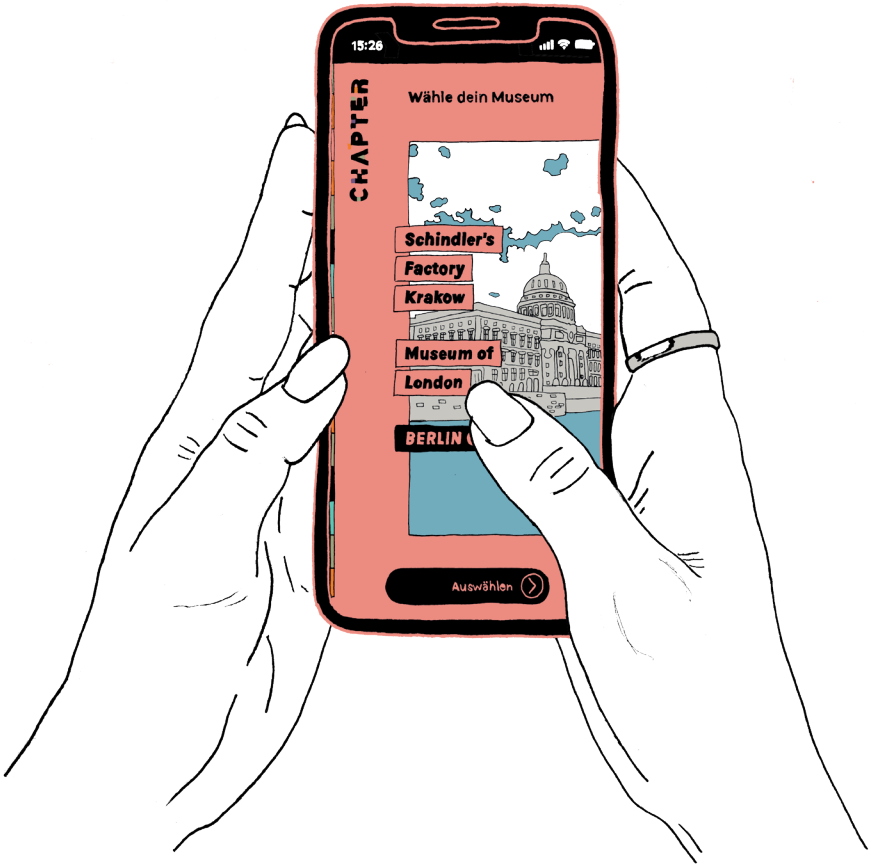
Pia Schramm and Christoph Bareither

DESIGNING A MUSEUM APP FOR POLITICAL ENGAGEMENT

Reflections on the CHAPTER Project for Museum Practitioners, Educators and App Designers



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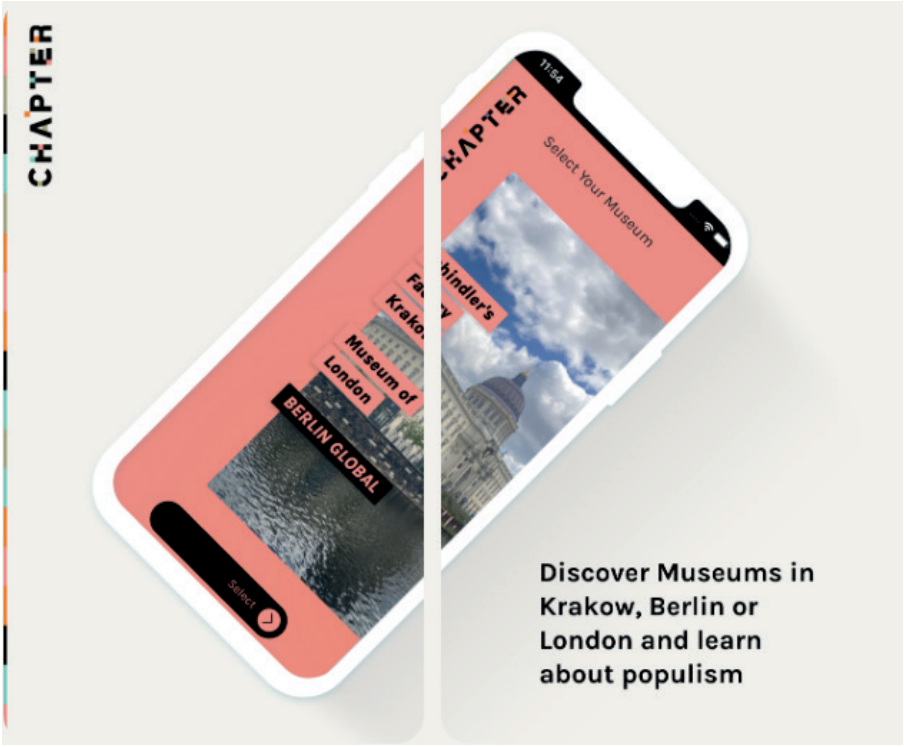
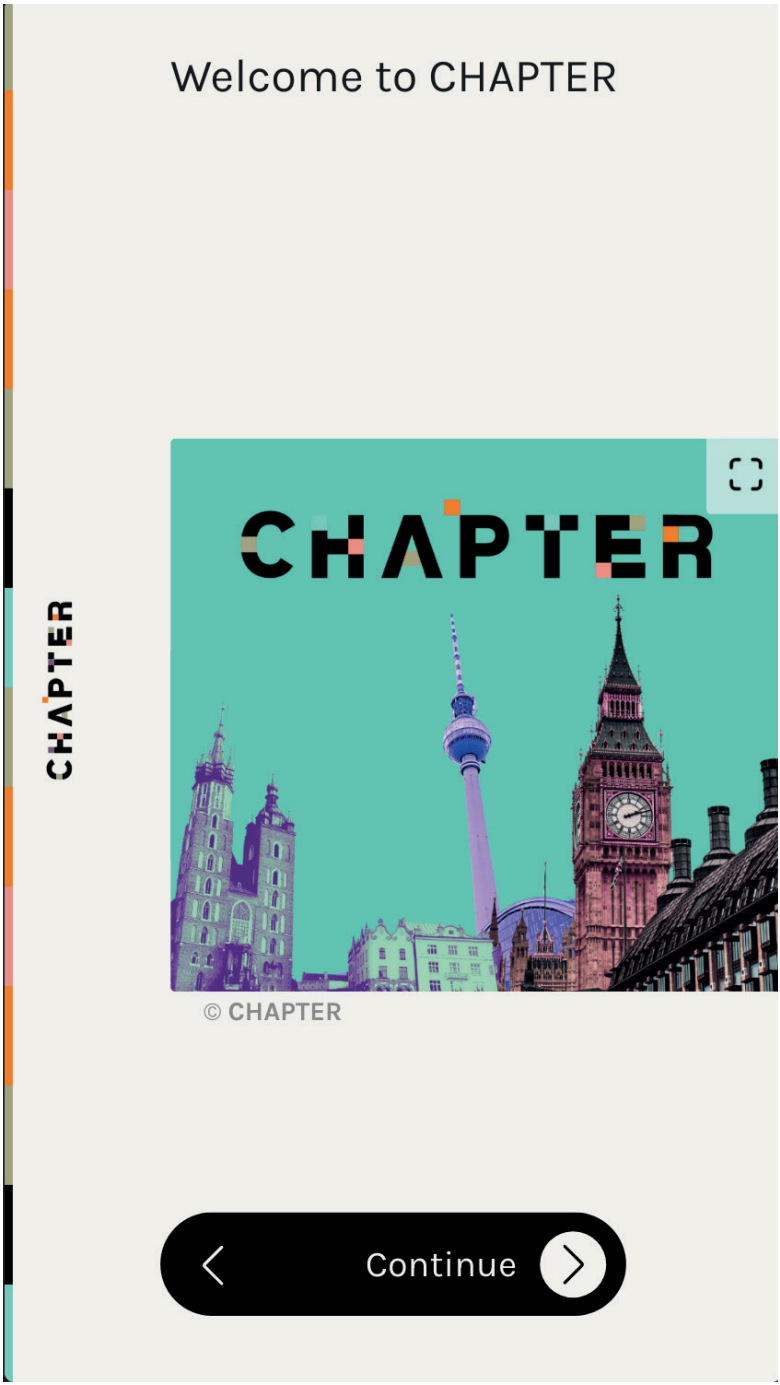
Content

1 Introduction to the CHAPTER Project



Screenshots of the CHAPTER App © CHAPTER

The CHAPTER App was developed as part of the academic research project 'Challenging Populist Truth-Making in Europe: The Role of Museums in a Digital "Post-Truth" European Society' (CHAPTER for short). The project was funded by the Volkswagen Foundation and carried out by an international team based at the University of Tübingen, the Humboldt Universität zu Berlin, University College London, and the Jagiellonian University in Kraków, in collaboration with the software develop-



Screenshot of the home screen of the app © CHAPTER

er in Vienna. The app is a digital tool that aims to inspire young adult visitors (18–26 years) to learn more and think critically about populism – in particular what we call 'populist truth-making' – as a challenge for European societies. It is tailored to three different museums and their collections/displays: the 'BERLIN GLOBAL' exhibition by the Berlin City Museum located in the Humboldt Forum Berlin, the 'Kraków under Nazi Occupation 1939–1945' exhibition by the Oskar Schindler Enamel Factory in Kraków, and the London Museum (formerly Museum of London) with its digital collection. The app uses digital activities that combine elements of interactive games with social media aesthetics. It is based on exploratory research and a co-design process with around 90 young adult visitors. While typical museum apps are designed to allow users to engage with the themes of existing exhibitions (often being digital versions of classic audio guides), the CHAPTER App takes a very different approach: it aims to add a digital layer to existing exhibitions that goes beyond the scope of these exhibitions to address contentious political issues.

In several 'chapters' (which are 'episodes' that users can experience in each museum), the app guides its users to different objects in the museum that deal with themes such as sport, posters, music, or food. Each chapter starts with the epistemic and emotional affordances of the selected exhibit and uses these to address selected 'facets of populist truth-making' (see in detail below). All chapters follow a similar pattern: first, users are asked to locate the object within the exhibition and to interact with and reflect upon it. This often involves emotional reflection, and in many cases the chapters draw connections between the exhibit and the everyday lives of the young adult visitors. For example, a display on 'bystanders' in the Second World War in the Kraków Museum is used to discuss everyday experiences of bullying and bystanders in school. The next step is to draw parallels and relationships between the context of the exhibition and contemporary issues related to populism. In the example above, this includes a discussion of how populism works through loudness and intimidation, practices that can

lead eyewitnesses to atrocities to adopt a bystander position. Various tasks and quests within the chapter aim to reflect on the consequences of populist politics. Finally, the links to the 'facets of populism' are made more explicit, and users are encouraged to think about how populism works in practice. In this way, each chapter of the app provides a frame that connects the exhibit and its context with issues related to populist politics and uses this connection to both inform and inspire emotional reflection about different facets of populist truth-making. As users progress through the chapters, they gain more knowledge about how populism works and how it drives polarisation and conflict in our society. This enables users to recognise and critically analyse populist strategies they encounter in everyday life.

The CHAPTER App is designed to be used directly on-site at the BERLIN GLOBAL exhibition at the Berlin City Museum in the Humboldt Forum in Berlin and at the Oskar Schindler Enamel Factory Museum in Kraków. The chapters for the Museum of London are designed to be used off-site. The app is free and available in English, German and Polish. It was released in 2024 through Apple's App Store and Google's Play Store, where it will be available until the end of 2027 (download link for all systems: https://chapter.fluxguide.com/fluxguide/appstore). Readers of this project documentation are invited to try out the app (the Kraków and Berlin chapters can also be tested remotely from anywhere) and/or watch our introductory video, which visually explains its main features and gives an insight into the development process (link: https://youtu.be/P-58-i0XhxU).

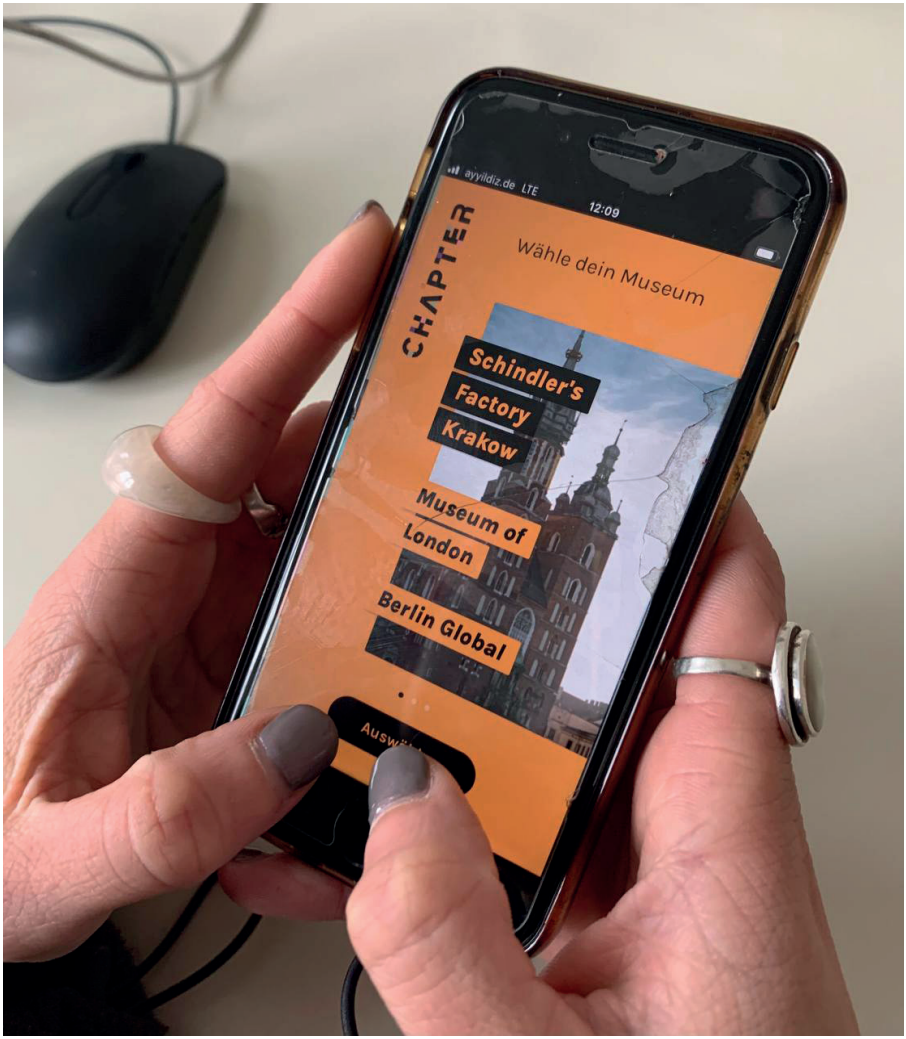
QR-Code to download the app

QR-Code to watch the introductory video

A Project Documentation for Museum Practitioners, Educators and App Developers

The development of the CHAPTER App was part of a research project that asked how populism affects the work of European museums, but also how museums can address the challenges posed by populism. One major part of the project was research in different European museums and an interview study with 39 museum practitioners from Germany, Poland and the UK. The other major part was working on the CHAPTER App. This app is unique in that it is not a classic museum app, produced by a particular museum and focused on explaining the museum's exhibitions and content. Instead, we see our app as a testing ground for design principles and practices that help us demonstrate how museums can address contentious political issues and inspire young audiences to critically engage with them. This project documentation, 'Designing a Museum App for Political Engagement', is a key output of the project towards this goal. It documents how a group of researchers worked with professional museum app developers, museum practitioners, and young participants to develop structures, designs, and content ideas for such an app. The project documentation is specifically aimed at a readership of museum practitioners, educators, and app developers who are interested in the more practical challenges of our project and the potential we see in it. For this reason, the documentation deliberately avoids references to the large body of academic literature on populism, museums, and digital design. While our project has also produced several texts and presentations that engage with academic debates on museums, heritage, populism, and the role of digital technologies in this field, the purpose of this project documentation is much more 'hands-on'. We are aware that, as academically trained authors with limited curatorial experience, we are 'strangers' in the field of practical museum work, and that some of the things we have to say may seem banal or even irritating to museum practitioners who have been trained in the design of museum tools based on other standards. Therefore, it is not our intention to claim that our project provides the perfect examples. But what makes our project special is that

we had the freedom of an academic project to explore the potential and pitfalls of a political museum app beyond questions of economic success or visitor numbers. The funding from the Volkswagen Foundation allowed us to experiment with new ways of doing things – and to fail where necessary – in order to explore new possibilities.



Hands holding a phone © CHAPTER

The Team

The idea for the CHAPTER App was initially developed by the project's main applicants and Principal Investigators (PIs) Christoph Bareither (Tübingen) and Sharon Macdonald (Berlin), supported by PIs Haidy Geismar (London) and Roma Sendyka (Kraków). Christoph Bareither later oversaw the development process as project leader for the app. The main coordinator of the development process, the communication between the various groups involved in the design of the app and its practical implementation was Pia Schramm (Tübingen/Berlin). Other core team members were project researchers Alice Millar (London), Marlena Nikody (Kraków) and Julia Leser (Berlin), who contributed to the knowledge base for the app, designed the content for each region and engaged in co-design with young adult visitors – all of which will be detailed in the following sections. Alice Millar also proofread and edited all the English texts in the app, and Marlena Nikody translated and edited all the Polish texts. Helena Kieß (Berlin) was also a core team member during the project's first year and contributed significantly to the conceptualization of initial approaches. Another group of project members were several student assistants, Jasmin Kellmann, Antonia Schnell and Annabelle Schönherr. They played an important role in creating the knowledge base, developing an 'app construction kit' (see below), designing social media content to accompany the app and, in the case of Jasmin Kellmann, strongly assisted the co-design process.

While the above-mentioned team members were responsible for the content of the app, they also worked closely with a team from professional app developer Fluxguide (Vienna), namely Kasra Seirafi (CEO), Carina Doppler (project manager) and several developers and designers from the company. Fluxguide's expertise allowed us not only to experiment with ideas, but also to implement them technologically and create a museum app with a professional look and feel. All of these different contributors were part of the core development team for the CHAPTER app.

Partners and Participants

The process of developing the CHAPTER App would not have been possible without the support of many museum practitioners and experts who provided advice, inspiration and critical reflection (with particular support from Foteini Aravani and Bartosz Heksel, and Nikolas Dittgen as external researcher). It is important to note that our contacts in the three museums were not part of the core team. The reason for this is that our researchers needed to retain an independent position in order to be able to experiment freely with potentially new approaches. However, the museums we worked with and their staff – while sometimes critical of our approaches – were generally very open and constructive in their feedback and opened many doors for us, for which we are grateful.

Equally important were the many participants in our co-design process, mostly school or university students, who offered their time and creativity to improve the app and help us develop our approach. We would like to emphasize that their efforts and work are greatly appreciated by our team.

The Structure of this Project Documentation

As this project documentation aims to provide 'hands-on' insights, it offers a mix of more detailed descriptions and summarising 'key points.' These are not analytical, but practical key points that we think might be of interest to museum practitioners, educators and app developers. Readers who are only interested in the main findings of our project are welcome to use the key points for a quick overview. Otherwise, the text is divided into three main sections. Section 2 begins with a description of our exploratory research, which helped us to better understand the facets of populism, the potential of certain exhibitions to address these facets, and the potential of digital applications to mobilise political engagement. Section 3 outlines the process of designing the app and what we think can be learned from our specific approach for potential future projects. Section 4 focuses on the

co-design phase of our project and discusses the pros and cons that practitioners interested in participatory approaches might find valuable. A short outlook gives a summary of our approaches and reflects on the limitations and added value of the CHAPTER App project.

2 Exploratory Research and Knowledge Base for the App

The CHAPTER app is based on several strands of exploratory research that informed the design process. The research was heavily inspired by the approaches of ethnographic research, which is a specific style of qualitative research that often involves participation in everyday practices (e.g., museum visits), face-to-face encounters with people (e.g., through interviews or conversations with museum visitors, curators, etc.), and (autoethnographic) self-observation by researchers (e.g., when visiting museums or testing digital applications). Parts of our research drew on ethnographic methods in the explicit sense (in particular an interview study and participant observation), others integrated ethnographic perspectives in a broader sense (e.g., when studying apps by testing their functionality and critically reflecting on their affordances). While we recognise that it is not practical for all museum app projects to conduct in-depth research as a basis for app design, we hope that our project can demonstrate how qualitative and ethnographic research can be valuable, especially for the development of apps that address contested political issues. In the following, we will show how this type of research helped us to lay the foundations on which our museum app was built.

2.1 Exploratory Research on Facets of Populist Truth-Making

The cultural sector, and museums in particular as epistemic authorities, can become fertile ground for populist politics. As places of collecting, archiving and displaying cultural heritage, museums are sus-

ceptible to political instrumentalisation. Of course, museums are never simply politically 'neutral' institutions. As defined by the International Council of Museums (ICOM), their role is to promote diversity and sustainability in contemporary societies.[1] Following this definition, museums are directly affected by the rise of populism, an ideology of inclusion and exclusion that divides society into 'the people' and 'a corrupt elite' and promotes polarising stereotypes between different social groups. In order to understand how populism in practice affects museums and their staff, but also – and more importantly for this publication – to show how museums can challenge populism, the CHAPTER project conducted an ethnographic interview study with museum staff in Germany, Poland and the UK. The interviews were conducted by Julia Leser, Alice Millar, Marlena Nikody and Pia Schramm. We spoke to a range of museum professionals, from museum directors to freelance tour guides working in different types of museums.[2] The semi-structured, in-depth interviews, together with the existing corpus of literature on populism, formed the basis for our understanding of different 'facets of populist truth-making'. While we have also published an academic reflection on the concept of populist truth-making,[3] for which the work of Julia Leser was particularly instrumental, we also aimed to phrase the insights from these reflections in a more accessible format that could serve as the basis for our app. Below is a brief overview of these different facets.

The way populists use antagonisms is a specific facet of populist truth-making that we call **'populist polarization and othering'**. In the case of right-wing populism, a polarised normative distinction between 'us' and 'them' and the exclusion of the latter negates the values of a pluralistic democracy. This is already intrinsically linked to the facet of

1 International Council of Museums: Museum Definition. https://icom.museum/en/resources/standards-guidelines/museum-definition/ (20.02.2025).

2 For a detailed overview, see also: Julia Leser/Alice Millar/Marlena Nikody/Pia Schramm: Right-Wing Populism and Museums: Findings from an Interview Study in the UK, Poland, and Germany (forthcoming).

3 Julia Leser/Christoph Bareither/Sharon Macdonald: Populist Truth-Making: A Conceptual Approach to Populism in the Context of European Museums. In: International Journal of Heritage Studies (24.12.2024), 1–13.

'populist people-making', namely the evocation of 'the people' as a category that allows for the creation of a political identity, an 'us', which often takes the form of an imagined national community with a constitutive 'other'. Populist politics also engage in **'populist heritage-making'**, promoting a version of the people's national past that is imagined as 'glorious' and 'great'. In both historical and contemporary contexts, populism emphasises feelings over facts. Populist politics also makes effective use of emotions, a facet we call **'populist feelings and truth'**. As part of such emotional truth-making, it matters much less whether a claim about the world is factually true, because truth can be felt through agreement within one's own social peer group. The role of emotions in the context of truth-making is highly related to what we call **'populist politicised truth'**. In politics, truths serve as tools to generate and communicate political interests, and to rally and persuade people to form and act on a collective political will. Populists shape truths to portray themselves as victims of an allegedly oppressive regime (framed as the 'political elite') and thus as marginalised, disenfranchised, and under threat of being 'erased'. Moreover, populist politics rely on a particular form of **'populist loudness'** – strategies for dominating a conversation based not on factual qualities but on the ability to make noise. Social media are effective platforms for such performances, and the way populists use them also demonstrates the **'digital affinity of populism'**. By using social media platforms in a particularly vocal way, populists seek to dominate public discourse, not only normalising their beliefs but also distracting the public through aggressive and disruptive agenda-setting. We describe the effect of this attempt at media domination and agenda-setting as **'populist distraction'** from discussing pressing issues such as climate change and economic inequality.

In our project, this outline of different facets of populist truth-making helped us to tackle and categorise the political practices that are specific to populism. While this outline, in its reduced form, may not be able to do full justice to the complexity of academic debates and analyses of populism, it was a necessary step in working towards our

Users comparing results of tasks within the app © CHAPTER

app, as the purpose of the app is to stimulate reflection on these facets in an accessible way. However, communicating a complex and ambivalent concept such as populism through a digital application is challenging; it means carefully balancing complexity with simplification. When creating the content for the CHAPTER app, we therefore discussed in detail how we communicate the facets to the target group of a young, diverse audience. Simplification is particularly dangerous in the context of populism, as it is a practice used by populist

actors to reduce the complexity that is often inherent in political issues. Populists use this strategy to combine simplified truths with 'othering.' The app, on the other hand, aims to simplify complex issues in order to help users understand and critically reflect on the problems inherent in such practices. Below we will discuss in more detail how the different facets were addressed in the design of the app. But first, we will describe other parts of our exploratory research that underpinned the design process.

Key Points:

- Exploratory research combined with literature reviews can help to build a knowledge base about contested political issues that a museum app might address. In our case, our research showed that populist truth-making is characterised by complex, intersecting and overlapping properties, which we call 'facets of populist truth-making.'
- Navigating the tension between complexity and simplification is an ongoing challenge in the design of museum apps for political engagement. In our case, outlining distinct 'facets of populist truth-making' might not do full justice to academic debates, but it was a necessary step towards communicating knowledge about populism through our app.

2.2 Exploratory Research in Museums

In our project, we aimed to identify exhibitions that would make it possible to critically address the different facets of populist truth-making. These exhibitions were not necessarily dealing directly with the issue of populism. Rather, we wanted to explore whether and how exhibitions with different themes could be used to address populism by adding an additional, digital layer – this is what makes our project (hopefully) interesting for museum practitioners working on and with exhibitions with other themes, but who are interested in including political themes without changing the exhibition. A key question in preparing our project was therefore which exhibitions would allow for a critical reflection on the facets of populist truth-making.

A key conceptual approach to answering this question was offered by the notion of affordances. In short, affordances are the capacities of a material object or space (or a technology, as we will show later) to enable, induce or constrain certain practices and experiences. In the case of our project, we can broadly distinguish two types of relevant affordances: the first type of affordance is epistemic. Many museum objects allow visitors to gain knowledge about a particular subject or stimulate intellectual reflection. The second type of affordance is emotional. Museum spaces and objects have affective potentials that are additionally supported and shaped by elements such as exhibition design, lighting, sound, etc. These elements can evoke or constrain particular emotions and shape how we feel and behave in exhibitions; for example, a dark, cold, and silent space will evoke different emotions than a bright, busy, and noisy space. In addition, objects and spaces have inherent emotional affordances that encourage visitors to interact with exhibits in particular emotional ways. In our project, we considered epistemic and emotional affordances to be inextricably linked. Knowing and feeling are intertwined practices; we gain knowledge through our feelings, and our feelings are shaped by our knowledge. To effectively address and challenge populist truth-making, this interdependence needs to be acknowledged – and made productive.

Addressing the emotional affordances of a room symbolizing the Kraków Ghetto © CHAPTER

Selection of Museums as Field Sites for the App

In order to identify exhibitions with strong epistemic and emotional affordances for our purposes, we first considered several institutions in each of the three locations before settling on those with the most promising potential. In these three museums, we then used exploratory and ethnographic approaches to reflect on the specific affordances of individual objects and spaces. The research was carried out by Alice Millar in London, Marlena Nikody in Kraków, and Pia Schramm and Julia Leser in Berlin. We refer to the three museums as 'field sites.' This means that all the institutions were aware of our research and, in two cases (Kraków and London), worked closely with our researchers. However, the final app is not a product of these institutions, but a product of the independent research team.

During the first year of the project, the team identified the exhibition 'BERLIN GLOBAL' by the Berlin city museum located at the Humboldt-Forum in Berlin, the Museum of London's permanent exhibition, and Schindler's Enamel Factory in Kraków as promising spaces to work with. Opened in 2021, the 'BERLIN GLOBAL' exhibition reflects on the city's past and present and invites visitors to engage with a range of multimedia objects, including a digital wristband and interactive challenges. The modern design provides an emotional atmosphere that promised to appeal to young adults (our target audience). The permanent exhibition at Schindler's Factory is one of the most visited exhibitions in Poland. With its focus on the city's history during WWII, it addresses many topics relevant in the context of populist truth-making. The Museum of London's collection of born-digital objects was chosen as an equally promising context for the app and allowed us to continue working with the collection after the museum's closure in 2022. However, we were able to work with the museum's digital collection, which allowed us to create content for the app that was independent of the physical exhibition space. In all three museums, one or more researchers from our team conducted participant observation of visitors (e.g., by accompanying them on guided tours), (informal) interviews with young adult visitors and staff, and

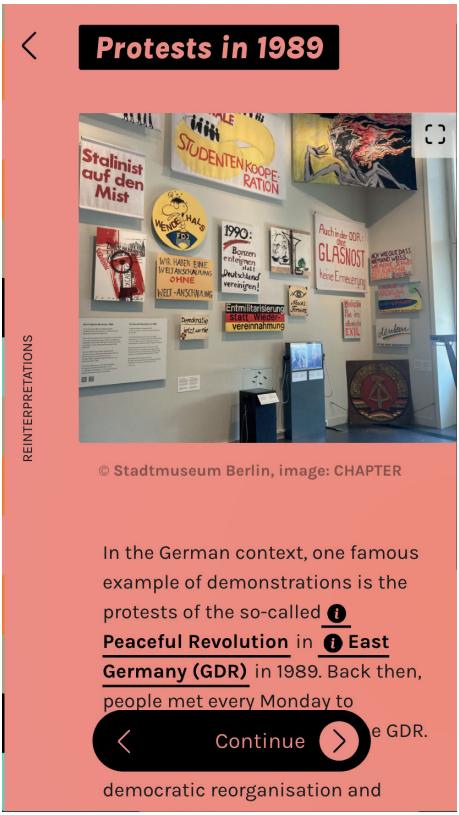
Exploratory research at the Museum of London © CHAPTER

an analysis of social media posts by visitors reflecting on specific exhibits. In London, our researcher Alice Millar also co-curated an exhibition called 'Into the Twitterverse', which displayed objects from the digital collection and further enriched our knowledge of the objects and visitors' experiences of them. The generated data served as a basis for selecting exhibits that held promising epistemic and emotional affordances for an app that would address the facets of populist truth-making outlined above.

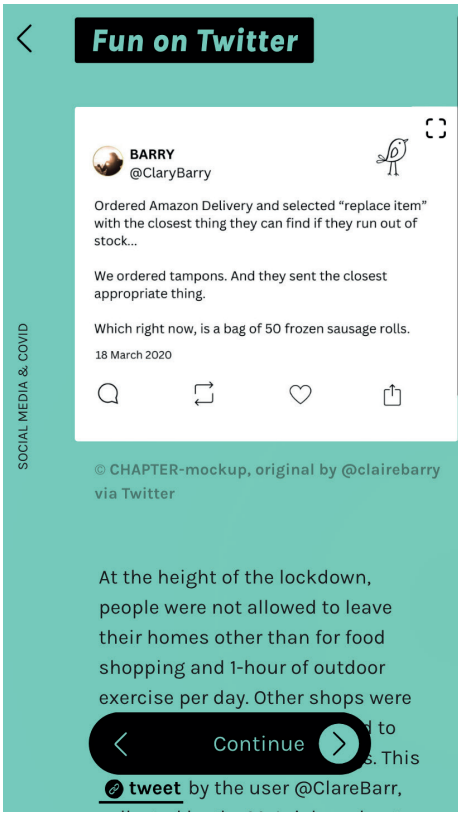
Epistemic and Emotional Affordances of Exhibits

The fieldwork showed that museum spaces and objects have a broad potential to address political issues beyond the actual content of the exhibitions. Certain objects can evoke positive emotions and a 'feel good' atmosphere, while others evoke more negative feelings, and these feelings are inherently linked to the knowledge and understanding that visitors gain. The epistemic and emotional reflections offered by objects and spaces can thus serve as anchor points, transmitters, and mediators for addressing difficult political issues.

The 'BERLIN GLOBAL' exhibition, for example, features several posters from the period of Germany's 'Peaceful Revolution'. Shortly before the fall of the Iron Curtain, people in East Germany peacefully took to the streets to express their desire for reunification. The posters and slogans from that time evoke strong emotions. Slogans such as 'We are a united people' evoke ideas of nationhood and are value- and emotion-laden. During our fieldwork we observed that these posters, combined with an installation that encourages visitors to 'make noise', often attract visitors who actively interact with the objects. In our research we realised that the affordances of the objects could be effectively used to address the facets



Screenshot of the chapter 'Reinterpretations' addressing the 'Peaceful Revolution' at the exhibition BERLIN GLOBAL © CHAPTER



Screenshot of the chapter 'Social Media and Covid' addressing posts around the Covid-19 pandemic collected by the Museum of London © CHAPTER

of 'populist people-making' and 'populist loudness.'

Another example of such connections comes from London, where we worked with the born-digital exhibition. Digital artefacts can also have strong emotional affordances, for example, a selection of specific tweets around the Covid-19 pandemic. During the pandemic, social media platforms became increasingly popular as a means of communication. The tweets collected by the Museum of London address the absurdities of the pandemic in an engaging, ironic or funny way. They provide an opportunity to experience fun and joy, emotions that contrast with the isolation, uncertainty and fear that the pandemic has left many people feeling. In our research, we realised that some of these posts could be used to demonstrate how social media logics and emotions are intertwined, providing an effective approach to getting users of the app to reflect on the 'digital affinities of populism.'

In both examples, we do not use objects that already address populism. Instead, we make use of exhibits that are not directly related to populism in order to engage visitors through their epistemic and emotional affordances, before drawing connections to the different facets of populist truth-making in successive steps. Exploratory and ethnographic work within the exhibitions, including participant

observation, (informal) interviews with visitors, tour guides, and curators, as well as content analysis of social media posts, is an effective way of preparing these connections by exploring the different affordances of individual exhibits for museum visitors.

Key Points:

- Museum spaces and objects have specific emotional and epistemic affordances that can help address pressing political issues beyond the original frames and themes of exhibitions.
- Exploratory research within exhibitions can help to assess this potential of museum spaces and objects by analysing visitors' interactions and engagement. In our case, it helped us to understand how specific exhibits and spaces within the exhibition afford an epistemic and emotional engagement with different facets of populist truth-making.

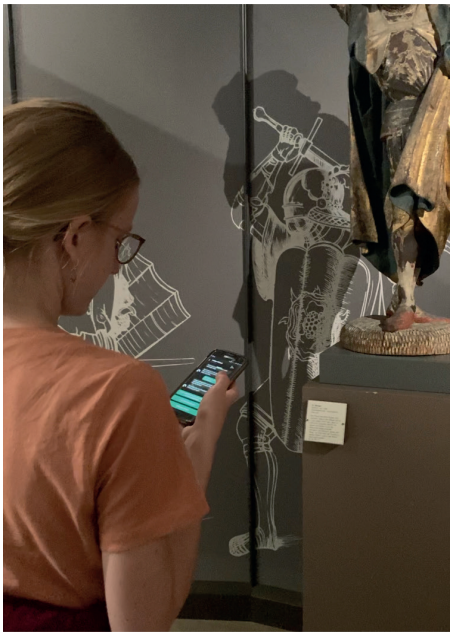
2.3 Exploratory Research on Digital Apps

When designing a museum app from scratch, exploratory research on existing museum apps that have similar goals or related functionalities can be helpful. Just as objects and spaces have affordances that enable epistemic and emotional visitor experiences, different digital tools have their own affordances to do the same. Accordingly, two key questions for this part of our project were: What kind of epistemic and emotional engagement do museum apps and apps for political education afford? And how do app designers create resonances between the app's affordances and those inscribed in physical museum spaces and objects, thus enabling meaningful visitor experiences? The concrete testing of applications can be quite fruitful for a better understanding of how particular affordances of digital tools unfold.

Research on Existing Museum Apps

Most museum apps are mainly based on written or spoken text, providing mainly basic information such as floor plans, suggested tours, etc., or presenting content similar to typical audio guides. This means

that museum apps often reproduce long-established forms of museum guidance and contextualisation in digital form. However, some apps use more immersive, playful, and innovative approaches. These do not necessarily rely on expensive technologies such as AR/VR. Innovation can also lie in particular ways of engaging with museum content.



Exploratory research on the 'Ping!App' at Badisches Landesmuseum
© CHAPTER

In the CHAPTER project, we investigated several museum apps, focusing mainly on usability, design, and affordances, as well as the synergies between material spaces and digital content that these apps create. Pia Schramm, supported by our student assistants Jasmin Kellmann, Antonia Schnell, and Annabelle Schönherr, conducted two case studies, the first focusing on museum apps and the second on educational apps dealing with political issues. The testing sessions followed a standardised pattern, consisting of using the formats (on site, if there was a physical location), followed by focus group discussions among our research team about the potential and limitations of each product, which were recorded and transcribed. From these testing sessions, we not only gained insights into the specific affordances of the apps. As we will show below, we were also able to formulate key design questions that later shaped the development process of our own app.

One of the apps we studied was the app for the Landesmuseum Württemberg (based in Stuttgart, Germany), which was developed by our partner Fluxguide. Testing one of their products allowed us to

evaluate the benefits of individual interaction types (which were also offered as functions for our own app) in relation to objects and spaces.

In contrast, the 'Ping!' app (developed for the Badisches Landesmuseum Karlsruhe, Germany) had a very specific design that was of particular interest to us in terms of its approach to the 'personification' of objects. A 'match-making' function allows users to have a fictional chat with selected objects. This mechanism inspired us to think about what factors need to be in place to create a dialogue between objects, user and app. The 'Ping' app also raised questions about orientation in the physical spaces of exhibitions.

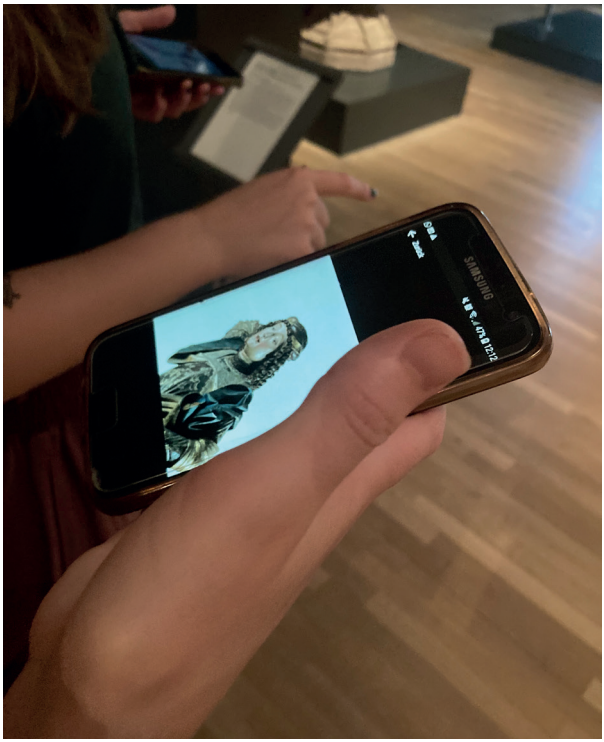
The third app was 'Room of Memories' (a so-called 'serious game' developed by the Stadtmuseum Tübingen, Germany), which involves users in morally charged decisions related to the Holocaust. With its very engaging but also challenging approach to immerse users in a fictional set-up taking place in Nazi Germany, it brought us to critically reflect on the relation between fiction and reality.

The process of exploring these different applications led us to several key design questions:

- How can we meaningfully match the spatial conditions, affordances, and atmospheres present in exhibitions with the specific tasks and functions of digital tools?
- What additional knowledge and contextualisation do users need in order to make sense of an app linked to selected objects in an exhibition?
- What specific learning outcomes should be achieved, and what functions or features provided by the developer would best support these goals?
- How can a dialogue with an app feel engaging, and what questions do such dialogues raise?
- How can an app successfully navigate users through an exhibition?

Educational Apps to Address Political Topics

The second group of apps we studied were educational apps. As these apps were not designed for specific museum spaces, they did not require on-site use. Rather than focusing on the synergies between the affordances of exhibitions and apps, in this second case study we aimed to understand how educational apps use immersive technologies to inform about contested political issues. In testing these apps, we took field notes on our observations and reflected on the apps' affordances in focus group discussions with our team members (some of whom were part of the target group for our app). Specifically, we selected two political education apps designed for students to learn about right-wing symbols and mechanisms (the 'Loulu' app developed by a theatre group and the 'Hidden Codes' app developed by the Anne Frank Educational Centre), as well as an app dedicated to politics during the Weimar Republic developed by the German Historical Museum.



Exploratory work with museum apps
© CHAPTER

The app 'Loulu' mimics the style of social media platforms and immerses its users in a scenario where they have to prevent a fictional friend from becoming radicalised online. The familiarity of young players and 'digital natives' with such platforms allows them to apply implicit digital knowledge when navigating the game. In this sense, the structure and visual design of the app are very engaging, which sparked our interest in using a similar social media-inspired design for our app. At the same time, fictional but accurate and sometimes violent content, as in the 'Loulu' app, also raises ethical concerns. The fully illustrated 'Hidden Codes' app challenges users to identify right-wing symbols and inspired us to use illustrations as well. The quest to identify and reflect on symbols and their meanings also influenced our final product. Finally, the educational platform by the German Historical Museum encouraged us to reflect on the relation between simplification and complexity in educational applications. This platform uses more 'classic' task formats (multiple choice, drag and drop, etc.) to make the learning process more playful. However, in order to successfully 'play' through these tasks, the user's educational background in historical knowledge must either be at a high level or the user must delve deeply into long texts provided by the platform. Hence, when planning interactive formats that build upon users' prior knowledge, the relation between complexity and simplification has to be carefully balanced out.

Our reflections on educational apps led us to consider further key design questions when designing our own app:

- How can we use digital technologies as tools to promote (emotional) experience and dialogue, playing with fictional elements without manipulating the user?
- How can we balance fictional content with content that represents real examples within an app?
- How can a specific design (in our case, a social media design) of an app contribute to an engaging and immersive experience?
- How can a contested political issue (such as populist truth-making) be addressed in concrete examples while minimising the reproduction of problematic content?

- How can we use illustrations to encourage critical reflection, and what are the limits of visual language in contentious political fields?
- How can we design a product that is not too complex, easily accessible and yet challenging enough?

In summary, the exploratory research we conducted on existing museum apps and on educational apps related to our thematic interest in populism brought to the fore a number of key design questions and approaches. Generally speaking, testing and reflecting on existing apps helped us to understand how the epistemic and emotional affordances of such technologies can inspire critical thinking and foster dialogue around political issues.

Key Points:

- Digital apps can provide epistemic and emotional affordances to inspire meaningful visitor experiences that can help address pressing political issues.
- Synergies can be created between the affordances of apps and the affordances of physical museum spaces and objects, creating immersive visitor experiences that combine digital and spatial/material aspects.
- Exploratory research can help to understand the affordances of digital apps. In our case, the exploratory research brought to the fore a number of key questions that later inspired the design of our app. These relate to the integration of the spatial conditions, affordances, and atmospheres provided in the exhibitions into the app, but also to questions of knowledge, contextualisation, and accessibility, as well as questions of representation and the balance between the fictional and the real.

3 Designing the Initial App Version

3.1 App Design

Based on the fieldwork in the museums and the analysis of the emotional and epistemic affordances of the exhibits, we worked closely with our partners at Fluxguide to design a first prototype of the CHAPTER App. While our research team explored the potential requirements based on fieldwork in our partner museums and with existing apps (see section 2 above), Fluxguide advised us on how to implement our suggestions technologically. We therefore met regularly to report progress and brainstorm in iterative circles. This form of collaborative development required us to find a common language between researchers and app developers. At first glance, the jargon used by development companies may seem unclear to researchers and museum professionals. The theoretical concepts that ethnographers work with, on the other hand, may remain abstract to technology developers. Therefore, time and space must be given to translate each other's perspectives. Collaboration also requires the ability to compromise and find creative solutions together.

In what follows, we reflect on both the process of developing such a coherent design and the process of creating the content. We hope that this will provide museum practitioners, educators and designers with useful insights into the process of designing a museum app for political engagement, and an opportunity to reflect on the challenges involved.

Technical Structures and Choices

When creating an app, some decisions – such as whether the app should be a 'native app' or a 'web-based app' – need to be made at the very beginning of the process. After an initial consultation between the researchers and the team from Fluxguide, we decided on a native mobile app that works without an internet connection. Once content is downloaded, users can use the product offline, which is

Selecting a location within the app, Screenshot
© CHAPTER

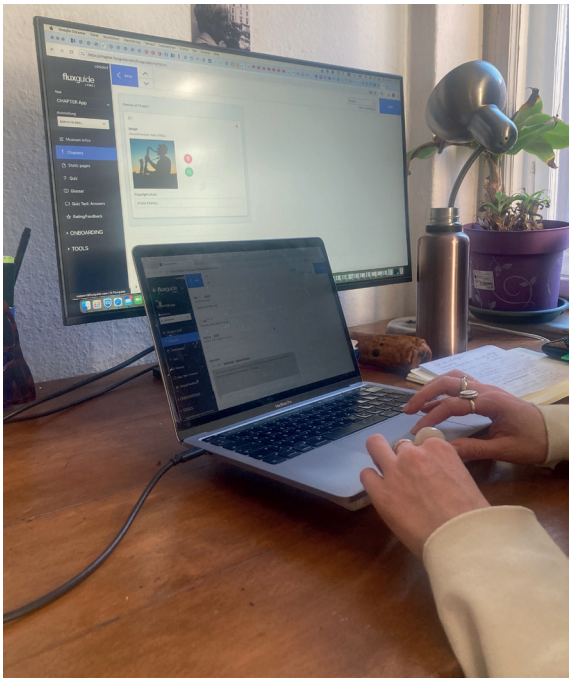
preferable for museums with no or unstable Wi-Fi connections. In the initial planning phase, we also decided not to use more complex technologies such as virtual reality or augmented reality (VR/AR). Instead, we wanted to focus on a 'simple' app that would be easier (and less expensive) to replicate in similar projects in the future. While some museum apps use strong visual effects via VR/AR, our own goal was to engage young adult visitors through a simple but effective social media aesthetic and meaningful interactions on an epistemic and emotional level.

Before designing the interactions and content, we had to develop a working structure for the app. The app starts with an introductory animation, followed by a limited number of introductory slides explaining what the app is about. In the following overview screen, users can choose between the three museums.

Each museum is assigned a specific colour (which also characterises the design of the content for that museum). After selecting a museum, the user is presented with a further selection of introductory slides that briefly introduce the museum or exhibition and offer some additional guidance. After viewing these slides, the user is presented with a selection of chapters: each chapter has a title and an image. Users can browse through the chapters chronologically or select the chapters that interest them most. Within each chapter, they are directed to a different exhibit or space within the exhibition, followed by different types of interaction and different types of content, which we will outline below. In addition to these core elements, there is a menu that allows users to access the acknowledgements, the imprint, the privacy policy, the glossary, and functions to switch languages, switch to another museum, or provide feedback to the developers.

Content-Management-System and Types of Interaction

At the heart of the app's backend is a content management system (CMS) provided by our partners at Fluxguide. The CMS was essential to the process of designing the app, as it allowed our researchers to explore how to structure the content for each chapter in their own



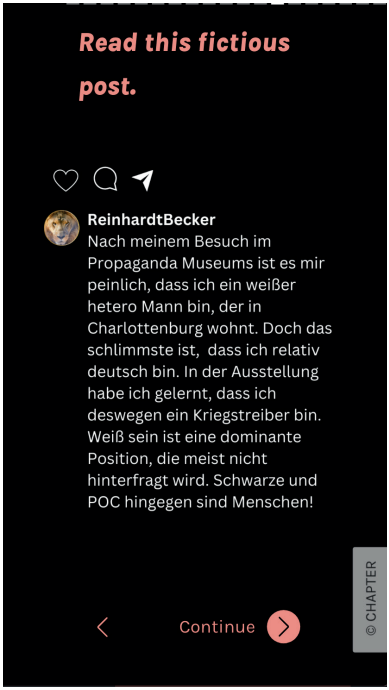
Working with the content management system
© CHAPTER

way. They were able to try different solutions and test the results immediately, enabling an iterative process of content design over several months.

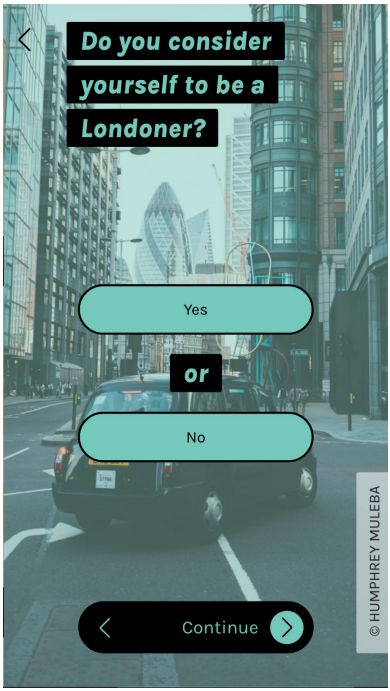
The CMS also provided a crucial basis for the co-design of our app, which followed the initial design process and is described in more detail below. In the initial planning phase, our research team was able to choose from a given set of potential tasks and interactions that could be included in the app. In the CMS, these types of interactions are organised as 'pages' or 'slides'. Each chapter then contains several of these slides in the social media aesthetic we chose. Each slide has different technical functions, which can be broadly categorised as **a) slides that focus on textual and visual content** (such as large/small images, text, headings, hyperlinks and links to the glossary), **b) interactive quiz slides** (multiple choice, single choice, a matching matrix, a 'hotspot' function to detect details in images, etc.), **c) slides that work with emojis and a responsive 'instant feedback' feature** that allows users to see the responses of previous users, **d) slides that allow users to express their opinions** in an open text form visible to other users (approved by the researchers to prevent misuse), and **e) opening and closing slides** (providing further information such as a warning about sensitive content at the beginning of a chapter or closing slides that mark the end

of a chapter). While most of these features were already in the Fluxguide CMS repertoire, they were aesthetically adapted to our needs. In addition, the emoji-based functions were a new type of interaction designed specifically for the CHAPTER App. The combination of different slides and the flexibility to make changes proved to be useful and sufficient for our purposes.

Social Media Inspired Design



We opted for an intuitive social media design that would appeal to our young target audience through its aesthetic. Fluxguide created a style optimised for smartphones and inspired by apps such as Instagram and TikTok. This includes features such as a sliding function to navigate through content, as well as vertical images, modern sans-serif fonts, playful colours, smooth buttons, and emojis familiar to our target group – in sum, a style that feels accessible and natural to 'digital natives'. While profes-

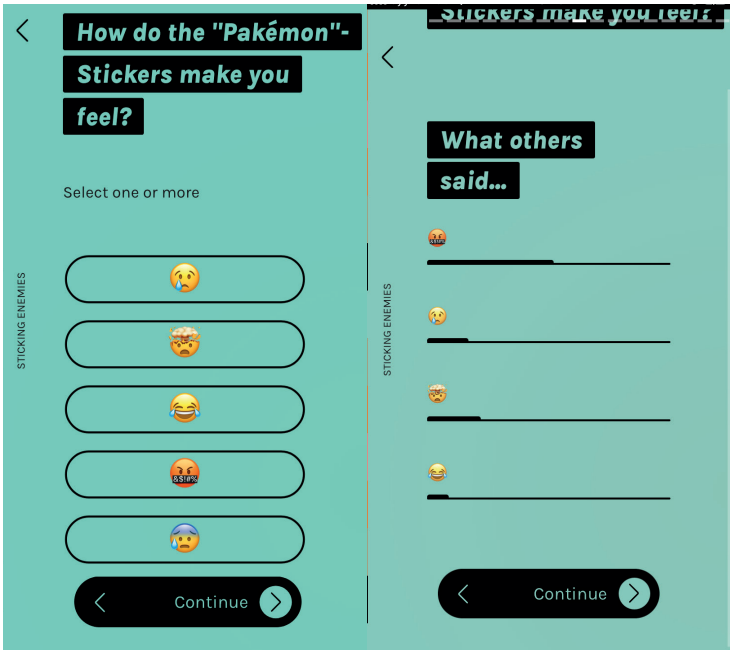


Screenshots of the CHAPTER app with a social media inspired design © CHAPTER

sional design is a significant cost factor in the development of museum apps, our user evaluation of the app showed that it is a crucial factor for a positive user experience. Especially when developing an app for a young audience, a visually appealing design is highly relevant to encourage engagement.

Addressing Emotions

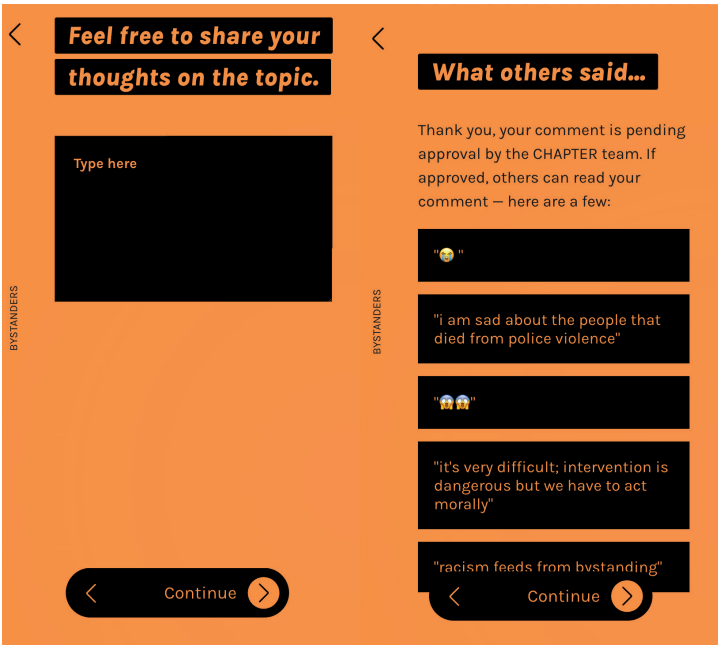
Our fieldwork in and with museums has shown us that various museum objects and spaces possess the potential to address topics of populist truth-making both epistemically and emotionally. Mobile applications can make use of these affordances by addressing and playing with them. More specifically, apps can introduce their own emotional affordances. For example, single and multiple choice answers based on emojis and/or functions that enable users to leave text-based comments allowed us to inspire users to reflect upon their own feelings regarding specific issues related to populism. In the case of using emojis, there is of course only a limited selection of visual symbols available, which some visitors might experience as restrictive in terms of their emotional expression. At the same time, emojis can be inspiring, especially for young adult visitors, because they rely on emotional affordances that are also part of these users'



Screenshots of content that addresses emotions in the chapter 'Sticking Enemies' © CHAPTER

everyday lives. The slides with emojis or options for textual expression are designed in such a way that other users are able to see how users before them felt about the issue. The app shows which emojis others have used, or it shows texts written by others (which have previously been checked by our team via the CMS to ensure that they do not contain inappropriate content).

By enabling visitors to express themselves emotionally and making these expressions visible to other users, we wanted to create not only an individual but also a social reflection on the feelings and emotions associated with populism. In this process, we created synergies between the emotional affordances of specific museum objects (e.g., an object that is linked to practices of exclusion and 'othering' against minorities) and the emotional affordances of the app (e.g., using emojis to inspire emotional reflection about the object). In our app, we tried to use these synergies to inspire critical reflection about the role of emotions in populist truth-making (e.g., how polarizing emotions



Screenshot of textual expressions by users © CHAPTER

against minorities are mobilized). We believe that such an approach can be applied to different exhibitions, regardless of their type and size, and can be used to address not only populism, but potentially a wider range of contested political issues.

From Gamification to Reflection

Another important factor influencing the design process was that populism relies on strong and morally charged binaries, which led us to try to avoid such binaries in our own app. Therefore, we decided to go beyond the logic of 'right' and 'wrong' answers combined with a (morally charged) reward system. We wanted to avoid the typical gamification logic that often characterises museum apps: the CHAPTER App is not about collecting points to win a game, but about having an emotional and epistemic experience that encourages critical reflection. The chapters, with their various tasks, do not just aim to answer questions by 'lecturing' users about populism, but are designed to encourage us-

ers to ask critical questions about populism in their own everyday lives. This is also closely related to encouraging users to express their feelings about certain issues and content, rather than just assessing their prior knowledge or what they have learned from the app. Combining 'classic' task-based interactions with sections aimed at epistemic and emotional reflection has proven to be an effective way to achieve these goals. We believe that this combination could also serve as a model for other museum apps that aim to inspire political engagement with contentious contemporary issues.

Key Points:

- Collaboration between researchers and/or museum staff on the one hand and software development teams on the other is both a necessary and challenging part of designing museum applications. Collaboration requires a willingness to find a common language and to compromise where necessary.
- An app based on a content management system (CMS) is extremely helpful for successful collaboration between researchers/museum staff and software designers. It allows designers to work on key technical challenges related to specific formats, while researchers can flexibly test these formats and try out different types of content.
- In our view, an app for political engagement does not need high-end and expensive technological features such as VR/AR. While these may be interesting options for some well-funded museums, we hope our project shows that young audiences can be successfully engaged with a 'low-tech' app based mainly on images, text, and interactive formats. It is worth investing time and resources in developing interesting, challenging, and engaging interaction formats rather than focusing on seemingly 'spectacular' effects.
- An aesthetically pleasing, coherent design was rated very positively by our users and clearly improved the visitor experience. If the aim is to attract a young audience, it is helpful to base the design on a social media aesthetic. While good visual design is expensive, it seems to be a crucial factor for young audiences to take the app 'seriously' and feel engaged by its content.

- It is very productive to use the emotional affordances of an app and create synergies with the emotional affordances of museum objects to address the emotional dimension of contentious political issues. In our case, we developed interaction formats based on emojis and open text answers that allowed visitors to reflect individually and dialogically on their feelings related to populism – this approach was experienced as very positive in the evaluation by the app's users.
- As our project demonstrates, it is very possible to design an engaging museum app that goes beyond the gamification logic (in the sense of earning points to win a game) that characterises many museum apps. Instead, a museum app for political engagement can successfully create more holistic epistemic and emotional experiences that can inspire critical reflection on contentious political issues.

3.2 Crafting Content

While our partners at Fluxguide provided the technical framework for our app, the research team focused on the creation of its content. The aim was to use the affordances of the app and its functions in such a way as to engage users in interactions with the affordances of specific museum exhibits or spaces. This aim works to inspire users to critically reflect on the different facets of populist truth-making. During the period of content creation, the research team met regularly to exchange ideas. A reflexive process of content development in a diverse team of four researchers (and four Principal Investigators) requires a considerable amount of time and planning. Later, when discussing the relationship between the app and the exhibition, we were also advised by museum professionals from the three museums. During the content creation process, we created extensive Excel spreadsheets to organise and track all the necessary information and examples, which were then integrated into the app via the CMS. These spreadsheets were also used to translate the content into the different languages.

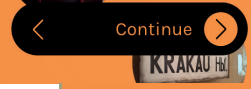
Combining Different Types of Content

When designing the content for individual chapters, our researchers departed from selected exhibits and 'matched' them with one or several facets of populist truth-making. The researchers then designed each chapter based on the emotional and epistemic affordances of the exhibit and its synergies with the affordances of our digital application.

The chapters follow different patterns, but they all contain a recurring set of key types of content. The first type (usually at the beginning of a chapter) is **content that introduces the object and provides contextual information**. This is often interwoven with **content that explores and/or builds relationships between users and the object**. This can be achieved by asking for the user's opinion about the object, or by using interactive game-like tasks to engage with the user. This type of content can also include (or be enhanced by) **content that encourages epistemic and emotional reflection**, for example by asking for personal feelings and showing what others have felt or thought. In many cases, the chapters also include **content that draws connections between the object and examples from users' everyday lives**. For example, a chapter on how populism can instrumentalise everyday objects such as food begins with a question about visitors' eating habits and links them to a 'tasting station' in the 'BERLIN GLOBAL' exhibition. A chapter on populist noise and intimidation, to take another example, begins with personal questions about experiences with bullying and bystanders at school, before linking to an exhibition on bystanders during the Second World War. Many more examples could be given here. While the content of each chapter usually begins with a focus on the object in its original context and how it relates (or can relate) to the users and their everyday experiences, each chapter follows with **content that draws connections between the example(s) and concrete facets of populist truth-making**. Here, the app either relies on concrete examples that demonstrate populist truth-making and/or it discusses broader populist dynamics on a more general level. In some cases, the chapters are concluded with **content that is intended to stimulate further reflection and**

SYMBOLS AND FLAGS

It's photo time! Which objects from the exhibition would you share on your social media?



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SYMBOLS AND FLAGS

Strong Symbols

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Drag the slider to review a different version of the image...

Continue

Did you already discover the

SYMBOLS AND FLAGS

How do you feel when looking at the flags and touching them?

Select one or more

😍

🤯

😭

🤮

😈

Continue

Look at this post

MuseumLover
F*** Nazis - Love Museums, hate Facism #kraków #schindlersfactory #history

Continue

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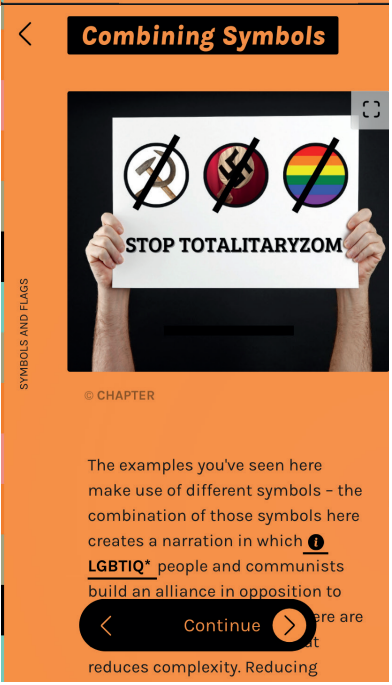


Screenshots of the chapter 'Symbols and Flags' for Oskar Schindler's Enamel Factory in Kraków © CHAPTER

discussion beyond the app, e.g., as a discussion between a group of visitors who might use the app together.

One important issue with this strategy for designing content was that the different facets of populist truth-making are highly interconnected. Reflecting this interdependence, the app does not treat the facets as separate entities. Concretely, this means that some chapters address several facets at once, depending on the affordances of the object and how they resonate with the examples presented in that chapter. For us, the strategy of being less strict about creating explicit matches between objects and facets and instead focusing on enriching the experience of each chapter, was the most effective way to achieve our goals.

A more detailed example will help to illustrate how this process of content-crafting was realised in practice. One of the selected objects from the exhibition at Oskar Schindler's Enamel Factory is a flag with a large swastika displayed in one of the exhibition rooms. When Nazi Germany occupied Poland from 1939, such flags were covered up by the authorities. The object, with its politically charged symbolism, often attracts the attention of visitors, many of whom share photos they have taken with the object on social media platforms, often positioning themselves (emotionally) with the symbol. Such practices are referred to in our chapter on symbols and flags in the app. First, visitors are shown a couple of images and asked which one they would be most likely to post on their social media account – the swastika flag is one of the examples (**content that explores and/or builds relationships between users and the object** *and* **content that draws connections between the object and examples from users' everyday lives**). Users are then invited to approach the flags in the exhibition while a visual slider in the app shows a historical image of how these flags were displayed in the streets of Kraków during the Nazi occupation (**content that introduces the object and provides contextual information**). This is immediately followed by a question about how the user feels when looking at and touching the flag (**content that encourages epistemic and emotional reflection**). After some images showing

how other users react to the flags on social media, the chapter moves on to interactive tasks about the role of symbols in political and social communication on a more general level. It then explains how populist truth-making often relies on symbols that are used in a simplifying way that reduces complexity while being emotionally charged, often serving as an anchor point for political identification (as in the case of the swastika flag), but also for the stigmatization of the 'other' (**content that draws connections between the example(s) and concrete facets of populist truth-making**). Finally, the app asks users to consider how symbols are used in public spaces in their own daily lives (**content that is intended to stimulate further reflection and discussion beyond the app**). In this way, the original object in the museum serves as an anchor point to question the role of symbols in populist simplification beyond the original context of the object within the exhibition.

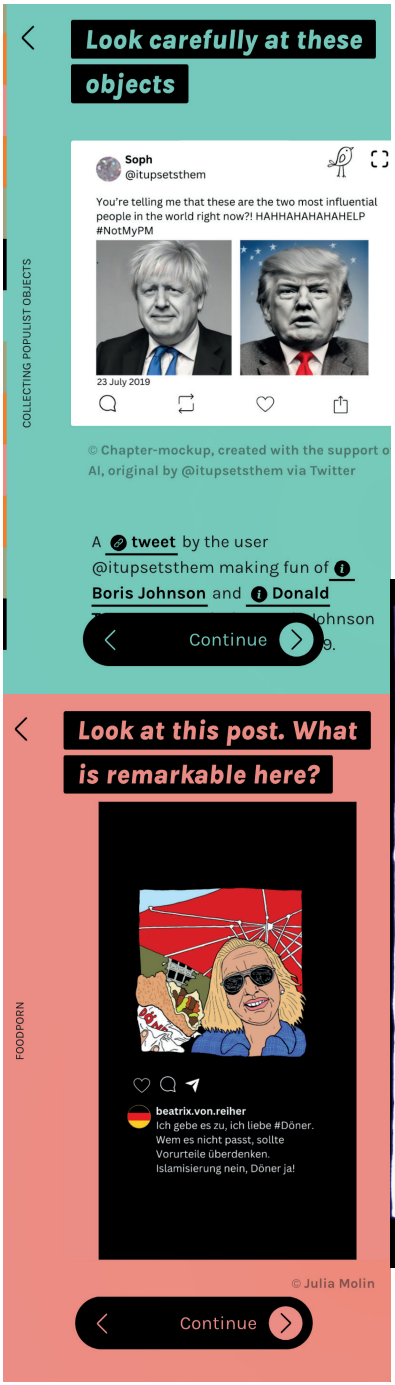
Avoiding Binaries

In creating content for an app that deals with contentious political issues, we were repeatedly faced with a key challenge: Populism relies heavily on morally charged binaries that are often oversimplified. At the same time, a museum app requires a degree of simplification and illustrative examples to make an effective argument without overwhelming users with too much information. This makes it difficult to name and represent populist actors and practices without reproducing the same binary logics. For example, it may be necessary to use real-life examples to illustrate the dangers of populist politics. However, such an approach runs the risk of becoming a form of 'blaming' and stigmatisation that achieves the opposite of what the app aims to do. We designed the app to explain and illustrate the mechanisms, strategies and discourses of populism, not to blame individual actors or parties. This is particularly important as populist actors often portray themselves as victims of an oppressive system that unfairly delegitimises them. Blaming and stigmatising populists could therefore inadvertently reinforce a populist narrative. Thus, it was crucial for us to strike the right balance between concrete representations of pop-

ulism through real-life examples on the one hand, and differentiated explanations of how these examples represent specific kinds of populist truth-making on the other. We therefore decided to use a mixture of real and fictional examples. The real-life examples were intended to show that many of the practices we describe in the app are actually carried out by populist actors. The hypothetical examples ('Imagine a case in which...') were intended to demonstrate general principles of how populism works. The aim of such fictional examples was not simply to confirm users' assumptions that certain political actors and parties are 'populist', but to enable them to recognise populism in practice – even where it is not typically expected – and to ask critical questions about it.

Copyright Questions

The creation and implementation of different types of content raises many copyright issues, particularly where images are used as examples. We cannot discuss these in detail here, nor can we provide legal advice to readers. However, we would like to comment briefly on our own experience. When it comes to copyright, German law distinguishes between publications or technologies with an educational and/or scientific purpose on the one hand, and formats with a commercial interest on the other. For the former, the use of visual quotations (e.g., using original social media posts as examples) is possible, for the latter it is much more restricted. Our CHAPTER App is non-commercial and has educational purposes, but it must be available on the public App Store and Google Play Store, which makes its legal status difficult to assess. In our case, different legal advisors gave different opinions on the copyright implications, leaving the exact legal status of the app content unresolved. We therefore decided not to work with direct quotations and did not use any original source material (such as images from social media posts) in the app. Instead, we worked with copyright-free visual material – crediting authors and titles of works where available – or created our own illustrations or mock-ups of original examples. We experimented with gen-



Mock-ups created with generative AI and illustrations created by Julia Molin © CHAPTER

erative AI to create mock-ups with limited success, so we also hired a professional illustrator for some of the necessary illustrations. In many cases, the illustrations in the app relate to a concrete/real-life example that was available as an online resource at the time the app was designed. Along with the illustrations, we have also provided links to the original examples so that users can use them as reference points. This strategy allowed us to refer to real examples and illustrate these exam-

ples (with mock-ups or illustrations) without taking unnecessary legal risks. For photographs of objects in the exhibitions, we communicated closely with the museum staff and obtained permission to use images of the exhibits, in some cases requiring minor adjustments to our original plans.

Key Points:

- Creating content for a museum app that deals with political issues beyond the thematic scope of an exhibition takes a lot of time and resources, especially when several researchers and museums are involved.
- Simple tools such as Excel spreadsheets can support the process and work well with a content management system (CMS). In our case, this combination was sufficient for a multi-researcher project involving three different museums.
- An app for political engagement is always going to include a variety of different types of content. In the case of our own project, we created different types of content that recur in each chapter in order to inspire reflection about different facets of populist truth-making. The different types of content allowed us to build relationships between objects/exhibits and users, to inform about the objects, to inspire epistemic and emotional reflection, to draw connections between museum objects and facets of populist truth-making, to connect the political issues addressed by the app to users' everyday lives, and to inspire further reflection and discussion beyond the app.
- A key challenge for apps dealing with political issues is to avoid reproducing the problematic practices they are trying to raise awareness about. In our case, it was a very difficult balance to show how populism works without reproducing a binary logic. There is no clear solution to this problem. We opted for a mix of concrete real-life examples (pointing to specific cases) and fictional examples (not pointing the finger at specific actors or groups, but demonstrating general principles of populism).
- Copyright issues are very complex and can be a barrier to content exploration and selection, especially when the content is visual. In the case of our project, many legal questions could not be clearly resolved

by legal advisors. We therefore opted for a safe and transparent handling of the content through a mix of Creative Commons resources and our own mock-ups or illustrations. This approach worked well for our own needs and allowed us to publish an app with a rich spectrum of visual examples.

4 Co-Designing the Final App Version

Participatory co-design was an integral part of the CHAPTER project. We originally planned to work with young adult visitors both in designing the prototype for the app and in evaluating it in the museums over the subsequent years of the project. The Covid-19 pandemic limited this plan, and the initial design process could only involve a limited number of people from the target group, represented by our own student assistants. However, in the second half of the project, we were able to organise an ambitious co-design process that built on the initial version of the app and incorporated many of the changes and additions made by our participants.

App-Testing at the exhibition 'BERLIN GLOBAL' © Nicolas Dittgen

4.1 Participatory Design of a Museum App

After the prototype of the app was completed at the end of the first half of the project, several co-design sessions were organised on site at the museums in Kraków and Berlin, and in university spaces in London (where the app was not tied to a specific physical location). We worked with around 90 young adult visitors spread across the three locations.

The Co-Design Process

The co-design sessions with focus groups in Germany, the UK, and Poland followed a standardised pattern. We invited visitor groups of young students from university seminars, schools and other groups (e.g., museum activists). Some of the co-design sessions were also attended by museum staff, such as curators, PR managers, etc., who provided feedback in several iterative rounds.

Participants were first asked to install the app prototype on their own devices and were introduced to the context of the app. The researchers then accompanied groups of visitors and observed their interactions – in the case of Berlin and Kraków, these were interactions with

Co-Design Session at the Humboldt University, Berlin © CHAPTER

the app within the physical museum spaces. Prior to each co-design session, the researchers defined a number of chapters for the group to focus on. After going through each relevant chapter, the participants gathered for short feedback sessions with standardised questions about usability, learning effects, and an assessment of what the users liked and what they felt was missing.

In the second step (which was not possible for all, but for most of the groups), the museum visit was followed by the more intensive co-design session(s). In these sessions, groups of young students focused on improving selected chapters. For this purpose, our student assistants Antonia Schnell and Jasmin Kellmann provided the participants with a so-called 'app construction kit.' This kit visualised the different types of slides (see 3.1) that were included in the CMS, either in digital form (through digital templates created using the software Canva) or in analogue form (through printed posters that represented different slides and that participants could work with). In this way, participants could use either their own equipment, such as laptops, or analogue paper and pencils to work out their ideas for improving a particular chapter.

Suggestions made by participants through their kits were then discussed by the researchers and incorporated into the app in real time. The CMS allowed the researchers to make such changes in a copy version of the original chapter. In this way, participants could immediately test how their suggested changes would look in the app. The researchers tracked all suggested changes in Excel spreadsheets and recorded and transcribed the focus group discussions, later analysing the feedback and criticism expressed here. Based on their notes and reflections, the researchers decided which changes suggested by the participants to keep and which to discard for the next iterative version of the app to be used by the next group of participants.

Many of the changes that the participants developed during this process were small improvements, but some of them significantly changed the course of the chapters. One group of students working with the Berlin version of the app were also asked to submit

suggestions for alternative and additional chapters after the visit, and one of these suggested new chapters made it into the final app (the 'Music is my first love' chapter for the Berlin museum), demonstrating that the co-design process was not only a way to review and improve, but also to significantly enhance the app and its content.

Challenges of Participatory Projects in the Museum Context

Participation and the involvement of different communities in museum activities are part of the work and values of museums, which is also evident in the ICOM definition of a museum. While it is not possible here to discuss the growing body of academic research that critically reflects on the (in)value of participatory projects, we would like to briefly reflect on our own experiences with some of the challenges of co-design.

The first key question was to decide **who should participate in the co-design sessions**. First and foremost, participatory projects need participants who volunteer to contribute and spend time on the projects. In the case of museum apps, these are more likely to have a relatively educated background and a pre-existing interest in museums. When trying to engage more diverse groups from different backgrounds beyond the usual museum-going communities, the challenge is how to motivate these groups to participate in an environment in which they are not already interested. One option is to reward participants financially, and the need to fairly compensate participants for their time and work is certainly an argument worth considering. However, the option of compensating participants financially is also controversial, not only because the necessary funds are often lacking, but also because it can significantly influence the outcome of participation. In our case, we decided not to offer financial compensation for participation, but to focus on voluntary participation. This meant that many of our participants were school or university students, which can mean that they bring a different mindset and expectations to the co-design process than other visitors (e.g., treating it as an 'assignment'). At the same time, this allowed us to explore how the app relates to practices such as 'critical

Co-Design in London © CHAPTER

thinking' that school and university students are often familiar with or learning about.

A second key question for us was **how many participants a co-design group should have**. Initially, we planned to work only with large school groups. After trying out co-design sessions with both large and small groups, it soon became clear that groups of three to five people per accompanying researcher were the most feasible and productive (e.g., a larger group of 12–15 participants was feasible with three researchers present). In contrast, working with large groups, such as school groups of up to 20 people, with only one accompanying researcher was very challenging, as it was difficult for the researchers to observe and communicate successfully with individual participants.

Another question was **how long a co-design session should be**. In many cases, we worked with students from university seminars, which allowed us to prepare the students intensively for the co-design sessions. A combination of a museum visit followed by one or more co-design sessions is time consuming, at least one or two full days should be allowed for. In other groups that followed an open call for participation, such an intensive form of co-design over several days was not feasible.

A key challenge for the co-design process was also to address the question of who has the curatorial authority to implement changes. On the one hand, our participatory project (like many other similar projects) aimed to give participants curatorial agency, to take their ideas and suggestions seriously, and to implement them in the final

App Testing at Oskar Schindler's Enamel Factory in Kraków © CHAPTER

version of the app wherever possible. On the other hand, participants often did not have much time to think through the changes they were suggesting, and their knowledge of the different implications of certain decisions was more limited than that of the researchers who had been working on the app for several months. In some cases, the critical thinking and suggestions of museum staff also had to be taken into account when considering certain changes. Ultimately, our researchers in each museum (Alice Millar for London, Marlena Nikody for Kraków, and Pia Schramm and Julia Leser for Berlin) had to make individual decisions about which of the changes and additions suggested by our participants to keep and which to discard for the next version of the app. In our view, however, this does not undermine the participatory nature of the project if the researchers/curators in charge of these decisions still carefully consider the suggestions and weigh them against other pros and cons that arise in the larger context of the app and the respective museums.

Key Points:

- Co-designing an app with participatory groups needs to be well planned and requires significant financial and human resources.
- Creating a digital and/or analogue toolkit that represents the types of interactions and/or content used in an app can enable participants to better understand the app's structure and to start working on content without much need for technical explanations (e.g., of the CMS system).
- Participatory projects face challenging questions about who should participate and whether or not participants should be compensated for their work. The focus of our own project was on participants who took part voluntarily and without financial compensation.
- Determining the right group size for a participatory project can be difficult. In our own project, we found that working with large groups can be very challenging and that working more in depth with smaller groups was more efficient and productive.
- Another challenge for participatory projects is the question of the duration of participation. Our own experience is that it is difficult to moti-

vate groups to engage in long co-design sessions, but these sessions were most effective when participants worked on the project for one or two full days.

- Participatory projects raise questions about curatorial authority. Based on our experience with the CHAPTER App, we believe that it is possible to have researchers/curators make central decisions about the content of the app while still successfully maintaining the participatory character of the project, if the suggestions and changes made by participants are carefully considered and weighted against other factors.

4.2 Examples and Outcomes of the Co-Design Process

But how exactly did co-design benefit the development of the app? In what follows, we distinguish three types of outcomes. First, we will discuss how participants provided critical feedback that allowed researchers to make adjustments to the design. Second, we will discuss minor adjustments that were made directly by the participants – as these minor adjustments were of different types, we will focus on the specific case of adjustments related to the balance between simplification and complexity in the app. Thirdly, we will give an example of how participants created their own content for the app, using the case of the chapter 'Music is my first love' created by a group of students at the University of Tübingen.

Participants' Critical Feedback and Design Adjustments by Researchers

Co-design served as a process of qualitative evaluation, going beyond the typical statistical feedback that is often used as a means of evaluation for apps. In fact, our app included a statistical evaluation tool, but visitors rarely used this tool, and the quality of the feedback did not significantly help us to improve the app. Co-design, on the other hand, provided a rich selection of verbal and dialogic feedback from our target audience, which helped the researchers to

understand which parts of the app already worked well and which parts needed improvement.

Firstly, the feedback showed that the app was generally well received by a young audience and was well suited to promoting critical thinking about populist truth-making – this meant that our main goal with the initial design of the app had been achieved. In particular, the use of well-designed digital interactions was seen as enriching by participants. The evaluation also showed that engaging with and sharing different opinions and feelings created an immersive experience and encouraged reflexivity in thinking about populism. At the same time, the participatory evaluation highlighted certain issues that we needed to address. A key issue was the sensory overload that some users experienced when using the app. Especially in exhibition spaces with an immersive design and extensive use of technology, sound, lighting effects, etc., the use of a mobile application was perceived to be distracting and sensorially overwhelming. This is even more the case for our app than for standard museum apps, as it

Discussing the app in a feedback session at the exhibition BERLIN GLOBAL © CHAPTER

aims to add an extra layer to the existing exhibition. This means that the CHAPTER app requires users to concentrate on the content of the app while they are standing in museum spaces with strong sensory stimuli. Such effects were repeatedly described by our participants. In addition, the use of the CHAPTER app was experienced by some participants as physically demanding, linked to the lack of seating and quiet environments in which to use the app. In addition, the spatial orientation within the exhibition was described by some users as inadequate and the wayfinding function as irritating.

The feedback we received during co-design allowed us to address these issues through design changes. For example, in response to the issue of sensory overload, we embedded notes into the app encouraging users to move to quiet spaces, take breaks, and sit down regularly while using the app. In response to the wayfinding issues, to take another example, we changed the image-based navigation to text-based descriptions, encouraging users to explore the spaces themselves, which proved to work much better.

Concrete Adjustments: The Case of Complexity vs. Simplicity

Most participants went beyond providing feedback and engaged more deeply in a co-design process by making their own suggestions for possible changes to the app. A recurring question in this process was how complex or simple the content of the different chapters should be. As mentioned above, the initial design of each chapter was a constant balancing act between the need for complexity in order to adequately convey knowledge about populism, and simplification in order to make the app accessible and engaging. This balancing act was particularly difficult because the question of complexity vs. simplification depends on the educational background of the users, their attention span and their familiarity with digital media.

In the case of the CHAPTER project, we defined our core target audience as a young, 'digital native' audience of museum visitors aged 18–26 ('young adults'), although the app should also appeal to

App Testing with a group of students from Humboldt University © CHAPTER

younger audiences (14–18 years) and audiences above our target audience (27+ years). Having grown up with image-based social media platforms, our core audience is said to be less tempted to read long texts, with some studies even claiming a correlation between decreasing average attention spans and the use of social media platforms. Our initial plan was to work with video and keep text to a minimum. However, it turned out that creating mainly video content was not feasible. Instead, we focused on making textual content as accessible and engaging as possible for our target group, frequently embedded various images and illustrations, and put a strong emphasis on interactive engagement through playful tasks. One of the key questions was how much text young users were willing and able to read, and how complex or simple these texts needed to be in order to be both informative and engaging, but not too overwhelming, for the target audience.

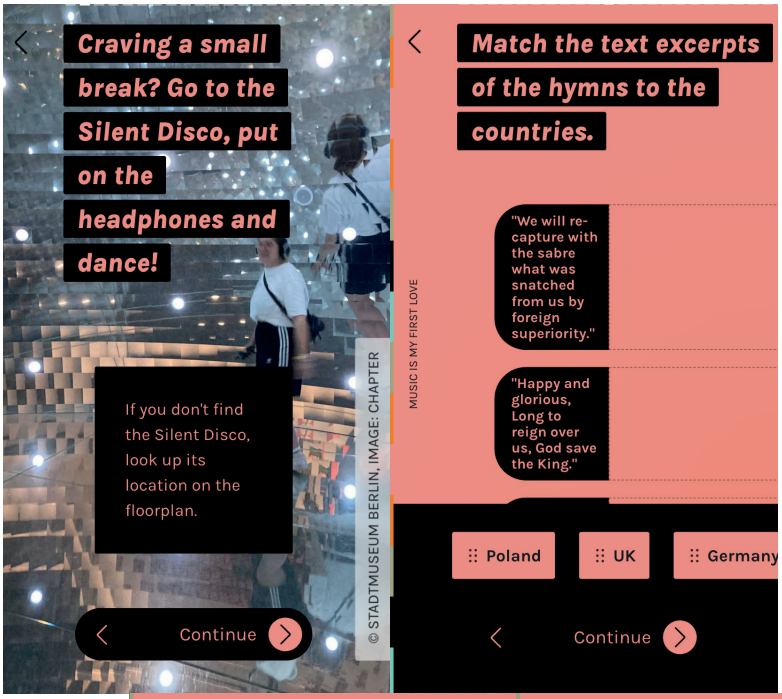
Co-design offered a unique opportunity to address this issue, as the app's target audience could be directly involved in making decisions about it. In the case of our test users, most of them had a higher education qualification (e.g., A-levels) or were enrolled as students at a university, which often meant that there was a pre-existing affinity with education (and museums) that certainly shaped their feedback on the properties of the textual content in the app. In the case of the Berlin co-design, participants did not feel that the amount and density of textual content in our app was too much, but that it was appropriate or even too little. For example, a co-design group in Berlin working on the 'Revolutionary Posters' chapter (focusing on various political posters dating back to the founding of the Weimar Republic) changed our rather simple and short introduction to this period of German history into a more complex introduction to the characteristics of the period. While the researchers had previously assumed that too much contextualisation would be perceived as boring and therefore skipped by users, our participants felt it was imperative to introduce more complexity. We adapted their suggestion for the next iteration of the app. However, this does not mean that the textual content was always perceived as too simple. In other cases, such as the London co-design process, some

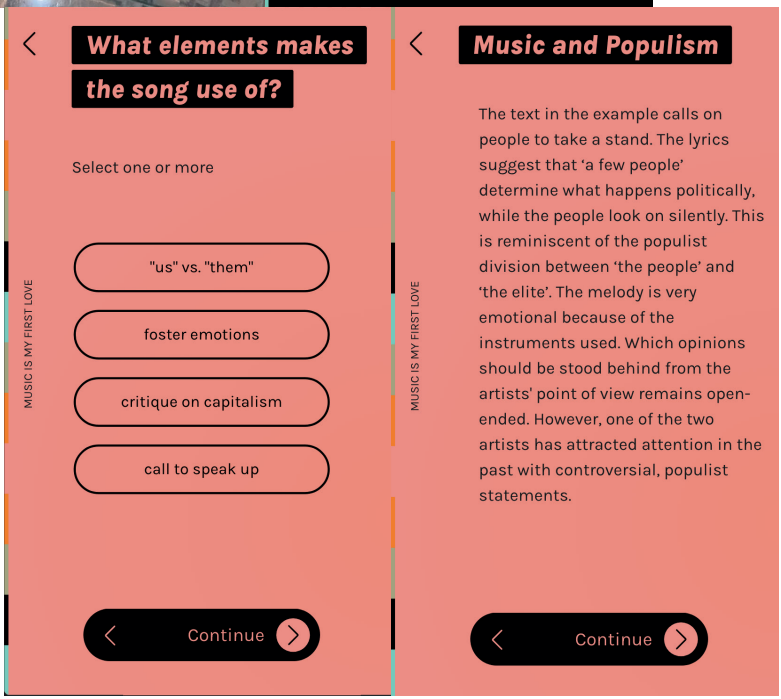
texts were instead simplified because participants felt they were too complex or too long. This means that co-design does not offer linear or general design solutions, but it can help to identify individual solutions to individual problems related to specific pieces of content.

App Content Created by Participants

The most involved method of co-design was to invite participants to build new chapters from scratch. We experimented with this approach with a group of students from the University of Tübingen. The group met for several preparation sessions before visiting the exhibition in Berlin, carried out two half days of co-design with minor adaptations, and then worked at home on conceptualising and creating their own chapters. The work on their own chapters was done in groups. The result of this process was a variation of often very good content full of creative ideas. None of the drafts for new chapters were final or 'polished', but they showed the potential of involving the audience in the design of the app's content, provided they are able to invest a significant amount of work in the process. While we were not able to incorporate several of these suggestions into the final app (due to our own workload), we selected one of the suggestions that we felt best complemented the existing chapters in the Berlin section of the app.

The chapter 'Music is My First Love' was written by students of cultural anthropology: Eva Barsch, Marvin Feuerbacher and Lukas Weigold. After their draft was completed, our researcher (Pia Schramm) made further adjustments and optimised the draft to fit seamlessly into the framework of the app. The students' chapter takes the 'Silent Disco', a mirror-ball room at the 'BERLIN GLOBAL' exhibition, as a starting point for a critical reflection on the nation-building capacities of music. The 'silent disco' immerses visitors in a disco feeling, where they can listen to music through headphones provided, and the spatial design allows users to dance and enjoy themselves. The 'silent disco' is surrounded by a series of posters of artists who have played important concerts in Berlin's history. After an initial invitation to engage with





Screenshots of the chapter 'Music is my first Love' © CHAPTER

the 'silent disco', this chapter explores the function of emotion in music, using national anthems as an example. Links between identity and music are also drawn and problematised. Various popular songs dealing with belonging and identity are used as objects of investigation to show when and how music can (re)produce the populist distinction between 'us' and 'them'.

Key Points:

- Participatory co-design offers a great opportunity for developers and researchers to test a product 'live': technical bugs, malfunctioning, and content issues can be analysed through such a process.
- Co-design can help to refine and improve an app incrementally. For example, in our own co-design process, participants helped us to (re) balance complexity and simplification of texts within chapters.
- When participants invest a significant amount of time and work, the result can be very valuable additions and extensions to the original design and content. In our case, a group of participants redesigned a selection of chapters from scratch and one of these was implemented in the final app.

5 Outlook

Museums are political actors, places of societal participation, and spaces for exchange and dialogue. As public institutions, they have a responsibility to engage with a diverse society. Such values are threatened by populist politics that seek to divide society into morally charged, opposing categories by polarising and scapegoating the 'other'. The current political landscape in many European countries and beyond is marked by such efforts, highlighting the growing importance of institutions that facilitate exchange and dialogue. It is crucial that institutions such as museums contribute to a better understanding of the challenges posed by populist politics by identifying and making visible its strategies, rhetoric and practices.

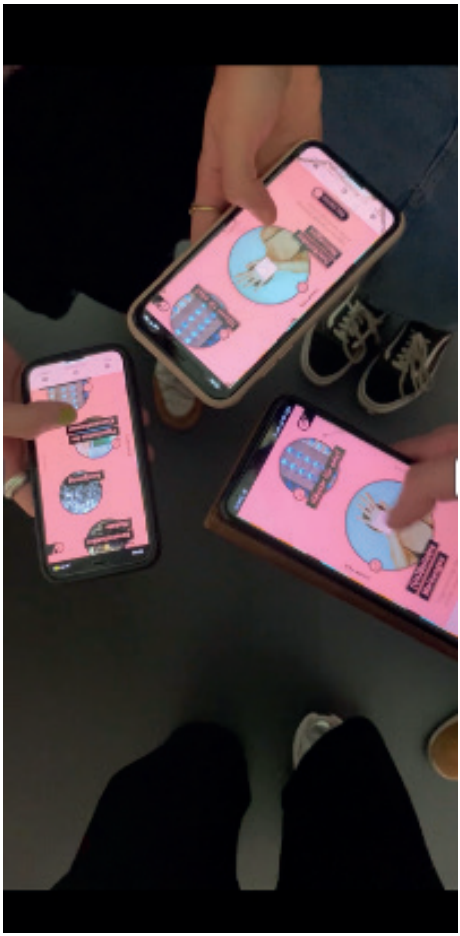
The CHAPTER project has demonstrated that mobile applications can enhance interaction and engagement with politically contentious

issues in museum spaces and inspire young audiences to think critically about complex issues such as populism. Exhibits (whether physical or born-digital) and museum spaces can provide entry points for deeper learning and reflection on issues beyond the thematic scope of an exhibition. Our app shows that museums, even those without existing politically themed exhibitions, can foster political engagement by incorporating an app as an additional interactive layer. Museums that want to add an app to their educational repertoire do not necessarily need to have a wide range of technologies, digital objects, or an immersive exhibition design. The targeted use of mobile applications in smaller or less digitised institutions can also be successful. Similarly, digital tools in museums do not necessarily have to be 'high-tech' applications incorporating technologies such as VR/AR. If used creatively, 'low-tech' mobile applications with interactive formats (questionnaires, interactive tasks, images, text blocks, hyperlinks) can provide an engaging, entertaining, and educational experience.

We suggest that a prior analysis of the emotional and epistemic affordances of museum spaces and objects is important here. Exploratory and ethnographic research on and with visitors can be a helpful approach to understanding these affordances: by observing how visitors engage in and with exhibitions, and asking them about their epistemic and emotional experiences, we can deepen our understanding of the knowledge and emotions that objects and spaces provide. Once these relations are analysed, the key challenge is to create synergies between the affordances of museum exhibits and spaces and the affordances of mobile applications. If successful, this strategy can create an emotional and epistemic experience for users that goes beyond gamification approaches (in the sense of 'winning' a game) and instead focuses on critical reflection. Involving participants from the target audience in the design and development process is a labour-intensive and costly process, but still useful and enriching for an app focused on political engagement. Not only does a co-design process allow for technical and content-related adjustments, but participation

can also incrementally improve the overall quality of the developed formats while adding new, innovative content.

While we believe that the CHAPTER App can serve as a good example of how museums can potentially address contentious political issues and promote political engagement (even beyond the scope of their current exhibitions), we also see clear limitations. The main limitation is that our app mainly resonates with an audience that is already receptive to a critical stance towards populism. Those who are already receptive to populist truth-making are less likely to use a museum app that critically engages with this issue. This raises the question of whether our app – and museum apps for political engagement in general – are doomed to mainly 'preach to the choir' by addressing issues that their audience is already aware of.



People testing the app at the exhibition BERLIN GLOBAL
© CHAPTER

There are two answers to this question. The first is that an app like ours could potentially be integrated into the curricula of school classes and university seminars with more diverse audiences with different political opinions, where it could reach more than the typical museum visitors. It was not within the scope of our project to achieve this goal, as this would require long-term strategies to be implemented through

partnerships between museums and educational institutions. Nevertheless, we hope that our app demonstrates the potential that museum apps could have for such collaborations.

The second answer is that even if it is 'preaching to the choir', a museum app for political engagement can have added value. Some of our co-design participants who had previous knowledge of populism felt that the app did not teach them anything completely new. However, it allowed them to look at museum collections in a new way that provides more in-depth knowledge about populism and inspires critical reflection on how emotions are involved in the different facets of populist truth-making. In short, a museum app obviously has clear limitations when it comes to inspiring engagement with contentious political issues. But – as our CHAPTER App hopefully demonstrates – museum apps can become one of several potential elements for sustainable educational strategies that are able to challenge problematic developments such as the rise of populism in European societies.

DIGITALES BILDKURATIEREN ALS BEREICHERUNG DES MUSEUMSBESUCHS

EIN FORSCHUNGSBASIERTES PORTFOLIO FÜR DIE ANGEWANDTE MUSEUMSARBEIT

CHRISTOPH BAREITHER, KATHARINA GEIS, SARAH ULLRICH, SHARON MACDONALD, KATRIN BRÜCK, LEONIE WINTERPACHT

Museum apps can serve as a useful tool for addressing issues beyond the scope of an exhibition, encouraging visitors to think critically about political issues while providing an engaging experience. This publication reflects on the potential and limitations of museum apps for political engagement. By documenting the development of the CHAPTER app, created as part of the research project „Challenging Populist Truth-Making in Europe," it offers practical inspiration for museum professionals, educators, and software developers interested in developing their own apps.

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