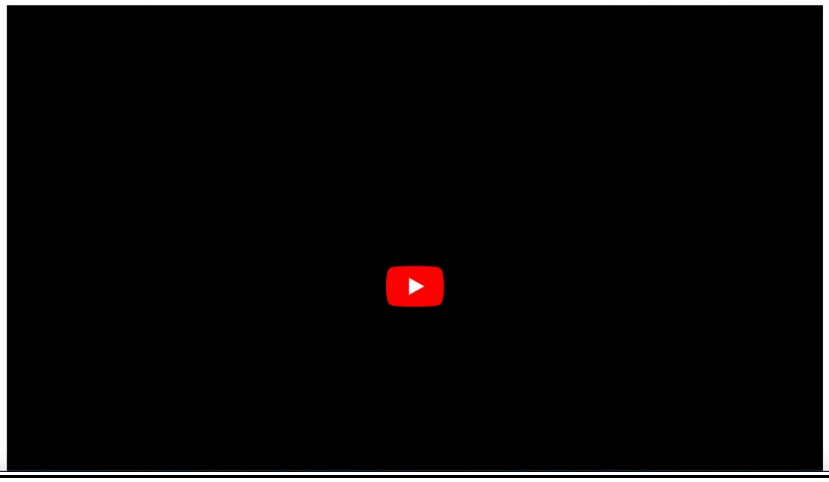
Shirley said, “Normal people like us couldn't imagine why people would want to do that. He was there and, living through it, even he couldn't understand.”

An oral testimony that Rosa Dajch gave to the New York Museum of Jewish Heritage is unavailable. The only other sources are online, with the 45 Aid Society and the interview with Debbie Lewis used for the case study in this research.

Appendix 5: Image gallery of Object Biography content viewable on the Proof-of-concept platform created.

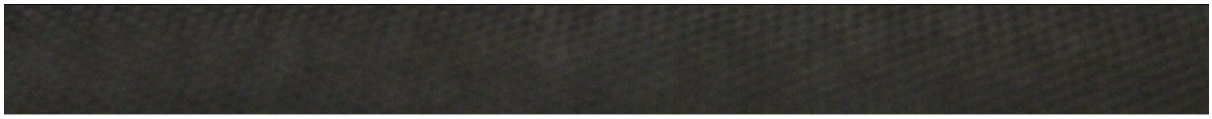
Object Biography: Judy Glicksohn Pasternak

Judy Glicksohn Pasternak, Daughter of Holocaust survivor Jacob Glicksohn.



"I was liberated. We were happy that the war was over. It was my birthday and I realised that I'm all alone in the world." (Jacob Glicksohn aged 18 years)

From loneliness after the devastation of the Holocaust to hope and love, Judy Glicksohn Pasternak tells, with immense pride, the story of her father Jacob Glicksohn and his beautiful relationship and marriage with her mother.



Jacob Glicksohn's wedding ring.

This 24-carat gold wedding ring is the only one in the world. It was specially made in Burma for Jacob Glicksohn, by Judy's great-grandmother (mother's grandmother's side of the family) and bears his initials JG on both sides of the small clear diamond.

The journey and the story behind this ring truly are remarkable.

Jacob Glicksohn was born in Czestochowa, Poland and lived in the ghetto there. From forced labour in the Hasag camp, he was then sent to Buchenwald in January 1945. From Buchenwald, he was later transported by train to Theresienstadt.

As a little boy, Jacob was thrown into a game of survival, with no instructions, just intuition. He believed that luck was with him all the time because when he was in the concentration camps and ten people were selected to march out, they did not know if they would survive or be killed. Judy explained more, "Our surname is Glicksohn and Glick is luck. He always felt that he was a lucky man. He said luck was with me. Luck was on my side. I didn't know why I did things, but I felt that this is it and I'll do anything just to live even he was.

He had typhus, he was so weak he couldn't even cook his own cocoa when he was in Theresienstadt, they gave them cocoa and sweets and whatever he used to exchange something for somebody else to go and boil his cocoa or boil his potato. He would give something else because he was so weak, and he said I'd never gave up hope."

translated it was then that they discovered Jacob's mother had died in Treblinka, from that diary Judy explained that "his hair turned white, and he never laughed and smiled from that day onwards."

However, Jacob's story of love and hope began when he met his future wife-to-be, Judy's mother.

Judy proudly recalls, "When he met my mother..his life changed. He was back to life and although he died at the age of fifty-nine; every night, he would thank my mother for being her, his wife, his friend, his sister, his mother, his companion.... my parents' story is a wonderful love story."

Jacob's wonderful values and remarkable respect and gratitude for his wife are lessons that would benefit many today where various forms of hatred and discriminatory cultures occur in some sections of society.

We learn how Jacob met his wife.

Judy, "My father sat with a Polish English Dictionary on the weekends and translated little portions of the newspaper, The Jewish Chronicle, and he was also a stamp collector. One day he found a small ad in the newspaper that somebody from Burma wants to correspond with a stamp collector. So, he thought I'll practise my English and I'll exchange stamps and he wrote a letter...they corresponded for four years."

After four years of writing to each other Jacob proposed to Judy's mother, "my father proposed to my mother by letter, "...he said to her, "If I could have whatever I need, it's just to marry you...and my mother answered back, you're crazy (more or less)...I'm Sephardic, I'm not Ashkenazi, which was not something that was regular at that time.....I'm eight years older than you and you don't even know me and it's not logical.

And her grandmother said as she looked up in the sky...this is what my mother told me....she looked up in the sky and said, thank God....and my mother was so just shocked, she said, why are you saying this? She said because this is what we call the bashert."

The bashert is a person's soulmate, especially when considered as an ideal or predestined marriage partner.

Judy still has those letters written between her father and her mother, items of personal treasure. Correspondence between two people deeply in love with each other, capturing written memories and the excitement of a new life felt between them, "...they exchanged stamps, they exchange stories, they exchanged photographs and they fell in love."

The path to love wasn't always plain sailing and Jacob first had to undergo some scrutiny from the grandmother of his future wife-to-be, to determine if he was suitable as Judy recalls, "...my father was a refugee from the pogroms in Russia...he fled to Iraq and a Jewish couple that had a grocery store took him in and in exchange for bed and food he worked for them.

They had one daughter and he fell in love with their daughter, and he got buried with her and they had one daughter, Rachel Rosenberg, born in Iraq...and she was my mother's grandmother. So, she felt that this is like a closure, and she said I will pay for Jack's fees to come to Burma, and I'll even send him money to buy clothes. He can come here for a month, and we'll give him a good time and if after one month you still want to marry this man, I'll agree, but I have to test him....and so my father arrived in Burma for a month and my mother's grandmother was testing him in different ways.

She saw that he put on Tefillin in the morning, so that was it, a good thing...and then she asked him about his family, and he told her that he is a Cohen, a priest in...a Jewish priest. She said he's

She saw that he put on Tefillin in the morning, so that was it, a good thing...and then she asked him about his family, and he told her that he is a Cohen, a priest in...a Jewish priest. She said he's a Cohen, that means he's important and she herself was a daughter of a Cohen, so this is a sign from God.

Then one day she sat him down, and this is how my father told the story.

She took out a little handkerchief from there and she opened the handkerchief and was full of diamonds and she said choose the stone....and for my father, these were just stones, they're not gems because the most precious things that he had he already lost in the Holocaust, so he didn't want to offend the old lady.

He took the smallest diamond and she said, I like your modesty and I'll make you your wedding ring with this diamond and then he said to me, Judy, if you ever offered diamonds, go for the big ones, don't take the small one."

Judy wears her parent's wedding rings to this day, "...and after he died, I took the ring and I've been wearing that ring ever since, and in November my mother died. She was almost 103 years old, my father was 59, and I'm wearing her wedding ring, so I wear both my parents wedding ring and I feel that they're with me all the time."

Judy has authored a book based upon her father's diary and there are photographs of both her parents in the book and of their wedding, where in 1952, seven years after the horrors of the Holocaust her father is sitting with one of the richest girls in Burma, with an orchestra playing just for him. "An amazing love story," says Judy.

Judy's parents wedding rings bring her much strength in life, "with both rings, I feel my parents are with me...and as my father wasn't afraid of anything. That's how I feel when I feel the ring like you can do it. Whenever anybody asks me how can you manage this, how can you manage that?

Judy's parents wedding rings bring her much strength in life, "with both rings, I feel my parents are with me...and as my father wasn't afraid of anything. That's how I feel when I feel the ring like you can do it. Whenever anybody asks me how can you manage this, how can you manage that? It's always there, I'm a survivor's daughter. I can do it."

Jacob understandably protected his family from hearing about the Holocaust and to try and move on in life himself, "...my father didn't tell me anything about the Holocaust. Whenever I asked him, he said it's like a sore, like an ulcer with pus and I've got a plaster on it...and what you're doing is you're ripping it open, and you want to dig in."

In 1946 Jacob wrote a diary in Polish, at the time everything was fresh in his mind.

Judy recalled, "...he said to me you will translate the diary after I die and then you can, you'll know the story and you can do whatever you want with it, but don't give it to Yad Vashem. So, I promised him that I will keep the diary. I have it and it took me quite a while because only 20 years after he died, I decided that I'm going to translate it.

And when I read it, I left it closed again for another 20 years. I lost too much.

Eight years ago, I wrote a book...and it's based on my father's diary...and it's called, in Hebrew, 'on behalf of my father.' That's what I'm doing, I'm telling his story on his behalf."

Photograph of the book written in Hebrew, "On Behalf of My Father," by Judy Glicksohn Pasternak based upon her father's diary that was written in Polish (1946).

Judy said her father always mentioned Windemere, "...it was lovely. It was like heaven and that was it. Windemere brought me back to life. That's what he said."

Judy eventually visited Windemere having looked it up on Google several years previously when she wanted to visit, "..I looked it up in Google, Windermere and then I saw they have the Lake District, the library and I looked there and at the exhibition and...my father's picture from the boat, this picture and I didn't have it, so I sent an e-mail. Can I have a copy of the photo? I didn't even think about this. I just wanted a copy of the photo that I didn't have and I'm so happy that I corresponded with Rose and with Trevor."

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A copy of the photograph containing Jacob Glicksohn along with several of the obtained from Rose Smith and Trevor Avery at the Lake District Holocaust Proj

A copy of the photograph containing Jacob Glicksohn along with several of the other boys that Judy obtained from Rose Smith and Trevor Avery at the Lake District Holocaust Project.

From visiting Windemere, Judy has been able to meet other survivors' families that she describes as 'cousins' and a 'big family,' which shows the unique bond they have and how they wish for their relatives to be remembered and their lives and stories help educate future generations.

Jacob's wedding ring and story will help to educate people more about the Holocaust as Judy explained, "We have a project in Israel called remembrance in the living room. Basically, people invite people to their homes, and they invite a survivor or a second gen to tell the personal story and there's always something optimistic.

You always have to believe that it'll be okay you don't lose faith and when I look at the wedding ring and I see my father, how he was, he lost everyone, his whole family. He thought he lost his whole family and seven years later he is married, and he has a family.

The wedding ring resembles family and the continuation. It's especially for the children when they come to hear the story because he was just 12 years old when the world, when the war broke out, he used to say, I didn't even have a bar mitzvah, and I was forced to be a man.

So, I tell these children he was your age, but he didn't give up. There's always hope, and you can see he survived. He got married, he had a family. He had a good life.

That's what I the wedding ring is, just something that is with me all the time.

Even if I have a dilemma of something, it's like, what would you say? What would you do now you know." (Talking to the ring for inspiration from her father)

Judy believes there are many ways for people to learn about the Holocaust and was immensely proud and supportive of being involved in this research project as a way of presenting Holocaust-related objects and their associated stories.

Judy explained, "Those stories, everything is a suitable way. Anything you do to bring the Holocaust. See, everybody finds their own. Each one finds its own path to learn about the Holocaust. Some people, through books, some people through films. Some people need Instagram. They're doing all these little things. Some people go to museums and some people need to see objects that belonged to survivors.

Yad Vashem did the same thing with my father's diary, because I wouldn't give it to them, so they scanned it 3D, so they have it there.

And I think it's important, these are objects of real people."

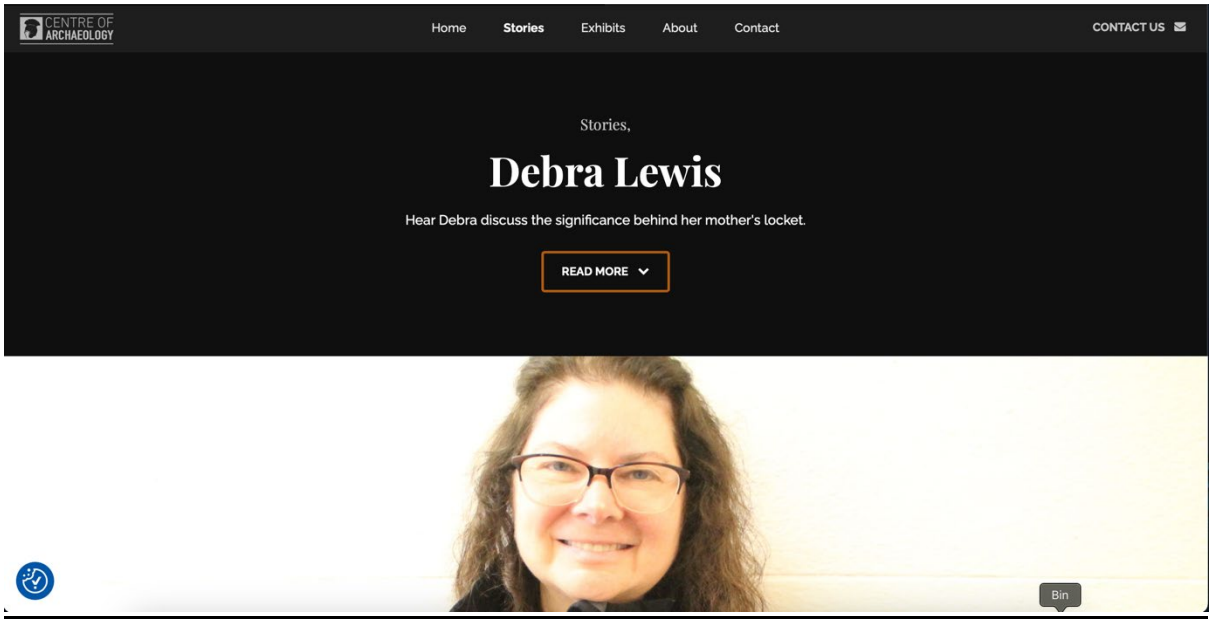
Judy later found her grandfather's grave in Czestochowa having looked his name up on a site called find-a-grave. When she attended, the graveyard was in a terrible state and a major clean-up project took place. Judy asked them to send her a photograph if they found the grave, three years later they did, and she has that photograph of her grandfather's final resting place.

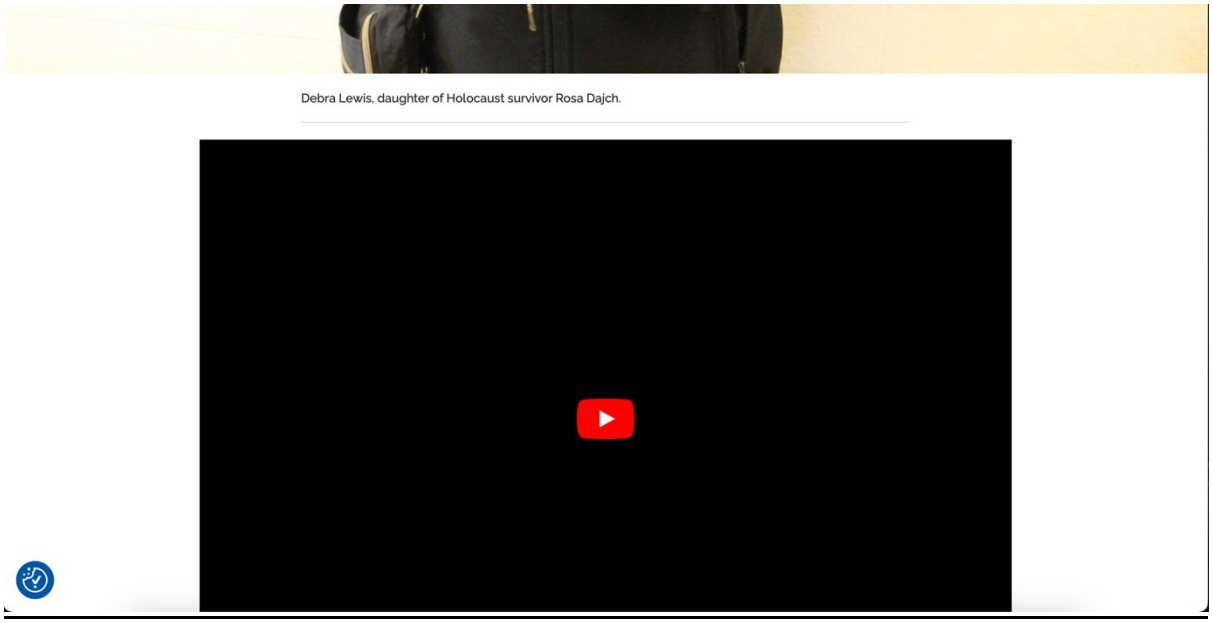
The 3D scan of her father's Holocaust diary and the translation into Polish of chapters, relevant to Czestochowa, from Judy's book, based on the diary is now helping students to learn of the history associated with Czestochowa.

There are plans in place for Judy's book to be translated into English which will broaden the scope for contributing to educating people about the Holocaust.

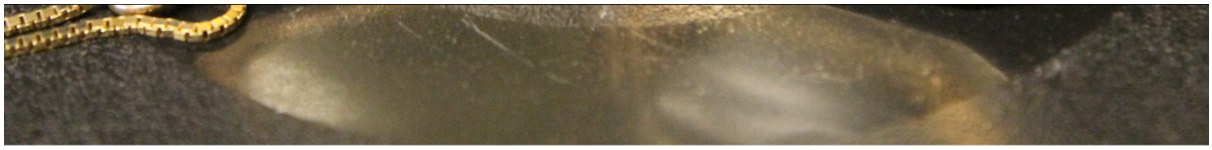
Judy's final thoughts brought home why this research is important, "...when they learn about Czestochowa's history, their learning through my book. Wow, so I think, I'm doing my part."

Object Biography: Debra Lewis





"...my mother carried it with her through Auschwitz and through the labour camps, through liberation all the way to England." (Debbie Lewis (nee Debbie Fogel), daughter of Rosa Dajch).



Photograph of the locket now belonging to Debbie Lewis – depicting her grandfather on the left and her mother on the right.

This square-shaped locket originating from around 1946 is made from gold with filigree on the outer edges, decorated with a small band of rubies in the shape of a horseshoe and is attached to a chain. The width of the locket measures around 5cm when fully opened. It contains two black and white photographs which are of significant sentimental value to Debbie:

- on the right is a horseshoe-shaped photograph of Rosa Dajch, Debbie's mother taken around 1945/46.
- on the left is a thumbnail photograph of Debbie's grandfather, Gdaliah Dajch, that Rosa carried with her during her time in Auschwitz, during the liberation and then to England. This tiny thumbnail photograph was detached from a larger group photograph using a pin.

With a strong feeling of pure love and admiration for her mother, Debbie Lewis's story begins. Here is the story of Rosa Dajch's locket and photograph of her grandfather enriched with an unparalleled friendship that would last a lifetime and a sheer will to survive the horrors of Auschwitz.

Although Rosa Dajch sadly passed away in 2020, she was one of the Southampton Girls following liberation from Auschwitz. This group of survivors were part of the second group that

following liberation from Auschwitz. This group of survivors were part of the second group that came to the UK following liberation at the end of WW2. This group encountered 'the boys' through various societies that organised reunions and other events that they attended. A predominant organisation is the 45 Aid Society, which has detailed archives for everyone that was included in these groups, which have allowed further detail to be added to the content within the case studies presented here. Additionally, it was determined to include this story despite not being directly related to 'the boys' due to Rosa Dajch's connection to the Holocaust and through meeting her daughter Debbie at the reunion event held in Windermere. Debbie provided the interview included here.

The locket is an item she saw her mother wear often and for Debbie, it has a strong, unbreakable connection between them, "...when I wear it, I feel like I have her next to my heart which may sound soppy, but it's true."

Debbie describes that the locket and necklace made her mother feel very emotional wearing it to honour one of the other girls Estera Warszawskah. Each girl bought each other identical necklaces such was their bond forged through friendship and Debbie recollects that in some later photographs, she saw her mother wearing the necklace and in others Estera wearing hers.

Debbie said, "My mother met her best friend Estera in the barracks of Birkenau on the day that they both lost their sisters in a selection....a man in a white coat took them away."

It was this friendship that enabled Rosa to survive. Debbie was unsure of her mother's true age but recalls she may have been aged around 13-15 years when Rosa met her best friend "I don't know what her true age was at the time, both of them reached out to the other and never let go, and they swore to each other that they would stay friends, that they would never be apart and coming to England was a watershed moment for them because it gave them new life and every girl had another girl. Everyone in Herne Hill, where my mother was hostelled had a best friend."

Even though Rosa eventually went to Canada and Estera to Israel, their friendship lasted until Estera passed away, quite young from cancer.

Debbie added, "Although my mother passed away...had a family...but never gave up her connection to the boys, to this experience of being given a gift of new life and the generosity of the English people who welcomed her into Southampton and then ultimately into the hostels."

We return to Rosa Dajch and her life to understand her journey.

Rosa Dajch was the youngest in her family born in 1927. She had two sisters and an older brother and grew up in Lodz, Poland. Rosa's father was described as a house painter and a 'jack of all trades.' However, when the Second World War broke out, because he was employed in a cash-only type business his source of income fell apart almost immediately. Rosa worked in a factory (a resort) as a shoemaker. One of her sisters worked in a toy factory, the other sister was a furniture maker and her brother, the oldest sibling went to Russia with four friends and sadly died in Leningrad (now St. Petersburg). Debbie's grandmother was called Nacha Dajch (nee Morgenstern).

The family then lived in the ghetto for 4.5 years. Rosa's father was always a very politically active man, and he became an important member of the community there. He was asked to join the Jewish Police in the ghetto but refused because it meant in Debbie's words he would have to "rat out his friends and that was something he wasn't going to do."

In August 1944, Debbie's grandfather, grandmother, her mother Rosa and her two sisters Esther and Cecil were taken to Auschwitz. One cannot even imagine the distress that followed, "when they got to the platform...during the selection, the first people to go were my grandmother and my grandfather and my mother told the story that at the platform someone official came, they had a cane with a hook on the end and pulled away my grandfather in one direction pulled my

had a cane with a hook on the end and pulled away my grandfather in one direction pulled my grandmother in the other direction. She didn't have a chance to say goodbye."

However, Debbie fondly and sadly recalls the kindness and sheer spirit her grandfather showed at that time before he and others were murdered in Auschwitz, an account mixed with atrocity and highlighting a man's leadership and sheer human qualities to help reduce the natural fear those with him were suffering.

"On the train to Auschwitz, my grandfather, who was a very well-read man, had a suitcase. You were told you could pack one suitcase and given a short amount of time to pack. My mother packed a doll, a comb...she didn't see what my grandfather brought, and they got on to the train and the first thing he did was he found a cooking pot and put it into the corner of the train and found a blanket to make a corner. He said that we should not be animals, even in the situation we should live like people and have privacy for almost private needs.

People were crying and screaming...it was a terrible atmosphere because the trip to Auschwitz lasted maybe 3 days...you stopped, you started. He opened up his suitcase at one point and cleared a space, and he said I'm going to read you stories and he opened up his suitcase and it was filled with books.

There was no money in there, there was no food, there was no clothing. It was just books and he pulled out a book by Sholem Aleichem and started to read these stories, which are satire and comedy...my mother said...the car became quiet as a library and he was able to calm people's nerves, to soothe them and to distract them from what was coming.

So, I don't know much about my grandfather, but I think knowing that story, I didn't need to know much more about him. He was a gentle man. He was a kind man. He always gave to his community. He was not a religious man, but he was deeply spiritual and his own way and

believed in Yiddishkeit, in continuing the culture of Yiddish is very vital to him.....my father's whole family was taken away. He had no one. Nothing. His whole town was taken away to Treblinka."

It is suspected that Rosa kept her father's photograph (the one in this locket) in one of her shoes when she was taken to Auschwitz. Although she was stripped of all other clothing, her shoes were not taken from her, "the picture itself was valuable as gold...to her...and it was really the only object that we had...my grandfather's whole family was taken away."

Although the locket was made from gold and during times of hardship where it would have been so easy to trade for basic food, it was never sold. Such was its importance and the priceless value of this locket and the photographs in it are very much part of Debbie's family and will be for future generations of the family, "as a child of survivors, I don't have heirlooms like perhaps other people of my generation do. There are no family heirlooms. This object is something that I will pass on to my daughter and I hope that she will treasure it as much as I do."

Debbie Lewis lives in the USA and was honoured to be able to tell her story so that others could learn more about the Holocaust and remember the millions of people who died far too soon.

"I think that, especially when educating young people, if you consider six million dead, it's too big a number for kids to wrap their heads around and one of the best ways to teach kids is through an artefact. The artefact tells a story. The artefact can be described as tangible. It's real.

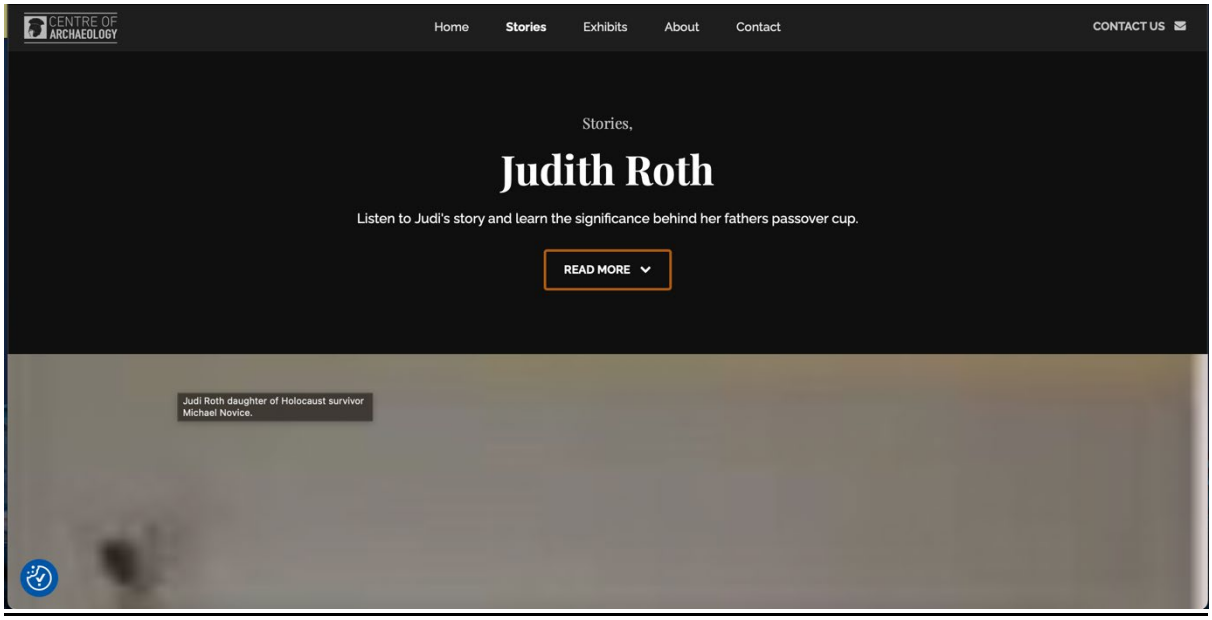
The six million are too many, but through this object you can tell the story of one person. It has a history to it, so to say. What became of my mother? How did she survive? Where is she from? Why would something gold be valuable? Let's look at the details of the thing and what made that so important to her and I believe that again, that objects are the best way to do this.

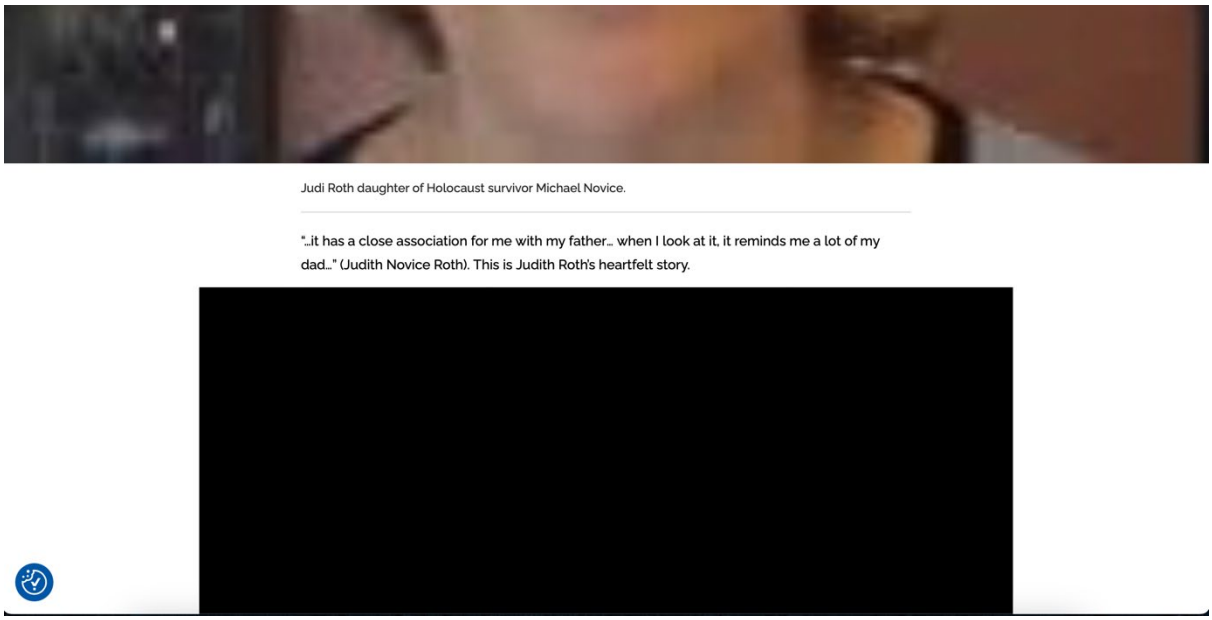
Well, we're talking about a generation of students now who are digitally knowledgeable. They

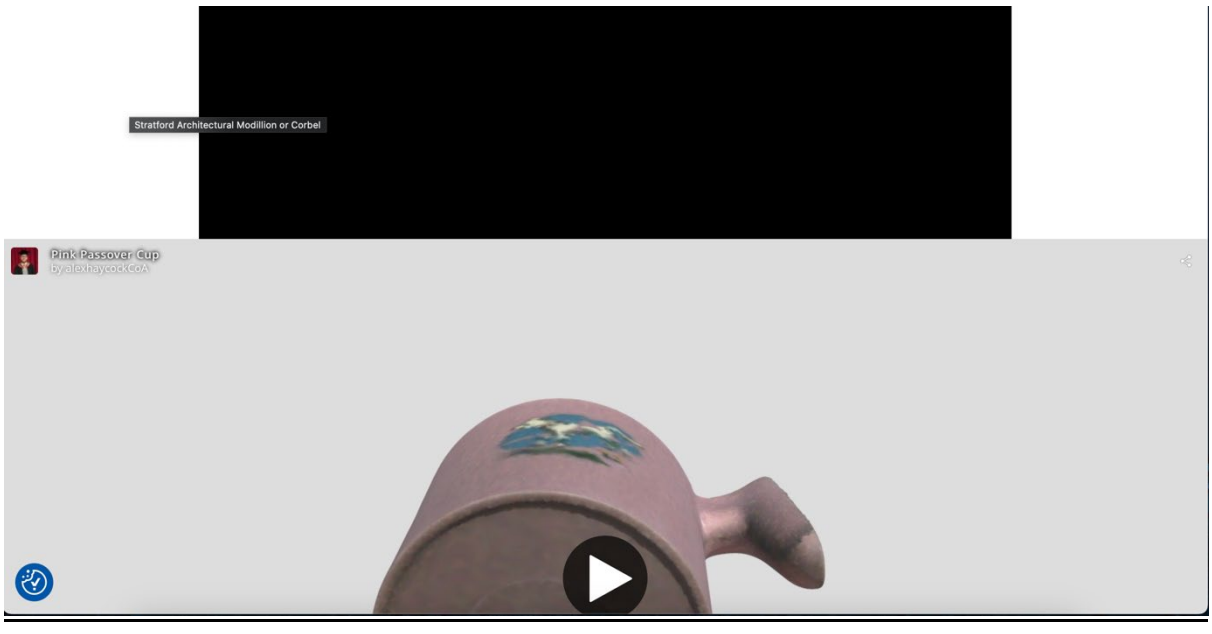
Well, we're talking about a generation of students now who are digitally knowledgeable. They are not going to go to the Encyclopaedia Britannica to look for information. They're going to go online and they're going to know how to use it with some agility.

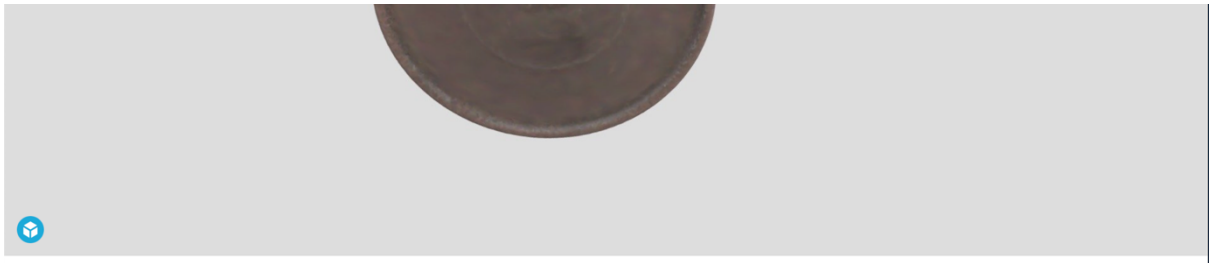
They are hard-wired now to do research in a more sophisticated way than my generation ever was, and I think that as more comes online, it's available to more people. The other important piece of this is in terms of preservation of memory. If you have these objects, you can't deny the history. We know that it's there."

Object Biography: Judith Roth









Judi's pink passover cup that belonged to her father Michael.

In May 2022, at the belated 75th-anniversary reunion marking the arrival of the child refugees to Windermere, Judi Novice Roth (Judi) presented her Passover Cup for digitisation.

The story of this Passover Cup begins with Judi, who lives in the USA, and she is the daughter of Michael Novice, a survivor of the Auschwitz, Buchenwald and Theresienstadt camps during the Holocaust. Judi was born only 11 years after Michael was liberated from Auschwitz.

The cup was Judi's when she was a child gifted to her by her father. Although the cup was not directly from the Holocaust, Judi said "it has a close association with my father. I don't have anything my father had during the Holocaust. He didn't have anything…" It symbolises the special relationship between Judi and her father and the pain and trauma he would have suffered to survive the Holocaust and bring her into the world. The cup itself is made from opaque pink plastic it features a sticker of a lamb on the side and has the dimensions: 6.9cm (height) x 6.4cm (diameter at the base) and 7cm (diameter at the rim).

Judi recalled her childhood memories from Passover and how her family (and other traditional Jewish families) had a whole different set of dishes (crockery) specifically for this celebration. These were separate from those used the rest of the year at mealtimes: "the 8 days of Passover, we would have had a whole different set of dishes and so that cup and a matching bowl, they were my very favourites". Unfortunately, the bowl was broken and lost many years ago and the Passover cup is the only item from Judi's childhood Passover dishes. The sentiment this holds for Judi is immeasurable: "It's the only thing I have from the Passover dishes of my childhood. When I look at it, it reminds me a lot of my dad……it reminds me very much of my dad's personality which is quite amazing given what he went through that he is not angry, he's sweet and kind and generous and caring and that's it's pretty incredible."

The Passover was Judi's favourite holiday period with her special cup and bowl being an important part of the 8 days of Passover for her for many years.

Judi compared the story of the Passover where Jewish people escaped from Egypt and were able to become free people with her father's plight in the Holocaust: "There's a parallel to me with my dad being in the Holocaust and then becoming a free person…he worked as a slave labourer in a little town in Poland…in an ironworks factory….for about two and a half years and then he went to Auschwitz and worked as a slave and then he went to Buchenwald and worked as a slave, so I see some parallels between the Passover and my dad's story."

Despite Michaels' suffering during the Holocaust, Judi grew up in a safe family environment, referencing the positive impact her father had on her and the family: "I don't know how he did it, but he always made me feel safe. I always had a roof over my head. I always had food on the table." Michael protected the family a great deal from the trauma associated with the Holocaust, barely speaking about it unless she asked something relating to him during that time, with Judi adding "I don't know if that kind of explains my feeling about the cup and why it reminds me of him."

Judi vividly remembered her first memory when she realised her father was a Holocaust survivor when she was a child and refused to eat a meal her mother had made. The reply from her mother left an indelible mark on Judi "You know you should eat that because a lot of times your father had nothing to eat except grass."

Judi went on to explain "It's on this train where they didn't give them any food and they let them off. I guess maybe once a day or something and all they could find was grass and so it, it's so, so, so traumatic."

Judi said that when her father spoke of the Holocaust, he did so only at what she described as high levels. In the words of her father, "I went to Auschwitz. and they made us work hard and we worked here, and we worked there and there wasn't enough food, and we were hungry. Then we run on a death march."

Judi further recollected, "My father would never say, you know, that they were beaten on the head or that they were, you know, hung up by a rope….no, my father would say they had no food and his cousin said we had nothing to eat. We claimed one potato that we stole somehow or another and we cut it into little, tiny pieces to make it last for several days."

Aged only 17 years old, four months after Michael Novice was liberated from Auschwitz he came to England and Windemere. Michael's parents and brother were murdered during the Holocaust. Michael went through Nazi Occupation with two cousins, one of whom was killed before the end of the war.

Having been in England for a month, Michael became ill with tuberculosis and was looked after for a long time in a sanatorium, where people were always brought in to help including teachers who taught him English and History: "the people who are mentors to him, he had all the bonds of

who taught him English and History: "the people who are mentors to him, he had all the bonds of bonding with the other boys who survived."

Michael eventually found his brother and the people helping him whilst he recovered helped bring him over to England.

Michael's recovery took about seven years, and he eventually went to the USA having pondered between going to Palestine or Paris with his brother. Michael married and had a family and whilst working achieved a bachelor's degree, a master's, and a Ph.D. Quite remarkable by any standards but for a Holocaust survivor to go on and make a whole new life and instil into and protect his family with values and integrity is more inspiring.

Thirty-seven great-grandchildren now exist because Michael and Judi touchingly acknowledge the fragility and value of human life being so precious, "if you save one life, it's as if you save the world and I see that with my father because his one life. All the direct descendants are because he was able to live, and we could do so."

Although Michael was very reluctant to speak to his family about the Holocaust due to the traumatic effects it had on him, he was interviewed twice during the 1990s about his experiences. Judi says her father is a very emotional man and even when they (the family) would ask him anything he would steer away from such upsetting and harrowing details, showing that protection for his family.

Judi has watched the video recordings of her father's interviews "Recently, I rewatched his videotape recording; in it, the interviewer asked him. He said, did you tell your family about what happened to you? He said not very much, and the interviewer said did they ask you about it and my father said yes, sometimes they did. I did ask him, I sat him down probably three or four times over the course of my childhood and I said yeah, tell me what happened to you?

over the course of my childhood and I said yeah, tell me what happened to you?

Judi's father said in that interview, "I tried to send them off. I didn't wanna tell them..."

Judi went on to explain, "..it was very hard for my dad and even in the 90s when he gave these interviews, which was more or less 50 years after the end of the war, he would break down and cry, you know, and 50 years later, it was so painful that he still had trouble and he wanted to give the interviews in the 1990s because he knew that if he didn't speak, then stories might be lost. So, I think they said my dad is a very emotionally balanced, very healthy, emotional person. And my take on him is that he kind of conceptually put his trauma in a box and closed the box. It wasn't sealed up. The trauma was in there, but he didn't get mired in it. He had to move forward with his life."

Judi has read some articles written by her father which showed the strong connection the Windemere children had with each other, "I recently came across some articles that he wrote and in one of them, particularly if he wrote about how important the for the family of the boys was for him, because I think they used to talk with each other in a way that you or I or anyone else who didn't go through the Holocaust, we could never understand because we fortunately never experienced it, but they had the support of each other as well as the support."

In 2022, Judi visited Windermere. She was taken, by Trevor Avery (LDHP) to the first sanitorium her father was taken to where she felt like she was walking in her father's footsteps from all those years ago when he came to England. The added sentiment of Judi's Passover cup displaying the lamb coupled with the Windermere setting of beautiful natural hills and landscape brought an even stronger connection, which could never have been predicted at the time she was given the cup, "the setting maybe the cup came from, but you know, I came to Windermere in May and in the hills...lambs and sheep...feel like beautiful, you know, none of the trauma of the Holocaust because really, my dad protected us a lot from the trauma of the

Windermere in May and in the hills...lambs and sheep...feel like beautiful, you know, none of the trauma of the Holocaust because really, my dad protected us a lot from the trauma of the Holocaust."

More information on Michael's life can be found in the book 'Life of Michael Novice' which was published in 2017 by his family.

To further understand the relevance of the Passover cup, it is important to briefly understand the Jewish celebration of the Passover which will assist with understanding Judith's story.

Understanding the Passover

A Passover cup is a central symbol within the Jewish holiday called the Feast of Redemption. Despite not having any mention within the original Passover story, the only biblical reference to a cup is in the New Testament when Jesus celebrated this feast with his disciples. However, throughout Hebrew scripture, the cup is used to symbolise God's judgement. This symbol is often depicted with wrath, redemption, judgement, and blessing and despite no mention within the Passover story, these themes are woven throughout it.

Passover itself is the Jewish celebration of the Hebrew liberation from slavery in Egypt. It is the commemoration of the 'passing over' of forces of destruction and the sparing of the firstborn Israelites. The celebration typically starts on the 15th and ends on the 21st (22nd outside of Israel) of the month of Nisan (March or April). During this time, all leaven is prohibited, and only unleavened bread (Matzo) may be consumed. This is done to symbolise the suffering the Hebrews suffered while in bondage and in the haste to leave Egypt (Reform Judaism, 2024 & Chabad, 2024).

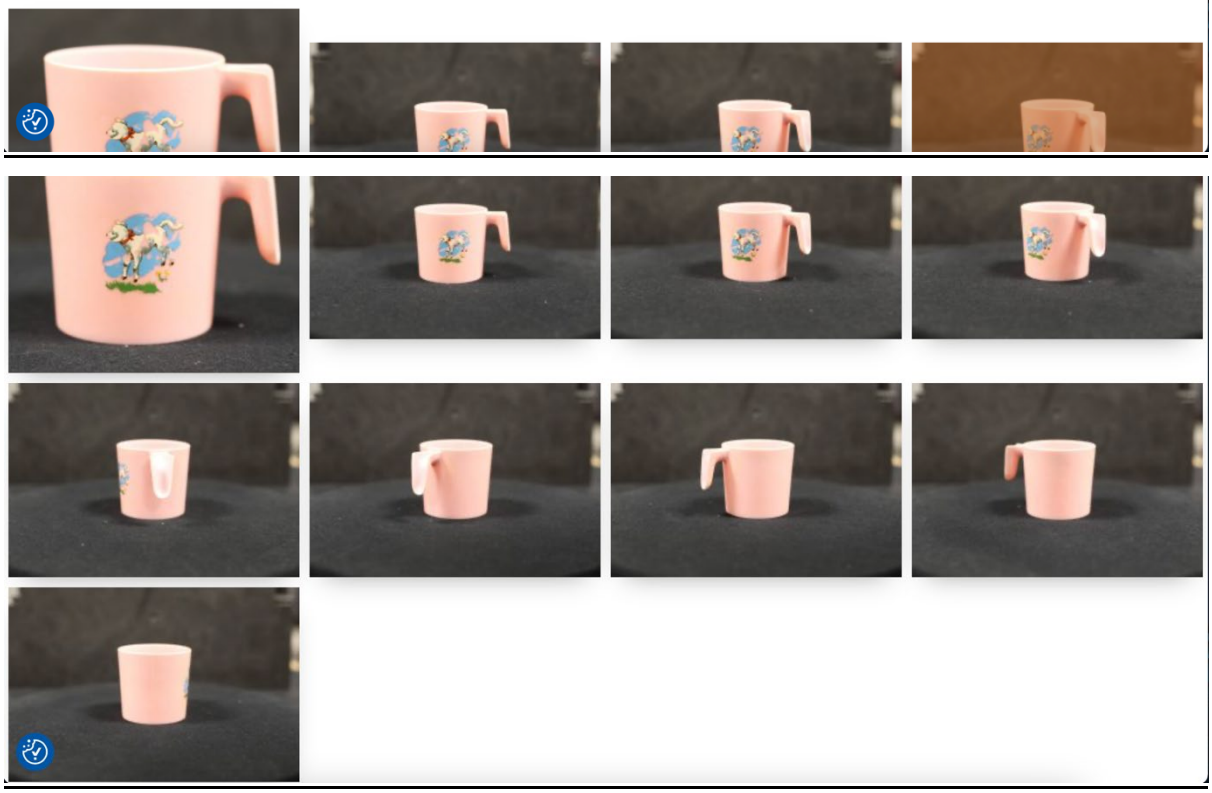
How the use of cup became used as a symbol for Passover is a mystery, however, within an ancient rabbinic source, the Mishnah, there is instruction to drink from the cup four times a day

Each time the cup is filled it is given a different name.

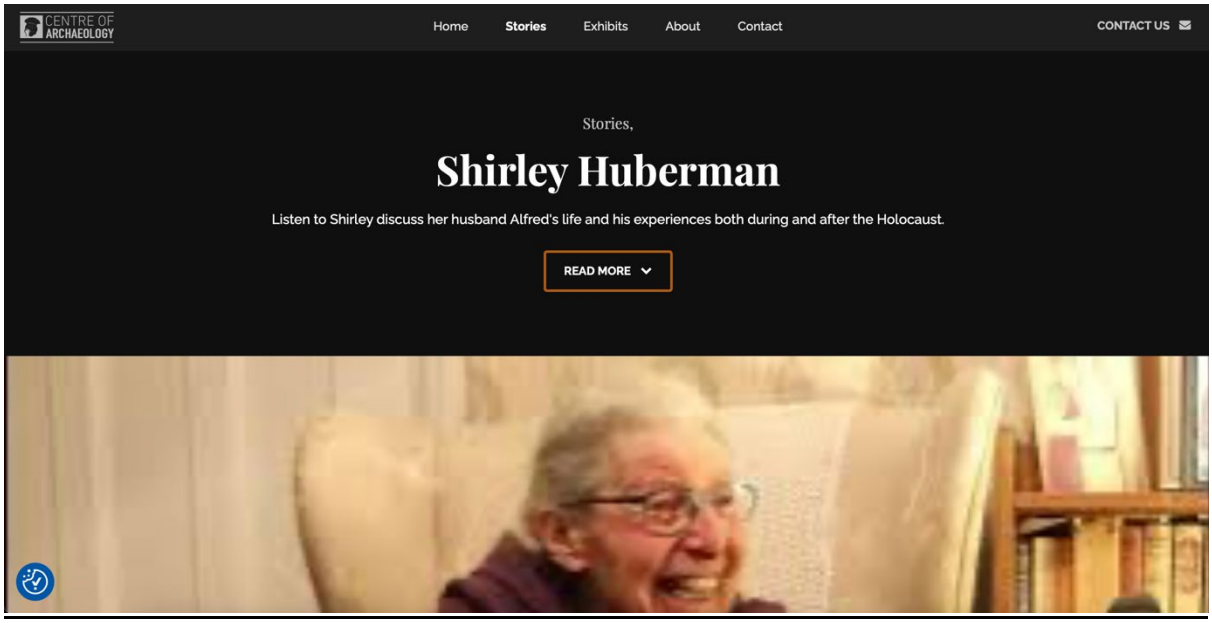
1. The cup of sanctification (Kiddush).
2. The cup of judgment or deliverance.
3. The Cup of Redemption.
4. The cup of praise (Hallel) or Consummation.

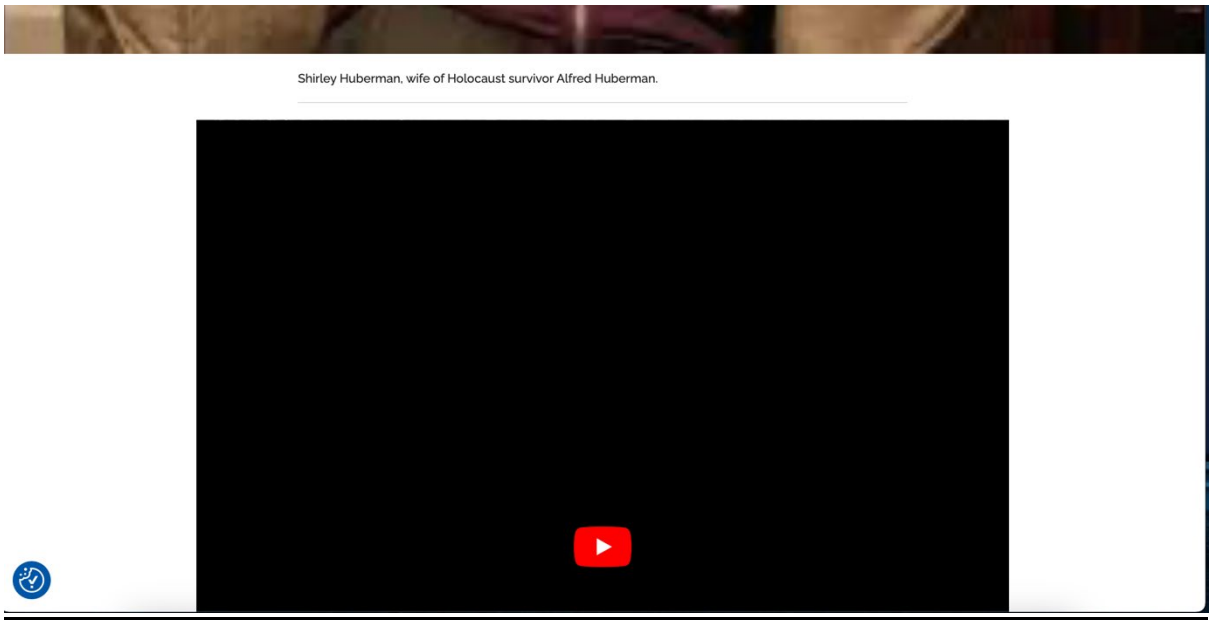
Objects such as this Passover cup have significant religious connotations and as such have sacred meaning and those that practice the Jewish faith are held with great importance. For example, without this cup, the owner could not complete the religious rituals involved in the Passover feast.

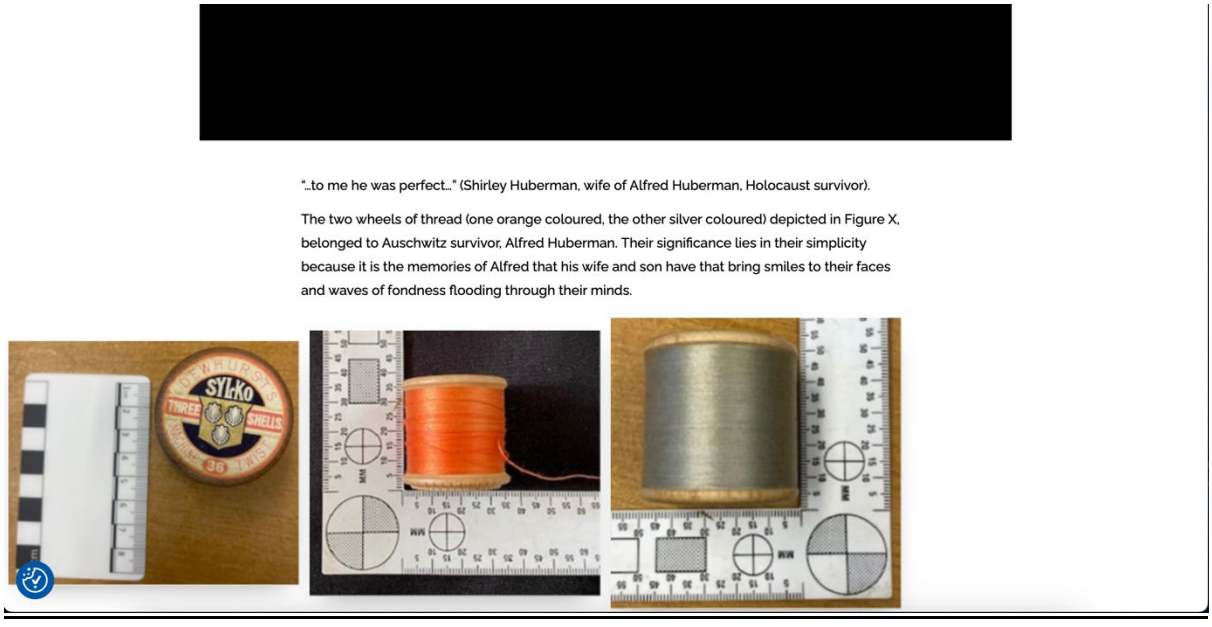
The cup presented here was given to the current owner as a child by their parents who were survivors of the Holocaust, thus adding an even greater personal connection to the object in addition to the religious ones. This transforms what can be seen as a commonly found religious object for many into an object with a profound meaning. For the Holocaust survivor that presented this, it was likely the first time their child was taking part in the feast and having not been able to undertake the feast during the years of the Holocaust and now with their children, would have been a largely significant even, that has become a cherished memory for the objects current owner and is still used during the feast today. Judith's story highlighted this.



Object Biography: Shirley Huberman







This story is a perfect example of how to be a good person and not let bitterness rule despite the suffering in Auschwitz. Alfred and his sister were the only two from the family that survived Auschwitz. Following WW2, his sister later went to France and he came to the UK as one of the Windermere Children and with this came a second chance at life.

However, whilst in Windemere, Alfred was ill with tuberculosis (TB) and suffered a lung haemorrhage playing football. He was very much one of "the boys" and made many friends with them in Windermere.

After a period of respite in Windermere, Alfred travelled south to the coastal town of Brighton, where he had relatives and needed a job, he began working as an apprentice at a tailor's shop where the significance of the thread wheel begins.

Shirley recalls, "By the time, I met him he was a tailor...he'd done evening classes he'd done cutting classes and went through the whole gambit. When I first knew him, he was a men's tailor and then gradually, he learned to be a lady's sailor so he could do anything if it was silk or, wool or whatever it was...just you give it to Alfred, he could do it."

Shirley was in real awe of Alfred and saw no wrong in him, "I still say absolutely amazing he was kind, he was thoughtful...he did kind things without mentioning it, help people...he was an all-round good egg as they say."

Alfred seldom spoke about his experiences during the Holocaust as Shirley remembered, "He didn't like to even when he was giving talks. He didn't. He didn't really want to, but he felt that he had to go and talk and just spread the message so that people would know about it."

It was as if Alfred felt a strong sense of duty to those who had died and survived the Holocaust to tell their stories so that people could believe what had occurred, by hearing it first-hand.

Alfred loved his job as a tailor not only because he was earning money having come from nothing but more so for his customers as Shirley recalls, "he liked the customers. It was the people, definitely the people. He was so satisfied that he could do something to please them because he'd get the most outlandish things and make them fit the customer...and they were so delighted with his work. That's so good to hear...in his work room I've got a of bag of letters that I got when he died and that gives you a good idea of what people thought of him."

Alfred had his workshop in a large store in Brighton called Hannington's and when it closed his customers followed him to his workshop at his home address where he continued his work for them.

Alfred was such a friendly man who saw no harm in anyone Shirley adds, "You might imagine that having been in the camps, he'd be a bit (standoff motion mimicked), but he wasn't. He was friendly, open, and talkative...and if I said I don't like her, he'd say no don't dislike people, don't be bitter inside, because if you're bitter inside it just eats you up."

Shirley said that Alfred was a good father and spoke about his experiences and story in universities, prisons, and at work and was interviewed by a journalist, the article which can be found online (The Keep, 2024). Alfred was interested in people's reactions to his story and embraced the fact that his story should live on after he was gone.

Alfred's son explained, "he never came from a position of pity or anything like that. He came from a position of...education and used to have a sort of stock saying if I don't talk about it, who will? I never got the impression he sort of told the story for him...it was always for all the people...I've heard him interviewed and he said, as the years gone past, I can't believe that I went through that, so to expect someone who hasn't been through it to even believe...that anybody could survive that. That's why it was, you know, important for him to sort of have confirmation and evidence that it had happened.

Sometimes I'd go with him, and he did his talks and I'm always quite amazed, even from young kids...that, it does seem to sort of resonate with people. Unfortunately having lost dad, we can't do that now, but there was nothing more impactive than having a real person stood in front of you...so them telling their story and I think this is probably just the next stage using technology."

Shirley added, "And at Windemere, Rose ran a writing competition for children to write essays and one time they wrote a letter to Alfred, and I've got those, so they must have related to what they'd heard."

Alfred's son believes that academics should personalise individual experiences because the magnitude of the Holocaust is too big to comprehend. This research intends to do this.

Shirley holds the same view, "...and all stories are different. Every survivor that you hear talking, they didn't have the same experience. They might then end up in the same place...they might have gone on a march, but how they were treated by different groups of people and neighbours and, so-called friends and I think all these films like The Boy in the Striped Pyjamas some said that couldn't possibly have happened and people believe that."

Alfred Huberman was just a normal man speaking about his experiences, far more impactive than anyone used to teaching or presenting. When he began talking about his life and experiences, other topics would naturally flow from his mind articulating a real human element to his talks, engaging his audiences well.

Hearing first-hand stories enabled listeners to understand what life was really like and had they not gone through the Holocaust one can only wonder what direction each person's life would have taken.

In Shirley's words, "he said he didn't know he wanted to be a tailor and maybe could've done

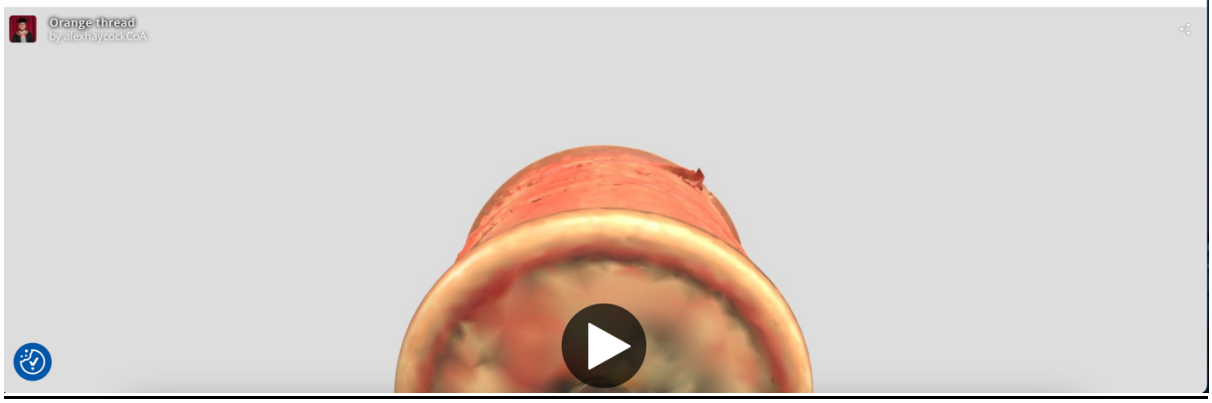
have taken.

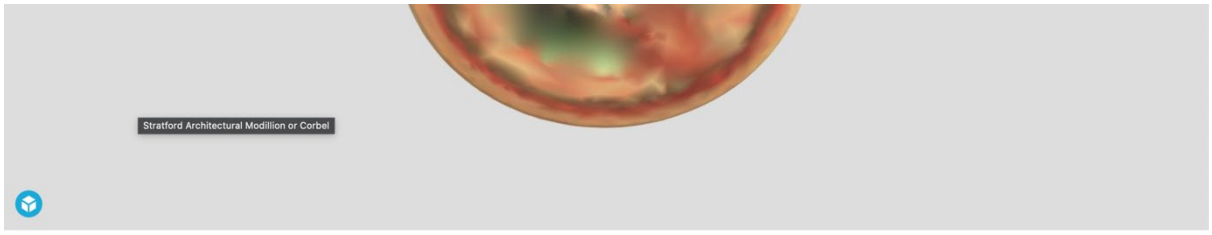
Stratford Architectural Modillion or Corbel

In Shirley's words, "he said he didn't know he wanted to be a tailor and maybe could've done better if he didn't. He did so well with what he did, and I think he just liked people. He was a good communicator.

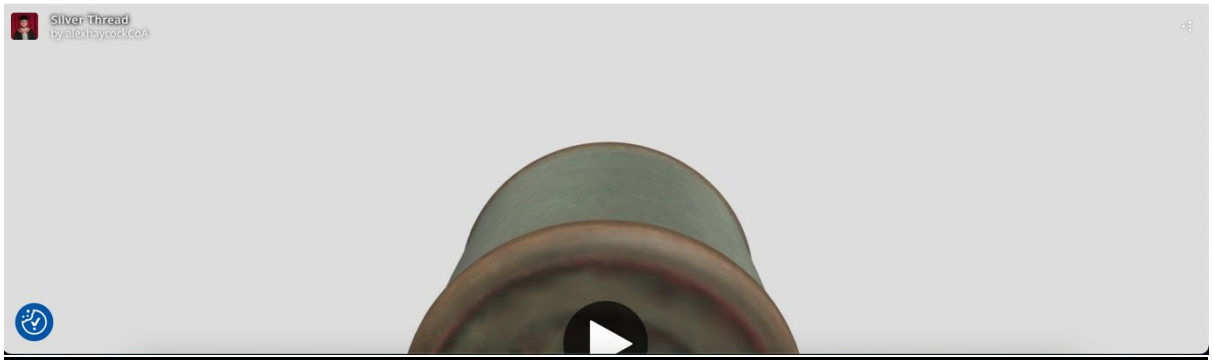
To me he was perfect. When I hear other women saying nasty things about their husbands..I just don't understand it."

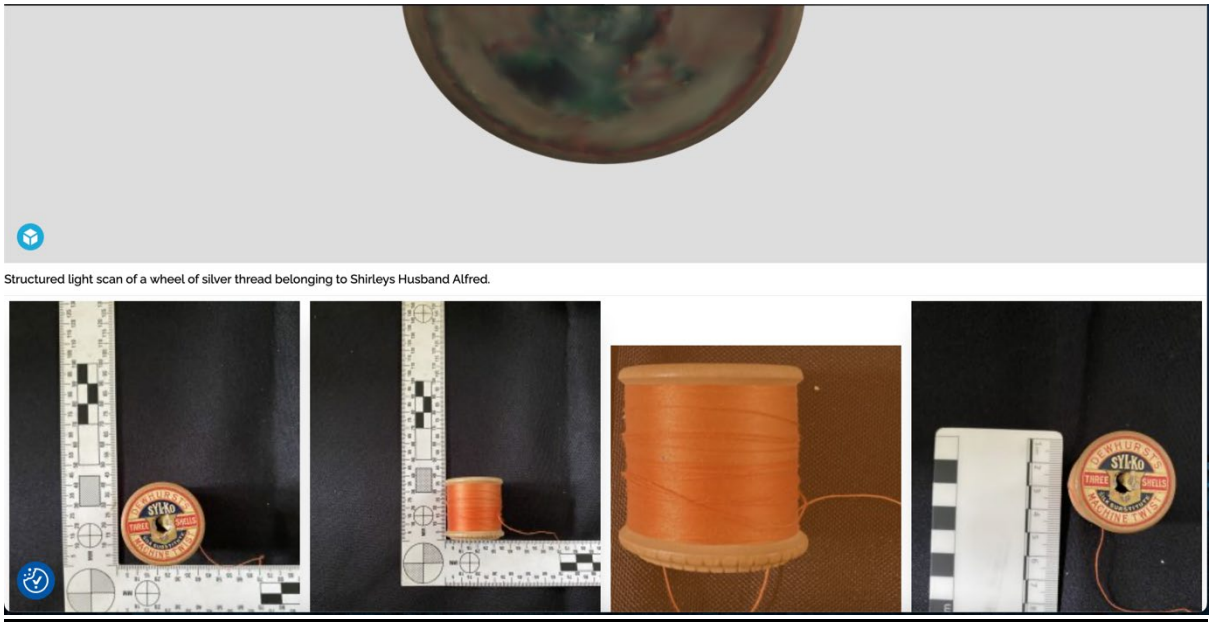
To preserve Alfred's memory, Shirley and her son have kept the room at the back of his house he converted into a workshop, exactly as he left it before he sadly died.



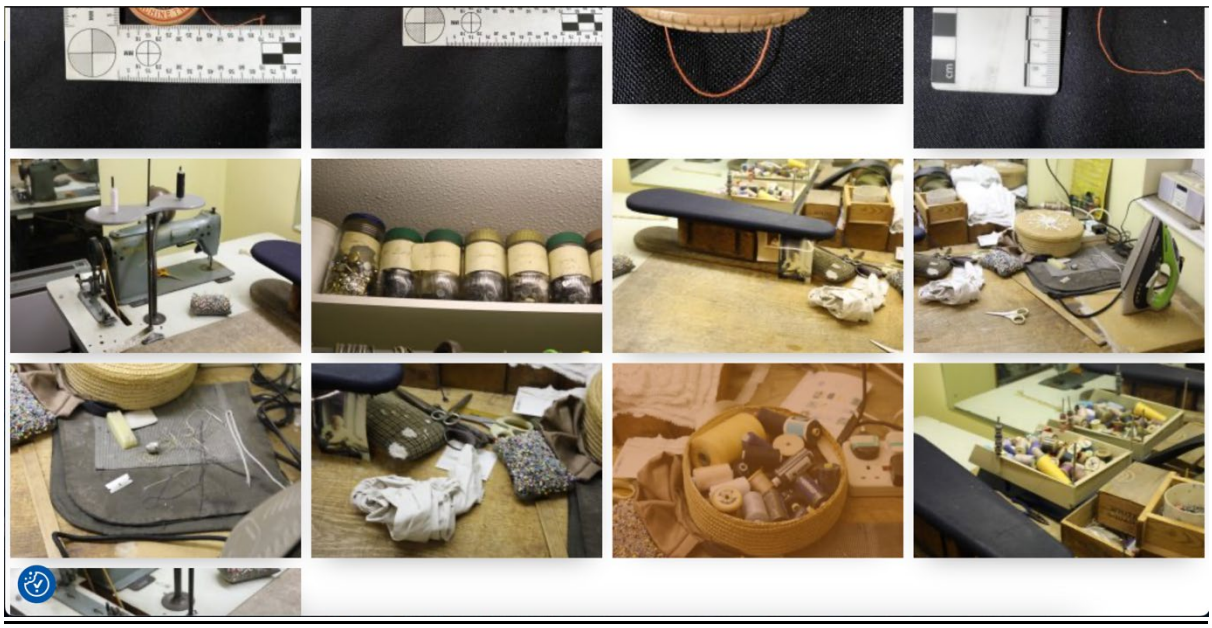


Structured light scan of a wheel of orange thread belonging to Shirleys Husband Alfred.

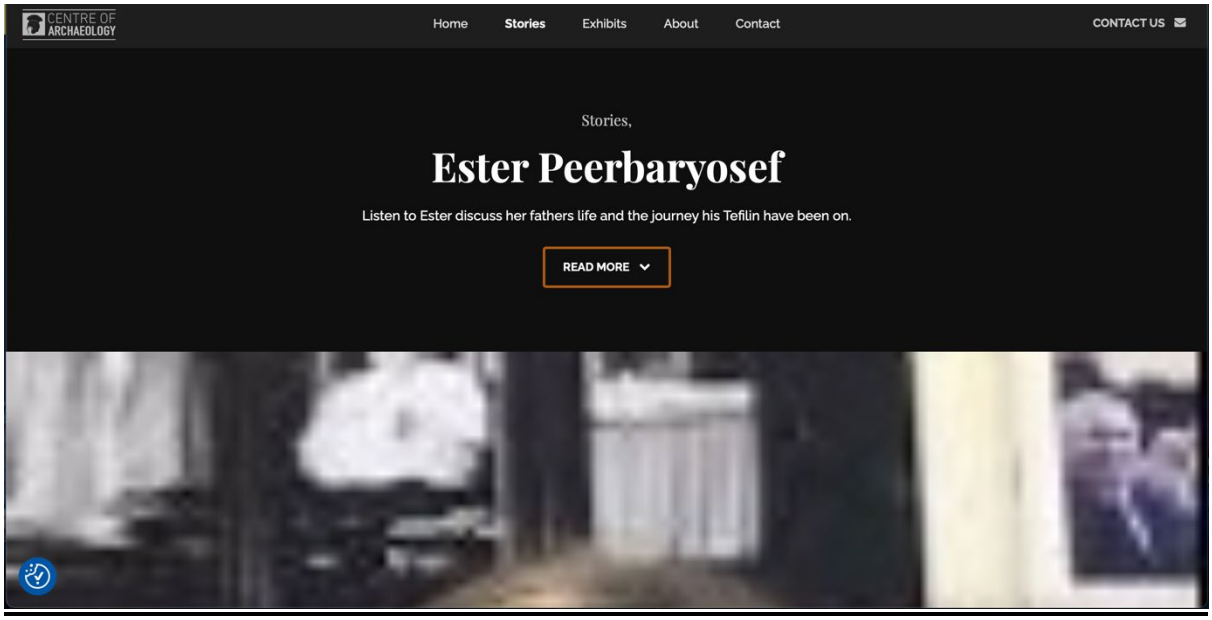


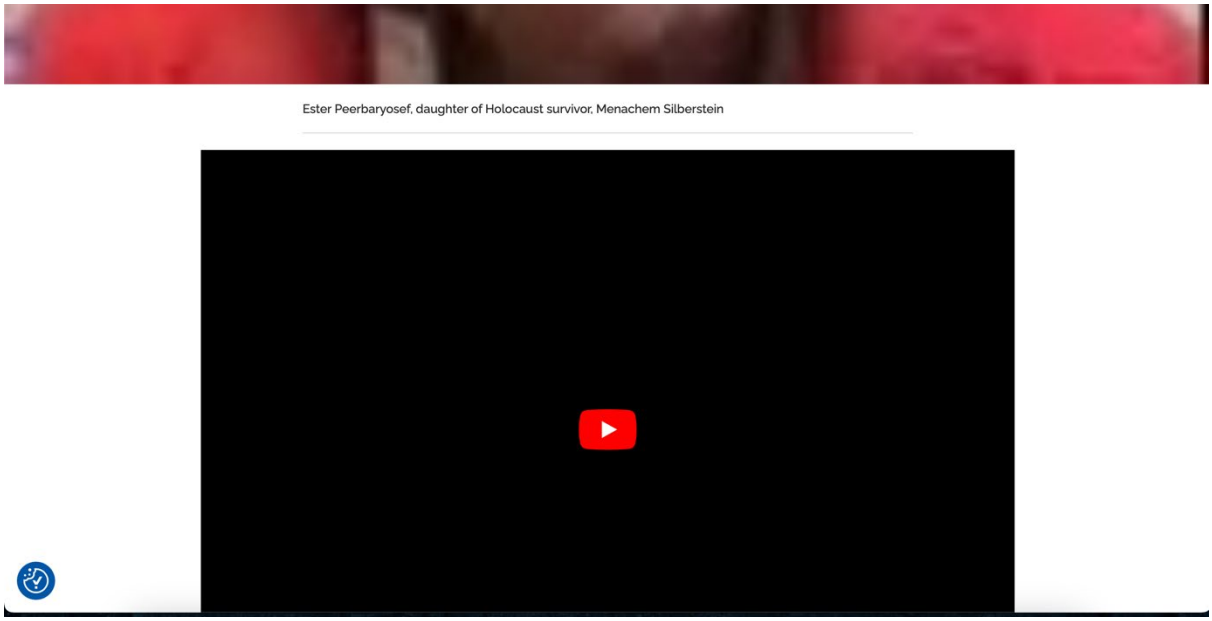


Structured light scan of a wheel of silver thread belonging to Shirleys Husband Alfred.



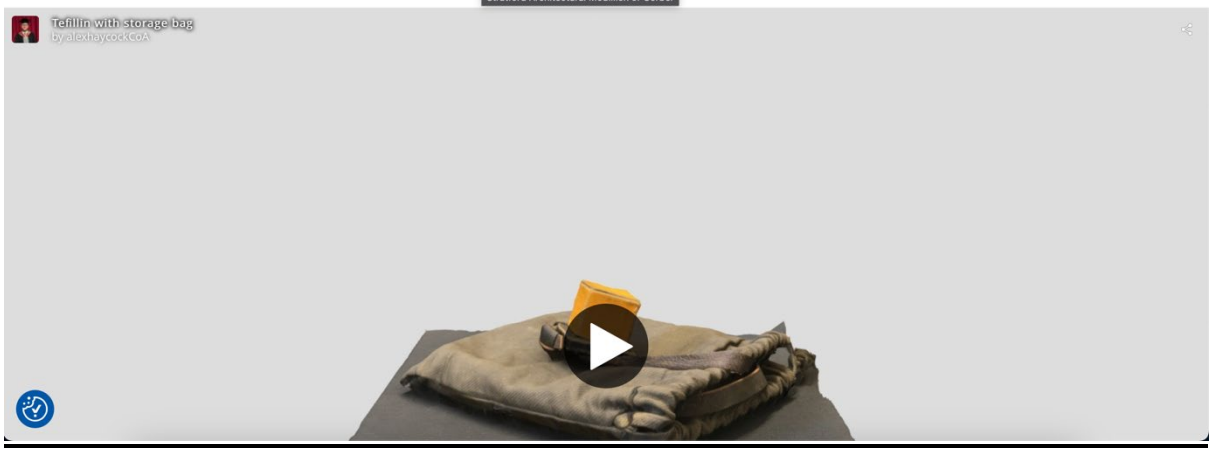
Object Biography: Ester Peerbaryosef

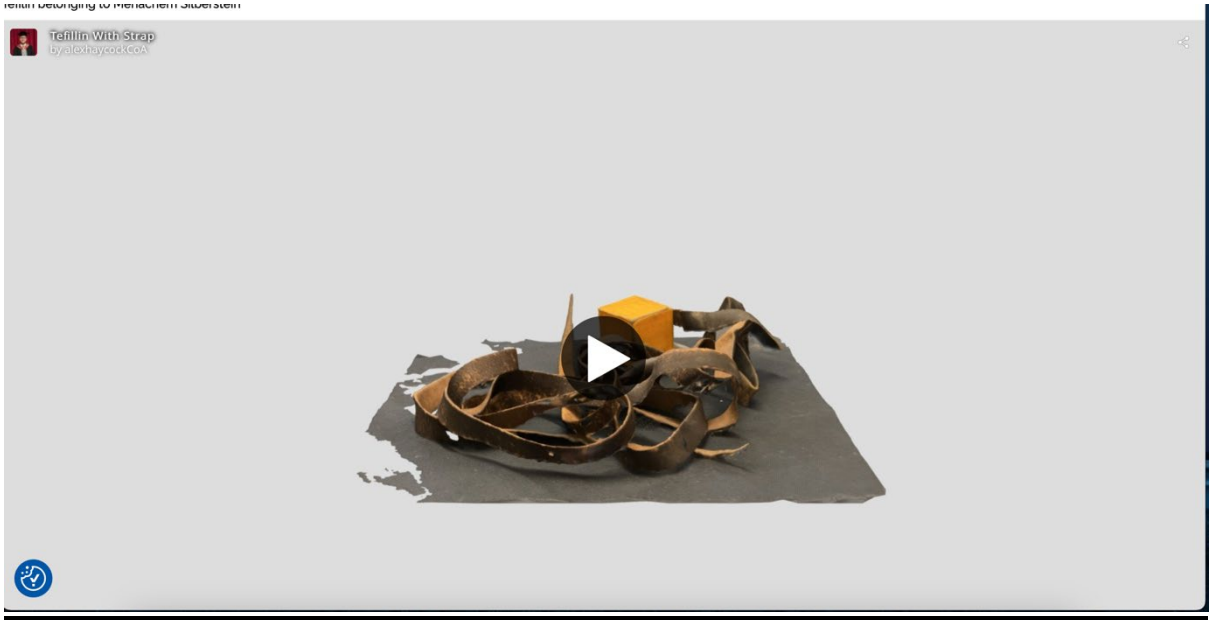




I saw that it will be the most important thing I can do for my father to bring it here to Windermere, the place that he got it, and it will be a memory for him here."

(Ester Peerbaryosef, daughter of Holocaust survivor Menachem Silberstein).





Tefilin belonging to Menachem Silberstein

Menachem Silberstein was born in Łódź in 1927. Throughout the Holocaust, he was a forced labourer in the Mniszew ghetto until 1941. Before being moved to the Skarzysko-Kamienna, Czestochowa and Buchenwald camps he was sent on a death march to the Theresienstadt camp in 1944. He was liberated and came to Windermere as one of the boys (Yad Vashem, 2011).

To give the Tefillin more context, the religious significance should be noted. Traditionally, they are a pair of black leather boxes containing Hebrew scrolls, connected by a leather strap, which are worn by all Jewish males over the age of 13. However, in modern times people of all genders can use them in their prayers (Reiss Medwed, 2024).

They are most frequently used during morning prayers and are worn as it is a mitzvah (commandment) in the Torah (Jewish Museum London, 2021). The Torah mentions the mitzvah of Tefillin on four occasions. Therefore, each of these four texts is inscribed on parchment and placed in leather boxes. The texts themselves included verses that sum up the fundamentals of the Jewish faith (Chabad, 2024).

The four texts are:

1-2) Kadesh and Vehayah ki yeviacha – the duty of Jewish people to remember the redemption from Egyptian bondage, and to educate children about this and God's Commandments.

3) Shema – Unity of one God, commands to love and fear him.

4) Vehayah – assurance of reward that follows observing the Torah's mitzvahs.

The meaning behind the Tefillin and these scriptures is to 'bind oneself to God' and aid in keeping this belief in a person's thoughts during times of prayer, reflection and in day-to-day life. To bring people closer to their faith.

This Tefillin along with a tallit katan was originally gifted to Menachem in the Lake District in 1945 by Rabbi Weiss, who was from the Gateshead Yeshiva community and came as part of the carer team who came to help the newly arrived Windermere Children.

The story behind this Tefillin has parallels with life in that we often return to a place of significance for our final resting place after we die and the Tefillin eventually is returned, full circle, to Windermere, where it remains for all who visit to be able to see.

Menachem missed the Jewish tradition of his bar mitzvah because of the Holocaust and so, the Tefillin was deeply treasured by him, believing it would protect him from the dangers in the world and bring him future good luck.

Ester said it was important to Menachem that people learned about the Holocaust and the people affected by it, "he said all the time we need to tell the story. We need to tell what happened to us because people have to know what it means and people will forget, and we have to tell the story for generation and generation to imagine that never again something like this will happen."

Menachem came to Windermere where he was given a new life along with the other children and from there, he went to London to learn to be a dental technician. In 1948, he went over to Israel as a volunteer in the Independence War and later met his wife (Ester's mother). Some of the other boys who also came to Israel returned to England, however Menachem remained in Israel with his wife. The Tefillin travelled with Menachem, he would never let it go, held precious.

Ester proudly explained how her father spoke to children in schools, speaking highly of his time in Windermere, how he and the other children came to be there and what it meant to him. He even went to the army where his son was posted to tell his story of how he ended up in Windermere and what the place meant to him.

Before Menachem died, the family visited Poland as Ester recalled, "We went to Poland, we went to his place where he was born, and we made with him a big tour of a Holocaust places. it was very important to him. We took all the grandchildren then to tell the story and everything, but to Windemere, he never came back."

His memories of Windermere are indelibly stored in wonderful colour in his mind, playing out scenes from his given new life away from the horrors previously experienced. A life shared and experienced between the special bond he had with the other boys.

Ester said that her father wanted her to place the Tefillin with him in his grave after his death, however, she explained that the Rabbi conducting his funeral ceremony said that it could not be placed in a grave because of the holy nature of it.

Ester decided to keep hold of it and return it to Windermere from where he was originally gifted it. When Ester discovered there was a survivor's reunion in London and realised a lot of survivors were no longer alive, she had to attend and felt a strong sense of duty to travel up to Windermere, where she was able to tell her father's wonderful story and gained an element of closure for herself.

"It (Windermere) was a very, very big place for him and made a lot of difference to his life, so I saw it for me...and I knew in May there was a reunion in London.
A lot of survivors are not with us anymore. So, I said to my husband, we have to go to the reunion and then I will go to meet Trevor."

Ester said that to understand her father's story and the significance of this Tefillin, people must first understand what it means to Jewish people, children, and the bar mitzvah and then the influence Windermere had upon Menachem, keeping this Tefillin with him as he travelled to Israel. She said that telling his story will allow people to understand both sides, one as a

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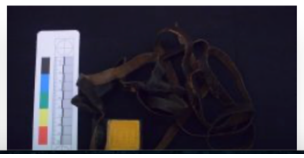
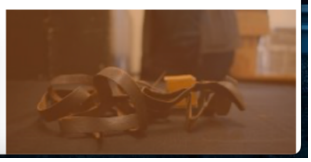
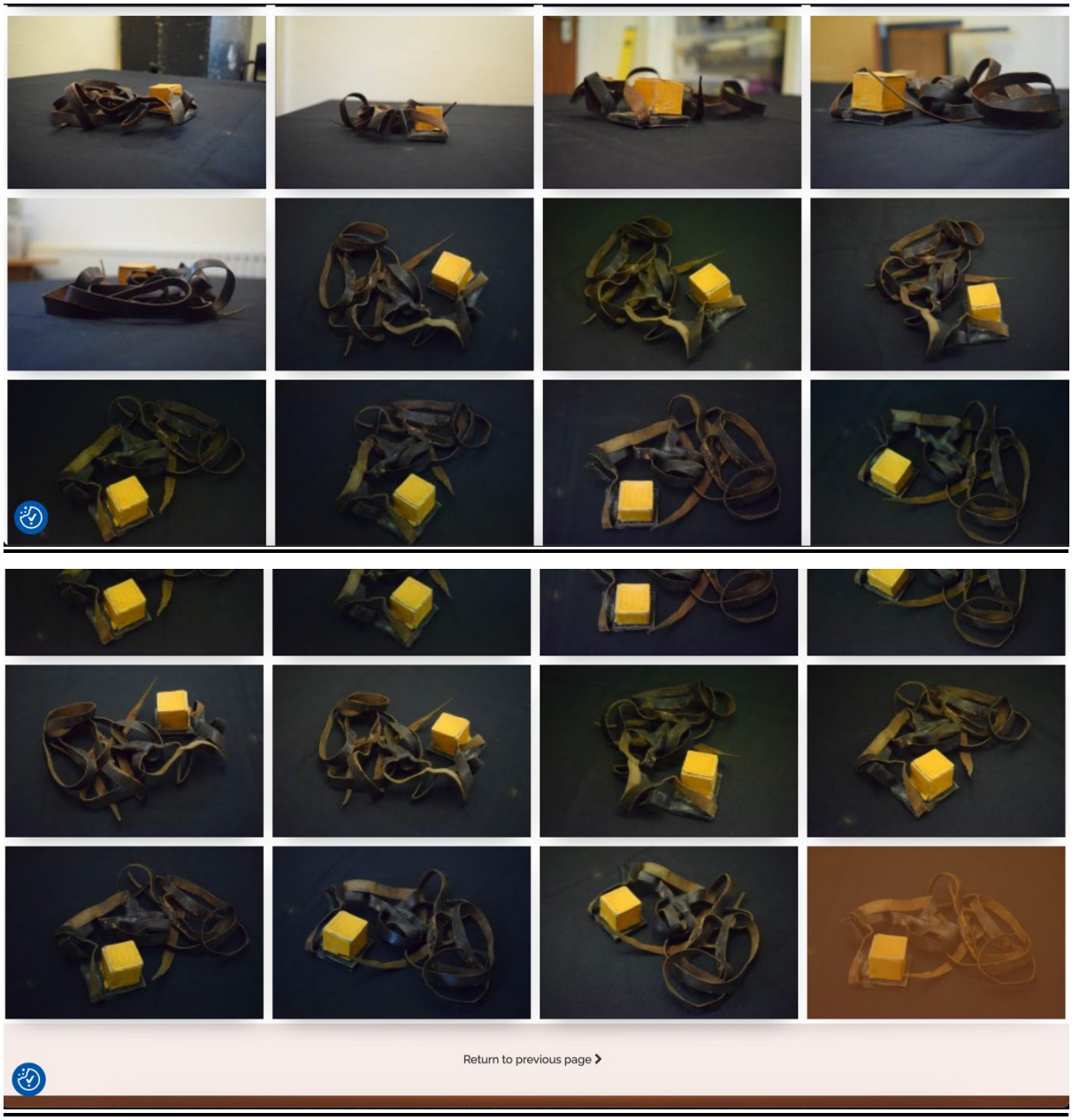
"It was in a special place at home...and once he told me about it, you know when I pass away, you'll have to put it in my grave. I couldn't put it in the grave, but I think I put it in a place that is very important for him."

Everyone will remember his name as one of the boys now that the Tefillin is back at Windermere, displayed in the Lake District Holocaust Project.

Ester said that in Israel, a lot of schoolchildren do visit some of the camps (for example, Theresienstadt and Auschwitz) to learn about the Holocaust, but they do not go to Windermere to learn about the support provided by the British Government for so many children. A digital online resource as a way of being able to tell these important stories of survival is something that Ester believes will enable this to happen.

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