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Routledge Research in Digital Humanities

HIDDEN CITIES

**URBAN SPACE, GEOLOCATED APPS AND PUBLIC
HISTORY IN EARLY MODERN EUROPE**

Edited by
Fabrizio Nevola, David Rosenthal
and Nicholas Terpstra



Hidden Cities

This groundbreaking collection explores the convergence of the spatial and digital turns through a suite of smartphone apps (*Hidden Cities*) that present research-led itineraries in early modern cities as public history.

The *Hidden Cities* apps have expanded from an initial case example of Renaissance Florence to a further five historic European cities. This collection considers how the medium structures new methodologies for site-based historical research, while also providing a platform for public history experiences that go beyond typical heritage priorities. It also presents guidelines for user experience design that reconciles the interests of researchers and end users. A central section of the volume presents the underpinning original scholarship that shapes the locative app trails, illustrating how historical research can be translated into public-facing work. The final section examines how history, delivered in the format of geolocated apps, offers new opportunities for collaboration and innovation: from the creation of museums without walls, connecting objects in collections to their original settings, to informing decision-making in city tourism management.

Hidden Cities is a valuable resource for upper-level undergraduates, postgraduates, and scholars across a variety of disciplines, including urban history, public history, museum studies, art and architecture, and digital humanities.

Fabrizio Nevola is Professor of Art History and Visual Culture at the University of Exeter. His research focuses on urban and architectural history of early modern cities, with a particular attention on everyday life and public space in Italy, to which he also applies digital humanities approaches.

David Rosenthal is Research Associate at the University of Exeter. He works on urban social history in early modern Italy, with a focus on public space, ritual, and work. He co-created the *Hidden Florence* app with Fabrizio Nevola and is supervising editor of the *Hidden Cities* apps. He is currently editing a collection on disaster in the early modern world.

Nicholas Terpstra is Professor of History at the University of Toronto. He works at the intersections of gender, politics, charity, and religion in early modern Italy, focusing on civil and uncivil society, religious refugees, and the digital mapping of early modern social realities and relations.

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Hidden Cities

Urban Space, Geolocated Apps and Public History in Early Modern Europe

Edited by Fabrizio Nevola, David Rosenthal and Nicholas Terpstra

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Introduction

Fabrizio Nevola

Good day to you, traveller. Welcome to Exeter in this, the year fifteen hundred and eighty-eight – the thirtieth year of Queen Elizabeth’s reign. My name is Thomas Greenwood . . . at your service.

Ah, I see you’ve already got yourself a copy of Mr John Hooker’s splendid new map. Only the best cities have these.

So begins the *Hidden Exeter* trail led by Thomas Greenwood, a haberdasher and city administrator, who guides the visitor through the streets of Exeter in the year 1588. These two short opening lines introduce the key concepts at the heart of all the *Hidden Cities* apps – led by “contemporary” historical guides and making use of historical maps – the modern-day user can explore the city informed by research-based interpretation trail that makes use of relatively simple augmented reality (AR) features enabled by the affordances of smartphones (Fig. 0.1). Though not fully immersive, the guides enable the user to visit a city using maps created over 400 years ago in the company of a guide from a similar period – a technology-mediated form of time travel. In so doing, the apps propose an experience-based approach to understanding the built environment and material culture of public space that is layered into the historic fabric of cities, using location services (GPS) to trigger audio tracks at specific points of interest. Broadly speaking, each walk in the *Hidden Cities* apps is structured as an itinerary that is built up through the character’s comments, additional audio content provided in short expert “discover more” pieces and is supported by a linked website where the more interested user can explore a wealth of further research, presented in the form of short articles with related images.¹

Hidden Florence was the first of six *Hidden Cities* apps, with new cities to come.² Back in 2013, it began as an experiment in how increasingly ubiqui-

1 Currently, *Hidden Florence* is a stand-alone app with its own website (www.hiddenflorence.org); the *Hidden Cities* website (www.hiddencities.eu) supports the apps for Deventer, Exeter, Hamburg, Trento and Valencia. All the apps can be downloaded free for iPhone and Android devices on App-Store and GooglePlay.

2 Work is currently ongoing for Copenhagen and planned for Tours and Venice (2022).



Figure 0.1 Film still from promotional film created for the *Hidden Exeter* app, 2021. © Freshground films and University of Exeter

tous consumer handheld devices – their camera, high-quality screen, audio and above all the location services that drive all mapping features they provide – could be harnessed within the context of writing and presenting early modern urban history. From the outset, *Hidden Florence* was a research collaboration between humanities academics and Calvium, then a small software company specialised in location-based apps, with a focus on user experience design (UX).³ Thanks to initial funding from the UK Arts and Humanities Research Council (AHRC), Fabrizio Nevola and David Rosenthal worked with Calvium to develop, over the period of a few months, the first version of the app that included two walks led by a late-fifteenth-century woolworker we named Giovanni. Our woolworker was a compound character, drawn from multiple archival sources, and able to illuminate the visitor’s understanding of Renaissance Florence from a more marginal position than the privileged viewpoint often favoured by guides and scholarly treatments of the marvels of the “cradle of the Renaissance”. By placing Giovanni in particular places, the positionality of the character (and to an extent the researcher voicing them) stands out – offering the critical stance of a disenfranchised worker, while yet engaging with elite or monumental sites or guiding the user around his home neighbourhood outside the city’s monumental centre.⁴ Some years later (in 2018), generous further

3 Calvium have grown considerably since (www.calvium.com); see Chapter 2 by Jo Morrison.

4 Discussed further in the comments that follow, the theoretical framing of this “everyday” guide is discussed in greater detail in two earlier articles: Fabrizio Nevola, ‘Microstoria 2.0: Geo-locating Renaissance Spatial and Architectural History’, in *Early Modern Studies after the Digital Turn*, ed.

funding from the AHRC enabled us to bring together an expanded group of experts of Renaissance Florence in partnership with Nicholas Terpstra and his DECIMA research group at the University of Toronto, to create a series of new itineraries within the *Hidden Florence* app (published 2019).⁵ This scaling up of the project, to include new researchers and much more content, was matched by a change to the app design that allowed it to present a number of characters that the user can select from (Fig. 0.2). As is discussed further subsequently, this scaling up also meant that we needed to refine our working methods to communicate our approach to the larger team, while also being somewhat adaptable to the different ideas and responses that they proposed. In adapting the app format, we sought to accommodate a wider variety of contemporary voices or perspectives, to include elite and non-elite, male and female characters, as well as voices that articulated institutional order as much as subaltern or critical viewpoints.

The most recent step in the development of *Hidden Cities* relates to a new iteration of the app format that has resulted from a project funded by the Humanities in the European Research Area (HERA), which included an element that led to the publication of five new city apps in 2020.⁶ A collaboration between academics in five countries, the new apps largely follow the template of the second version of the *Hidden Florence*, with the main user-facing change being the inclusion of multiple-language options. All the new apps are published in English, while the “home” language for each city is also available (in Valencia and Trento, two additional languages are included). A further change to the design brief for the apps is a more articulated inclusion of material culture of public space – objects now in museum collections that originally derived their meaning from how people interacted with them in the public realm – which is facilitated by close collaboration of the research teams with the partner heritage/museum organisations. The new apps (Deventer, Exeter, Hamburg, Trento and Valencia) were all launched with one itinerary, with additional walks currently being completed and added. The other major change to the software architecture that has been made as a result of five new apps built on the same template is that we have developed with Calvium a content management system (CMS) that allows the research team to build, test

Laura Estill, Diane Jakacki, and Michael Ulliyot (Toronto: Iter, 2016) (Series: New Technologies in Medieval and Renaissance Studies), 259–282, and Fabrizio Nevola and David Rosenthal, ‘Locating Experience in the Renaissance City Using Mobile App Technologies: The *Hidden Florence* Project’, *Mapping Space, Sense, and Movement in Florence: Historical GIS and the Early Modern City*, ed. Nicholas Terpstra and Colin Rose (London: Routledge, 2016), 187–209.

5 A full list of contributing scholars in this second phase of the project can be found in the “Credits” page of the apps and on the project website <https://hiddenflorence.org/about/credits/> (accessed August 2, 2021).

6 The full name of the three-year project (2019–2022) is *Public Renaissance: Urban Cultures of Public Space between Early Modern Europe and the Present*, led by Fabrizio Nevola, with Daniel Bellingradt, Mónica Bolufer, Sabrina Corbellini, Juan Gomis and Massimo Rospocher; the five apps are one of a number of outputs from the project, see www.hiddencities.eu (accessed August 2, 2021).



Figure 0.2 Screenshot of the *Hidden Florence* app showing the guide selection screen.
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and publish content to the apps to a large degree independently of the technology providers. Implications of this for research and teaching are discussed in greater detail subsequently and the chapters that follow.

From these initial comments, it should be clear that the suite of *Hidden Cities* apps participate in digital humanities practices, while contributing to the expanding field of digital public history. In the most general terms, the widespread uptake of smartphones is taken as an opportunity for the researcher to communicate directly with a wider public, GPS and familiarity with digital mapping functions facilitate location-based interpretation, while fast-growing processing speed for mobile computing make it possible to deliver a good deal of information (data) in

the form of mapping features, audio files and images to most devices. As such, in digital humanities terms, the affordances of smartphones are being harnessed to the age-old humanities practice of interpretation of evidence and its communication to audiences of peers, students and the wider public.

Mobile phones – as the name suggests – are made to be used on the move, and this defining feature makes them a medium that effectively shapes research questions and interpretative strategies around mobility of objects and people, research themes that are themselves current in the field of early modern studies.⁷ To cite Marshall McLuhan’s well-worn phrase, “the medium is the message”, and there can be little doubt that smartphones are ideally suited to shaping a message that is about place and movement, and the dialogues with the viewer through images (screen-based) and audio.⁸ As we consider how these ubiquitous devices might shape communication strategies in humanities disciplines, one way to reflect on this is through a hands-on approach to research and dissemination, making content for this medium, an approach to digital humanities driven by the experimental act of making, as Stephen Ramsay might put it.⁹ So, the *Hidden Cities* smartphone apps effectively enable a Lefebvrian analysis of urban spaces in the early modern past through a triangulation of people, objects and places, operationalising research practice through a kinetic, embodied experience.¹⁰

We learned early on that while the affordances of apps delivered on handheld devices did indeed create opportunities for a direct dialogue with non-professional historians, we needed to identify our audience, think about how we would hook them into what we wanted to communicate, but also adapt our own modes of communication to the medium of delivery and the expectations of those audiences. Working with the app developers Calvium on user experience (UX) design for the first *Hidden Florence* app, the need for brevity was set into sharp relief, especially when factoring environmental considerations. Our intended users were more likely than not visiting a city as tourists or students, and the imperative in designing informative historical trails is always on ensuring that there is a good

7 For a recent example, see the special issue collection *Cities in Motion: Mobility and Urban Space in Early Modern Europe*, Pablo Gonzalez Martin, Rosa Salzberg and Luca Zenobi, eds., *Journal of Early Modern History* 25 (2021).

8 Marshall McLuhan, *Understanding Media: The Extensions of Man* (New York: McGraw-Hill, 1964), 7: “The medium is the message. This is merely to say that the personal and social consequences of any medium – that is, of any extension of ourselves – result from the new scale that is introduced into our affairs by each extension of ourselves, or by any new technology”.

9 Stephen Ramsay, ‘On Building’, in *Defining Digital Humanities: A Reader*, ed. Melissa Terras, Julianne Nyhan, and Edward Vanhoutte (Farnham, Surrey: Ashgate, 2013), 243: “Personally, I think Digital Humanities is about building things. . . . If you are not making anything, you are not . . . a digital humanist”.

10 Henri Lefebvre, *The Production of Space*, trans. D. Nicholson-Smith (Oxford: Blackwell, 1991), 27. Additional discussion of the antecedents to locative practices in the arts and humanities can be found in Chapter 1 by David Rosenthal; see also Jason Farman, ed., *The Mobile Story: Narrative Practices with Locative Technologies* (London: Routledge, 2013) and Jason Farman, *Mobile Interface: Embodied Space and Locative Media* (London: Routledge, 2012).

reason for bringing people to a particular place. Over the past few years, thanks to this UX advice, I have frequently found myself asking colleagues, and more recently students: “imagine it is 36°C, or raining or snowing: is it worth it for the user to stand in the street listening to what you have to say, or could you just as easily tell it to them in the comfort of their own homes?” Locative experiences – albeit that we discovered that many people would indeed use the app in “armchair mode” – need above all to have a focus on place, that makes sense of the visual cues we encounter, unlocking these through the interpretation provided.

At the same time, we came to consider perhaps the two defining features of the app’s format – the use of a historical guide character and the visual overlay of the historic map on the contemporary base map (Fig. 0.3). Both these features are forms of augmented reality – in that they extend the perceptive field of the user – on the one hand, creating the fiction that an individual from 500 years ago is speaking to you through the headphones of your 2020 iPhone; on the other hand, allowing you to explore a city using a map that is also very old and doesn’t always match the extant urban footprint. In contrast to conventional historical GIS, where precision in latitude–longitude coordinates is important, the locative experience of the historic map can be looser, as users enjoy discovering the convergence and mismatch of modern and historic built fabric on the ground. Although users can always tap a button to revert to a modern base map if they get lost, wayfinding within the historic map environment underscores the ways in which cities have changed over time, as for instance is the case for Hamburg and Exeter, both extensively transformed following WWII bombing and subsequent rebuilding. Even where urban centres appear to be unchanged over the centuries, the map visually highlights modifications; as is discussed in Chapter 6 on Trento, the sixteenth-century map shows the original course of the river Adige, altered in 1858 and replaced by tree-lined boulevards. As such, the maps and indeed the narratives that they support reinforce the changing nature of the construction of space and its meanings over time, providing concrete and visual evidence of how the spatial practices of pedestrian movement adapt to the palimpsest of urban morphologies. Furthermore, the question of documentary accuracy in some ways also informs the role of the guide character – above all, they need to catch the interest of the audience, be historically informed and plausible, but there isn’t an expectation that they should be based exclusively on a set of historical documents or a specific individual, albeit that in some cases they are. This accent on the UX imperatives frees up some of the constraints on a character-led, research-based itinerary, allowing themes to inform the storytelling that is propelled by a sequence of place and objects along a defined route.

Conversely, as the earlier comments have already suggested, as the various iterations of the *Hidden Cities* progressed, so we realised that we were engaged in a relatively new form of research methodology. While the apps are expressions of public history – in that they are aimed at an audience outside professional academia – the place-based affordances of the technology and the focus on location-specific interpretation alter the ways that we, as researchers, are invited to



Figure 0.3 Film still from promotional film created for the *Hidden Florence* app showing the historic map, 2014. © Freshground films and University of Exeter

handle the primary evidence. In telling a story within the apps, a triad of person–object–place becomes central, and a convergence between these occurs at each site in the itinerary. As we develop a theme in each guided walk, so we are constantly asking – why is the character in this place; what is important about what we are looking at and how does it (the object/building/feature) acquire meaning from its situation; and how is the significance of the place derived from its interaction with people and objects? As is discussed further subsequently, such an approach bears resemblance to the historical methodology of narrative-driven microhistory, structured around the everyday experiences of individuals. Here, as with the maps, it can be understood as a situated and experiential or embodied practice of space in terms familiar from the influential writings on urban spatial practices by Michel de Certeau and Henri Lefebvre, with an important distinction that relates to the sort of close reading of such spaces that comes from doing specific place-based research.

These two main observations – that there is a defining methodology to the creation of our *Hidden Cities* apps from a UX perspective, and that locative history might offer a framework for interpretation, itself a research methodology – have increasingly come into focus as we worked with new teams of researchers on the various iterations of the apps. Both aspects are explored further in Part I, by David Rosenthal on public history in Chapter 1, and by Jo Morrison on UX design in Chapter 2. Furthermore, in thinking about analogies between existing historical methods and approaches that might transfer to the character-led locative interpretation we have favoured for the apps, the lesson of microhistory has proven

particularly productive.¹¹ At one level, the majority of the guide characters chosen for the apps to date present a voice of “history from below”, of overlooked, subaltern, scarcely documented characters that populated the streets of Early Modern Europe. Giving voice to these characters – at times directly from a cache of historical sources, at others from a synthesis of relevant evidence – provides an opportunity to highlight the positionality of the historian, while at the same time shedding light on the everyday functions of urban public space and the material culture connected to it.¹² While the guided walks are brief, and tightly focused on specific objects and places, as in microhistory there is an intention that the closely observed detail will illuminate more widely our understanding of a particular time, place and subject. To an extent also, the need to script characters for the app also speaks to the genre-defying writing style often associated with microhistory, where interpretation is driven through a narrative or life cycle, more than by analytic priorities that are often the focus of academic historical writing.

Beyond these methodological considerations, other important factors that have emerged from the research and development of the *Hidden Cities* are worth noting, some of which are explored further in the chapters that follow. As should already be fairly clear, the production of these apps is a collaborative enterprise, drawing not only on the expertise of teams of humanities researchers and technology providers, but also on that of museum curators with whom we have worked to identify appropriate objects for inclusion in each of the stories. As Suzan Folkerts and Rick Lawrence write in Chapter 9, the benefits of such collaborations cut both ways, as we co-create research findings and produce apps which are also of value to our museum partners in engaging audiences that visit museums. Just as the characters and itineraries seek to shed light on overlooked actors and sites in the pre-modern city, the selection of material objects creates opportunities of connecting up objects that are sometimes overlooked in collections to their original place of production, consumption or display in the historic city. The app format thus helps bridge the distance between manuscript and material culture, as situating texts/objects in the spaces in which they originally operated helps both researchers and the public understand more about their past meanings and contexts. In so doing, aspects of the “museum without walls” are enacted, as physical objects now preserved in museum cabinets and storerooms can be digitally contextualised in the local urban environment.¹³

11 These observations were first developed in Nevola, ‘Microstoria 2.0’.

12 In addition to the chapters in Part II of this collection, the innovative research findings for the material culture of public space derived from such close readings of the urban environment are examined in a forthcoming special issue edited by Fabrizio Nevola and Massimo Rospocher for *Urban History*, ‘Public Renaissance: The Material Culture of Public Space in Early Modern Europe’.

13 A new walk in the *Hidden Exeter* app has been co-produced with the St Nicholas’ Priory, the city’s oldest standing building, in the custody of Exeter Historic Buildings Trust; the itinerary connects objects in the Royal Albert Memorial Museum and Art Gallery (RAMM) to this important but tucked-away site, drawing attention to its history around the dissolution of the monasteries under Henry VIII.

Such partnerships with local stakeholders – museums, learned societies, city heritage administrators and tourism offices – are also invaluable in aiding the distribution of the apps to users, in the absence of the significant marketing budgets that accompany commercial products. Encouraging adoption of what is still quite an innovative means of audience engagement with heritage and history remains a challenge, as Tim Coles points out in Chapter 10. To take the example of *Hidden Florence*, the app project was able to secure partnerships with a number of museum stakeholders in Florence, as well as the city’s UNESCO office, and through these promotional material provided with the city’s multi-day multi-museum ticket (FirenzeCard) led to a demonstrable increase in downloads and use of the app.¹⁴ While it will be readily understood that the worldwide COVID-19 pandemic has severely limited travel and consequently the audience for the five new apps launched in November 2020, each app involves partnerships with local stakeholders, which have committed to aid their promotion.¹⁵ Short videos have been valuable in disseminating the research and promoting the Florence app, especially through social media, and active twitter accounts accompany each of the apps.¹⁶ A recent collaboration agreement with Apple to create a series of “Guides” within the “Maps” app that is built into all Apple devices presents a real opportunity for wider adoption of the apps, as searches in the Map feature for a city where there is a *Hidden Cities* guide are highlighted to all users (Fig. 0.4).¹⁷ It is too soon to make any reliable observations on the impact of this new feature, although initial analytics data do suggest a significant group of new users to the app are coming from this Maps feature.

Perhaps naively, in the first iteration of the *Hidden Florence* app, we gave very little thought to the fact that a public-facing digital output of this sort would not only contain data (in the form of the content we created), but also generate data (in the form of user analytics). Both Android and iOS app platforms generate user analytics data, and we have had access to only the most basic, high-level data that contains no personal information and is fully anonymous. At this level, it is possible to count the number downloads, for example, locate them in broad geographic regions, or observe how long users remain engaged with the app. We have only recently begun any sort of systematic analysis of this data, and Coles presents some observations of it in this volume from the perspective of sustainable tourism. Circumstantial evidence also shows that a significant audience for the apps is made up of university-age students who are using the apps on site and remotely as part of their coursework and research. Even without specialist

14 For full details of project partnerships, see <https://hiddenflorence.org/about/credits/> (accessed August 6, 2021).

15 See www.hiddencities.eu/partnerships (accessed August 6, 2021).

16 In addition to twitter accounts for each city, @hiddencitieseu pulls these all together in one stream. For short films on the Florence project, see <https://hiddenflorence.org/news/> (accessed August 6, 2021).

17 At present we have listed Florence, and the other cities will follow. See <https://guides.apple.com/?lsp=9902&pg=17273512830118864541> (accessed August 6, 2021).

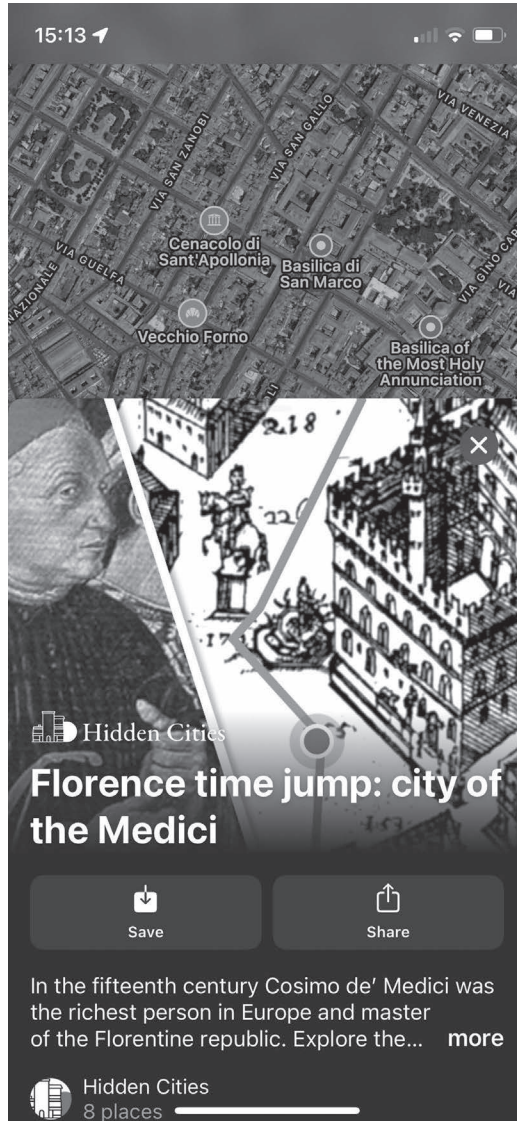


Figure 0.4 Apple Map Guide feature showing *Hidden Florence* itinerary. © Apple and University of Exeter

social science expertise, it is clear from the data that an unexpected (but perhaps obvious) usage pattern reveals that a significant proportion of users enjoy the app remotely, in “armchair mode”. While, as Coles suggests, it may be too soon to claim that trails might help decentre tourism from over-congested major tourist cities such as Florence; nonetheless, local authorities are interested in the

potential of technology to influence tourism flows, which can in turn help leverage support for partnerships.¹⁸ Conversely, most of the five new *Hidden Cities* have been developed for locations that are less worried by over-tourism, and instead add to the available digital resources for cultural tourism. It will be interesting to see what new analysis can be done from the combined data of the five new city apps, perhaps even observing this through the seismic shifts in tourism as Europe emerges from the systematic lockdown measures that prevailed through to the Spring–Summer of 2021.

Quite a distinct area that deserves a brief discussion in this Introduction is the application of the practice, learning and research of making the *Hidden Cities* apps to university teaching. The app format lends itself to engaging students with both the public history methodologies of creating and presenting the past in ways that may be more compelling to a wider public, and as a way into discussion of the underpinning research that informs the content. Julia Rombough and Sharon Strocchia discuss how they have used the *Hidden Florence* app in their teaching in a section of Chapter 8. Strocchia describes how she used the Niccolosa and Marietta trails as way into exploring themes such as gender and work in Renaissance Florence, while Rombough explains how students at University of Toronto were involved in initial research and drafting of the Marietta and Ercole walks, then much adapted and reworked in their final published form. Along similar lines, Nevola and Rosenthal have been working with a small group of student interns at the University of Exeter to create a new itinerary within the *Hidden Exeter* app – here in partnership with the organisation that manages St Nicholas’ Priory, a rare surviving building from Medieval Exeter. Through a close and complex collaboration between researchers, museum professionals and undergraduate and post-graduate students, a new walk has been created that considers the city around the crucial years in the 1530s when Henry VIII’s overturning of Catholic institutions transformed the city through the suppression of powerful religious houses such as the priory.¹⁹

A more readily replicable educational application has instead been tested at the University of Exeter in the Spring semester of 2021, made possible by the new user-friendly CMS produced as part of the *Hidden Cities* project brief. As is discussed in more detail by Jo Morrison in Chapter 2, the CMS allows researchers to build, test and publish content directly into the published apps. A modification

18 For the Florence UNESCO office considerations on how *Hidden Florence* contributes to their strategic plan to diversify tourist destinations in the city, see www.firenzepatrimoniomondiale.it/en/hidden-florence-esplora-la-citta-al-tempo-di-cosimo-i-de-medici/; for analysis of the Florence data, see Fabrizio Nevola, Tim Coles and Cristina Mosconi, ‘A City Revealed? Critical Insights from the Implementation of a Heritage Tourism App for the World Heritage City of Florence’, *Journal of Heritage Tourism*, accepted.

19 The internship project runs April–September 2021 and is funded by European Erasmus+ funding for ‘Communities and Students Together (CaST)’ and the University of Exeter ‘Education Incubator’; see www.exeter.ac.uk/about/teaching-excellence/educationincubator/about/cast/. For one account of the use of the app in teaching see <https://hiddenflorence.org/research/>.

of this CMS removes the public-facing “publish” functionality, limiting access to content to people in possession of a QR code. Nevola and Rosenthal worked with a large class of 48 students registered on an art history and visual culture field study module at Exeter that was impacted by travel restrictions during the COVID-19 pandemic. Students worked in groups of eight using the existing template from the *Hidden Cities* apps to create entirely new walks that were shaped by their own research interests. Unable to visit Florence, they researched a theme using digital tools and resources to create location-based interpretative guides on a range of topics, from a Grand Tour itinerary shaped around the experiences of a female friend of Elizabeth Barrett Browning, through to a day in the life of Michelangelo. Leading this course was especially rewarding as, in a year marked by the challenges of online teaching, students were exceptionally engaged and actively enjoyed the group work activity that brought them together to create a shared output. Thanks to the versatility of the CMS, students were able to fully view and test the apps on their own devices (sharing these with friends and family), without these being fully published. Students were thus challenged to write content for new media, thinking about dissemination of research, the affordances of digital, all the while being able to handle the results of their work on their own personal devices.²⁰



The chapters that follow develop in further detail many of the issues raised earlier and are structured in three parts. In summary, Part I focuses on the overarching methodologies, considering these first from a public history perspective and then through technology and UX. Part II is made up of one contribution from each of the cities for which there is an app; most articles are co-authored to represent the collaborative nature of these endeavours and they all focus on different aspects related to the research and development underpinning the apps. Finally, Part III opens outwards from the *Hidden Cities* apps to reflect on how these can be assessed from other sectors (tourism; museums) and possible future directions for locative AR.

As has been noted throughout, the *Hidden Cities* apps propose a new way of doing public history that explores the affordances of smartphones to assemble a variety of content types (audio, image, text, map), delivering these through a location-driven narrative. In so doing, as Rosenthal shows, it is part of a lineage of arts and humanities embodied engagements with place, as well as experimenting with established historical methodologies such as microhistory. In Chapter 2, Morrison describes the technical, design and user experience features of the app and CMS. What is illuminating here is to note that Calvium’s UX design considered both the academics that use the CMS to create the apps and the end users, underlining the

20 As we consider future directions for the *Hidden Cities* project, as well as exploring new partnerships to create new city apps, we are also considering how this teaching platform might be extended through licences to other institutions and users.

value of workshops and testing in the development of working prototypes. This also applies to the researcher's own process. All the researchers involved in the creation of the apps discussed in this collection adapted or radically changed their character narratives following site-based testing. There can be little doubt that it is essential to test content, establish what doesn't work on site, edit and adapt, and test again; this iterative process is fundamental to the success of the itineraries and how they effectively operate in what Morrison describes as hybrid public space, an expression of AR where physical and digital converge.

Six chapters make up Part II and each considers one city, drawing out how in different ways they shine a light on hidden or overlooked stories, irrespective of whether the city is heavily touristed or not. At some level, all these chapters address the complexities of the process of translation of high-level research into the format of the app – how to remain true to the historical record, how to extrapolate the memorable insight from the wider picture or the challenges of creating a character. As is frequently noted in the chapters that follow, the integration of historical research questions with material culture and specific urban sites imposes a form of discipline to the design and writing process. These are important considerations, as it is well known that movement within the city was constrained through factors such as class and gender, but also region and time-period, so that the selection of sites is always conditioned by the chosen guide. In writing about Valencia, Mónica Bolufer, Juan Gomis and Blanca Llanes Parra in Chapter 4 dwell especially on the challenges of anachronism in the context of their blind character Josep, considered within the concerns of disability studies as a research field today, yet also mindful of distinctions between past and present sensibilities. Instead, Rombough and Strocchia in Chapter 8 discuss the differing boundaries to movement in the public space of Renaissance Florence through an elite character, Niccolosa (based on firm documentary sources) and the weaver, Marietta (based on a synthesis of source material).

The choices made in defining guide characters is central to the thematic cohesion of each walk; as in many examples of microhistory, it is the specificity of the central figure of the narrative that provides impetus for the interpretation through engagement with lived experiences. Again, as in microhistory, it is interesting to observe how these guide characters often operate on the margins, or as intermediaries, able to move between spaces and groups. Marietta busies herself almost invisibly about her business, as she moves between the sites of charity distributed across Florence, while Ercole the cop has the oppressive force of law and order on his side as he charts his route through the city. In Exeter, Thomas Greenwood is a city administrator to whom everyone is expected to open their doors; more exceptional, Cosimo de' Medici moves through Florence unimpeded, the swagger of its leading citizen exuding from his every comment. Walking through public space tends to privilege particular types of movement, affording agency to some, invisibility to others. These are of course major themes in urban history, especially of swathes of work concerned with mobility and space. While the fact that apps are public-facing outcomes of historical research, nevertheless the medium lends itself to the exploration of complex characterisations, of topics that are resonant

today (race, class, gender, etc.), but which may at times even become controversial to avoid anachronism. The challenge for the historian is to keep positionalities in play, and indeed to highlight these, so as to allow the user to understand the subtleties of privilege and access that obtained in the past, while avoiding presentist and often popular stereotypes that artificially compress the distance of past and present by means of readily identifiable characters that are “more like us”.

Unsurprisingly for location-aware apps, mobility also emerges as a key theme for the underpinning research, and there is repeated attention in the selection of sites which facilitated the exchange of objects, commodities or information. So then, Massimo Rospocher and Enrico Valseriati’s account of Trento focuses on the city’s migrant community of Germans; through the character of the inn-keeper Ursula, they show how taverns operated as informal public spaces of sociability and exchange of refreshment and news. In Chapter 6, Rospocher and Valseriati illustrate Trento’s border condition – a rest stop for travellers between German lands and Italy – while the structure of their itinerary follows an errand, as Ursula moves through the city to complete a particular task. Here, movement is both a research topic and a narrative device, as it is in Kate Osborne’s account of the haberdasher-city official in Exeter. So too for Daniel Bellingradt and Claudia Heise and in Chapter 3 in their account of Johann, as he moves through Hamburg in search of information, passing sites of varying formality in the city’s news economy. This allows the site to recreate parts of the city that the modern pedestrian no longer sees, while in other cities, narrative and interpretation might highlight eclipsed social and economic spatial hierarchies. Movement and the exchange of information act as a common driver through the apps, as indeed it is for the exchange of religious knowledge between private and public spaces of the “Modern Devotion” in Deventer, described by Sabrina Corbellini, Pieter Boonstra and Margriet Hoogvliet in Chapter 5.

Part III turns instead to what might be described as the effects or impact of the apps in other domains and future directions of research. Suzan Folkerts and Rick Lawrence in Chapter 9 provide distinct observations on how these apps operate in relation to museums and heritage institutions. For Folkerts, a curator at the Athenaeumbibliotheek in Deventer that preserves a manuscript annotated by Katharina Kerstkens, the guide character in *Hidden Deventer*, the app provides a mechanism for putting fragile manuscripts back in motion, as the trail follows the devout itinerary of this laywoman through the late fifteenth-century Dutch city. Lawrence instead outlines the digital engagement strategies of Exeter’s RAMM and shows how the app meets various criteria for how technology can be applied effectively in the museum setting. Together, these two contributions provide a valuable testimony to the benefits of university researchers collaborating with museum and heritage professionals, and the importance of factoring in partners’ needs in defining project goals, rather than imposing academic research priorities without proper consultation.

Tim Coles in Chapter 10, on the other hand, takes a detailed look at the claims that have often been advanced for apps and other technologies in encouraging

“smart” tourism as a panacea for the problems of over-touristed destinations. Drawing on various examples, including the analytics for the first phase of *Hidden Florence*, he suggests that there is a way to go before such claims can be justified through empirical data. While this sounds a cautious note, it is also an invitation for more research to be done on the increasingly widespread digital offer made to tourists by many local and regional authorities, as well as by commercial providers. As Coles and Morrison both note, of course, increasingly such research – and the gathering of data for it – needs to take account of European and other directives following the “General Data Protection Regulation” (GDPR), which also explains our use of only very high-level analytics (i.e. descriptive, non-personalised) generated by the *Hidden Cities* apps.

The final chapter turns in a somewhat different direction to consider another locative AR project that has resulted in a separate app, *Hidden Florence 3D*, also produced as a collaboration between humanities researchers and technical providers. As the name suggests, the app extends the aims of the walking tour app through the deployment of a locative 3D model delivered as an on-site AR experience. Donal Cooper, Fabrizio Nevola, Chiara Capulli and Luca Brunke in Chapter 11 show how a 3D model of the demolished Florentine church of San Pier Maggiore is delivered as 1:1 scale experience that unfolds on their phone or tablet screen, as users move around the urban setting of the original church, or the museum where paintings from the church are now displayed (and remotely – in “park” as opposed to “armchair” mode, given the size of the building!). Here 3D model extends the contextual experience of the space through the Giovanni and Niccolosa walks in the original app to provide a visual AR commentary. Currently, it is a challenge for technology to pull together the locative audio-guide software with the different systems that drive the locative 3D, although it is hoped that this will be possible in the future.

So then, as this brief Introduction has shown, over the course of six years, an experiment in the application of GPS to urban history has taken shape as a relatively large collaborative research project, that has involved numerous scholars, museum professionals and heritage partners. We have updated the original app design to accommodate a variety of content, providing language options as well as choices that the user can make about who will guide them through the city of the past. As the project has developed, so we have begun to explore in greater detail the potential insights from analytics data for tourism and heritage partners, and most recently have tested the methodology successfully in a classroom context. As we look forward, as well as a potentially valuable promotional opportunity through the Apple Maps platform, we are considering how to bring in new cities to the *Hidden Cities* family of apps, whether to retain our focus on early modern cities, and how we might vary the characters and stories told in each distinct city. Our hope then is that readers of this collection will find inspiration to adopt these new approaches in locative history research, teaching and dissemination, and may indeed consider joining us in this endeavour.

A note on funding

As has been noted earlier, the development of the *Hidden Florence* and *Hidden Cities* suite of apps is dependent on funding awarded by various bodies, through a competitive process (all projects listed were led by Fabrizio Nevola). We are very grateful for this funding. Arts and Humanities Research Council (AHRC, UK) follow-on-funding for the first iteration of *Hidden Florence* (2013; AH/K005138/1). Higher Education Innovation Fund (HEIF) through the University of Exeter led to the publication of this work in 2014. Phase 2 of *Hidden Florence* funded by AHRC (2018–9; AH/R008086/1; with co-investigators Donal Cooper and Nicholas Terpstra). A Humanities in the European Research Area (HERA) collaborative project (2019–2022; Hera.2.003; with co-investigators Daniel Bellingradt, Mónica Bolufer, Sabrina Corbellini and Massimo Rospoche). David Rosenthal has been the lead research associate on this project from its outset. A full listing of project participants and partners can be found in the “credits” of each app and on the two project websites:

www.hiddenflorence.org

www.hiddencities.eu

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Part I



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1 Revisioning the city

Public history and locative digital media

David Rosenthal

For those concerned with how we do public history in the streets, the toppling of statues across North America, and to a lesser extent Europe and elsewhere, in the summer of 2020 was an instructive moment. As long-simmering tensions around monuments to figures such as Robert Lee, Edward Colston and Christopher Columbus erupted into direct action following the murder of George Floyd in Minneapolis, dozens of statues were pulled down, damaged or defaced. Many dozens more were either removed or modified by official means, a process already well in train and accelerated by the events of 2020.¹ Whatever the approach, what has driven proponents of change is the idea that public spaces should not be occupied – or at least unproblematically occupied – by ‘heroes’ on pedestals judged to be deeply implicated in a racist or imperialist past.

This powerful reminder that the way we inscribe the past into public spaces has a profound, if not always obvious, cultural significance makes a good starting point for a chapter that reflects on the relatively new potentials of locative media to do just that. Smartphones, especially, are almost tailor-made for locative storytelling, and as such are versatile tools in the public history armoury, well placed to play a role in the ‘memory activism’ that forms part of the business of

* I would like to thank Jo Morrison, Forbes Morlock, Anne Brassier, and my co-editors Fabrizio Nevola and Nicholas Terpstra for their helpful comments on this chapter.

1 For an unofficial list of monuments removed in the wake of Floyd’s killing, on 25 May 2020, see ‘List of Monuments and Memorials Removed during the George Floyd Protests’, Wikipedia, https://en.wikipedia.org/wiki/List_of_monuments_and_memorials_removed_during_the_George_Floyd_protests (accessed June 30, 2021). In the United States, the majority of monuments removed were Confederate – 94 according to an estimate in February 2021. ‘2020 Confederate Symbol Removals’, Southern Poverty Law Center, www.splcenter.org/data-projects/2020-confederate-symbol-removals (accessed March 31, 2021). See also Peter Hill, ‘When the Statues Went Up’, *History Workshop*, June 12, 2020, www.historyworkshop.org.uk/when-the-statues-went-up/. More widely, for the United States, see David B. Allison, ed., *Controversial Monuments and Memorials* (Lanham, MD: Rowman & Littlefield, 2018); Madge Dresser, ‘Set in Stone? Statues and Slavery in London’, *History Workshop Journal* 64, no. 1 (2007): 162–199.

public history.² Indeed, the ongoing debate around contentious monuments serves to make a few basic points about the utility of these everyday devices. For many, the best way to deal with such statues is not to remove them, but to problematise them *in situ* – by rewriting the signage, or by creating what Thomas Laqueur calls ‘pluralistic landscapes’, boxing them in with other artworks or objects that in effect critically historicise them.³ For Bristol’s Edward Colston, wrangling over new signage to acknowledge his role in the Atlantic slave trade was overtaken by events: on 7 June 2020, the statue was dumped in the harbour.⁴ But at many other sites new signage has been put in place by city authorities. Edinburgh’s Melville monument, to take one example, is set to sport a new plaque at the base of its giant neoclassical column to say that the figure on top, Henry Dundas, 1st Viscount Melville (1742–1811), was instrumental in deferring the abolition of transatlantic slavery.⁵ Yet if durable media like this remain vital, mobile digital media – ephemeral yet increasingly pervasive – have the capacity to augment reality far more expansively, with textual, audio and visual ‘signage’ or ‘mark up’. Public monuments themselves can be geotagged fairly straightforwardly with third-person interpretative narrative delivered through smartphones. Indeed, they can be given voices, as Talking Statues has done in cities in the United Kingdom, the United States and Ireland, tagging dozens of statues via QR codes with speeches performed by well-known actors.⁶ At the same time, locative media can roam well beyond typical ‘heritage’ sites, objects and priorities, joining any number of elements of the built fabric to social and cultural histories of place, and to any number of past lives. As Jason Farman has put it, mobile media can operate as tactics of spatial storytelling to tell stories that often go untold.⁷

The *Hidden Cities* group of apps, the focus of this collection, is informed by precisely this kind of public history agenda. To illustrate, we might take *Hidden Florence’s* ‘Crime and Punishment’ trail, set in the 1560s, which in fact begins by marking up a public statue. The ‘contemporary’ guide, a feature of all the *Hidden Cities* trails, is a fictive city cop called Ercole, who begins his journey by standing the user in front of the statue of Hercules outside the doors of the Palazzo Vecchio. Baccio Bandinelli’s marble Hercules may be a prominent monument, but it has

2 James B. Gardner and Paula Hamilton, ‘The Past and Future of Public History: Developments and Challenges’, in *The Oxford Handbook of Public History*, ed. Gardner and Hamilton (New York: Oxford University Press, 2017), 11. Serge Noiret, ‘An Overview of Public History in Italy: No Longer a Field Without A Name’, *International Public History* 2, no. 1 (2019): 2.

3 Thomas Laqueur, ‘While Statues Sleep’, *London Review of Books* 42, no. 12 (2020): 9–14.

4 Colston was rescued from the harbour and is presently on display, horizontally, along with placards from the June 2020 action in Bristol Museums’ M Shed space.

5 ‘New wording for plaque at Melville Monument agreed’, City of Edinburgh Council, www.edinburgh.gov.uk/news/article/12885/new-wording-for-plaque-at-melville-monument-agreed (accessed April 1, 2020). Melanie J. Newton, ‘Henry Dundas: Naming Empire and Genocide’, *History Workshop*, November 11, 2020, www.historyworkshop.org.uk/henry-dundas-naming-empire-and-genocide/.

6 Talking Statues, www.talkingstatues.co.uk (accessed June 2, 2021).

7 Jason Farman, ‘Stories, Spaces, and Bodies: The Production of Embodied Space through Mobile Media Storytelling’, *Communication Research and Practice* 1, no. 2 (2015): 106.

a sketchy public profile, known mainly as the inferior counterpoint to Michelangelo's celebrated David a few feet away. Ercole does not undercut this, indeed he reinforces it, but he does so by returning the statue firmly to its sociopolitical context. He recalls that when Hercules, poised to execute the cowering cattle thief Cacus with his club, was unveiled in 1534, not long after the Florentine republic was crushed by the Medici and their allies, the artwork was seen as a blatant symbol of monarchical rule and was plastered with dozens of derogatory poems. Yet as well as tagging Hercules with audio signage that contextualises him in terms of regime change and the Renaissance politics of public art, Ercole introduces a new figure into the square – himself. Ercole turns out to be a man who finds in this mythological marble hero a legitimate model for Medici justice and his own role in it, and in the course of his trail the user discovers a great deal about the places and culture of justice in the early modern Italian city, and about the brutal and brutalised outsiders, such as Ercole, who sustained the machinery of civic order. On the whole, this is how *Hidden Cities* has leveraged locative AR. It geotags stories of lived experience to established 'heritage', to largely ignored places and at times to radically transformed sites. At the same time, it populates – pluralises, as Laqueur might put it – the landscape with male and female figures who, for the most part, represent past lives rarely set in front of a local or visiting public. This chapter will turn to examine the *Hidden Cities* model more closely, as well as point to potential directions in this fast-evolving field. But first it will provide some context by setting out the range of ways that locative AR is being used to tell often untold histories in public spaces, a field of practice only starting to come into focus in the public history scholarship.⁸

Like most history, narratives of the past told *in situ* using locative media are often mediated by third-person interpretation.⁹ The format is well illustrated by Cleveland Historical, an app produced by Cleveland State University's Centre for Public History and Digital humanities, which also developed the Curatescape

8 Current public history surveys touch lightly on mobile media, tending to subsume this within digital history more widely. Sharon Leon, 'Complexity and Collaboration: Doing Public History in Digital Environments', in Gardner and Hamilton, eds., *The Oxford Handbook of Public History*, 44–66; Serge Noiret, 'Digital Public History', in *A Companion to Public History*, ed. David Dean (Hoboken, NJ: Wiley, 2018), 111–124. Cherstin M. Lyon et al., *Introduction to Public History: Interpreting the Past, Engaging Audiences* (Lanham: Rowman & Littlefield, 2017). However, see Kevin Kee and Timothy Compeau, eds., *Seeing the Past with Computers* (Ann Arbor: University of Michigan, 2019); Fabrizio Nevola and David Rosenthal, 'Locating Experience in the Renaissance City Using Mobile Technologies: The "Hidden Florence" Project', in *Mapping Space, Sense, and Movement in Florence: Historical GIS and the Early Modern City*, ed. N. Terpstra and C. Rose (London: Routledge, 2016), 187–209; Fabrizio Nevola, 'Microstoria 2.0: Geo-locating Renaissance Spatial and Architectural History', in *Early Modern Studies and the Digital Turn: New Tools for New Research Questions*, ed. D. Jakacki, L. Estill, and M. Ulliot (Toronto: Arizona CMRS and Iter, 2016), 261–284. From the far more extensive mobile media scholarship, pathfinding has been Jason Farman, ed., *The Mobile Story: Narrative Practices with Locative Technologies* (London: Routledge, 2013); Farman, 'Storytelling with Mobile Media', in *The Routledge Companion to Mobile Media*, ed. Gerard Goggin and Larissa Hjorth (London: Routledge, 2013), 528–537.

9 Lyon et al., *Introduction to Public History*, ch. 6.

platform allowing others – to date 33 mainly city projects – to build their own mobile history apps.¹⁰ ‘Slavic Village’, for example, one of the 34 Cleveland Historical tours, traces a history of migrant enclaves in the city. It focuses on the growth, in the late nineteenth and early twentieth centuries, of Warszawa, or little Warsaw, one of the largest Polish communities in the United States, and neighbouring Karlin, where there was a significant concentration of Czech immigrants. It describes the post-war transformation of these enclaves due to deindustrialisation and suburbanisation, as well as moves, in the late twentieth century, to revitalise the same neighbourhoods under the banner of ‘Slavic Village’, a rebranding that catalysed growth but which met with a mixed reception by local residents. With an introduction framing this narrative, the trail joins together 12 geolocated sites – some still in existence such as the Bohemian National Hall or the Third Federal Savings and Loan; others transformed, such as the Cleveland Worsted Mills, which closed in the 1950s – to interpret a century of physical, socio-economic and ethnic urban change.

Like many Cleveland walks, ‘Slavic Village’ is delivered by text on screen, along with archive photography at each site – in effect a geolocated digital guidebook. However, audio, a core functionality of smartphones and relatively inexpensive to produce, can deliver the same stories via third-person narration; or, for the more recent past, through first-person oral history. Several Cleveland Historical trails use audio to build stories. In ‘African Americans in Cleveland’, for example, users can hear a series of short testimonies recalling the 1950s heyday of Gleason’s Musical Bar, a major hub in the US jazz and blues circuit. And it is worth pointing up that music itself, a very specific kind of audio testimony, can forcefully evoke complex cultural pasts. One remarkable trail from the East Texas History app, produced by Sam Houston University using the Curatescape platform, takes songs gathered by the ethnomusicologist or ‘ballad hunter’ John Lomax, who gained access to Southern prisons in the 1930s in pursuit of ‘negro’ folk songs and spirituals, and geotags them back to the places Lomax recorded them.¹¹ However, for a more systematic application of locative audio, we might point to an app such as Soundtrails, which seeks to surface marginalised voices and histories in Australia, specifically indigenous experience, primarily through oral testimony.¹² In ‘Walgett’, participants and Walgett locals offer narratives recalling their own experience of the 1965 ‘Freedom Ride’, when a busload of Sydney University students led by Charlie Perkins, Australia’s first Aboriginal graduate, travelled through rural New South Wales in a bid to bring media attention to what effectively was racial segregation. Or, tackling a deeper past, ‘Myall Creek’ skilfully assembles interviews to unpack what the massacre of (at least) 28 Aborigines in 1838 by colonists in New South Wales means to individuals today with links to the place

10 Cleveland Historical, <http://clevelandhistorical.org/> (accessed June 10, 2021). Curatescape, <http://curatescape.org> (accessed June 10, 2021). See also Lyon et al., *Introduction to Public History*, 101–102; Leon, ‘Complexity and Collaboration’, 55–56.

11 East Texas History, <https://easttexashistory.org/tours/show/3> (accessed May 10, 2021).

12 Soundtrails, www.soundtrails.com.au/all-soundtrails (accessed June 3, 2021).

or the event. In doing so, it frames a layered story of familial, national and cultural memory, as well as the process of public commemoration itself.

Audio, of course, releases users of locative media from what Farman has called the ‘poverty of the screen’, enabling them to engage more fully with their surroundings.¹³ Yet while this is true in the examples just discussed, on the whole these apps choose not to plunge the user into a deeply sensory or detailed embodied dialogue with their immediate environment. ‘Myall Creek’, for example, is a situated documentary that leaves users to establish for themselves specific connections between the narratives unspooling through their headset and the material culture and textures around them, or their own sense of emplaced self. However, public history using locative AR has also been pushed productively in this direction – towards what might be called the past as experience.

In the first instance this has a historical meaning. Historians have pursued the spatial and material dimensions of embodied experience in the past for at least two decades, linked to the wider trend in the humanities identified by the cultural geographer Denis Cosgrove as the ‘spatial turn’.¹⁴ Urban historians in particular have looked to capture the spatial and sensory nature of city life, the diverse ways in which people once occupied and moved through streets and squares – either as part of the rhythms and exigencies of everyday life or in response to specific events. Michel de Certeau’s conceptualisation of space as ‘practised place’ has been highly influential here, the notion that urban spaces are actively produced by the complex, kinetic interactions between ordinary people and the material fabric of their cities – what Jane Jacobs, in reference to New York neighbourhoods in the mid-twentieth century, more evocatively described as a ‘sidewalk ballet’.¹⁵ At the same time, handheld mobile devices allow this attention to the fine-grained street ecologies of the past to be set in close dialogue with the user’s own embodied experience on the streets of the present. One of the primary ways this unfolds is through movement, a kinaesthetic dialogue between past and present that resonates both spatially and temporally. Movement here essentially means walking, an often unconscious act that, again partly thanks to De Certeau, has become an area of scholarly enquiry in its own right. Both sociologists and historians have understood walking as one of the ways that city dwellers, past and present, effectively produce urban spaces and social relations, tracing out ideas of territory and community, recalling and modifying their sense of identity and place, as they put one foot after the other.¹⁶

13 Jason Farman, ‘Storymarker: Mobile Storytelling App’, <http://jasonfarman.com/portfolio/story-marker-mobile-storytelling-app/> (accessed June 30, 2021).

14 Denis Cosgrove, ‘Landscape and Landschaft’, *German Historical Institute Bulletin* 35 (2004): 57–71.

15 Michel de Certeau, ‘Walking in the City’, in de Certeau, *The Practice of Everyday Life* (Berkeley: University of California Press, 1984), 91–109; in this context, also see Henri Lefebvre, *The Production of Space* (Oxford: Blackwell, 1991). Jane Jacobs, *The Death and Life of Great American Cities* (New York: Random House, 1961), 50–54.

16 Nevola and Rosenthal, ‘Locating Experience in the Renaissance City’. For general studies, see Timothy Shortell and Evrick Brown, eds., *Walking in the European City: Quotidian Mobility and*

Locative apps that have pursued the past as experience in this way have been informed not only by such critical reflections on space and movement, but also by art installations that preceded the mass production of GPS-armed smartphones, which began in the late 2000s. The pathfinding work of Canadian artists Janet Cardiff and Georges Bures Miller, for example, who have been creating audio walks that interleave stories and soundscapes with the walker's own movement since 1991, directly informed the innovative Montreal Voices Project that ran from 2005 to 2012 at Concordia University's Center for Oral History and Digital Storytelling.¹⁷ Through downloadable audio and maps, 'Sounding Griffintown: A Listening Guide of a Montreal Neighbourhood' (2006) presented a collage of oral testimony and soundscapes that recall this formerly Irish working-class district. It looked to put this in a dialogue with the user's experience in the post-industrial and partially gentrified streets of twenty-first-century Griffintown through simple yet effective audio techniques – such as asking users to keep pace with both their guide and the first-person narrated memories of place through the sound of footsteps, or encouraging them at certain moments to remove their headsets and listen to the city of the present.¹⁸ Building on Griffintown, 'Une fleur dans le fleuve' (A flower in the river) in 2012 took the user along the route of a procession held every year by Montreal's Rwandan community to commemorate those murdered in the 1994 genocide. Rather than a single processional narrative, users hear six individuals tell their stories along the route, as well as audio such as singing recorded at actual processions, in order to enhance the sense of joining an 'active commemorative space'. The act of remembering itself was further anchored to place by framing objects passed along the route as if they were memory prompts: for example, at a phone box, users hear a telephone ring in their headset and testimony from a woman, a student in Montreal in 1994, who describes receiving a call from a brother she believed had been killed in the Rwandan atrocities.¹⁹

Other projects have also looked to stitch user experience to place and narrative through real-world gamification. Influential here has been the work of UK art collective Blast Theory, whose innovative hybrid-reality installations began with

Urban Ethnography (Farnham: Ashgate, 2014); Tim Ingold and Jo Lee Vergunst, eds., *Ways of Walking: Ethnography and Practice on Foot* (Ashgate: Aldershot, 2008); Joseph Amato, *On Foot: A History of Walking* (New York: New York University Press, 2004); for an illustrative case study, see Filippo De Vivo, 'Walking in Sixteenth-Century Venice: Mobilising the Early Modern City', *I Tatti Studies in the Italian Renaissance* 19, no. 1 (2016): 115–141.

17 Janet Cardiff and Georges Bures Miller, 'Walks', www.cardiffmiller.com/artworks/walks/ (accessed June 10, 2021). Adriana de Souza e Silva and Jordan Frith, 'Re-Narrating the City through the Presentation of Location', in Farman, *The Mobile Story*, ch. 3.

18 Lisa Gasior, 'Sounding Griffintown: A Listening Guide to a Montreal Neighbourhood', www.griffinsound.ca/griffintown/index.htm; <https://storytelling.concordia.ca/research-and-creation/audio-walks/> (accessed June 22, 2021).

19 Steven High, Lisa Ndejuru, and Phil Lichti, 'Une fleur dans le fleuve', <https://storytelling.concordia.ca/projects-item/a-flower-in-the-river/> (accessed June 22, 2021); Steven High, 'Embodied Ways of Listening: Oral History, Genocide and the Audio Tour', *Anthropologica* 55, no. 1 (2013): 73–85.

2001's *Can You See Me Now?* This overlaid city streets with virtual cities online and staged a game of catch, in which geolocated players in physical space had to track down online players. The wider agenda of this project – one that speaks to historians seeking to populate today's cities with vanished lives – was to reflect on how locative technology can be used to explore ideas of presence and absence (photos were posted of the empty spaces where online players were caught).²⁰ In the public history arena, 2005's *Riot! 1831* pioneered experiments with gamification. This staged event, using bulky early GPS technology addressed the franchise reform riots in Bristol, one of England's most explosive uprisings, which culminated on Queen Square when cavalry effectively put down the protest. In order to introduce voice, *Riot! 1831* used dramatised first-person narratives based on a range of historical sources, and it looked to convey the multi-vocal and tumultuous nature of events by mapping dozens of scripted audio vignettes to Queen Square. A little like a 'sandbox' video game, these geofenced micro-narratives were triggered by users as they moved freely around the square, with no directional guidelines or third-person commentary, until at a certain point the software initiated audio representing the cavalry charge.²¹ This approach was developed in 2012 by *Ghosts in the Garden*, a collaboration between the University of the West of England, local museums and locative technology firms, staged as a series of events in the Georgian-era Sydney Gardens in Bath.²² This was explicitly framed as a 'history from below' project, where, instead of 'heritage' figures typically associated with the pleasure gardens, such as Jane Austen, new research was used to script a cast including pickpockets, police, entertainers and vagrants. Again, a raft of audio vignettes mapped to the area were triggered by GPS, but responding to the confusion some users reported due to the randomness of *Riot! 1831*, *Ghosts in the Garden* used a more directive model, a walk-to-unlock mechanic known as choose your own adventure (CYOA), so that after listening to the audio at each micro-site, users were given two or three alternatives of where to proceed next. The vignettes were also fastened to a larger story: users heard conflicting opinions about the garden's proprietor in the 1820s, William Bridle, a former prison governor sacked for corruption, and their choices determined whether Bridle would be exposed to public disgrace. Like *Riot! 1831*, *Ghosts in the Garden* reported mixed results and for some users a similar disorientation. Nonetheless, these

20 Blast Theory, *Can You See Me Now?* (2001), www.blasttheory.co.uk/projects/can-you-see-me-now/.

See Adriana de Souza and Ragan Glover-Rijkse, 'Historicising Hybrid Spaces in Mobile Media Art', in *The Routledge Companion to Mobile Media Art*, ed. Larissan Hjorth et al. (New York: Routledge, 2020), ch. 10. For Blast Theory's subsequent work in this vein: Rowan Wilken, 'Proximity and Alterity: Narratives of City, Self, and Other in the Locative Games of Blast Theory', in Farman, ed., *The Mobile Story*, ch. 12.

21 Liz Crowe and Ralph Hoyte, *Riot! 1831* (HP Labs, Bristol, 2004). See M.J. Blyth et al., 'Interdisciplinary Criticism: Analysing the Experience of Riot! A Location-Sensitive Digital Narrative', *Behaviour and Information Technology* 25, no. 2 (2006): 127–139.

22 Steve Poole, 'Ghosts in the Garden: Locative Gameplay and Historical Interpretation from Below', *International Journal of Heritage Studies* 24, no. 3 (2018): 300–314.

were projects designed to test how locative gamification could be used not only to involve people in an embodied dialogue with the past, but also to convey the fragmentary nature of sources and the process of constructing histories – themes I will return to – and they remain both innovative and generative experiments. Indeed, *Riot! 1831* was tweaked in 2018 to become a collage of somewhat more linear narratives and republished as a smartphone app.²³

As noted in the introductory remarks, *Hidden Cities* has also aimed to introject into the public square – to date the early modern square – social and material histories not typically presented to either local or visiting publics. *Hidden Cities* is in effect a hybrid model. Like the last two examples provided, first-person dramatised voices mediate place as an embodied conversation between past and present; meanwhile, more conventional third-person audio narration offers contextualising commentary by project researchers. Most trails are guided by a single dramatised character, so that sites visited via the format's georeferenced historical map – street tabernacles, coats of arms, orphanages, taverns, news stalls, churches, prisons and so on – have a specific significance to that character, in their present or in memory. The character effectively becomes a vehicle that stitches the sites together, as an itinerary that hooks lived experience and social biography to themes such as class, gender, disability, migration and communication in the urban world. In the project's original outing, *Hidden Florence* (2014), the character's itinerary was conceived as a day in the life, where a wool worker in 1490 walks the user to familiar places in his neighbourhood and in the city centre. Increasingly, though, *Hidden Cities* has set its guides off on goal-oriented journeys with a framing narrative, raising the stakes for the character to better expose underlying social historical issues while at the same time enhancing the verisimilitude of the walked experience for the user. In *Hidden Trento's*, 'Innkeepers, princes and migrants', for example, the immigrant tavernkeeper Ursula needs to end up at the palace of the police captain so that she can deliver a petition that might get her husband out of jail. In *Hidden Hamburg's* 'City of news', a quest is crafted around the production and consumption of news, with the character, Johann, propelled from site to site in pursuit of printed pamphlets that might help him, and the user, interpret the political turmoil that upended Hamburg in 1686. As well as the influence of the 'spatial turn', this *Hidden Cities* model is deeply informed by microhistory, which is committed to reconstructions of small worlds and individual lives, especially lives 'from below', in order to draw out larger social and cultural processes. In doing so, microhistorians, as Tom Cohen has pointed out, have also been concerned to interpret the intimate relationships of people with the 'sights, sounds, smells, textures, and quirky spaces of neighbourhoods and buildings'.²⁴

23 Charlie Harman, 'Riot! 1831 Is Back: What's New?', <https://calvium.com/riot-1831-back-whats-new/> (accessed July 15, 2021).

24 Thomas V. Cohen, *Roman Tales: A Reader's Guide to the Art of Microhistory* (New York: Routledge, 2019), 5. For an overview, see Steven Bednarski, *A Poisoned Past: The Life and Times of Margarida de Portu, a Fourteenth-Century Accused Poisoner* (Toronto: Toronto University Press,

Given that *Hidden Cities* trades so heavily on dramatised voices, it pushes to the surface the question of fictionalisation and performed pasts. What makes a model such as this history as opposed to, say, the emplaced narratives of the recent ‘ambient literature’ movement?²⁵ In some respects a great deal. In *Hidden Cities*, the characters are constructed to mediate research into relationships among place, social culture and identity – so while specific scenarios are often invented, these scenarios, and the perspectives evinced by the characters, are informed by what the historians in each project judge to be plausible or at least conceivable in contemporary terms. To borrow Saidiya Hartman’s well-known phrase, the process might be described as ‘critical fabulation’, which for Hartman meant imagining female slave experiences in the face of archival silences.²⁶ *Hidden Cities*’ invented characters such as those already discussed – early modern police, textile workers and innkeepers, for whom we usually have few biographical details and fewer ego documents – are the most clearly fabricated. Yet dramatising better sourced, and real, historical actors remains a fictive enterprise. Katharina Kerstkens of Deventer, Niccolosa Alessandri of Florence and Thomas Greenwood of Exeter, all subjects of chapters in this volume, have left historians biographical details and a few documents, but little more. Even a well-documented and dissected figure such as the unofficial boss of the fifteenth-century Florentine republic Cosimo de’ Medici – a decidedly elite character we chose to do partly because he remains unexamined in plain sight at the hyper-touristed heritage sites he is associated with – involved a similar process. Agreed facts and Cosimo’s own ideas were only the basis to script a character who in the specialist historiography has been variously portrayed as a ruthless ‘godfather’ and a pious statesman. Our reading was that Cosimo was both, and thus his voice became a place where these tensions could be explored and contextualised.²⁷

While fictive characters performing the past is hardly new in public history, it is not uncontested. First-person reenactments, or ‘living history’, at heritage sites have become increasingly popular in recent decades, at times with a second-person element that invites visitors to participate in an activity or imagine themselves in the shoes of a historical actor.²⁸ On the one hand, critics point out that the affective or empathetic engagement with past lives that this aims to achieve runs the risk of collapsing temporalities – which resonates with charges of presentism

2014), ch. 1. S.G. Magnússon and I.M. Sziártó, *What Is Microhistory? Theory and Practice* (New York: Routledge, 2013).

25 Jonathan Dovey, Tom Abba, and Kate Pullinger, ‘Introduction’, in *Ambient Literature: Towards a New Poetics of Situated Reading and Writing Practices*, ed. Abba et al. (Cham: Palgrave Macmillan, 2021). This volume developed from a UWE Bristol, Bath Spa University and University of Birmingham project from 2016 to 2018 that produced a number of locative literature apps: *Ambient Literature*, <https://research.ambientlit.com/> (accessed July 5, 2021).

26 Saidiya Hartman, ‘Venus in Two Acts’, *Small Axe* 26 (2008): 1–14.

27 David Rosenthal, ‘Finding Cosimo de’ Medici’, <https://hiddenflorence.org/2018/12/10/finding-cosimo-de-medici/> (accessed July 2, 2021).

28 Lyon et al., *Introduction to Public History*, chs. 6 and 7; Thomas Cauvin, *Public History: A Textbook of Practice* (New York: Routledge, 2016), ch. 9.

and anachronism that have at times been levelled at the fictive devices and ‘thick’ narratives used by microhistorians.²⁹ On the other hand, others maintain that, in terms of public engagement, education and participation, the risks are worth running and that affective closeness should not assume conceptual simplicity.³⁰ To this I would add that it would be wrong to assume that strong affective responses to representations of the past cancel out critical thinking about historical structure and process.

We can, however, help stimulate critical thinking by openly acknowledging the artifice. Here, locative AR may have a head start. As Steven High of the Montreal Voices Project points out, the walked experience is never truly immersive, but rather liminal; the present-day environment the walker must negotiate, especially a busy urban environment, is always impinging on the user, in tension with any narration of place.³¹ That tension, or dialogue, can be acute when a place has changed dramatically over time: in some *Hidden Cities* locations, the user has to do a great deal of imaginative work, particularly Hamburg where only one site on the ‘City of News’ trail, the Deichstrasse, has remained largely intact since the seventeenth century. As for dramatised historical characterisations, *Hidden Cities* – which has had to negotiate the distance between the present and early modernity – may offer suggestions for avoiding epistemological bear traps. Firstly, we made no attempt to create ‘authentic’ historical voices but, while avoiding gross anachronisms, had the characters speak mainly in non-period idiomatic language. In tandem with this, these characters directly address the user as if they are a time-traveling visitor, offering to act as their guides (or vice versa in the case of *Hidden Valencia*’s blind street singer Josep, who asks for help getting to a public execution). In other words, users are asked to collude in an impossible fiction, one that continually points up the character as a construct. Indeed, like other second-person participation, of which this is a light example, the format can be leveraged to deepen a sense of critical dialogue between past and present, prompting the user to reflect on material and cultural continuity and change. In *Hidden Valencia*’s ‘Revolutionary Road’, the blind ‘guide’ Josep stops at the site of the destroyed City Hall, now a public garden, and assures the user that, while he cannot see the building either, it is right in front of them, and he advises them to check their map (smartphone), which displays an engraving of what once stood at the site. In *Hidden Florence*, Cosimo de’ Medici responds to an implicit query about his extravagant support for the poor Dominican friars at the San Marco by turning the question back to the user: ‘Don’t rich old bankers fear for their souls

29 Vanessa Agnew, ‘History’s Affective Turn: Historical Reenactment and Its Work in the Present’, *Rethinking History* 11, no. 3 (2007): 299–312. For these debates within microhistory, see note 24.

30 See Mark Salber Phillips, ‘Introduction: Rethinking Historical Distance’, in *Rethinking Historical Distance*, ed. Phillips (Basingstoke: Palgrave Macmillan, 2013), 1–20; Iain McCalman and Paul A. Pickering, ‘From Realism to the Affective Turn: An Agenda’, in *Historical Reenactment: From Realism to the Affective Turn*, ed. McCalman and Pickering (Basingstoke: Palgrave Macmillan, 2010), 1–17.

31 High, ‘Embodied Ways of Listening’, 74–76.

where you come from?’ In this temporally liminal space, Cosimo’s ‘where’ unambiguously means ‘when’.³²

Historians seeking to create public AR experiences that are both compelling and educational are still experimenting with locative media’s current affordances, and as illustrated by *Riot! 1831* – a staged event with cumbersome technology in 2005 to a downloadable smartphone app in 2018 – these affordances are hardly standing still. If we can pick out directions of travel in this emergent world, one might be the convergence or cross-fertilisation between locative media and web-based GIS projects (Geographical Information Systems). The georeferencing of historical maps that underpins the *Hidden Cities* model was partly inspired by the growth of online GIS projects such as Locating London’s Past or DECIMA for Florence.³³ Indeed, *Hidden Florence* uses the same map, the Buonsignori map of 1584, as the DECIMA project, which, among other things, plots data for early modern Florence such as city censuses and a census of Jewish residences connected to ghettoisation in 1571. In this context, we can point to Antwerp Time Machine, published in 2020. This geolocated app is a public-facing outgrowth of GISTorical Antwerp, which, like DECIMA, is a series of mapped databases that offers granular detail of urban households.³⁴ With Antwerp Time Machine, a user can toggle between three geolocated historic maps and access census data for the city centre in three time frames, 1584, 1796 and 1898, as well as historic images tagged to place. On the 1584 map, to take an example, a user can stand on the Hoogstraat, Antwerp’s oldest street, and discover that the owner of the building in front of them was a merchant called Aart Pelgrims, that the occupant family was headed by a dyer and that the family paid the handsome rent of 100 guilders a year. While GISTorical Antwerp’s stated aim is to explore topics such as migration and integration, gentrification and impoverishment, as it stands the Antwerp Time Machine is best described as a resource: raw geodatasets are transferred into a locative app without interpretative narrative or connections made between the hundreds of household data points. That said, the potential for locative urban storytelling that joins some of the dots is obvious and in this case – with three time frames in play – tantalising. The app may well turn out to be an early example of GIS projects migrating from their online homes, perhaps first via online storytelling tools such as StoryMap, into the locative arena, big data acting as base layer on which to build public history experiences.³⁵

32 Similarly in the second trail for *Hidden Trento*, ‘City of the Council’, for publication in late 2021, the guide character Angelo Massarelli openly expresses his disgust for beggars, then follows this with: ‘You think I’m not a good Christian? Perhaps where you come from everyone is far more charitable.’

33 Locating London’s Past, www.locatinglondon.org/index.html (accessed April 1, 2020). DECIMA, <https://decima-map.net/>. See also Nevola, ‘Microstoria 2.0’, 263–266.

34 Antwerp Time Machine, www.uantwerpen.be/en/projects/gistorical-antwerp/ (accessed April 1, 2021). GISTorical Antwerp, www.uantwerpen.be/en/projects/antwerp-time-machine/sint-andries-time-machine/ (accessed April 1, 2021).

35 StoryMap, <https://storymap.knightlab.com/#examples> (accessed July 30, 2021). For recent historical uses of StoryMap, see ‘Whose Streets?’ *History Workshop*, www.historyworkshop.org.uk/category/features/whosestreets/ (accessed July 30, 2021).

A second front of convergence is between mobile historical storytelling and mainly visual 2D and 3D AR. The Museum of London's popular Streetmuseum (2010), for example, led users to sites with GPS and allowed them to precisely overlay archive prints and photographs on the present-day built fabric, a particularly good example of blended reality.³⁶ Or, an instance of the increasing application of 3D VR/AR for both research and heritage, Edinburgh 1544 Time Binoculars (2017) reconstructs a number of streetscapes in early modern Edinburgh, and the app makes this accessible as a non-geolocated AR experience *in situ*.³⁷ In different ways, apps such as these offer a powerful sense of the city as palimpsest, yet the emphasis is on sensory effect rather than interpretative and contextualising narrative. As the authors of '3D models and locative AR' in this volume discuss, greater integration between the two is critical and indeed is underway for *Hidden Florence 3D*. This app reconstructs the destroyed church of San Pier Maggiore, a site that in the *Hidden Florence* audio app trail 'Saints and Sinners' is important to the Niccolosa Alessandri character, a real figure whose sister was the church-convent's abbess. Launched on-site, users of *Hidden Florence 3D* can walk down a reconstruction of the nave of the church, now a narrow street, until they reach a model of the high altarpiece that now hangs in the National Gallery in London. Technological and funding hurdles notwithstanding, it is not difficult to envisage that 3D reconstructions of lost buildings such as San Pier Maggiore, or of radically changed streetscapes, will soon be paired with the kind of first- and third-person narration that the audio apps discussed earlier use to interpret past experience vis-à-vis surviving city fabrics.

Perhaps the most stimulating direction of travel in locative AR for public history revolves around ways in which we might deliver storytelling that not only puts public users in dialogue with the sidewalk ballets of the past, but make such approaches work harder to enhance learning and critical engagement. One fairly straightforward method is to use more than one voice, drawing attention to the existence of a multiplicity of contemporary perspectives and thus resisting the impression that a single point of view is representative of the past. With this in mind, *Hidden Cities* included dialogues in two recently published trails. In *Hidden Trento's* 'City of the Council' trail, the guide character, a dramatisation of Council of Trent secretary Angelo Massarelli, a jaded yet loyal servant of the Church, is approached outside the cathedral by an imperial notary, who seeks his help over charges of heresy. The notary, based on a historical figure and a real case, also robustly defends his deviations from doctrine, and the sharp exchange between the two men is designed to convey in microcosm the fracturing of religious world-views in Europe and the institutional and political stakes that accompanied this.

36 This app and its successor Streetmuseum Londinium were unavailable at the time of writing. www.museumoflondon.org.uk/discover/museum-london-as (accessed July 2, 2021).

37 Edinburgh 1544 Time Binoculars, www.smarthistory.co.uk/Edinburgh1544/download.html (accessed July 2, 2021). St Andrews University and Smart History's current project is 'St Andrews 1559', a 3D reconstruction of St Salvator's Quad. www.smarthistory.co.uk/. For a sample of VR 3D projects, see www.theguardian.com/travel/2021/mar/02/10-virtual-tours-spectacular-buildings-around-world-vr.

Hidden Exeter pushes this a great deal further in a ‘history from below’ approach to the dissolution of the monasteries in Exeter in 1536, constructing a two-hander across the entire trail in which a brother and sister, both artisan characters, find themselves, for a range of religious and economic reasons, on different sides of the Reformation unfolding in England.

Such examples of situated historical theatre return us to the role of the audience/user and the potentials of gamification. *Hidden Cities* uses basic forms of gamification; geofencing triggers an image of a street object that the user must find before launching the character audio (a form of scavenger hunt), while, as observed earlier, in some trails the user uncovers new elements of a story as they move through the sites in a linear quest narrative. Yet despite light second-person participation, the *Hidden Cities* mechanic as it stands means the user is essentially led by the character; there are no real choices to be made. Steve Poole, who led Bath’s *Ghosts in the Garden* experiment, argues that more advanced gamification is the best route to a ‘dialogical approach to methodology’, with narratives and outcomes contingent on the decisions of the user, prompting them to evaluate and problematise evidence.³⁸ Recent scholarship on historical video games would tend to agree; gameplaying the past, paralleling known histories with a range of possible outcomes, is seen to promote the understanding of contingency, conditions and circumstances, which underpins an understanding of historical process.³⁹

While my own work with *Hidden Cities* suggests that AR gamification is not strictly necessary to convey contingency or stimulate critical dialogue with historical evidence and constructions of lived experience, it can certainly experientialise these elements. There is also evidence to suggest that both VR and AR gameplay promote active learning on unfamiliar topics.⁴⁰ As Kevin Kee, Eric Poitras and Timothy Compeau recently pointed out, historians have only scraped the surface of AR locative gaming and moreover are still developing ways to evaluate what users take away from these experiences.⁴¹ Their own games, *Niagara 1812* and *Queenston 1812* (2010), incorporated quests where users had to accomplish goals and solve puzzles while exploring the 1812 war between the United States and Britain’s Canadian colonies, at the same time investigating its aftermath by

38 Poole, ‘Ghosts in the Garden’, 306 and *passim*.

39 Andrew B.R. Elliott and Matthew Wilhelm Kapell, ‘Introduction: To Build a Past That Will “Stand the Test of Time” – Discovering Historical Facts, Assembling Historical Narratives’, in *Playing with the Past: Digital Games and the Simulation of History*, ed. Elliott and Kapell (New York: Bloomsbury, 2013), 1–30. See also Martin Wainwright, *Virtual History: How Video Games Portray the Past* (New York: Routledge, 2019).

40 Armin Hutzler et al., ‘MythHunter: Gamification in an Educational Location-Based Scavenger Hunt’, in D. Beck et al., eds., *Communications in Computer and Information Science* 725 (2017): 155–169.

41 Kevin Kee, Eric Poitras, and Timothy Compeau, ‘History All Around Us: Toward Best Practices for Augmented Reality for History’, in Kee and Compeau, eds., *Seeing the Past with Computers*, 207–223. More widely on AR games: Mads Haahr, ‘Everting the Holodeck: Games and Storytelling in Physical Space’, in *Interactive Digital Narrative: History, Theory and Practice*, ed. Hartmut Koenitz et al. (New York and London: Routledge, 2015), 211–226.

revisiting the mystery of who bombed a monument to Sir Isaac Brock in 1840, the British military commander killed at Queenston in 1812. Meanwhile, *Jewish Time Jump* (2013) was designed to address gaps in US high school history curricula and encourage students to think about labour issues, past and present. Framed by material that details a deadly garment factory collapse in Bangladesh in 2013, the app specifically tackles an early twentieth-century story in New York, the mass garment worker strike led by Jewish, Italian and Irish migrant women in 1909 and the death of 147 of these workers in a factory fire two years later.⁴² GPS-located on site in Greenwich Village, players take on the role of time-travelling reporters, gathering perspectives of labour leaders and evaluating source material. User choices determine some of the material presented and the perspectives they play from: for example, if the clothing they choose for their avatar marks them out as strikers, they will need to avoid strikebreakers; if mistaken for a boss, they may find themselves invited to a crisis meeting of manufacturers.

Positioning the user as participant-investigator, as these apps do, and involving them through role-playing gamification in the process of doing history, albeit schematically, is a direction in locative public history worth pursuing. For apps such as *Hidden Cities*, which want to remain in an ‘eyes up’ kinetic dialogue with the material environment, a more gamified future is likely to privilege audio, with screen interaction centred primarily around period mapping. Indeed, one recent prototype proposes an audio mechanic that fully exploits the affordances already available on smartphones, with features such as site points that only unlock on the map as the user progresses (and which can even be set to appear only at certain times of day), a choice of routes and narratives within an interlocking structure, and site points that trigger different stories depending on direction of approach.⁴³ The mobile storytelling potential of this kind of palette – and one thinks of the way that microhistories, often based on a crime and the trial testimony it produces, link a discrete set of places, events and *dramatis personae* to multiple perspectives – has an immediate appeal.

To briefly return to contentious monuments, there is much at stake in how we do history in the streets. In Bristol, a case in point, a few weeks after Edward Colston was pulled down, a new statue was erected under the cover of darkness on his plinth, *A Surge of Power (Jen Reid) 2020* by Marc Quinn, a sculpture of a black female anti-Colston protester with a clenched fist salute. Taken down the next morning by city authorities, the plinth remains vacant at the time of writing. What ultimately may be placed there, and in the city at large, is still being formulated by a history commission appointed by the city council.⁴⁴ Whatever

42 Owen Gottlieb, ‘Time Travel, Labour History, and the Null Curriculum: New Design Knowledge for Mobile Augmented Reality History Games’, *International Journal of Heritage Studies* 24, no. 3 (2018): 287–299.

43 Reinis Indans et al., ‘Towards an Audio-Locative Mobile Application for Immersive Storytelling’, *Journal of Cartography and Geographic Information* 69 (2019): 41–50.

44 ‘We are Bristol History Commission’, *Bristol City Council*, <https://www.bristol.gov.uk/policies-plans-strategies/we-are-bristol-history-commission> (accessed December 3, 2021). Appeals to have Quinn’s statue temporarily reinstated were dismissed in August 2021.

physical media materialises in Bristol and elsewhere, locative digital media delivered through smartphones clearly also has an increasingly vital role to play in how the past, and which pasts, are represented and commemorated in public spaces. Locative media can be used to explore research topics in spatial, sensory and material terms, enabling interpretative insights that might never occur from the page of a manuscript. At the same time they offer tools to translate these insights into public history, facilitating dialogues between past and present that engage with the politics of memory: interrogating, complicating, and perhaps above all expanding what is regarded as heritage.

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2 Heritage, digital placemaking and user experience

An industry perspective

Jo Morrison

Introduction

Over the past decade, due to the availability, advancement and adoption of mobile technologies, there has been a rapid increase in the number and types of locative smartphone apps related to urban cultural memory. From the Museum of London's augmented reality app, *Streetmuseum*, that combines historic images and video with present-day street scenes and Auckland City Council's self-guided tours which "encourage people to learn more about Tāmaki Makaurau history", to *The Cartographer's Confession* that fuses fiction and non-fiction with imagined and real locations as it explores emergent forms of literature in London, people are engaging with the history of their physical surroundings through mobile locative media.¹ Pushing the boundaries of digital public history further is *The Lost Palace*, commissioned by Historic Royal Palaces (HRP) to tell the story of the Whitehall Palace that was destroyed 300 years ago.² As they move along Whitehall, a road linking Trafalgar Square and the Houses of Parliament, the audience experiences a choreographed locative performance which evokes seventeenth-century London through touch, hearing and sight using a mixture of wooden handheld devices, haptic technology and binaural 3D sound. HRP's Tim Powell states, "The technology must help visitors connect to the place and to the stories and characters in an emotional and visceral way and the technology enables us to do that in ways we have not been able to do before".³ As these locative projects

1 Meriel Jeater, 'Smartphones and Site Interpretation: The Museum of London's Streetmuseum Applications', in *Archaeology and Digital Communication: Towards Strategies of Public Engagement* (London: Archetype Publications, 2012).

Barbara Holloway, 'Te Paparahi Toi Māori, Walks in the City', *LinkedIn*, 2020, www.linkedin.com/pulse/te-paparahi-toi-maori-walks-city-barbara-holloway/.

Kate Pullinger and James Atlee, 'The Cartographer's Confession: An Artist Interview with James Atlee', *Ambient Literature* (2018): 187–197.

2 'The Lost Palace – Giving Life to the Lost Palace of Whitehall', *Calvium*, <https://calvium.com/projects/the-lost-palace/> (accessed May 23, 2021).

3 Tim Powell, 'The Lost Palace II – Return of Historic Royal Palaces' VR Sensation', *Museums + Heritage Advisor*, last modified July 13, 2017, <https://advisor.museumsandheritage.com/features/lost-palace-ii-return-historic-royal-palaces-vr-sensation/>.

demonstrate, through each new digital technology, practitioners seek to draw public attention towards the historic built environment in ever more inventive ways.

Historians and academic researchers are part of this move to fuse place-based historical storytelling with mobile technology. As they create locative media that reveals different aspects of history in urban space, they participate in shaping a type of hybrid public space through an emergent practice termed “digital placemaking”.⁴ This chapter concentrates on the making of historical locative media and its enabling technology and how these participate in the fields of digital humanities and digital public history. The first section provides an account of some key spatial concepts, before discussing the *Hidden Cities* suite of mobile apps and their user experience design. The second section then explores the making of three components of the project: interactive historical maps, the content management system and the analytics tool. The final section discusses the experience of making *Hidden Cities* and offers a set of considerations for academics and those from the museums and heritage sector who are interested in locative digital public-facing history.

Mobility: people, public space and digital technology

The act of using a smartphone while walking in cities is an everyday event and one that has been studied extensively by different disciplinary communities, for example social scientists, urban geographers, artists and computer scientists. Many accounts describe how mobile technologies influence ways in which cities are experienced, from shifting people’s visual attention and behaviour patterns to modifying social rituals and spatial appropriation.⁵ As Brewer and Dourish suggest, “mobile technology is not, then, simply operating within a spatial environment; it is implicated in the production of spatiality and the spatial experience”.⁶

4 Andrea Rolando and Alessandro Scandiffio, ‘Mobile Applications as Tools for Exploiting Cultural Heritage in the Region of Turin and Milan’, in *International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences* (Strasbourg: XXIV International CIPA Symposium, 2013), 525–529.

Georgios Artopoulos, ed., *Hybrid Heritagescapes as Urban Commons in Mediterranean Cities: Essays on Accessing the Deep-rooted Spatial Interfaces of Cities* (Nicosia: The Cyprus Institute, 2018).

5 Tali Hatuka and Eran Toch, ‘The Emergence of Portable Private-Personal Territory: Smartphones, Social Conduct and Public Spaces’, *Urban Studies* 53, no. 10 (2014): 2192–2208. <https://doi.org/10.1177/0042098014524608>.

Eric Laurier, Barry Brown and Moira McGregor, ‘Mediated Pedestrian Mobility: Walking and the Map App’, *Mobilities* 11, no. 1 (2015): 117–134, <https://doi.org/10.1080/17450101.2015.1099900>.

Gorsev Argin, Burak Pak and Handan Turkoglu, ‘Between Post-Flâneur and Smartphone Zombie: Smartphone Users’ Altering Visual Attention and Walking Behavior in Public Space’, *ISPRS International Journal of Geo-Information* 9, no. 12 (2020): 700.

6 Johanna Brewer and Paul Dourish, ‘Storied Spaces: Cultural Accounts of Mobility, Technology, and Environmental Knowing’, *International Journal of Human-Computer Studies* 66, no. 12 (2008): 963–976.

The ongoing proliferation of mobile apps and expansion of smartphone functions will serve to implicate these devices further in reshaping individual and collective encounters with urban space. Hence, as mobile technologies play a key mediating role in shaping people's modes of action and engagement with the city, new constructions of space are being conceptualised that seek to reframe the traditional borders between physical and virtual spaces.⁷

As an orienting spatial concept, this chapter adopts a theory of “hybrid space” developed by de Souza e Silva which refers to the merging of physical and digital to create a new type of socially constructed space.⁸ Building on this, Farman claims that mobile technologies require people to be embodied across multiple hybrid spaces, “The stakes related to the ways we conceive of embodied space are significant, including the ways we imagine identity, community, and cultural objects we create, including art, games, performance and narrative”.⁹ Therefore, those people engaging with public history through the use of a *Hidden Cities* locative smartphone app can be conceptualised as being situated in hybrid public space, where digital content relates to the physically proximate and requires a user's attention to be focused in neither the physical nor the virtual, but both, the hybrid.

Digital placemaking can be positioned as an emerging spatial practice operating in, or facilitating, hybrid space.¹⁰ It is related to the placemaking concept, which is broadly understood as a collaborative process whereby people from a range of stakeholder communities inform and influence the evolving experience of public space. Examples include the *Pallet Pavilion* transitional architecture project in New Zealand, *Intersection Repair* project that helps communities transform road intersections into vibrant public spaces in Oregon and urban upgrading interventions in Medellin, Colombia.¹¹ Adding “digital” to “placemaking” expands and reframes familiar conceptions of public space and spatial practices. As such, an

7 Andre Lemos, ‘Post–Mass Media Functions, Locative Media, and Informational Territories: New Ways of Thinking about Territory, Place, and Mobility in Contemporary Society’, *Space and Culture* 13, no. 4 (2010): 403–420, <https://doi.org/10.1177/1206331210374144>.

Jason Farman, *Mobile Interface Theory: Embodied Space and Locative Media* (Oxford: Routledge, 2012), 15.

8 Adriana de Souza e Silva, ‘From Cyber to Hybrid’, *Space and Culture* 9, no. 3 (2006): 261–278.

9 Farman, *Mobile Interface*, 15.

10 Jo Morrison, *Ideascape: Digital Placemaking for Porth Teigr, Cardiff Bay* (Bristol: Calvium, 2017), 10–11.

Luke Hespanhol et al., *Media Architecture Compendium: Digital Placemaking* (AvEdition, 2017).

11 Joel Mills, ‘Hidden Rooms: The Empowered City’, Issue, last modified December 18, 2014, https://issuu.com/pivotdublin4/docs/joel_mills_presentation.

‘Placemaking Projects – The City Repair Project’, The City Repair Project, <https://cityrepair.org/our-projects> (accessed December 20, 2020).

Julio D. Dávila and Diana Daste, ‘Poverty, Participation and Aerial Cable-cars: A Case Study of Medellin’, *12th NAERUS Annual Conference ‘The City at a Human Scale’* (Madrid, October 2011), https://assets.publishing.service.gov.uk/media/57a09de1e5274a31e0001ad4/60726_cable_cars_Medelin.pdf.

array of practitioners have adopted location-specific digital technology and media to create new ways for people to engage with physical places, for example participatory planning projects to help citizens reshape their neighbourhoods using Minecraft software; Starling CV, an interactive pedestrian crossing, and the Sydney Opera House's Living Mural.¹² While diverse in nature, a common characteristic across these projects is a concern with fostering deeper relationships between people and the places they inhabit, which, in turn, can boost the social, cultural, environmental and economic values of these locations.

Despite the clear emphasis of the word “digital” in the term “digital placemaking”, it is not a “tech-first” approach to urbanism. Digital technology is just one of the constituent parts to be considered when designing a digital placemaking project, other aspects include the people who will use or be affected by the project, the place of use and any associated data.¹³ As such, digital placemaking is a context-specific, relational practice with multiple interdependencies, and while the responsible use of technology is a core component, the chief concern of practitioners is to improve the human experience of places. Thus, for the purposes of this chapter, digital placemaking can be defined as the augmentation of physical places with location-specific digital services, products or experiences to create more meaningful public spaces for all.

As a practice which draws knowledge from a number of fields, digital placemaking is inherently flexible and collaborative. The multidisciplinary teams that form to create a particular project will have expertise necessary for that instance. For example, those who developed the *Hidden Cities* smartphone apps had skills that included software engineering, mobile app development, user experience design, interface design, content management system integration, public history, site-based historical research, storytelling and more. Similarly, another historical app from some of the same collaborators, *Hidden Florence 3D*, also required contributors with the know-how to design and develop the 1:1 scale digital reconstruction of the church of San Pier Maggiore, specifically, 3D modellers from the technology industry and art historians from academia.¹⁴ As these teams worked together to translate historical research into engaging public-facing locative

12 Tim McDaniel, ‘Block by Block: The Use of the Video Game “Minecraft” as a Tool to Increase Public Participation’, Texas, 2018, <https://digital.library.txstate.edu/handle/10877/7214>.

‘Starling CV – Umbrellium’, Umbrellium, <https://umbrellium.co.uk/products/starling-cv/> (accessed December 17, 2020).

‘Sydney Opera House: Living Mural Sydney, a Collaborative Architectural Projection’, Universal Everything, <https://universaleverything.com/projects/sydney-opera-house-living-mural> (accessed December 17, 2020).

13 Jo Morrison, ‘Mobile Digital Wayfinding Tools: Enabling and Enhancing the Experience of Visitors with Different Access Needs’, in *Inclusive Digital Interactives: Best Practices + Research* (Access Smithsonian, Institute for Human Centered Design and MuseWeb, 2020), 321–348, <https://access.si.edu/sites/default/files/inclusive-digital-interactives-best-practices-research.pdf>.

14 ‘*Hidden Florence 3D* – Re-imagining a Lost Icon of Renaissance Florence’, Calvium, <https://calvium.com/projects/hidden-florence-3d/> (accessed May 23, 2021). See also discussion in Chapter 11 by Nevola, Cooper, Capulli and Brunke in this collection.

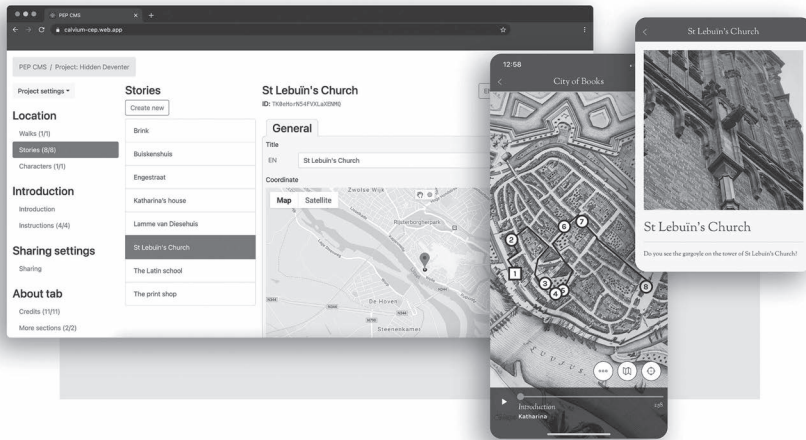


Figure 2.1 *Hidden Deventer's* content management system and mobile app interfaces.
© Calvium and University of Exeter

media, they sought to balance the interests of the researchers, the technologists and the end users of the mobile apps.

The *Hidden Cities* suite of five apps are individual software products which were each built on a single technology platform, the Place Experience Platform (PEP). Research historians created content about the cities and uploaded and stored this content into the platform's content management system (CMS). Once the initial content was embodied in mobile apps published in Google Play or Apple's App Store, the applications could be downloaded onto smartphones and experienced by members of the public. As such, the Place Experience Platform has two sets of end users: the researchers who create content via the CMS and test the app, and the public who experience cities through the use of just the app, for example *Hidden Deventer* or *Hidden Hamburg*. As partners in the *Hidden Cities* research project, digital agency Calvium designed and developed the Place Experience Platform to optimise the user experience of both the content management system and mobile apps.

The apps for Hamburg, Valencia, Exeter, Deventer and Trento are built upon the user experience and interface design that was established for the first European city app, *Hidden Florence*.¹⁵ Fundamentally, the user experience can be

15 Fabrizio Nevola and David Rosenthal, 'Locating Experience in the Renaissance City Using Mobile App Technologies: The "*Hidden Florence*" Project', in *Mapping Space, Sense, and Movement in Florence: Historical GIS and the Early Modern City* (London: Routledge, 2016), 187–209.

likened to the familiar museum audio guide that provides expert commentaries on selected objects within the venue. As with many of these guides, the user can move around the location following a prescribed route or choose a self-directed mode of engagement. The *Hidden Cities* apps enable this form of location-specific interaction at city-scale. Locative media provides audiences with historical stories that are “placed” in public spaces and the location of each story can be seen on a map, making the app a type of wayfinding tool. A key feature of each *Hidden Cities* app is the ability for users to move around the city by referencing a digital representation of a historical map, such as the 1587 Hooker-Hogenburg map of Exeter or the 1608 Antonio Mancelli map of Valencia. In this way, a visitor can stand on a present-day high street while engaging with a compelling visual historical document about that place. Furthermore, if the smartphone’s location services are enabled, the user will be able to see their own position on the historical map in the same manner as Google Maps, that is a blue dot overlaid on the map. Hence, the app provides a way for the public themselves to be augmented within the digital layers of history, travelling between centuries as they wander around public space.

The CMS developed during the *Hidden Cities* project and based on the Place Experience Platform model has a range of features that are used by researchers to create content for the mobile apps with text, audio and images.¹⁶ In *Hidden Exeter*, for example, as well as presenting stories about nine individual historical sites in Exeter, the app content also communicates information about the virtual characters that guide app users around the city, related research and the project creators. Using the CMS’s map-based interface, the researchers plotted the route that members of the public can follow around the city centre in order to “join city steward Thomas Greenwood as he shows you the places that make Elizabethan Exeter tick” when they choose the “Politics, Profit and Prayer” walk.¹⁷ In order to enable researchers to work in a fashion that reflects their preferred processes, the content management system supports multiple user accounts and permission modes that facilitate collaboration. As such, the Exeter researchers were able to upload, moderate, review and test any content prior to it being made available to the public. Once an app has been downloaded and used, the researchers are able to see information relating to its usage on an analytics dashboard, for example how many times *Hidden Exeter* has been opened and the average time spent on a specific walk. The evolution of the Place Experience Platform’s content management system over the course of the project demonstrates the co-creation of a user experience design, enabled by frequent interactions between the team at Calvium and the platform’s intended users in the academic research team.

16 ‘Features – Place Experience Platform’, Calvium, <https://calvium.com/place-experience-platform/features/> (accessed December 17, 2020).

17 *Hidden Exeter*, App Store, <https://apps.apple.com/gb/app/hidden-exeter/id1531113924> (accessed December 17, 2020).

User experience, usability and human-centred design

As claimed by Matthew G. Kirschenbaum, “The idea of interface, and related concepts such as design and usability, are some of the most vexed in contemporary computing”.¹⁸ Indeed, while user experience, usability and interface design are core components of the design and development of all digital products, they have various definitions, with the terms user experience (UX) and usability often used interchangeably. For the purposes of this chapter, usability is framed as how well a product’s features accommodate the needs of its user within their given context. Therefore, good usability should enable a person to use a product easily, efficiently and satisfactorily, without relying on help from others.¹⁹ User experience is a broader concept than usability, encompassing all aspects of a user’s engagement with a digital product, including its interface design, usability, function and marketing. User interface design is an aspect of UX and considers the graphical components and user actions required to make a person’s interaction with a product interface both simple and pleasurable.

Underpinning the UX of the Place Experience Platform is a human-centred design approach that takes into consideration the needs of the academic research community and members of the public. The goal of such an approach is to help establish design requirements and design concepts that are based upon the ways that people live their lives, that is how users interact with the world. While Giacomini suggests that “today’s human centred designer is a relatively transparent figure who does not impose preferences on a project, but who instead stimulates, conveys and translates the will of the people”, it is important to note that the “will of the people” is just one consideration of the design process.²⁰ The expertise of technical developers and interface designers and budgetary concerns are additional considerations that help to inform the ultimate design of a digital product. In this way, the design of the Place Experience Platform can be seen as a site of activity negotiated between multiple actors.

The history of the *Hidden Cities* project meant that the development of the Place Experience Platform followed a more evolutionary process than usual for a completely new product. The existing *Hidden Florence* app provided an established design template on which to base the user experience of the new suite of city apps. However, unlike for *Hidden Florence* where publication to the app stores was handled by the project’s technical partners, Calvium, for *Hidden Cities* it was determined that the academic researchers would be responsible for creating and publishing app content. Calvium consequently developed a bespoke

18 Matthew G. Kirschenbaum, ‘So the Colors Cover the Wires: Interface, Aesthetics, and Usability’, in *A Companion to Digital Humanities*, eds. Susan Schreibman, Ray Siemens, John Unsworth (Blackwell Publishing, 2004), 523–542.

19 ‘UX Design Courses & Global UX Community’, The Interaction Design Foundation, www.interaction-design.org/ (accessed December 17, 2020).

20 Joseph Giacomini, ‘What Is Human Centred Design?’, *The Design Journal* 17, no. 4 (2014): 606–623.

content management system for this purpose. In order to do so, the Calvium team employed human-centred design tools and techniques to discover the requirements of the academic researchers creating content, the goal being to create a platform that allows content providers to perform all of the required functions easily and in ways that are tailored to the processes and workflows of the humanities research community.

An earlier account of the *Hidden Florence* app has been given by its content creators, Nevola and Rosenthal, when they discuss its media (audio, text and image), storytelling style and narrative devices, and its intention to facilitate a user's "embodied engagement with the meanings of the site" when walking around Florence.²¹ They also outline the process undertaken by the technology partners to translate the 1584 Buonsignori printed map of Florence into a digital representation akin to a Google map. As mentioned previously, the *Hidden Florence* app design underpins the user experience of all the *Hidden Cities* apps. The following section seeks to reveal further how the suite of locative historical apps were made by exploring three aspects of the project from the perspective of the technical partners, Calvium. Firstly, the collaboration between the academic partners and Calvium will be summarised, focusing on two workshops. Next, it will describe the process of turning five premodern maps into navigational tools with the functionality expected of today's interactive smartphone maps. Attention will then be given to aspects of the content management system, before studying the evaluation tool that enables academics to see data related to user interactions with their apps, and is intended to provide insights to inform the underpinning research.

Collaborative workshops

User experience design is a key element of all digital engagement. To optimise the user experience of the *Hidden Cities* apps and content management system, the academic and technical partners collaborated in two workshops. Undertaken at the start of the project, the nature of workshop one was intentionally exploratory, whereas workshop two had a practical focus and happened once the project was underway. As the user experience of the *Hidden Cities* apps was built largely upon the original *Hidden Florence* app, the first workshop gave the researchers a broad introduction to the tools, mechanisms and models used to create content for the app experience. The academics from different universities also shared their research and any digital tools they had developed that might be useful to incorporate in *Hidden Cities*, for instance, one of the participants demonstrated a geographic information system (GIS) application. At this workshop a set of requirements was identified, for example each city app needed to have multi-language capability and the platform should be extensible. In addition, to inform the design of the CMS's user experience and its development workflow, the content

21 Nevola and Rosenthal, 'Locating Experience'.



Figure 2.2 Collaborative workshop to inform the UX of the *Hidden Cities* apps. © Enrico Valsertiati

creation processes of the academics were also mapped. This exercise proved valuable as it identified the need for the CMS to provide multiple user accounts and different editing permission modes. It also enabled the teams to discuss a project schedule that accommodated the needs of the academics to create and upload the content alongside those of the technologists to design and develop the software.

Workshop two was a practical session that focused on agreeing the project deliverables and its schedule. Calvium had synthesised the user experience insights gathered from the first workshop and presented the participants with wireframes that illustrated the proposed usability of the apps and the content management system. Both sets of wireframes were used as common reference points for discussion among the participants. Any agreed changes to the usability flows were noted and informed the next phase of design. Workshop two was also the point at which the production workflows and project schedules were assessed and agreed by the attendees. Achieving a schedule that did not hamper the work of either partner was summed up by Calvium’s project lead, “matching the ways we work with academic cycles and timeframes was critical . . . not sexy, but a hell of a challenge!”

The making of maps

Making each of the five cities’ historical maps interactive and responsive to movement was an inherently manual process that involved collaboration between an interface designer, technical developer and an academic researcher. Initially, digital representations of the premodern maps were delivered to the technology

partners whereupon the interface designer created new versions of the maps to a required specification for the developer to employ as he built the app. Prior to working with the maps, the designer felt that it would be “an interesting job, experimenting to bring them to life in this day and age”, and anticipated it being “an easy job” as she assumed that the historical maps would show a similar street layout to those presented in a modern online map, such as Google Maps, making alignment straightforward. However, each premodern map used a different type of projection and had its own set of characteristics, none of which matched exactly the app’s mapping software, and some of which complicated the task of lining up the modern city map with its historical counterpart. For instance, the map of Exeter had certain churches magnified which obscured surrounding streets, and Trento’s sixteenth-century map by Giovan Andrea Vavassore had significant differences, including the position of the river that had been rerouted subsequent to Vavassore’s work (see Chapter 6).

To overcome the various challenges and create a set of artworked historical maps that could be overlaid upon the corresponding Google maps, the designer followed an iterative process of trial and error. For each map she would start by lining up, as closely as possible, the historic map and Google map using the layers function in Photoshop software. She would then flip between the two maps to align the key features, for example curvatures of roads, city walls, rivers and canals as well as significant historical buildings. When the best positioning was achieved, the designer and researcher would agree how to proceed as “we had to manufacture distortion to align the historic maps to Google maps”. At this point, the designer would use the Puppet Warp feature in Photoshop to create a mesh over the historic map, enabling selected areas to be moved without affecting the rest of the image. Once this process was applied to the maps at five different levels of magnification – to enable a user to zoom in and out of a map, the finished set of “embellished” historic artwork was shared with the developer.

The developer then used the modified images of the historical maps to create map data suitable for incorporation in the interface of a mobile app. Sets of corresponding map tiles are generated for the app for each level of magnification required, allowing app users to pan and zoom a historic map, and see their own location on it as a “blue dot”, just as in the familiar Apple Maps or Google Maps interfaces. Should the app user prefer, they are able to switch between the historic and a modern map of the city within the app, so easing navigation around the city and illustrating some of the changes that have taken place over time. Originally, Calvium had planned to use their own existing software to automate part of the development process that facilitates these user interactions with the maps. However, part of Calvium’s automated map rendering software utilised third-party software that had been licensed as open source, and its recent change to a paid licensing model meant that drawing on this software was no longer viable. In addition, a key feature in the third-party software broke and the provider opted to no longer maintain it, instead relying on the “tech community” to fix any problems; therefore, Calvium chose to update their automated map rendering software by incorporating new third-party software with open-source licensing. Thus,

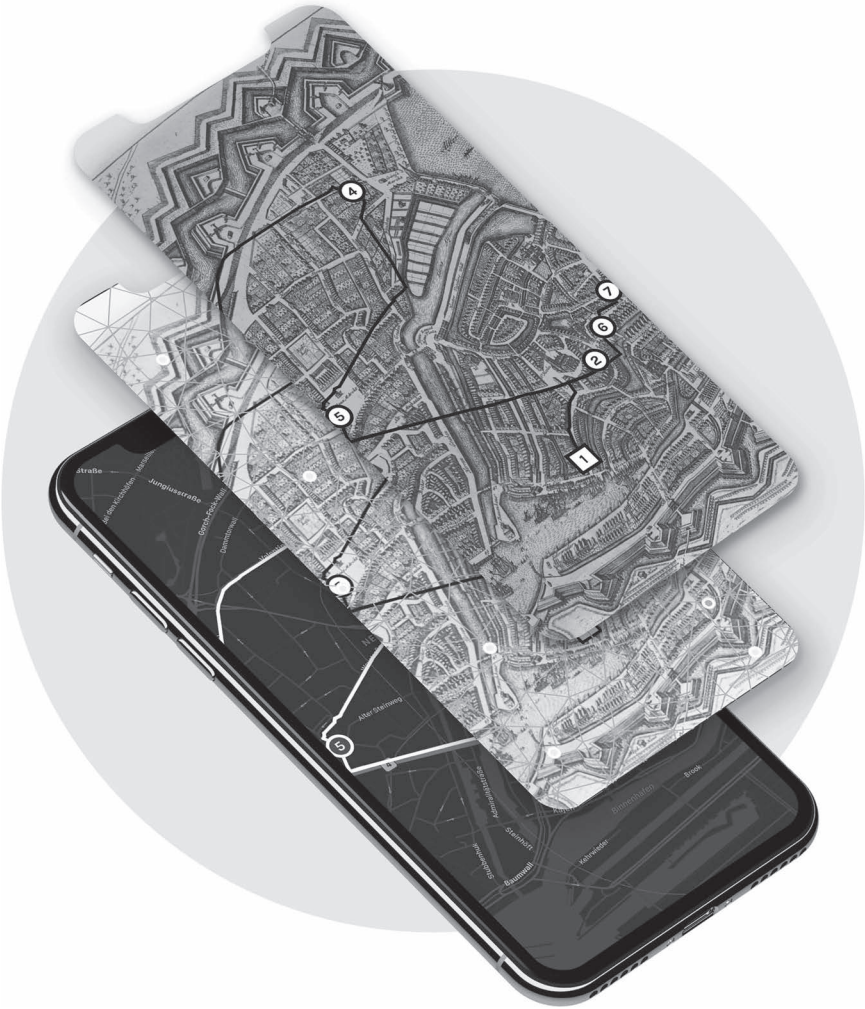


Figure 2.3 An illustration of the process of “layering” the modern and historic maps to enable alignment between them. © Calvium

changing and unpredictable software played a role in Calvium’s iterative design and development process.

Content management system

Once the researchers have created the content for their city app (text, audio and images), they upload it to the content management system, where it can be managed and modified. The CMS also enables the researchers to position story points

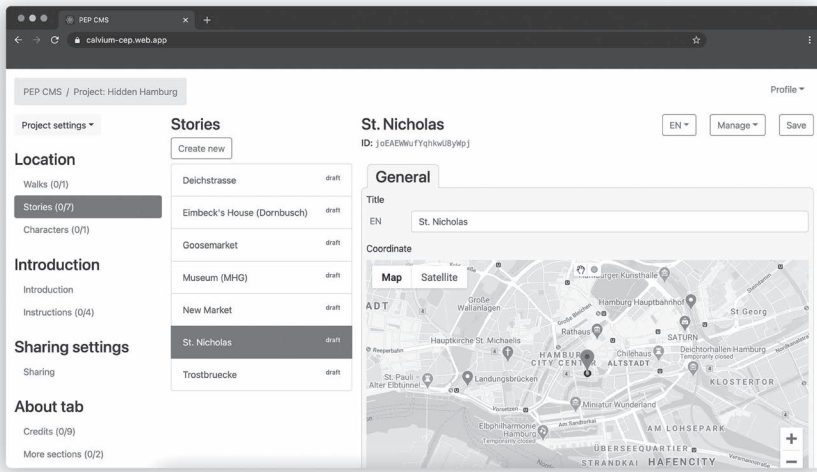


Figure 2.4 CMS used to upload and manage content for the *Hidden Hamburg* App.
© Calvium and University of Exeter

on the map and plot the routes of each walk, such as “Politics, Profit and Prayer” in *Hidden Exeter* or “Revolutionary Road” in *Hidden Valencia*. As part of their content-making process, researchers are able to review the media on a smartphone in order to test the user experience of the city app – without it being available for public consumption. Having reviewed the content, they can choose to update it further or publish to the app stores and start the process of making the city app live. When the app is live, it can be downloaded by members of the public and experienced either in the city location or remotely; in the case of the latter, the physicality of the user experience is absent.

The CMS was built as part of the *Hidden Cities* project. Its functionality was driven by the existing design specification of the *Hidden Florence* app and the requirements of the research community who would be the principal users of the software. As such, the main features of the CMS were settled at the start of the project, for example the “Location” information constituted “walks, stories, characters” and the “Introduction” information contained “introduction” audio and four sets of written “instructions” about using the app. In this way, the app interface invites users to “Let the characters guide your walk: You can use this app as you move through the streets of Exeter and trigger stories with GPS – or sit back and let your fingers do the walking by tapping on story points”.²² In order to ensure that the CMS accommodated the working needs and processes of the users, it was identified that multiple user accounts were necessary and that a “request

22 *Hidden Exeter*, App Store, 2020.

review” feature was needed, which would alert other researchers that a piece of content was ready for feedback.

During the content development phase of the project, when the researchers were devising their locative storytelling and creating the associated media, they raised design issues and queries that emerged through their making process. These issues related primarily to the functionality of the CMS and any subsequent effect on the app’s user experience. For instance, one concern related to the current instantiation of the CMS not providing an option of having a second image available in the app that could present a historical view of a specific site. Firstly the researchers explained to the technical partners how they had been writing the app’s content with the expectation of a second image on screen, and went on to describe their assumed real-world user experience. The researchers gave more context when saying “It’s a feature that’s used for cities that have very little extant early modern fabric, for instance Hamburg use it a fair bit”. The continued involvement of the researchers with the technical partners throughout the development of the CMS meant that requirements could be discussed and refined iteratively, such as the potential inclusion of a second image of historical features in the content set to aid user navigation.

Analytics dashboard

The *Hidden Cities* digital dashboard is a graphical user interface that provides the project’s researchers and technologists with metrics to monitor specific aspects of the usage of an app after publication. Each of the apps has its own dashboard which allows key data points to be compared across the suite of apps. For example, Hamburg, a city with a population of around two million people, had ten times the number of individual users who downloaded the app between 5 December 2020 and 3 January 2021, than Exeter, a city of approximately 130,000 people. This information can be read in different ways and prompt a range of questions.²³ For example, some might wonder if the significant disparity between the Hamburg and Exeter app is due to audience types and the context for their engagement with the city app at a time of varying “lockdown” restrictions due to the global pandemic. At the same time, without taking into account contextual data about population size and tourist flows, others might question the technical stability of the *Hidden Exeter* app. This example illustrates the intended role of the dashboard to support analysis and evaluation by users who view the data through different lenses.

The analytics dashboard’s key performance indicators display a limited view of an app’s usage due to the set-up of data acquisition. Data points are collected after a user has downloaded the app, opened it and interacted with it; therefore, a

23 See Chapter 10; also Nevola, Fabrizio, Tim Coles and Cristina Mosconi. ‘*Hidden Florence Revealed? Critical Insights from the Operation of an Augmented Reality App in a World Heritage City*’. *Journal of Heritage Tourism*, accepted.

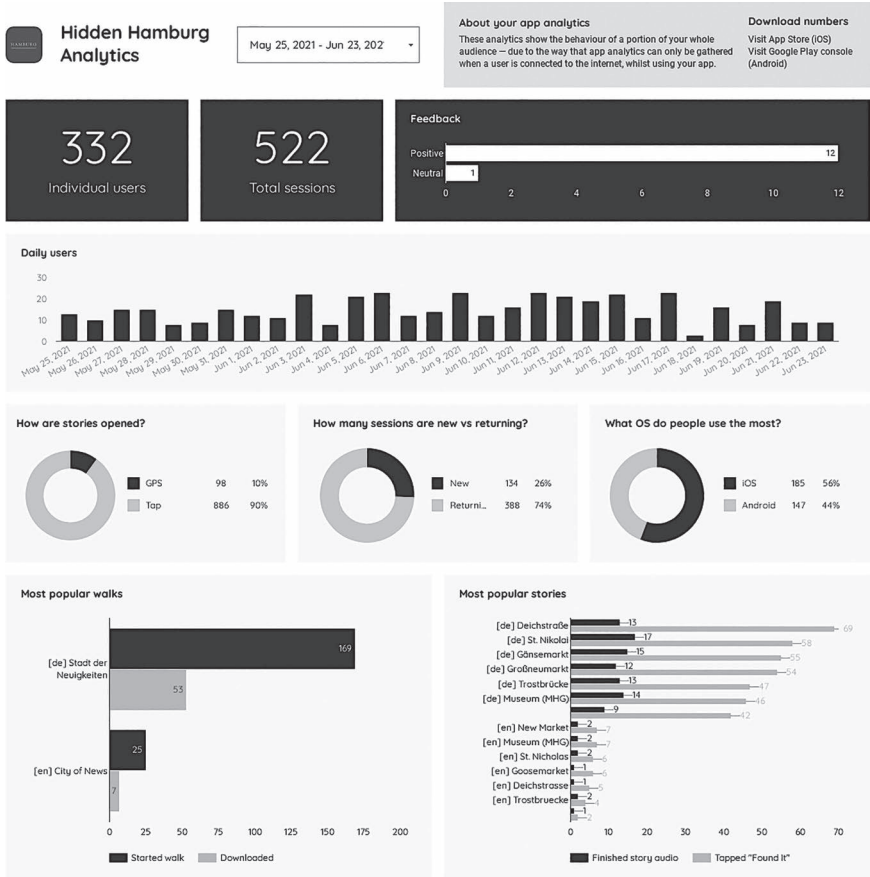


Figure 2.5 Analytics dashboard for *Hidden Hamburg*. © Calvium and University of Exeter

user who simply downloads the app would not be represented in the dashboard. Rather, that user would be counted in the download numbers in the metrics for the Apple and Google Play app stores. Furthermore, a user’s interactions may not be collected for analysis in the *Hidden Cities* dashboard if the app was used offline and never reopened when the user subsequently reconnected to the internet. In addition, there are types of data that have not been made available for analysis to preserve user privacy: “We’re not tracking fine grain detail, although there is more data available than presented in the dashboard”, explained a developer, “it’s not possible to identify individual users or their exact location nor to pull personal data from other sources”.

All of the information gathered for the *Hidden Cities* analytics tool is quantitative and relates to the core functionality of the app. It is possible to see the number of daily users (within the parameters described earlier), what operating system

people use, how many sessions are new versus how many are returning sessions, how many stories are opened, the most popular walks and stories, as well as high-level user feedback. Several regulatory factors pertaining to an individual's privacy contributed to the types of data featured in the dashboard, including the European Union's 2016 data privacy legislation "General Data Protection Regulation" and the Data Protection Act (2018).²⁴ The ePrivacy Regulation also concerns the protection of personal data in electronic communications and will repeal Directive 2002/58/EC (Regulation on Privacy and Electronic Communications).²⁵ It is currently going through legislative procedure in Europe and is expected to come into force in 2022; if the UK adopts this legislation, it will potentially impact the *Hidden Cities* system in the future. In addition to adhering to legislation when collecting data, other factors that influenced the datasets displayed in the analytics interface included technical feasibility, past experience of the *Hidden Florence* app data reporting and discussions with the lead academic partner about information considered useful for the research community.

To determine what datasets would ultimately be presented in the dashboard, the technical developers created a comprehensive list of the possibilities for the user experience designer of the dashboard to consider. The designer compiled a set of questions that each dataset could address, for example "WalkMapScreen: feedback-PopupResponse: feedback ('negative' or 'neutral' or 'positive')" was interpreted as "What feedback did people give? (Positive/Neutral/Negative)", and he then compared the questions to the information deemed useful by the researcher. Data visualisation templates were then designed for the chosen datasets and shared with the developer responsible for building the dashboard. The visualisation templates were evaluated for technical feasibility within the chosen dashboard software, Google Data Studio, and added to the evolving analytics dashboard for eventual population with the corresponding dataset. Hence, the process for determining the information presented in the analytics dashboard was iterative and involved multidisciplinary input.

Having described three core elements of the Place Experience Platform and given an account of their making, the next section draws on some themes raised to explore locative public history as a digital placemaking practice.

Discussion and considerations

The experience of making the *Hidden Cities* apps has shone a light on the multidisciplinary and collaborative nature of digital placemaking. It has also highlighted

24 'General Data Protection Regulation', Legislation.gov.uk, www.legislation.gov.uk/eur/2016/679/contents (accessed January 23, 2021).

'Privacy in Mobile Apps', Information Commissioner's Office, <https://ico.org.uk/media/for-organisations/documents/1596/privacy-in-mobile-apps-dp-guidance.pdf> (accessed January 23, 2021).

25 'The ePrivacy Regulation', EUR-Lex, <https://eur-lex.europa.eu/legal-content/EN/HIS/?uri=CELEX%3A52017PC0010> (accessed January 23, 2021).

'Directive 2002/58/EC (Regulation on Privacy and Electronic Communications)', Legislation.gov.uk, www.legislation.gov.uk/eudr/2002/58/contents (accessed February 14, 2021).

the significance of non-human factors as active constituents in digital placemaking practice. For instance, the account of changing the automated map rendering software demonstrated the influence of evolving software licensing policies, and the discussion about the datasets presented in the analytics dashboard showed that regulatory factors performed a role in determining the outputs of the project. Furthermore, these accounts pointed to the fluid nature of rules and frameworks, thereby altering their meaning and influence over time and showing them to be dynamic participants in digital placemaking practice. In addition, such regulatory factors are dependent upon the sociocultural system of the place where the software development happens and where the city app is used. In this way, and as discussed, the software design of historic locative apps created in and for European cities is influenced by a specific set of associated regulations and policies. City apps developed in countries with different regulatory systems or regimes may raise new concerns that would need to be carefully considered prior to progressing with a new *Hidden Cities* project.

Creating technologies for the geolocation and analysis of content in the physical environment also implicates software and data as non-human factors with influence. This was evident from the description of the processes at play when Calvium's bespoke map rendering software was employed to optimise an app user's interaction with the historic maps. Software was also an active factor when the developer of the analytics tool was assessing which datasets could feasibly be incorporated within the chosen software, Google Data Studio. In theory, it would have been possible to utilise all of the datasets chosen by the designer, but in practice, the chosen software needed more time and funding than was available to visualise all the datasets, which led to a subset being used by the analytics developer. However, it would be possible to return to the data analytics dashboard in the future to visualise additional datasets as the source data generated by each city app is stored indefinitely in Google's "BigQuery" database software.²⁶ The dashboard data also has influence, due to its dynamic nature and the information it represents and conveys to the researchers and technical partners, and the ways in which the data is interpreted and acted upon. The information presented in the dashboard has the potential to cause minor or significant changes to the underpinning software of the content management system, the app or the analytics dashboard, or to the locative content. At this point, it is worth noting that this exploration of the inherent relationships between people and non-human factors within the *Hidden Cities* project, and thus digital placemaking, does not convey intentionality onto the latter, nor is it viewed through a particular material-semiotic lens. Rather, the exploration demonstrates the sensitive and contingent relationships inherent between humans and non-human factors in the practice of locative public history.

The accounts of how elements of *Hidden Cities* were made brought into sharp focus the significance of the place itself when locative content was created and

26 'BigQuery', Cloud.google.com, <https://cloud.google.com/bigquery> (accessed May 23, 2021).

the user experience of that content was considered. Through the discussions about the “second image option”, it was apparent that the dynamic nature of the location’s physicality required each city app to have at least one researcher with up-to-date knowledge of its public realm. This was reinforced by the description of the researcher’s involvement in the technical process of aligning the historic maps to contemporary mapping software. Here, the researcher had to draw upon their knowledge of the location in order to recommend the most appropriate areas of the historic maps to distort. If lacking this place-based contextual understanding, out of necessity the interface designer would have made an assessment without knowing key location characteristics – such as the river in Trento being diverted after the historic map had been drawn. Such an action would have likely led to a poor user experience of the app and, potentially, of the city. Both cases demonstrate how the changing physicality of a place plays an inherent part in the creation and reception of historic locative media as well as the usability of the app’s navigation capability. They also serve to illustrate further the collaborative relationship between the academic research and technology partners throughout the making of the *Hidden Cities* project.

Across all phases of the project, there appears to be a need to achieve balance between sometimes “competing” factors, and to do so requires negotiation on many levels. Together, the researchers and technologists seek to create an enjoyable experience for users of the app, one that transmits historical information in a compelling way. This requires the usability of the app’s interface to be intuitive and responsive, the software to be robust, and entertaining and accurate locative content (audio, visual and text) to synchronise with a user’s location. Achieving this outcome requires the project team to introduce interpretation, not only of the maps but in many ways, for example from using fictionalised characters as part of the storytelling mechanics to presenting a partial view of city app data in the dashboard. It also requires the researchers writing for a spatial experience to anticipate the future relationships between the app’s users, the content and the place during the content creation process. Hence, this form of digital public history project challenges the makers to maintain the authentic nature of the project’s storytelling that members of the public can trust, with the need to deliver an overall “locative usability experience” that users enjoy.

When in development, each city app is treated as an isolated entity by the creators, but once published to the app stores online marketplace environment, the *Hidden Cities* apps become part of a competitive ecosystem. As such, they are competing for public attention with other place-based apps, as well as the physical heritage sites and visitor attractions of a city. For instance, searching for “Hamburg history” in Apple’s App Store presents *Hidden Hamburg* and four other apps related to the city’s cultural heritage. At this point, the *Hidden Cities* apps can be seen as part of the “attention economy” and thus require promotion across a host of communications channels to be noticed by members of the public, and downloaded. As can be seen when comparing the download numbers in the app stores’ dashboards to those in the *Hidden Cities* dashboards, simply downloading an app

does not automatically confer user interaction.²⁷ Similarly, once a downloaded app is in use, there will be a host of reasons why members of the public will cease interaction. Therefore, when engaging in public-facing digital humanities projects, the goal of the project team should not be limited to the creation and publication of the app content, but also to the factors required to publicise the app, motivate people to download the app, open it, use it and return to interacting with it.

Conclusion: digital placemaking and digital humanities

Representing the heritage of cities in the past through location-specific mobile app technologies is a multidisciplinary and relational activity, involving human and non-human factors. This chapter has used the experience of developing the *Hidden Cities* apps and their underpinning platform to produce a set of considerations for researchers and those from the museums and heritage sector who may wish to pursue similar digital placemaking projects for hybrid public space. In so doing, it has highlighted the sensitive and contingent nature of the relationships between dynamic factors, human and non-human, and that negotiation and mutuality are key characteristics of the practice of digital placemaking.

Through investigating the design and development of the Place Experience Platform – the process of making premodern maps interactive, the functionality of the content management system and the data presented in the analytics dashboard – it is apparent that the *Hidden Cities* project serves two user groups; the city visitor as the end user of the app and the researcher who creates specialist content for the app through the CMS. Therefore, to deliver a digital placemaking platform that provides an excellent experience for both sets of users, it is necessary to conduct an iterative design process not only with the end user of the app, but also with the researchers who will use the CMS and analytics dashboard to devise and produce the public-facing history apps of the future.

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27 Herbert A. Simon, 'The Bottleneck of Attention: Connecting Thought with Motivation', Carnegie Mellon University, <http://digitalcollections.library.cmu.edu/awweb/awarchive?type=file&item=46997> (accessed February 14, 2021).

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Part II



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3 Reconstructing the early modern news world

Urban space, political conflict, and local publishing in Hamburg

Daniel Bellingradt and Claudia Heise

Introduction

If an early modern merchant returned to their home city and wanted to find out what had been going on in their absence, how did they do that? Where did they go to get information and comment? What kinds of printed materials could they get their hands on or hear about? These questions about media and urban history underpin the *Hidden Hamburg* app, which looks to translate historical research into public history using a locative approach that is both novel and designed to engage a wide audience.¹ As with the other *Hidden Cities* trails discussed in this volume, our approach is to present early modern “experience” in today’s European cities through geolocated walks and place-related stories. Mobile technologies now offer an opportunity to rearticulate urban spaces and past lives for different publics, and in this sense all the *Hidden Cities* tours represent nuanced experiments in digital public history. *Hidden Hamburg*’s specific contribution is to digital humanities approaches to media history, book history, and communication history.²

1 Recent studies on new ways of historical storytelling include Christian Bunnberg and Nils Steffen, eds., *Geschichte auf Youtube. Neue Herausforderungen für Geschichtsvermittlung und historische Bildung* (Berlin: de Gruyter Oldenbourg, 2019); Eugen Pfister and Tobias Winnerling, *Digitale Spiele und Geschichte: Ein kurzer Leitfaden für Student*innen, Forscher*innen und Geschichtsinteressierte* (Glückstadt: Verlag Werner Hülsbusch, 2020); Nicholas Terpstra and Colin Rose, eds., *Mapping Space, Sense, and Movement in Florence: Historical GIS and the Early Modern City* (New York: Routledge, 2016). For approaches into exploring the city of the present and its past relics using social media see Nanke Verloof and Luca Bertolini, eds., *Seeing the City. Interdisciplinary Perspectives on the Study of the Urban* (Amsterdam: Amsterdam University Press, 2020).

2 Recent reflections on digital history as a way of approaching the past with digital communication technologies include C.A. Romein et al., ‘State of the Field: Digital History’, *History* 105, no. 365 (2020): 291–312; Daniel J. Cohen and Roy Rosenzweig, *Digital History: A Guide to Gathering, Preserving, and Presenting the Past on the Web* (Philadelphia: University of Pennsylvania Press, 2006); Guido Koller, *Geschichte digital. Historische Welten neu vermessen* (Stuttgart: Kohlhammer, 2016); Philippe Rygiel, *Historien à l’âge numérique* (Lyon: Presses de l’Enssib, 2017). See on the impact of Digital History to the field of digital humanities: Susan Schreibman, Ray Siemens, and John Unsworth, eds., *A Companion to Digital Humanities* (Oxford: Blackwell, 2004); Matthew

In this chapter, we explore the research themes informing *Hidden Hamburg's* app story – a hunt for news by a fictionalised character called Johann, a paper trader, who has just returned to the city after a business trip. The year is 1686, the significance of which we will return to shortly, but it is firstly important to point out that Hamburg is a prime location to explore early modern media and urban history. At this time, Hamburg, a Free and Imperial City of the Holy Roman Empire, was one of Europe's most important locations of print production and consumption. The mediality of urban space in early modern European cities could turn cities like Hamburg into resonating boxes in which news flows – printed, handwritten, and oral – battled for attention.³ It is estimated that Hamburg's reading public amounted to between one-fifth and one-quarter of the population (c. 15,000–17,000 people).⁴ To investigate this “city of news,” we chose a character who represented the crucial suppliers of raw materials to a paper-hungry publishing industry feeding Hamburg's ever-increasing demand for printed news.

Hamburg's publishing story started as early as 1491 when its first printing shop was founded. In 1686, at least 8 print shops and approximately 12 hand presses in total were in operation.⁵ One of these shops belonged to the printer and publisher Thomas von Wiering – a real historical figure and one of Johann's paper clients in the app story. In 1686, Wiering's biweekly newspaper, the *Relations-Courier*,

K. Gold, ed., *Debates in the Digital Humanities*, 3rd ed. (Minneapolis: University of Minnesota Press, 2019).

- 3 Daniel Bellingradt, 'The Early Modern City as a Resonating Box: Media, Public Opinion, and the Urban Space of the Holy Roman Empire, Cologne, and Hamburg ca. 1700', *Journal of Early Modern History* 16, no. 3 (2012): 201–240; Filippo de Vivo, *Information and Communication in Venice: Rethinking Early Modern Politics* (Oxford: Oxford University Press, 2007).
- 4 Estimations in Daniel Bellingradt, *Flugpublizistik und Öffentlichkeit um 1700. Dynamiken, Akteure und Strukturen im urbanen Raum des Alten Reichs* (Stuttgart: Franz Steiner Verlag, 2011), 247, and Holger Böning, 'Der gemeine Mann als Zeitungs- und Medienkonsument im Barockzeitalter', in *Das Mediensystem im Alten Reich der Frühen Neuzeit (1600–1750)*, ed. Johannes Arndt and Esther-Beate Körber (Goettingen: Vandenhoeck & Ruprecht, 2010), 227–238; 'Eine Stadt lernt das Zeitunglesen. Leser, Auflagen und Reichweite der Hamburger und Altonaer Zeitungen im ersten Jahrhundert des Zeitungswesens', in *Hamburg: Eine Metropolregion zwischen Früher Neuzeit und Aufklärung*, ed. Johann Anselm Steiger and Sandra Richter (Berlin: Akademie Verlag, 2012), 391–415, (406–412), and *Welteroberung durch ein neues Publikum. Die deutsche Presse und der Weg zur Aufklärung. Hamburg und Altona als Beispiel*. (Bremen: Edition Lumière, 2002), 112–131, (128).
- 5 Those included the presses of Thomas von Wiering, Thomas Roos, Peter Ziegler, Margarethe Rebenlein, widow of the official printer of the Senate, Georg Rebenlein, assisted by his successor Conrad Neumann, Nicolaus Spieringk, Friedrich Konrad Greflinger, Arnold Lichtenstein, and Henning Brendeke. In Altona, Christian Reimer was the privileged printer for the Danish authorities. See Christoph Reske, *Die Buchdrucker des 16. und 17. Jahrhunderts im deutschen Sprachgebiet. Auf der Grundlage des gleichnamigen Werkes von Josef Benzing*, 2nd ed. (Wiesbaden: Harrassowitz Verlag, 2015), 15–16, 357–371; Hermann Colshorn, 'Hamburgs Buchhandel im 17. Jahrhundert: Drucker, Verleger und Sortimenter', *Börsenblatt für den Deutschen Buchhandel, Frankfurter Ausgabe* 21, no. 89 (1965): 2369–2374, 22, no. 88 (1966): 2365–2370, 23, no. 31 (1967): 795–799; Werner Kayser, *Hamburger Bücher 1491–1850: Aus der Hamburgensien-Sammlung der Staats- und Universitätsbibliothek Hamburg* (Hamburg: Hauswedell, 1973), 13–15, 64, 72–78, 86–88.

was keeping his printing shop busy, as well as consuming large amounts of paper, but Wiering also operated successfully as publisher of almost 1,000 pamphlets, broadside prints, and other publications.⁶ The app-user meets Johann on his return to Hamburg with a ship's cargo of paper, keen to meet von Wiering, and to catch up with the local news.

Choosing 1686 allowed us to ground, and accentuate, our exploration of mediality and the spaces of news production and consumption in early modern Hamburg. This was a year of dramatic political conflict and as such it produced plenty of printed media. In this year, the so-called “Jastram-Snitger turmoil” – as it has been labelled, not uncritically, by many historians – came to an end with the public execution of the two Hamburg politicians Cord Jastram and Hieronymus Snitger.⁷ This affair started in 1684 when the two men accused the city council of misconduct and abuse of power. By organising the support of other citizens, Jastram and Snitger first managed to force the envoys of an Imperial commission in Hamburg (including the Duke of Celle) and one of the acting and accused mayors (Heinrich Meurer) to resign. Then, a deputation of 30 burghers, among them the influential Jastram and Snitger, staged a political takeover of the city. However, this burgher takeover did not become permanent. Jastram and Snitger faced strong political and economic sanctions by other powers of the Empire and when they approached the Danish king, Christian V, for help, their political momentum vanished. The Danish king and Duke of Holstein was an opponent of the Emperor and patron of the nearby city of Altona, and for decades he had wanted to subjugate Hamburg. In his eyes, the city was nothing more than a Holstein country town whose status of imperial immediacy he did

6 For Wiering's news publishing business see Holger Böning, *Geschichte der Hamburger und Alt-naer Presse: Von den Anfängen bis zum Ende des Alten Reiches*, vol. 1 (Bremen: Edition Lumière, 2020), 145–151; Werner Kayser, ‘Thomas von Wiering und Erben: Ein bedeutendes Kapitel hamburgischer Druckgeschichte’, *Auskunft* 10, no. 4 (1990): 343–371, (370); Kayser, ed., *Hamburger Bücher*, 72–77; and Colshorn, ‘Hamburgs Buchhandel’ (1967), 795–799. Our website shows the newspaper report of the execution of Jastram and Snitger from 5th October 1686 (‘Wiering's Relations-Courier’, *Hidden Cities*, www.hiddencities.eu/hamburg/new-market/wierings-relations-courier [accessed February 1, 2021]). See on the early modern news system Noah Moxham and Joad Raymond, eds., *News Networks in Early Modern Europe* (Leiden: Brill, 2016); Andrew Pettegree, *The Invention of News: How the World Came to Know about Itself* (New Haven: Yale University Press, 2014).

7 The *Jastram-Snitger turmoil*, a political process of unrest termed after two executed politicians, Cord Jastram and Hieronymus Snitger, took place in Hamburg between 1683 and 1686. See Kai Lohsträter, ‘Hinter den Kulissen eines Schreckenstheaters: Der Fall Jastram und Snitger in der Theatrum-Literatur des 17. Jahrhunderts’, in *Theatralität von Wissen in der Frühen Neuzeit*, eds. Nikola Roßbach and Constanze Baum ([s.l.] 2013, <https://bit.ly/3pEXGE7> (accessed January 27, 2021)); Hans-Dieter Loose, ‘Die Jastram-Snitgerschen Wirren in der zeitgenössischen Geschichtsschreibung’, *Zeitschrift des Vereins für Hamburgische Geschichte* 53 (1967): 1–20, and Manfred Asendorf, ‘Hamburg 1686 – Der dänische Entschluss zur Belagerung Hamburgs und der Justizmord an Jastram und Snitger. Das Ende einer Geschichtslegende’, in *Geprägte Geschichte. Hamburger Medaillen des 17. und 18. Jahrhunderts*, eds. Ralf Wiechmann and Joist Grolle (Hamburg: Edition Wartenau, 2014), 156–177.

not acknowledge.⁸ When in August and September 1686, Christian V besieged Hamburg, Jastram and Snitger fast became *personae non gratae*. Hamburg's political class turned their backs on them and cooperated promptly with the Emperor, gaining military support from regional imperial leaders such as the Elector of Brandenburg, Friedrich Wilhelm. Hamburg prevented a takeover by the Danish king, and Jastram and Snitger were accused of high treason and publicly executed.

The events in 1686 that culminated in Jastram and Snitger's execution are intended to raise the stakes for the guide character in his search for news. We thus set both Johann and the user on a journey both real and virtual through the streets of Hamburg, its busy marketplaces, and prominent news stalls. As Johann tries to access printed material generated by the political upheaval, including a certain contentious pamphlet burned by the government, both he and the user of the app reconstruct the political events that shook Hamburg in 1686. At seven sites (see Fig. 3.1), we gather news and rumours with Johann, listen to contextualising audio from the project researchers, and look at the accompanying images and texts provided on the app and website. While some of the sites have disappeared due to extensive destruction in Hamburg, public places, the courses of the streets, and often sections of the early modern fabric are still present. The app looks to overcome the gap between the spatial and material city by using additional historic street images and images of objects from local museums. Because we have used a propulsive "quest" model in this project, we roughly follow the app trail in this chapter to reflect on our experiment in public-facing kinetic storytelling. As we do so, the chapter links the trail in more detail to the underpinning research on urban, media, and spatial history.

The app tour establishes both the figure of Johann and the idea of the city as a trading hub by starting in the *Deichstraße*, where visitors can see the last remaining ensemble of Hamburg's premodern historical fabric. This was a bustling neighbourhood full of great merchant houses and shops, one of the favoured living and working places of wealthy traders in Hamburg. In the app, we used an image of one of the still extant seventeenth-century buildings to stand for Johann's house.⁹ In 1686, the Deichstrasse was a famous trading hub, where merchants' houses and shops shaped the streets and everyday urban life. Hamburg benefited greatly from its geographical location on a river (the Elbe), which also provided access to the North Sea. As the transport of goods was a water-driven economy, trading flows made the city a hotspot of regional,

8 See Martin Krieger, 'Hamburg', in *Handbuch kultureller Zentren der Frühen Neuzeit: Städte und Residenzen im alten deutschen Sprachraum*, ed. Wolfgang Adam and Siegrid Westphal, vol. 2 (Berlin: de Gruyter, 2012), 797–829, (797, 802f.).

9 The house at Deichstrasse No. 47 was founded in 1658 and restored in the 1970s. See Ursula Schneider, 'Die Deichstraße', in *Historische Stadtrundgänge: Kaufmannshäuser, Speicher und Kontore – von der Deichstraße zur Speicherstadt*, ed. Arbeitskreis Hafenkante (Hamburg: Museum der Arbeit, 1989), 4–11, (5–6).



Figure 3.1 Map of Hamburg. Copperplate print by Frederik de Wit (approximately 56 x 49 cm), with overlay of the seven sites in the Johann trail “City of News”. © portrait image of Johann: Cornelius Galle und Anselmus von Hulle, ‘Otto von Gericke’ ([s.l.], 1649, from State and University Library of Hamburg Carl von Ossietzky, signature: P 21: G 19, <https://resolver.sub.uni-hamburg.de/kitodo/PPN663948975> (CC BY-SA 4.0). © map: State Archive of Hamburg, Plankammer, signature: 720-1/1_131-01=168/53.

transregional, and international importance.¹⁰ Johann’s house where he both lived and worked – a normal condition for merchants in times when counting house, residence, and warehouse were most often under one roof – bordered the *Nikolaifleet*, the broad canal that was used for transportation.¹¹ The user

10 See on the economic history of seventeenth-century Hamburg: Hans-Dieter Loose, ‘Das Zeitalter der Bürgerunruhen und der großen europäischen Kriege 1618–1712: Handel, Schifffahrt und Gewerbe’, *Hamburg: Geschichte der Stadt und ihrer Bewohner*, vol. 1, ed. Hans-Dieter Loose (Hamburg: Hoffmann und Campe, 1982), 328–335; Martin Reißmann, *Die hamburgische Kaufmannschaft des 17. Jahrhunderts in sozialgeschichtlicher Sicht* (Hamburg: Hans Christians Verlag, 1975); Mary Lindemann, *The Merchant Republics: Amsterdam, Antwerp, and Hamburg, 1648–1790* (Cambridge: Cambridge University Press, 2017).

11 A contemporary two-storey merchant’s hall from the *Deichstraße* and a banquet hall are exhibited in the Museum of Hamburg, see ‘Banquet Hall’, Museum of Hamburg history, <https://bit.ly/2MHSsDZ>; ‘Merchant’s Hall’, Museum of Hamburg history, <https://bit.ly/2YpSDqe> (both accessed January 25, 2021).

is directed to the merchant's *Kontor*, or office, furnished with a desk, goose quills, wax seals, ink bottles, and papers, in order to highlight the most common business practice of early modern merchants engaged in transregional trade – reading and writing letters, keeping account books.¹² After establishing the merchant's habitat, we propel Johann into the city by blending two activities. Like any merchant, he is looking firstly to sell his goods, his paper, by taking a walk to visit a client, in this case the publisher Wiering. At the same time, he is seeking news, attempting to find out what has happened in the city during his absence.

News flows in religious spaces

The former church of St. Nicholas, at the Hopfenmarket, the city's former busy and most central market, is today a ruin and a memorial allowing visitors to move freely within the material remains of the nave and to imagine its grand dimensions, in particular the tallest steeple of its time (147.4 m in 1874).¹³ In 1686, St. Nicholas was one of five Lutheran parishes in Hamburg. The imposing dial on the church tower dictated the city's time and served as an important visual and acoustic landmark.¹⁴ The church bells claimed attention in the nearby spaces of political, judicial, and economic power: the old city hall, the court of first instance (or trial court), and the stock market. Inside at the centre of the church, there was an altar and pulpit, while to the west of the structure an organ by Arp Schnitger was under construction.¹⁵ Johann's stop here on his way to the printer calls attention to one of the most typical spaces of news reception and circulation in an early modern city: the church. In 1686, St. Nicholas was an epicentre of news.¹⁶ Early modern churches were prominent social spaces that offered opportunities, before and after the service, to

12 Recent studies on merchants and their secretarial work include Megan Williams, "'Zur Notdurfft der Schreiberey'. Die Einrichtung der frühneuzeitlichen Kanzlei", in *Diskurse – Körper – Artefakte. Historische Praxeologie in der Frühnezeitforschung*, ed. Dagmar Freist (Cologne: Böhlau, 2015), 335–372; Eric Ketelaar, *Archiving People: A Social History of Dutch Archives* ('s-Gravenhage: Stichting Archiefpublicaties, 2020), 171–175, chap. 7.3.1; Ann Blair and Peter Stallybrass, 'Mediating information 1450–1800', in *This is Enlightenment*, eds. Clifford Siskin and William B. Warner (Chicago: University of Chicago Press, 2010), 139–163.

13 The principal church St. Nicholas, founded in 1195, burned down in 1842, was rebuilt in the 1870s and was finally destroyed again in the Second World War. See 'St. Nikolai: Eng mit der Hamburger Stadtgeschichte verbunden', St. Nikolai, die Hauptkirche am Klosterstern, www.hauptkirchenstnikolai.de/kirche/geschichte/geschichte/ (accessed January 22, 2021).

14 'Die Geschichte von St. Nikolai – Teil 1: 1195 bis 1842 – Die mittelalterliche Pfarrkirche St. Nikolai', Mahnmahl St. Nikolai, www.mahnmal-st-nikolai.de/?page_id=268 (accessed January 22, 2021).

15 See for a contemporary description of St. Nicholas church: Wolfgang Henrich Adelungk, *Die annoch vorhandene Hamburgische ANTIQUITAETEN*. . . (Hamburg: Conrad Neumann, 1696), 17f.

16 See for further reading: Renate Dürr and Gerd Schwerhoff, eds., *Kirchen, Märkte und Tavernen. Erfahrungs- und Handlungsräume in der Frühen Neuzeit* (Frankfurt/Main: Vittorio Klostermann, 2005).

read and discuss gossip and other local affairs. Religious services themselves have long been understood by historians of communication as powerful media events where sermons delivered by pastors reached large audiences, who then discussed them.¹⁷ In early modern Hamburg and elsewhere, pastors regularly used their sermons to comment on local and wider affairs, to highlight and mock rumours in the city, and to promote printed versions of their own orations. The sermon was furthermore the place to read out the city's latest ordinances – which were also put up as printed posters on the city hall door, the stock market, or the city's harbours. In 1686, one could buy these printed sermons and much other news from the bookstalls at the back of St. Nicholas church. Booksellers, such as Johann Adolph Härtel at St. Nicholas, ran stalls in churches, offering printed books and news media on relevant topics.¹⁸ In addition, the Lutheran church was deeply intertwined with local politics and reformed pastors inserted themselves repeatedly into politics, organizing themselves in the so-called *Geistliches Ministerium*, the representation of Hamburg's Lutheran clergy.¹⁹

It was highly plausible therefore to have Johann want to stop at St Nicholas to gather information, and then to discover from the sermon that the two burghers Jastram and Snitger had been convicted and executed for high treason, as well as hear about the public burning of a pamphlet printed by Arnold Lichtenstein shortly before the execution day. In this way, the app story starts to combine the political history of Hamburg with an actor-led approach to media and communication history. When Johann goes to the bookstalls in the back of the church and buys a pamphlet with the title: “Kurtze und außführliche Relation”²⁰ (“A short and detailed report”), he also discovers how Hamburg was besieged by the army of the Danish king, Christian V, in August and September of that year. The user is also prompted to look at this pamphlet, which typically for the period is heavy on text with only a few images, while the secondary researcher audio fills in the political context

17 Bellingradt, *Flugpublizistik*, 141; Reinhold Pabel, *Hamburger Kultur-Karussell zwischen Barock und Aufklärung* (Neumünster: Wachholtz, 1996), 319f; Susanne Rau and Gerd Schwerhoff, eds., *Zwischen Gotteshaus und Taverne: öffentliche Räume in Spätmittelalter und Früher Neuzeit* (Cologne: Böhlau, 2008).

18 Hermann Colshorn, ‘Norddeutscher Buchhandel in den Kirchen’, *Börsenblatt für den Deutschen Buchhandel, Frankfurter Ausgabe* 102, no. 16 (1960): 2371–2374, with reference to various contemporary travel accounts.

19 Daniel Bellingradt, ‘Resonating Box’, 224; Bellingradt, *Flugpublizistik*, 135ff.; Susanne Rau, ‘Von “Lockungen”, “Verführungen” und “Zwang”. Zur “Denunciation” der Rekatholisierungspraxis im lutherischen Hamburg zu Beginn des 18. Jahrhunderts’, in *Zeitenwenden: Herrschaft, Selbstbehauptung und Integration zwischen Reformation und Liberalismus*, ed. Jörg Deventer, Susanne Rau and Anne Conrad, 2nd. ed. (Berlin: LIT Verlag, 2006), 335–358 (341); Wolfgang Henrich Adelungk, *Das Hoch=Ehr=Würdige MINISTERIUM zu Hamburg*, . . . (Hamburg: Conrad Neumann, 1696); Dennis L. Slabaugh, ‘Geistliches Ministerium’, in *Hamburg Lexikon*, eds. Franklin Kopitzsch and Daniel Tilgner (Hamburg: Zeise Verlag, 1998), 175f.

20 *Kurtze und außführliche Relation, Was sich in währrender Berennung der Stadt Hamburg In und ausser derselben zwischen Ihr. Königl. Maj. von Dännemark und obgedachter Stadt von Tage zu Tage begeben/ und remarquables zugetragen*. . . (s.l.: 1686).

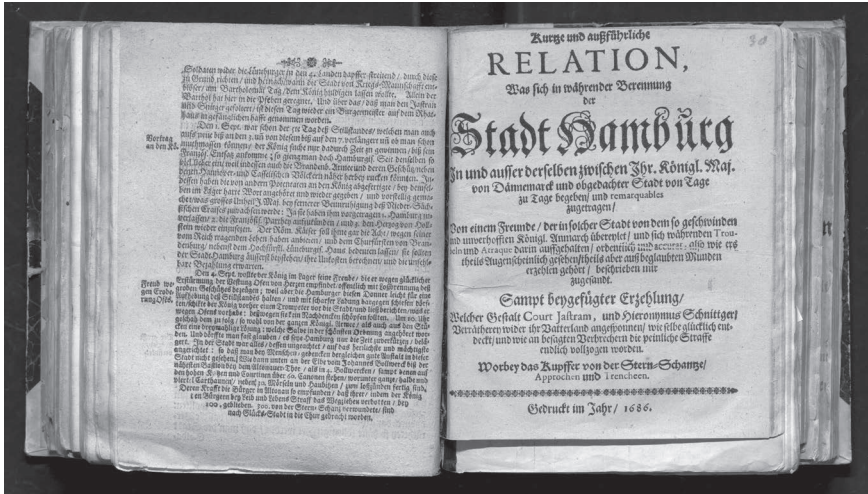


Figure 3.2 An anonymous pamphlet of 23 pages providing a chronological narration of both the military siege of Hamburg and the “exposure” and punishment of Jas- tram and Snitger, considered to be traitors and conspirators who intended to hand over the city to the Danish king. © State Archive of Hamburg, signature: Sammelband 121, no. 30.

(see Fig. 3.2). In Hamburg, the urgent political question, and the background to the so-called “Jastram-Snitger affair”, was about who held the highest authority in the city, a problem rooted within a complex power-sharing system in which those holding power (namely burghers, residents with citizenship) were divided into two political institutions, the Senate (Rat) and the burghers (Bürgerschaft) and their various civic colleges.²¹ App users can engage in more detail with this political background by linking to the short website article that accompanies this site.²²

Printing the news

“Here we are, in Thomas von Wiering’s printshop,” Johann explains while the user is standing in front of the Museum of Hamburg History. In the app walk, the

21 On the “Jastram-Snitger affair” see the references given in footnote 7. See for an overview of the political system of Hamburg: ‘Hamburg in 1686’, *Hidden Cities*, www.hiddencities.org/hamburg (accessed February 1, 2021); Jörg Berlin, *Bürgerfreiheit statt Ratsregiment. Das Manifest der bürgerlichen Freiheit und der Kampf für Demokratie in Hamburg um 1700*, 2nd ed. (Norderstedt: BoD, 2012), 31–34; Krieger, *Hamburg*, 55–58; Loose, ‘Bürgerunruhen’, 269–288; Lindemann, *Merchant Republics*, 36–38, 51–55; Gisela Rückleben, ‘Rat und Bürgerschaft in Hamburg 1595–1686: Innere Bindungen und Gegensätze’ (PhD diss., Philipps-Universität Marburg/Lahn).
 22 Daniel Bellingradt and Claudia Heise, ‘St. Nicholas: Church, Parish and Political Space’, *Hidden Cities*, www.hiddencities.org/hamburg/st-nicholas (accessed February 26, 2021).

museum, our external partner, stands symbolically for Wiering's now-vanished shop in the old city centre, mainly because it houses a rare extant example of an early modern printing press (Fig. 3.3) alongside other material traces of the city's once thriving print industry.²³ With the aim of illuminating the 1686 printing industry's impact on news flows in and out of the city, the user is provided with this image and the technical and economic contexts of the printing industry in early modern Europe. In many European cities, the "printing industry" was a local network that linked those people organising the necessary materials with the production and selling of all kinds of handwritten and printed media: paper dealers, book binders, map sellers, owners of book shops and news stalls, publishers, and of course printers. Hand-press printing did not change significantly in Europe between 1450 and the early 1800s, and when early modern Europeans referred to the art of printing, they meant the entire publishing process, starting with ideas from an author and including the work of specialists such as compositors, pressmen, proofreaders, and so on. In the app, we also provide a contemporary image of these processes of concurrent production by the specialists involved in the printing processes.²⁴ As interdisciplinary scholarship on the "History of the Book" continues to highlight, commercial printing and bookselling enterprises created and fostered important new markets of consumption and knowledge circulation.²⁵ And printing the news was both a major commercial enterprise of the time and a way to influence public opinion.

While Johann's original destination was Wiering's shop in any case, he was also keen to find out the rest of the story he heard in church. In order to maintain the tension for both him and the user in this quest for information, we contrived that Wiering's shop produced a reprint of the small pamphlet titled "Wahre Abbildung der an Tag gegebenen Verrätherey" ("True depiction of the treason that came to light"), a reprint of the burned pamphlet Johann heard about in St Nicholas.

- 23 'Museum für Hamburgische Geschichte', Stiftung Historische Museen Hamburg, <https://shmh.de/de/museum-fuer-hamburgische-geschichte> (accessed February 26, 2021). For further information, see the introduction for actual early modern printing practices: Donald F. McKenzie, 'Printers of the Mind. Some Notes on Bibliographical Theories and Printing-House Practices', *Studies in Bibliography* 22 (1969): 1–75, and for practices of printing a newspaper, see Martin Welke, 'Die Entwicklung der frühen Zeitungsdruktechnik', in *Zeitungsdruck. Die Entwicklung der Technik vom 17. bis zum 20. Jahrhundert*, eds. Martin Welke and Boris Fuchs (Munich: K.G. Saur, 2000), 9–28. Among the first printer manuals on how to run a contemporary printing workshop is Joseph Moxon, *Mechanik exercises, or, the doctrine of handy-works*. London 1694.
- 24 The app shows the etching ("At a printer-publisher's", "Der Buchdrucker") from Christoph Thelott (Stadtgeschichtliches Museum Leipzig, E 33/34/Gb). Another image on the website is an anonymous copperplate print with the title "Interieur van een boekdrukkerij" ("Interior of a print shop") from the Rijksmuseum of Amsterdam, object number RP-P-2015–26–1393, <http://hdl.handle.net/10934/RM0001.COLLECT.619603> (accessed January 25, 2021).
- 25 See the overviews by James Raven, *The Oxford Illustrated History of the Book* (Oxford: Oxford University Press, 2020); Michael F. Suarez and H.R. Woudhuysen, eds., *The Book: A Global History* (Oxford: Oxford University Press, 2013).

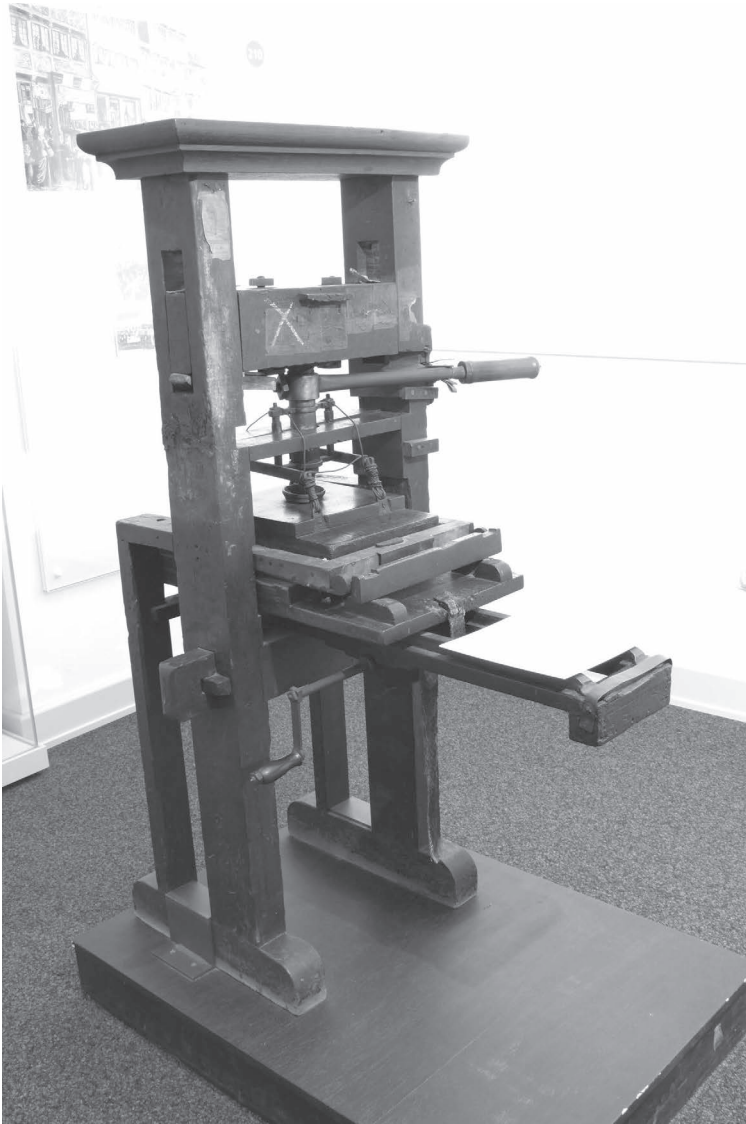


Figure 3.3 An early modern printing press present in the Museum of Hamburg History. This specimen is presumably of the eighteenth century because it already contains metal components such as the spiral spindle, transmitting the power of the rotation to the printing frame, while the first printing presses were entirely made of wood. © Historic Museums Hamburg Foundation, Museum of Hamburg History, inventory-number 2016-441

Wiering is not at his shop and Johann cannot buy a copy, and this drives him to the city's public news markets.

Public news markets

Market places like the local *Goosemarket* or the New Market, known now as the *Großneumarkt*, were hotspots for media flows in Hamburg, part of what made urban public spaces resonating boxes for communication.²⁶ The Goosemarket (Gänsemarkt) was a meeting place for a contemporary urban elite hungry for entertainment, a cultural hotspot in a large and wealthy city. Hamburg's opera house, established at the Goosemarket in January 1678, became the first public and commercially run opera house in German-speaking Europe and quickly established itself as an important feature of public life in Hamburg.²⁷ In the app, we show an image of the timber-framed structure in 1727 that appears to be the only remaining depiction of this grand institution, which was built after plans by the Italian architect, Girolamo Sartorio.²⁸ In and around 1686, this theatre as it was called by contemporaries, was devoted to a rather new genre, the opera, attracting up-and-coming composers, including Johann Theile and Georg Philipp Telemann, for its thrice-weekly performances. This institution was a hub of news, about the city and about international events and politics. Every performance was a social event, fostering the exchange of news and gossip both before and after the show. Because there was a scale of ticket prices, a range of social classes contributed to and participated in news flows at the opera house. In order to give an impression of the normally crowded public space in front of the opera, the app website shows a print depicting a crowded Goosemarket.²⁹ Because of all

26 On the interpretation of urban public spaces as resonating boxes, see de Vivo, *Information and Communication*; Bellingradt, 'Resonating Box'; Rosa Salzberg, *Ephemeral City: Cheap Print and Urban Culture in Renaissance Venice* (Manchester: Manchester University Press, 2014); Rudolf Schlögl, 'Politik beobachten. Öffentlichkeit und Medien in der Frühen Neuzeit', *Zeitschrift für Historische Forschung* 35 (2008): 581–661.

27 See on the establishment of Hamburg's opera house in 1678 and the following political and religious quarrels known as the "Hamburger Theaterstreit" (Hamburg's theatre conflict): Ingo Rekatzy, *Theater, Protestantismus und die Folgen: Gänsemarkt-Oper (1678–1738) und Erster Hamburger Theaterstreit* (Leipzig: Leipziger Universitätsverlag, 2019); Johannes Geffcken, 'Der erste Streit über die Zulässigkeit des Schauspiels (1677–1688)', *Zeitschrift des Vereins für Hamburgische Geschichte* 3 (1851): 1–33; Bernhard Jahn, *Die Sinne und die Oper. Sinnlichkeit und das Problem ihrer Versprachlichung im Musiktheater des nord- und mitteleuropäischen Raumes (1680–1740)* (Tübingen: Max Niemeyer Verlag, 2005).

28 The depiction of the opera house is in the holdings of the State Archive of Hamburg, signature 720–1/1_131–07=84.57. For a further description, see Hans-Joachim Marx, 'Geschichte der Hamburger Barockoper: Ein Forschungsbericht', in *Hamburger Jahrbuch für Musikwissenschaft*, vol. 3, eds. Constantin Floros, Hans Joachim Marx, and Peter Petersen (Hamburg: Wagner, 1978), 7–34 (14–18); Rekatzy, *Theater*, 14–17; Ernst Grohne, 'Das älteste hamburgische Opernhaus' *Mitteilungen des Vereins für Hamburgische Geschichte* 14, no. 77 (1926): 106–110.

29 The copperplate print by Franz Nicolaus Rolffsen shown on the website gives an impression of the crowded *Goosemarket* near the opera house. The scene shows a public lottery drawing

this, news stalls offering the latest in print were likely to have operated in this square. We have Johann buy a bestselling pamphlet titled “Hamburgisch Mordt-Theatrum, Besprengt mit dem Blute Jeronimi Snitquer” (“A Hamburg theatre of murder, sprinkled with the blood of Hieronymus Snitger”) on the rise and fall of the well-known merchant and politician, published shortly after Snitger’s execution in 1686, before heading to the New Market in search of a reprint of the burned pamphlet.³⁰

In 1686, the New Market, known now as the *Großneumarkt*, was the biggest marketplace in the city, and one of Hamburg’s largest urban spaces, used for various trading activities, and often crowded with street singers and fairground people.³¹ The New Market could easily have been called the “News Market” (as Johann calls it in his audio), as the market area was also one of two hearts of Hamburg’s printing industry – the other one being near city hall. Thomas von Wiering’s vanished shop historically was situated in the Brodschranken near the Trostbruecke, but in the app we gave him a stall at the New Market as well, located among the many other printer-publishers, booksellers, and typesetters in the “Neustadt.” In 1686, these purveyors of print included Friedrich Konrad Greflinger, Arnold Lichtenstein, Peter Grootte, and Bartholomäus Voskens.³² The marketplace was a prime location to buy, read, and hear the latest from local and other German newspapers, as many street sellers and news hawkers with cheap prints in their baskets were present as well. Reading alone, reading to others, and listening to others discuss news, and commenting on news were some of the main communicative activities in early modern cities.³³

As Johann listens to and comments on news flows at New Market and examines the stalls, the app aims to deepen user engagement with current research on multimedia reception and the uptake of news in early modern urban spaces. Evidence suggests that in 1686 some news stalls even offered, for half the price of a

(‘Goosemarket Gathering’, *Hidden Cities*, www.hiddencities.eu/hamburg/goosemarket/goosemarket-gathering [accessed February 1, 2021]).

30 *Hamburgisch Mordt-THEATRUM Besprengt mit dem Blute JERONIMI SNITQUER*, Kauffman und Bürger zu HAMBURG (s.l.: [1686]). The anonymous pamphlet of 139 pages was presumably published in late 1686 and addresses the theatrical staging of Hieronymus Snitgers execution (StAHH Smbd. 121, No. 34). See further: Lohsträter, ‘Hinter den Kulissen eines Schreckenstheaters’.

31 See Otto Beneke, *Der große Neumarkt in Hamburg. Mittheilungen aus vergangenen Tagen* (Hamburg: W. Mauke Söhne, 1873); Jonas Ludwig von Heß, *Hamburg topographisch, politisch und historisch beschrieben*, vol. 1 (Hamburg: Bachmann & Gundermann, 1796), 276–277.

32 Friedrich Konrad Greflinger worked at the Großneumarkt no. 39, Arnold Lichtenstein ran his print shop in the Millernsteinweg, publisher Peter Grootte was in business with two shops on the Ellern Brücke near New Market and at the stock market. Bartholomäus Voskens ran his shop, a type foundry, at the Herrengraben. See Reske, *Buchdrucker*, 369; Colshorn, ‘Hamburgs Buchhandel’ (1966), 2368–2370, (1967), 798; Johann Martin Lappenberg, *Zur Geschichte der Buchdruckerkunst in Hamburg am 24. Juni 1840* (Hamburg: Johann August Meißner, 1840), LX–LXIII; Kayser, ed., *Hamburger Bücher*, 64, 88.

33 In our app tour, we present another copperplate print at location 5, depicting practices of communication and reading in public spaces (J.C.G. Fritsch, ‘1. Das Rathaus. 2. Das Niedergericht. 3. Die Börse. 4. Die Commerciens Bibliothek. 5. Die Wage. 6. Der Cran.’ [s.d.]; State Archive Hamburg, Plankammer, signature 720–1/1_131–06=37–175a).

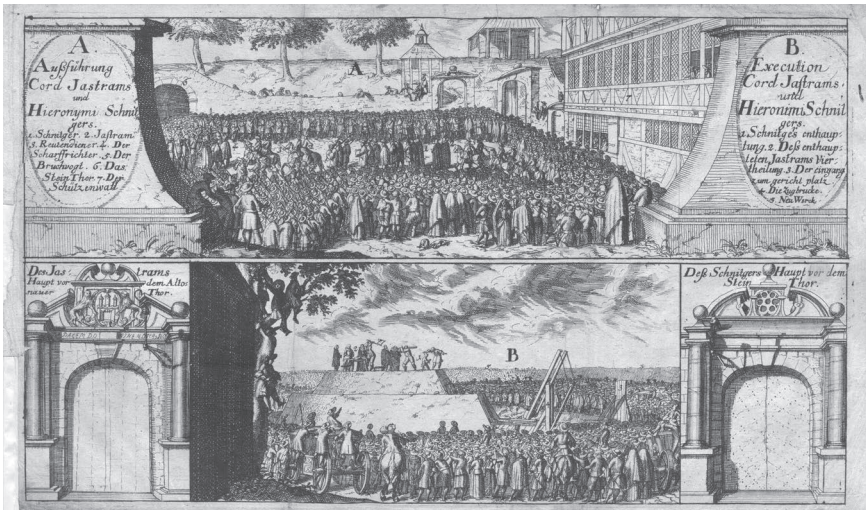


Figure 3.4 A pictorial print of the well-attended public execution that took place on 4th October 1686 and consists of two main parts. While part A shows the moments before the execution, the so-called poor sinners walk, part B presents the execution at the Köpelpelberg in the city's periphery. © State Archive of Hamburg, signature: A 320/22

printed copy, the option of hearing a newspaper being read aloud.³⁴ This special service helped to stimulate a continuous circulation of rumour and information among the city's diverse social communities, those who consumed newspapers and other non-periodical outputs of the local and (via postal networks) “foreign” print industries on a biweekly or weekly basis, and those who only heard news in coffee houses, churches, and marketplaces. Hamburg thus produced public spaces of illiterate and literate news reception, filled with oral, handwritten, drawn, and printed news – heard, seen, or read. Spectacular events, such as the public execution of Jastram and Snitger in 1686, generated additional news echoes that quickly found their way into these media streams. Because Johann learns that his sought-after pamphlet is sold out even at the *News Market*, he buys another print depicting the *Poor Sinners Walk* of Jastram and Snitger through the city, and their execution (Fig. 3.4).³⁵ Yet still aiming to find his

34 In ‘Wierings Kram’ (Wiering’s shop) one could buy the newspaper for one Schilling or only half the price to only read it but not take it home. See Böning, ‘Geschichte der Hamburger und Altonaer Presse’, 151, with reference to the epigram ‘Hanselmus’ by Christian Wernicke in *Christian Wernickes Epigramme*, ed. Rudolf Pechel (Berlin, 1909), 252 (esp. footnote 2), URL: <https://bit.ly/3AdzDgw> [30.06.2021]) and Holger Böning, ‘Weltaneignung durch ein neues Publikum. Zeitungen und Zeitschriften als Medientypen der Moderne’, in *Kommunikation und Medien der Frühen Neuzeit*, eds. Johannes Burkhardt and Christine Werkstetter (München: R. Oldenbourg Verlag, 2005), 105–134 (112), as well as Böning, ‘Eine Stadt lernt das Zeitungslesen’, 391–415 (406).

35 On the webpage we offer an example from the *Relations-Courier* produced by Wiering (see footnote 6). A copy is bought by Johann from a stall at the New Market. There the event of the

desired “burned pamphlet,” he heads off to the site where the pamphlet and its copies were incinerated in an official ritual punishing event – the city hall where the pillory stands.

Power, public space, and censorship

The City Hall (Rathaus) and Court of First Instance (Niedergericht) constituted not only the heart of political power in seventeenth-century Hamburg but also a site of strategic importance for the local book industry. Accessible by a bridge called *Trostbrücke*, this was where the burghers’ committees and the Senate met. While the Senate also functioned as the “Obergericht,” the High Court of the city, the Niedergericht, was responsible for sentencing (see Fig. 3.5).³⁶ Much of the local book industry was located near this powerhouse: many printers, publishers, and booksellers were stationed nearby, trying to get publishable news or official announcements directly and quickly. In 1686, Margarethe Rebenlein and Conrad Neumann jointly ran the privileged printing shop of the city near St. Peter Church, while the printer-publisher Wiering had his shop in nearby Brodschangen street. The printers Thomas Roos and Nicolaus Spieringh ran their shops at the corner of Knochenhauerstraße and “bey dem Rathause,” literally at city hall. Booksellers and bookbinders were nearby too: for example, Peter Groote’s bookshop near St. Nicholas, and the bookbinder Peter Knust, “Neben dem Niedergericht” – next to the Niedergericht.³⁷

In the app, we have Johann introduce another object relevant to the political story of 1686: the pillory, or the so-called ehrloser Block (“dishonourable block”).³⁸ In front of the Niedergericht, verdicts were announced, and minor penalties carried out, and in 1686, the death sentence against Jastram and Snitger was announced here to a public audience. On 28 September, one day after the announcement of the death sentence and a few days before the execution, the city executioner burned at the pillory confiscated copies of a critical and proscribed pamphlet produced

execution depicted on the copperplate print, held in the State Archive of Hamburg (StAHH Smbd. 153 No. 30: 8), is shortly described.

36 Two copperplate prints of the “Niedergericht,” engraved by Nicolaus Christopher Sooth, are shown on the website: ‘Inside Law Court’, *Hidden Cities*, www.hiddencities.eu/hamburg/trostbruecke/law-court-inside (accessed February 1, 2021) and ‘Law Court Building-complex’, www.hiddencities.eu/hamburg/trostbruecke/law-court. See further: Daniel Jacobj, *Geschichte des Hamburger Niedergerichts* (Hamburg: Gustav Eduard Nolte, 1866), esp. 106ff., 120–122; Joseph Scholz, *Hamburg oder vollständige Geschichte und Beschreibung dieser Stadt, mit allen ihren Merk= und Sehenswürdigkeiten*. . . . (Hamburg: Gottfried Vollmer, 1811), 31–33.

37 See: Reske, *Buchdrucker*, 367–370; Colshorn, ‘Hamburgs Buchhandel’ (1967), 798; Kayser, ed., *Hamburger Bücher*, 72–78, 86; Kayser, ‘Thomas von Wiering’, 343–371.

38 For descriptions of the “dishonourable block”, see Nicolas Bärmann, *Hamburg und Hamburgs Umgegend: Ein Hand- und Hülfsbuch für Fremde und Einheimische, nach den neuesten Angaben und den zuverlässigsten Quellen neu ausgearbeitet* (Hamburg: Friedrich Hermann Nestler, 1822), 128f.; J.F. Voigt, ‘Von Pranger und Halseisen’, *Mittheilungen des Vereins für Hamburgische Geschichte* 4 (1882): 122–124; Heß, *Hamburg topographisch*, 331–332; Jacobj, *Niedergericht*, 128.



Figure 3.5 A copperplate print, taken from a popular single broadsheet by the successful printer-publisher Thomas von Wiering, allowing a glance not only on the city's powerhouse at the Trostbrücke, with the ensemble of city hall, court of first instance, stock market, crane, and scales, but also on how inhabitants observed the city's life in busy public urban spaces and participated in its communicative flows. © State Archive of Hamburg, Plankammer, signature: 720-1/1_131-06 = 37/159.

near New Market by the local printer Arnold Lichtenstein.³⁹ While no images of the pillory – a place that was regularly used to publicly burn condemned books or pamphlets – exist, we offer the app user an image of the burned pamphlet that Johann was so eager to acquire, a reprint of which he manages to purchase from a boy hawking prints at the site. This site allowed us to further explore two themes pertinent to both media and urban history: symbolic punishments, such as public book burnings, and news circulation around such events.⁴⁰ The pamphlet in question is titled “Wahre Abbildung der an Tag gegebenen Verrätherey” (“True

39 This event from 28th September 1686 is reported, for example, in the anonymous handwritten chronicle *Geschichte merckwürdiger Vorfälle, die sich in Hamburg vom 15. Jan. 1680–25. Mai 1687 ereignet haben, in Form eines Tagebuchs von gleichzeitigen Händen geschrieben* (Hamburg: [n.p.], [s.d.]) (Commerzbibliothek der Handelskammer Hamburg, S/667).

40 Hermann Rafetseder, *Bücherverbrennungen. Die öffentliche Hinrichtung von Schriften im historischen Wandel* (Vienna et al.: Böhlau, 1988), esp. 131–158; see further: Richard Ovenden, *Burning the Books. A History of Knowledge under Attack* (London: John Murray, 2020); Daniel Bellingradt, ‘Wenig Papier, viel Aufwand. Öffentliche Buchverbrennungen der Frühen Neuzeit als materielles Problem’, *JbKG* 16 (2014): 28–48.

depiction of the treason that came to light”). It was considered by the authorities to be a political hot potato, and was immediately confiscated when copies were sold by Hamburg’s street sellers. Yet the song printed in the pamphlet continued to circulate orally within the city.⁴¹ In the song, the suspected ringleaders of the turmoil, Jastram and Snitger, and the Danish king are explicitly pilloried, and the triumph of the Free and Imperial City of Hamburg is praised – a topic considered by the city’s officials too risky to be sung within the city walls. Attacking potentates or reviling their honour, whether spoken, written, or with drawings, was also illegal, explicitly forbidden by both imperial laws and constantly renewed bylaws on censorship and often resulting in public executions.

Coffee houses as information hubs

Hidden Hamburg’s last stop is Johann’s favourite coffee house, Eimbeck’s House, chosen to allow us to explore early modern urban drinking houses as hubs of news. Eimbeck’s House was one of the first coffee houses in Germany, serving coffee from 1668, and was situated at the corner of Kleine Johannisstraße and Dornbusch.⁴² Today, it is an inconspicuous street corner surrounded by office buildings, restaurants, and a bakery, and the app therefore provides a contemporary copperplate print of this important and multifunctionally used historic building. In 1686, there were at least three other coffee houses in the city – the Dreyersches, Dressersches, and Schülersches.⁴³ Meanwhile, large and small inns, drinking houses, and taverns were scattered across the city, offering, in addition to coffee, a great range of drinks and food, including hot chocolate, wine, and beer, and offering diversions such as billiards. Indeed, tavern culture in the seventeenth century was strongly connected to the new coffee house sociability.⁴⁴ Meeting in one of the many drinking houses (and we know of at least 30 in Hamburg in

41 The anonymous print comprises four pages including a song in 20 verses (Staatsarchiv Hamburg, Smbd. 122 No. 18).

42 See Dagmar Lekebusch and Katja Nicklaus, ‘Heiß begehrt: Kaffee, Tee und Schokolade statt Bier-suppe’, in *Kein Bier ohne Alster. Hamburg – Brauhaus der Hanse*, ed. Ralf Wiechmann (Hamburg: Verlag der Stiftung Historische Museen Hamburg, 2016), 203–219 (211). Its name derives from ‘Einbecker beer’ – Eimbeck’s house was the only place in which this beer could be consumed. See Heß, *Hamburg topographisch*, 407–409; Alfred Dreyer, *Der alte Ratsweinkeller zu Hamburg 1250–1842* (Hamburg: Hamburgische Bücherei, [1951]), 7–12; Eduard Meyer, *Das Eimbecksche Haus in Hamburg. Eine Monographie* (Hamburg: W. Mauke Söhne, 1869), 24–26.

43 Lekebusch and Nicklaus, ‘Heiß begehrt’, 212–213.

44 Coffee house socialising was gendered: it was primarily men who used these new public–private social spaces. Few women – as imagined on the satirical print of a coffee house scene accompanying our article on the webpage (see ‘Inside a Coffeehouse’, *Hidden Cities*, www.hiddencities.eu/hamburg/eimbecks-house/coffeehouse-scene [accessed July 12, 2021]) – were seen regularly in these places. See further: Brian Cowan, *The Social Life of Coffee: The Emergence of the British Coffeehouse* (New Haven: Yale University Press, 2005); Dagmar Freist, ‘Wirtshäuser als Zentren frühneuzeitlicher Kommunikation. London im 17. Jahrhundert’, in *Kommunikation und Medien in der Frühen Neuzeit*, eds. Johannes Burkhardt and Christine Werkstetter (Munich: Oldenbourg, 2005), 201–224; ([Anonym], *Die neu-eröffnete lustige Schaubühne Menschlicher Gewohn- und*

the 1680s)⁴⁵ had a communicative impact, as news media were regularly offered alongside the drinks.⁴⁶ The coffee house and its urban clientele constituted a distinct social space driven by an atmosphere of relatively informal contact that allowed for pleasure as well as debate and discussion, sometimes over playing cards or board games. Because of this, coffee houses were popular meeting places for urban merchants looking to discuss business, catch some news, and be seen by others – and indeed it is here that Johann finally finds the printer Wiering.

Usually, one had to buy a drink to gain access to a house's range of written media such as pamphlets and newspapers.⁴⁷ However, one did not necessarily need to read the news in silence: the alcohol-driven and caffeine-fuelled worlds of drinking houses and coffee houses allowed clients to observe arguments presented or discussed by others, as well as engage with the sometimes contested interpretations of news. Gossip and rumour filled the air of Europe's coffee shops. In the app story, before Johann notices Wiering, who visited Eimbeck's House by accident, too, we have him discover another, more elitist, artefact of the local news world, a satirical medal that is being shown around by one of the other clients.⁴⁸ The silver medal's imagery allegorises the story of Jastram and Snitger from the Senate's perspective, addresses the rule of the Senate and the freedom of the city, and acted as a warning not to interfere with the city's rightful authorities. Having seen the medal, Johann joins Wiering for further discussion of the city's news and a future paper purchase, and bids the app's user "farewell," as the story ends at the last point of the tour.

Conclusion

Like all city tours of the *Hidden Cities* project, *Hidden Hamburg* explores new and engaging methods of historical storytelling for a wide public. Historical questions around media dynamics in an early modern urban setting, Hamburg in

Thorheiten . . . Teil II: Caffée- und Thé-Logia, dessen Gebrauch und Mißbrauch [Hamburg: Wiering 1690], n.p.

45 See Christoph Walther, 'Georg Greffinger's Hamburgisches Reisehandbuch und Beschreibungen von Hamburg im Jahre 1674', *Zeitschrift des Vereins für Hamburgische Geschichte* 9 (1894): 122–149, (138–140).

46 In the seventeenth century, coffee, tea, and chocolate became popular in Europe. Spending time in a coffee house became a feature of Hamburg's public life by the 1680s. Recent publications on the topic include B. Ann Tlusty: *Bacchus and Civic Order: The Culture of Drink in Early Modern Germany* (Charlottesville: University of Virginia Press, 2001); Beat Kümin, *Drinking Matters: Public Houses and Social Exchange in Early Modern Central Europe* (Basingstoke: Palgrave Macmillan, 2007).

47 Annerose Menninger, 'Tabak, Kaffee, Tee und Schokolade in Wissenskulturen der Frühen Neuzeit', *Zeitenblicke* 8, no. 3 (23.12.2009): 81, www.zeitenblicke.de/2009/3/menninger/Abbildung-4 (accessed January 28, 2021).

48 The medal, of pure silver, is about 5 cm across and weighs 30 g (Museum of Hamburg History, inventory no. MK 667). In our app tour, we present an image of this medal in the "Discover More" for this location.

1686, are translated into public-facing locative media through a geolocated city tour with place-related stories. We used the character guide, Johann, to explore the public spaces of the city as lived experience, reconstructing information accessibility and news flows in an early modern city, as the local publishing industry responded to a tumultuous situation. While the character format allows for an embodied experience of news hunting through the city, the app's expert commentaries on our research questions address the production and spaces of "news" in the 1680s. One of our intentions, afforded by the mobile storytelling format, was also to provoke reflection about past and present communication dynamics and spaces in an urban context. With the reconstruction of early modern Hamburg's news world, *Hidden Hamburg* aims to impact perceptions of communication conditions in the past for a broad audience, but we also hoped to encourage twenty-first-century app users to consider how our experience of news flows is contingent on available media, places, and social spaces. Historical memory emerges at individual, collective, and institutional levels, and we set out in the app to contribute to these multiple ways of making and presenting history. In doing so, we also aim to highlight both the impermanence and permanence of public places and their physical condition in historic and present Hamburg.

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4 Making disability visible in digital humanities

Blind street singers in early modern Valencia

Mónica Bolufer, Juan Gomis, and Blanca Llanes

Introduction

A blind man speaks in your ear as you stroll through *Ciutat Vella*, Valencia's historic district, and tells you a piece of the history of his beloved city, that of the uprising known as the Revolt of the Brotherhoods (1519–1522), the *Germania* or *Germanies*.¹ This conflict erupted in the city of Valencia during the convulsive summer of 1519, fuelled by social unrest and economic hardship. The uprising was led by Valencia's artisan guilds against the city's government and the urban nobility, soon spreading to the rest of the kingdom of Valencia and evolving into a violent confrontation that threatened the authority of the young king of Spain, Charles I, who had been elected Holy Roman emperor in 1519 (as Charles V). The *Germania* revolt came to an end in 1522 with the defeat of the rebel forces, giving way to a period of severe repression and retaliation.² Interwoven with this

1 Research for this chapter has been funded by the HERA project *Public Renaissance: Urban Cultures of Public Space between Early Modern Europe and the Present* and Spain's Ministry of Science, Innovation and Universities (ref. PCI2019–103749).

2 The research content of the guided walk heavily draws on key scholarly works on the revolt, such as Ricardo García Cárcel, *Las Germanías de Valencia*, 2nd ed. (Valencia: Ediciones Península, 1981); Pablo Pérez García, 'Conflicto y represión: la justicia penal ante la Germanía de Valencia (1519–1523)', *Estudis: Revista de historia moderna* 22 (1996): 141–198 and *Las Germanías de Valencia, en miniatura y al fresco* (Valencia: Tirant Humanidades, 2017); Jorge A. Catalá Sanz and Pablo Pérez García, 'La pena capital en la Valencia del Quinientos', in *Conflictos y represiones en el Antiguo Régimen*, ed. Emilia Salvador Esteban (Valencia: Universitat de València, 2000), 21–112; Vicent J. Vallés Borràs, *La Germania* (Valencia: Institució Alfons el Magnànim, 2000); Emilia Salvador Esteban, 'La Germania de Valencia. Una aproximación interpretativa', in *Carlos V. Europeísmo y universalidad*, vol. II, ed. Juan Luis Castellano Castellano and Francisco Sánchez-Montes González (Madrid: Sociedad Estatal para la Conmemoración de los Centenarios de Felipe II y Carlos V, 2001), 537–552; Juan Francisco Pardo Molero, *La defensa del imperio. Carlos V, Valencia y el Mediterráneo* (Madrid: Sociedad Estatal para la Conmemoración de los Centenarios de Felipe II y Carlos V, Colección "Historia", 2001); and Rafael Narbona Vizcaino, 'La Milicia Ciudadana de la Valencia Medieval', *Clio & Crimen* 3 (2006): 305–332. For a thorough list and critical review of the existing scholarship on the *Germania*, see Pablo Pérez García, 'La Germanía, quinientos años después', in *Reflexiones históricas y artísticas en torno a las Germanías de Valencia*, ed. Luis Arciniega García (Valencia: Universitat de València, 2020), 17–85.

story, our guide reveals some aspects of his own life. This is the fiction that shapes “Revolutionary Road”, the first augmented reality walk of the *Hidden Valencia* app. In this regard, we participate in the spirit that promotes the collaboration between five European universities in the HERA *Public Renaissance* project. In a work published a few years ago, Fabrizio Nevola and David Rosenthal, the creators of the *Hidden Florence* project in which this initiative is based, clearly explained its objective: “to explore how mobile technologies can offer historians a tool and a methodology for researching and conveying urban experience as a dynamic relationship between place and identity”.³ In addition, they pointed out that developing a smartphone app as a research product is not only an innovative and original means to disseminate historical knowledge to the general public, but also a valid and sound option with methodological consequences on the way in which historical research is considered. It enables us to establish links between the past and the present, to incorporate what is learned from past times into the very experience of walking around the city, with a digital navigation tool, which allows us to understand historical reality in a different way, through the experience of movement and the senses.⁴

Josep, the guide of the *Hidden Valencia* app, is an invented fictional character like Giovanni, the wool worker of the *Hidden Florence* app; they are to be regarded not as “a period voice” aiming at pretending historical “authenticity”, but rather as a mediator, a character deliberately placed in an ambiguous position, between the past and the present.⁵ Josep is based on a deep knowledge and understanding of the life circumstances of the group to which he belongs, that of Valencia’s blind street singers. By asking users to accompany Josep, and guide him on his itinerary, they become involved in the experience of walking through the winding and busy streets of a Renaissance city when one is deprived of vision.

In this immersion into the past, users go back in time to 1524, two years after the end of the *Germania* revolt. Josep, who is a member of the *Vera Creu* brotherhood of blind reciters of prayers, is preparing a literary piece about the revolt. Josep plans to attend the public execution of one of the *Germania*’s leaders at Valencia’s Market Square, to gather first-hand information on the repression of the uprising. At the Serranos Towers (Site 1), Valencia’s main entrance gate in the early modern period, Josep, in the absence of his guide Pere, asks visitors to accompany him to the Market Square (Site 7). On their way to this destination, users stop at different venues around Valencia’s historic centre, such as the Generalitat Palace’s gardens, which formerly housed the Old City Hall, demolished in 1860 (Site 2); the Door of the Apostles, at Valencia’s Cathedral (Site 3); the Archbishop’s Palace (Site 4); Santa Catalina Church (Site 5); and the Silk Market – the *Llotja* – (Site 6).

3 Fabrizio Nevola and David Rosenthal, ‘Locating Experience in the Renaissance City Using Mobile App Technologies. The *Hidden Florence* Project’, in *Mapping Space, Sense, and Movement in Florence. Historical GIS and the Early Modern City*, eds. Nicholas Terpstra and Colin Rose (London: Routledge, 2016), 187.

4 *Ibid.*, 193.

5 *Ibid.*, 197.

Josep's itinerary has been designed to include emblematic sites that had a major role in the revolt and its aftermath, in order to unveil and highlight the connections between Valencia's public spaces and the *Germania* revolt. These places were the stage of key events of the conflict, such as the triumphal entrance of the viceroy of Valencia – Diego Hurtado de Mendoza – in November 1521, after his military victories against the *Germania*'s forces (Site 1); the takeover of the city government by the *Germania* rebels in May 1520 (Site 2); the infamous riot at Valencia's cathedral in August 1519 – the *avalot de la Seu* – (Site 3); the assault of the viceroy's residence in June 1520 (Site 4); the abolition of taxes in February 1521 (Site 6); and the repression and public execution of the revolt leaders under the rule of the new viceroy, Germaine de Foix (Site 7).⁶ Josep's story revolves around themes that inform users of the main protagonists of the uprising (craft guilds, nobility, and royal authorities), as well as of the social, political, economic, and cultural context that framed the outbreak of the *Germania*. One of the seven stops, Santa Catalina Church (Site 5), is not directly linked to the events of the revolt. However, this location was conceived as the imagined place where Josep would recite prayers, with the aim of showing visitors the everyday life and experiences of blind street singers in early modern Valencia.

Research on early modern Spanish blind reciters of prayers has underscored their role as cultural mediators between the written culture and a diverse audience, including “men and women, children and old people, the cultured and the illiterate, rural people and city dwellers, and so on”.⁷ Although the reciting of prayers was their main activity, blind street singers were also fundamental in the dissemination of the so-called *literatura de cordel* (“cordel” or “string literature”), a popular genre of printed pamphlets that were displayed for sale hanging from a string (*cordel*). In this sense, they facilitated the transmission of written texts of different kinds with various purposes, which could be moralizing, propagandistic, while also generating public opinion.⁸ Through singing and reciting in a mostly illiterate society, Spanish blind performers of prayers greatly contributed to expanding access to written culture in the past, even though they could not read or write themselves.⁹ At a time prior to the invention of braille, blind street singers had to rely on their guides and relatives to transcribe their work, as Josep mentions at the Market Square (Site 7). In the present, and through the app's walk, Josep exerts a parallel mediating function, by bringing Valencia's visual culture

6 The year in which the “Revolutionary Road” itinerary is set, 1524, represents the period of the greatest repressive activity against the defeated rebels. In 1524, Valencia registered the highest number of public executions of the century. That same year, moderate leaders of the *Germania*, including Joan Caro, Pere Llorens, Bartomeu de Cas, and Jaume Ros, were condemned to death. Catalá Sanz and Pérez García, ‘La pena capital’, 25–26.

7 Juan Gomis, ‘Pious Voices: Blind Spanish Prayer Singers’, *Renaissance Studies* 33, no. 1 (2019): 44.

8 Juan Gomis, ‘Intermediarios entre el texto y su público: la cofradía de pobres ciegos oracioneros de Valencia’, in *Opinión pública y espacio urbano en la Edad Moderna*, eds. Antonio Castillo Gómez and James S. Amelang (Gijón: Trea, 2010), 301–317.

9 Gomis, ‘Pious Voices’, 42–63.

closer to “lay” audiences. Although visually impaired, Josep helps users to decipher and interpret the hidden traces and meanings of Valencia’s rich artistic and architectural heritage in relation to the *Germania* revolt, the history of the city, and his life as a blind person. In so doing and inspired by scholarly research in the field of disability studies,¹⁰ we present early modern blind prayer singers as active agents in their lives and communities, rather than victims, challenging common assumptions about disabled people and furthering our understanding of disability both in the past and in the present.

Empathy and knowledge-building through sensory experience

In the design of Josep’s walk, we have placed ourselves at the crossroads between various historiographical orientations and academic disciplines that have experienced significant development in recent decades, among them “public history”. Because we have chosen a blind character as guide of the *Hidden Valencia* app, the underpinning research is inevitably framed within the field of disability studies.

Making public history with the ambition of engaging in a meaningful manner with the lives and concerns of the present, shaping the way in which a society as a whole perceives the past and paying attention to communication channels, is not a new ambition. It is part of the very exercise of writing history, especially in formats aimed at non-academic audiences. The more deliberate and explicit wish to reach out to these audiences has been closely linked to social history and more specifically to the practice of “history from below”.¹¹ This form of historical narrative is understood as a history that not only incorporates excluded or marginalized individuals, but also the gaze that these individuals cast on the world (potentially critical, unconventional, or irreverent). It is commonly claimed that history made “for those below”, directed at a lay and often popular audience, embodies a civic and democratizing vocation of knowledge. This approach has likewise characterized other historiographic currents, especially women’s and gender history, connected in its origins to the feminist movement and the demand for a history in which women from the present could recognize themselves. In recent times, as museums and other cultural institutions strive to open their doors in a more inclusive and inviting way, and as they develop new and varied communication formats (including digital), knowledge dissemination is perceived not as vertical or top-down. Rather it promotes the active participation of different

10 See Catherine J. Kudlick, ‘Disability History: Why We Need Another “Other”’, *The American Historical Review* 108, no. 3 (2003): 789: “Much recent scholarship has not only aimed to give agency to groups previously excluded but has also sought to show how the interplay between the actors and the acted-upon has blurred the boundaries between them and therefore complicated our approaches to historical process”.

11 James B. Gardner and Paula Hamilton, ‘Introduction: The Past and Future of Public History. Developments and Challenges’, in *The Oxford Handbook of Public History*, eds. James B. Gardner and Paula Hamilton (Oxford: Oxford University Press, 2017), 5.

audiences in the construction of history's meanings from their own lives, beliefs, and experiences.¹²

This does not mean that history must become a slavish or *à la carte* narrative, offering each sector of the public that image of the past that comforts them in their preferred social, educational, gendered, ethnic, or ideological identity. Rather, it should draw attention to the complex and never linear threads that link past and present, constructing understandable, but never simplistic, narratives. Any honest exercise of historical outreach is thus a challenge that forces historians to act as the devil's advocate, asking themselves to what extent their efforts to address the historical actors they study and bring them closer to the public might result in an oversimplification. A successful outreach strategy, far from being the non-problematic translation of an objective and pre-established historical truth into a particularly understandable language, is a way of writing history like any other. It has its own rules, and demands us to consider, over and over again, relevant questions that affect the very production of historical knowledge.

When creating Josep as the guide-character, we had to tackle two particularly pressing and intertwined issues regarding the problem of identifying present-day actors (historians and app users alike) with those of the past. On the one hand, what are the limits of empathy, of identifying oneself with the other, for historical understanding? On the other hand, when there are historical actors who are understood to be bearers of an identity similar to ours, how do we avoid the kind of close identification with them that may result in an ahistorical understanding? The problem of empathy is even more relevant when resorting to research communication strategies that use visual and sensory media: cinema, TV, historical reenactments, video games, 3D reconstructions, augmented reality.¹³ Indeed, a mobile technology such as the one we have used in our project conveys an illusion of reality more powerful than that created by the written word (books, articles, explanatory panels) or oral media (such as the audio guides used in many museums). This power of suggestion is reinforced when choosing a fictional character, precisely a blind man who invites visitors to accompany him, to "see" and feel the city of the present and evoke the city of the past through the filter of his own perception.

12 See, among others, Ivan Karp and Steven D. Lavine, eds., *Exhibiting Cultures: The Poetics and Politics of Museum Display* (Washington, DC, and London: Smithsonian Institution Press, 1991); Laura Peers and Alison K. Brown, eds., *Museums and Source Communities: A Routledge Reader* (London and New York: Routledge, 2003); Tim Grove, 'Museum Education in a World of Technology', in *The Museum Educator's Manual: Educators Share Successful Techniques*, eds. Anna Johnson, Kimberly A. Huber, Nancy Cutler, Melissa Bingmann, and Tim Grove, 2nd ed. (Lanham, MD: Rowman and Littlefield, 2017), 89–97; and Tula Giannini and Jonathan P. Bowen, eds., *Museums and Digital Culture. New Perspectives and Research* (Cham, Switzerland: Springer International Publishing, 2019).

13 Peter Burke, *Eyewitnessing: The Uses of Images as Historical Evidence* (London: Reaktion Books, 2001) and A. Martin Wainwright, *Virtual History. How Videogames Portray the Past* (Abingdon and New York: Routledge, 2019).

The sensory experience offered by the walk has a strong visual component, but also an auditory one. Josep describes the visual culture of Valencia's public space based on the information obtained from third parties, mainly from his guide Pere. There is no doubt that his lack of vision has also taught him to enhance other senses, such as hearing. The figure of Josep intersects with that of the blind musicians and poets described by late medieval literature. According to Julie Singer, "literary descriptions of visual impairment in the late Middle Ages often rely on such a rhetoric of compensation, a zero-sum game wherein the loss of vision is counteracted by the enhancement of another sensory capacity or quality", thus transforming "the diminishing of eyesight" into "a key contributor to valor, virtue or artistic creation".¹⁴ This circumstance challenges the distinction between "impairment" and "disability" established by Lennard J. Davis, because for Singer, the literary texts of the late Middle Ages show that "in the face of an obstacle, an impairment does not necessarily become a disability" as "blindness constitutes not only an impairment of the sense of sight, but also an enhancement of another sense, namely hearing (or musical ability)".¹⁵ Josep reveals this hearing ability when he reflects on the dramatic events that took place at the Cathedral's square, just in front of the Door of the Apostles (Site 3), in the summer of 1519:

Pere and I were walking nearby – and I heard the violence before my guide saw it. First, the sound of stones and sticks banging on the walls and doors of the *Seu*. Afterwards, a thunderous noise. I could smell smoke too. We rushed to the plaza, and there we witnessed the crowd bundling Sanchis out of the Cathedral, before killing him in the same plaza.

For Josep the ear becomes an important means of acquiring new knowledge. Hence, sound acquires a prominent role in his narrative. As Eric Wilson pointed out in the case of early modern London, "paying attention to the sounds of the city, as noted by its citizens, has much to offer, not only to the cultural history of early modern England, but also to the ways in which we tend to 'view' the city more generally".¹⁶ Through his sound descriptions, Josep also offers another way of "seeing" and feeling the city. Josep brings us closer to the sounds that permeated Valencia's daily life and public space, from the bustle of frenetic commercial activity at the Market Square (Site 7) to the construction noise coming from the Silk Market (Site 6). Josep evokes the sounds and voices emanating from royal power and the city's authority when at Serranos Towers (Site 1), he describes the triumphal entry of Valencia's viceroy Diego Hurtado de Mendoza ("I can still hear the town criers announcing the arrival of the viceroy, the sound

14 Julie Singer, 'Playing by Ear: Compensation, Reclamation, and Prosthesis in Fourteenth-Century Song', in *Disability in the Middle Ages: Reconsiderations and Reverberations*, ed. Joshua R. Eyer (Farnham and Burlington: Ashgate, 2010), 39.

15 *Ibid.*, 40.

16 Eric Wilson, 'Plagues, Fairs, and Street Cries: Sounding Out Society and Space in Early Modern London', *Modern Language Studies* 25, no. 3 (1995): 6.

of their trumpets”). At the Market Square (Site 7), he refers to the punitive rituals performed in the immediate moments that precede the public execution of the *Germania*’s rebel (“Ah, I hear the trumpet of the town crier announcing the arrival of the prisoner. In a few moments, the crier will read the death sentence and then the executioner, Joan Diez, will perform his duty”).

The “sounds” of the *Germania* revolt are present in Josep’s story. His aural experience in relation to the events of the revolt, based on testimonies left by the contemporary chronicler Rafael Martí de Viciana, is very revealing.¹⁷ In his study of Renaissance Florence’s soundscape, Niall Atkinson has examined how “acoustic strategies, interventions, and exchanges that were critical to the success of the revolt [the Ciompi Revolt, 1378] can teach us a great deal about the relationship between architecture, space and sound in the early modern city”.¹⁸ In Valencia, it is at the Archbishop’s Palace (Site 4) that this link becomes more evident. Standing in front of the Archbishop’s Palace, and recalling the attack led by the *Germania*’s leader Guillem Sorolla in June 1520 against Valencia’s viceroy, Josep points out:

On the afternoon of Tuesday, June 5th, after freeing a convict from the galleys, a multitude gathered where we are standing now. I could hear them bash at the palace’s doors and smash the windows. The combat lasted for two endless hours.

After that, a rumour was spread around that Sorolla had been killed. Fake news, but it triggered a second attack, at night, on the viceroy’s residence. This time the uproar was even more scandalous. The sound of drums was deafening. The people cried, “Long live the king! Death to the viceroy!” The confrontation only ended when Sorolla approached the palace and his voice was heard among the crowd. Then they shouted: “Long live the king! Long live Sorolla!”

Josep’s story of the attack against the Archbishop’s Palace reproduces Rafael Martí de Viciana’s own narrative on the assault. Martí de Viciana’s depiction of this crucial episode of the revolt draws on first-hand accounts of the events, in which aural and spatial elements play an important role. The sound of drums, peoples’ cries, and loud noises referred by these sources, and recreated by the Josep character, served Martí de Viciana to stress the magnitude of this “commotion”,¹⁹ acquiring a symbolic role as voices of contestation in this space resonant of Valencia’s political and religious power. It marked a turning point in the conflict after the viceroy was forced to flee the city. By linking Josep’s aural memories to the

17 Rafael Martí de Viciana, *Libro quarto de la Crónica de la Inclita y coronada ciudad de Valencia* (Barcelona: Casa de Pablo Cortey, 1566).

18 Niall Atkinson, ‘The Republic of Sound: Listening to Florence at the Threshold of the Renaissance’, *I Tatti Studies in the Italian Renaissance* 16, no. 1 (2013): 79.

19 Martí de Viciana, *Libro quarto de la Crónica*, 48–53.

sites identified in the app, users gain a better understanding of the early modern city as (quoting Eric Wilson) “a differentially inhabited space – spoken, touched, traversed, vacated, amplifying, concentrating – variably punctuated by the ensemble of everyday activities, sonic and otherwise, that constitute the city as an ongoing event”.²⁰ In the case of Valencia, the *Germania* revolt further complicates this picture of the early modern city, showing how public spaces are contested and negotiated.

The pedagogical strategy that seeks to foster empathy by encouraging visitors to “stand in their shoes” has been part of the communication policies of museums and other cultural institutions in recent decades. It moves beyond more traditional display narratives that were based on a distanced, authoritative, and supposedly neutral vision.²¹ This is not alien to the deeper transformations taking place in the way knowledge is now understood within historical studies. Subjective and emotional aspects (imagination, empathy) are no longer seen as obstacles, but rather as aids in the intellectual exercise of understanding and interpreting required by historical knowledge. Authors such as Natalie Davis and Peter Burke have reflected on both the power of images and the tension between empathy and distance that the historian’s profession necessarily implies.²² For readers, viewers, or, in this case, app users, exercising empathy by putting oneself in the shoes of an individual from the past, has its limits. Trying to understand the experience of a blind man in a Renaissance city cannot fully encompass putting oneself in the place of others. In this respect, it is worth highlighting Lucien Febvre’s concept of a “lacerating distance” that always separates us from human beings of the past and that rejects presentist views and interpretations.²³ For this reason, Josep’s ironic comments in specific sites of the itinerary – Old (Lost) City Hall (Site 2) and Santa Catalina Church (Site 5) – are both a useful resource for a relaxed and engaging narrative, and a deliberate wink that stresses his fictional and artificial nature. He is not a historical character who pretends to be real. In this respect, users can be more prepared to understand that any narrative about the past, even in the most descriptive and authoritative sections of the app (“Discover More” and “Read More”), written in third person and not through a first-person voice, is not the “reflection” of what happened, but rather a necessarily selective and interpretive explanation.

Identity and disability

The second challenge posed by the app’s historic guide, Josep, stems from the convenience of assuming that there is an identity over time. In this instance,

20 Wilson, ‘Plagues, Fairs, and Street Cries’, 4.

21 Benjamin Filene, ‘History Museums and Identity. Finding “Them”, “Me”, and “Us” in the Gallery’, in *The Oxford Handbook of Public History*, eds. James B. Gardner and Paula Hamilton (Oxford: Oxford University Press, 2017), 332.

22 Ed Benson, ‘Martin Guerre, the Historian and the Filmmakers: An Interview with Natalie Zemon Davis’, *Film and History* 13, no. 3 (1983): 49–65 and Burke, *Eyewitnessing*.

23 Lucien Febvre, *Amour sacré, amour profane. Autour de l’Heptaméron* (Paris: Gallimard, 1971).

disabled users may identify with the experiences of the character when they feel they participate in their condition of disability, while other users can better grasp the difficulties faced in the past (and potentially in the present) by people with disabilities. In this sense, the more self-reflective views of disability studies have argued that a category of identity that was forged in the 1970s cannot be projected in the past.²⁴ It is anachronistic to pretend that in the past a common identity united people of different social status or gender, due to the fact that they all suffered from physical impairments (blindness or deafness, for example). Some physical expressions of disability, such as scars or amputations, were widely extended among the early modern population because of wars, illnesses, or radical surgeries. While the experience of extreme suffering was particularly dramatic among the poor, it cut across social differences, as Arlette Farge vividly showed in her book about physical and moral pain in eighteenth-century France.²⁵ Many of these conditions, far from being invisible, were very noticeable. In some cases, they guaranteed their bearers some benefits: for instance, a poor physical condition (due to age, illness, birth, or accident) granted the right to be given a begging license, and the group of blind prayers to which Josep belongs do not comprise all visually impaired people. It was a corporation of individuals whose collective identity was linked to the privileges that they defended against other groups.

The problem of identity has arisen very sharply within the field of public history when different groups (women, ethnic or religious minorities, people with disabilities) have demanded both a recognition of “their” own past and participation in the common narrative and an active involvement in the way (their) history is told. It is often the case that “asserting an identity in the past can confer legitimacy on minority groups by providing a sense of continuity between the past and the present and, by extension, with a future”.²⁶ However, the very idea of “identity” is a widely problematic and contested concept since the emergence of the “cultural turn” in history and social sciences.²⁷ An essentialist vision of identity linked to shared and supposedly natural attributes (gender, race, nation) or common conditions of material experience (class) is nowadays unacceptable. Rather, a constructivist vision prevails, which understands personal and collective identities – both as forms of categorization of an individual or a group by others as well as a sense of belonging to a community or an intimate perception of the self – as deeply felt social constructions.

24 Lennard J. Davis, ‘The End of Identity Politics: On Disability as an Unstable Category’, in *The Disability Studies Reader*, ed. Lennard J. Davis, 4th ed. (New York and London: Routledge, 2013), 263–277.

25 Arlette Farge, *La déchirure. Souffrance et déliaison sociale au XVIIIe siècle* (Montrouge: Bayard, 2013).

26 Jocelyn Dodd, Ceri Jones and Richard Sandell, ‘Trading Zones. Collaborative Ventures in Disability History’, in *The Oxford Handbook of Public History*, eds. James B. Gardner and Paula Hamilton (Oxford: Oxford University Press, 2017), 89.

27 Rogers Brubaker and Frederick Cooper, ‘Beyond “Identity”’, *Theory and Society* 29, no. 1 (2000): 1–47.

Historians have debated intensely on how to offer narratives that challenge today's readers and viewers, allowing them to better understand their own sense of identity, while capturing the complexity of the past without betraying it with anachronisms. Some museums have developed exhibition narratives that eschew the traditional approach of illustrating the collective identity of a certain racial group ("Black", "Latino", . . .), and instead provide a closer examination of the historical processes by which the category "race" was constructed.²⁸ It may seem self-evident, but it is worth remembering that disability studies have benefited from the theoretical journey of feminism and particularly its self-critical effort to avoid attributing to observers in the present (historians, audiences, app users), who feel part of a shared identity, an advantageous position to put themselves in the place of the individuals from the past.²⁹ Feminist historians since the 1970s have struggled, as a political and intellectual project, to make women of the past visible, often invoking a common female identity. However, they have remained cautious about creating a misleading sense of familiarity with women from the past. By analysing femininity and masculinity as cultural and social constructions, they have also contributed to destabilizing the notion of identity as a natural evidence or an automatic identification, heavily impacting the studies of other "imaginary communities" such as the national ones.

Blindness and historical agency

Influenced by women's and gender history and driven by the emergence and development of both cultural history and disability studies, scholarly publications on the history of disabled people have steadily increased since the 1990s. They have brought a clear shift in focus by overcoming the traditional medical model that viewed disability as a way of exemplifying the evolution of medical advances. Recent scholarship has addressed this topic from different perspectives, examining the relationship between history and disability with different degrees of depth: firstly, addressing disability not as an isolated phenomenon, but rather in connection with the social, cultural, political, and economic factors that shape it³⁰; secondly, establishing the distinction between impairment (physical condition) and disability (sociocultural construction of impairment), as well as studying the varied and mobile meanings attached to disability in the past³¹; and thirdly, understanding disability as a key element of cultural significance on which hierarchies have traditionally been built.³²

28 Filene, 'History Museums and Identity', 337.

29 Rosemarie Garland-Thomson, 'Integrating Disability, Transforming Feminist Theory', in *The Disability Studies Reader*, ed. Lennard J. Davis, 4th ed. (New York and London: Routledge, 2013), 333–353.

30 Kudlick, 'Disability History', 764–765.

31 Lennard, 'The End of Identity Politics', 265 and Irina Metzler, *Disability in Medieval Europe: Thinking about Physical Impairment during the High Middle Ages, c. 1100–1400* (New York: Routledge, 2006).

32 Douglas C. Baynton, 'Disability and the Justification of Inequality in American History', in *The Disability Studies Reader*, ed. Lennard J. Davis, 4th ed. (New York and London: Routledge, 2013), 31.

Blindness as a historical subject has gathered less attention than other expressions of disability, such as deafness.³³ Furthermore, most of the studies on blindness deal with the modern and contemporary periods, focusing primarily on the education of blind people and the social control exerted upon them by the elites.³⁴ There are very interesting and insightful works that address blindness in a period prior to the nineteenth century through a sociocultural lens. In his book on the representation of blindness in Western painting, art historian Moshe Barasch pointed out how perceptions and attitudes towards blindness and blind people, “as matters of culture”, may vary with time and are, therefore, subject to “historical change”.³⁵ Zina Weigand and Irina Metzler have noted that views on the blind were ambivalent in late medieval times. While many blind people were supported by charity, they were also the object of public derision and scorn.³⁶ During the Middle Ages, and from a religious and theological scope, visual impairment was likewise linked to sin and divine punishment. Nonetheless, this did not prevent medieval society from showing respect and admiration for certain blind individuals, particularly blind poets, and musicians.³⁷ In the beginning of the early modern period, when poverty and begging seemed to threaten the public order, control of blind people, rather than support, became a major concern for urban authorities in Europe.³⁸

Josep’s character is constructed within this historiographic framework and is based on our knowledge of the history of blind people in early modern Spain, a subject with a well-established and growing body of research in the last decade. Josep is a street singer, who composes *romances* on topics of interest and sings them in the streets of Valencia. We know the names of some blind men who had this profession in the sixteenth and seventeenth centuries as well as the titles of some of their works: for example, Cristóbal Bravo wrote *Angustias de la bolsa* (“*Bag’s heartaches*”), *Testamento del gallo* (“*Testament of the rooster*”), and *Testamento de la zorra* (“*Testament of the fox*”), while Benito Carrasco is the author of *Vida del estudiante pobre* (“*Life of the poor student*”). Pedro M. Cátedra’s study on the judicial process against the blind poet Mateo de Brizuela in 1577 has

33 Kudlick, ‘Disability History’, 781.

34 See, for example, Phillip M. Hash, ‘Music Education at the New York Institution for the Blind, 1832–1863’, *Journal of Research in Music Education* 62, no. 4 (2015): 362–388; Hazel McFarlane, ‘Out of Sight, Out of Mind: Blind Asylums and Missions in Scotland’, in *The Routledge History of Disability*, eds. Roy Hanes, Ivan Brown, and Nancy E. Hansen (London and New York: Routledge, 2017), 273–298; and Tilley Heather, *Blindness and Writing: From Wordsworth to Gissing* (Cambridge: Cambridge University Press, 2018).

35 Moshe Barasch, *Blindness: The History of a Mental Image in Western Thought* (New York: Routledge, 2001), 3.

36 Irina Metzler, *A Social History of Disability in the Middle Ages: Cultural Considerations of Physical Impairment* (New York and Abingdon: Routledge, 2013), 162, and Zina Weigand, *Vivre sans voir. Les aveugles dans la société française, du Moyen Age au siècle de Louis Braille* (Paris: Créaphis, 2003), 24–33.

37 Edward Wheatley, *Stumbling Blocks before the Blind: Medieval Constructions of Disability* (Ann Arbor: The University of Michigan Press, 2010), 67 and Singer, ‘Playing by Ear’, 39–52.

38 See Weigand, *Vivre sans voir*, 37–44, and Gomis, ‘Pious Voices’, 42–63.

provided a window into the creation and dissemination practices of one of these street singers.³⁹ These obscure historical figures, which academic research has managed to rescue from oblivion, offered us an attractive model for the historic guide of the *Hidden Valencia* app's itinerary. Why not create a blind character, a storyteller, who would provide users with an informed account of the events of the *Germania* revolt?

However, we decided not to limit ourselves to offering a simple and conventional image of the blind rhapsodist, well established in the Western collective imagination, thanks to the influence exerted by the figure of Homer. In order to bring users closer to the richness of historical reality and the complexity of identity-building, we conceive Josep not only as a blind man who gets ahead in life with his individual effort, but also as a member of a network of solidarity and mutual assistance created by blind people in many European cities since the late Middle Ages. We refer to the brotherhoods or corporations of the blind that existed in Paris, Sarrant, Strasbourg, Zülpich, Trier, Genoa, Venice, Florence, Padua, Lisbon, Barcelona, Madrid, or Seville, among others.⁴⁰ One of these brotherhoods was also founded in Valencia. In fact, this was, as far as we know, the oldest brotherhood of the blind among the numerous ones existing in Spain. It was founded in 1329, and from the beginning of the fifteenth century it was known as the *Vera Creu* brotherhood. Josep is part of this organization.⁴¹

By stressing this corporative element, Josep's character becomes richer in nuances and provides a more complex look at the history of disability. The brotherhoods not only offered a mutual support network for the blind and a structure that allowed them to develop diverse strategies to provide their members with assistance, but also an effective platform for dialogue with civil and religious authorities, necessary for the attainment of their privileges and benefits. The image of blind people from the past as passive and marginal individuals, dependent on charity and fortune, thus gives way to another view that reveals a capacity for initiative and organization that defies any victimizing gaze without falling into heroic stereotypes.

Like any other brotherhood, those of the blind were organized through by-laws, ordinances, statutes, or constitutions, which were approved by the royal

39 Pedro M. Cátedra, *Invençión, difusión y recepción de la literatura popular impresa (siglo XVI)* (Mérida: Editora Regional de Extremadura, 2002).

40 Weigand, *Vivre sans voir*, 28–33; Claudette Gilard-Fito, 'La confrérie des musiciens de Sarrant aux 16 et 17 siècles', *Bulletin de la Société Archéologique, Historique, Littéraire & Scientifique du Gers* 3 (2002): 304–338; Metzler, *Disability in Medieval Europe*, 179–181; Laura Carmelos, 'Street Voices. The Role of Blind Performers in Early Modern Italy', *Italian Studies* 71, no. 2 (2016): 184–196; Luigi Cajani, 'Gli statuti della compagnia dei ciechi, zoppi e stroppiati della Visitazione (1698)', *Ricerche per la storia religiosa di Roma* 3 (1979): 281–313; Danilo Zardin, 'La mendicizia tollerata. La "scola" milanese dei ciechi di S. Cristoforo e le sue regole (sec. XVI-XVIII)', in *Studi in onore di mons. Angelo Majo*, ed. Fausto Ruggeri (Milan: NED, 1996), 355–380; and Fernando Guedes, *Os Livreiros em Portugal e as suas associações desde o século XV até aos nossos dias* (Lisbon: Verbo, 2005), 28.

41 Gomis, 'Intermediarios'.

and ecclesiastical powers.⁴² New chapters were issued to accommodate changing needs, as circumstances required. Thus, if we focus on Spain's two oldest brotherhoods, those of Valencia (1329) and Barcelona (1339), we observe that their original purposes, embodied in their founding by-laws, were to organize spiritual obligations (ordering masses, meeting for certain celebrations, keeping a candle lit in the parish church) and offer mutual help (assisting their members in illness and in death, as well as sharing their guides when they found other fellow brothers alone and lost in the streets). In the second half of the fifteenth century, both brotherhoods added a new professional aim in their by-laws when royal authorities granted them the exclusive privilege of reciting prayers in the streets. From then on, blind brotherhoods assumed the activity of reciting prayers as their profession. Through their by-laws, they regulated different aspects such as the learning of prayers, the apprenticeship examination process, the way in which the reciting of prayers had to be done, and the fee charged for each prayer. In this way, blind brotherhoods were transformed into professional guilds, and their members became identified with their profession: in the well-known notarial documents, they are described as "*ciegos oracioneros*" ("*blind reciters of prayers*").

If we examine the evolution of the brotherhoods and study the primary sources they produced (by-laws, apprenticeship contracts, annual reports, lawsuits, deliberations), we can have a glimpse of the complex game of identity-building and negotiation, which prevents simplistic uses of the wide-ranging category of "people with disabilities" in the past. For blind individuals, being part of a brotherhood endowed them with a collective identity in which impairment was just one of its many elements together with mutual assistance, solidarity practices, and the organization and performance of their occupation.⁴³ The distinction established by the royal privilege for the reciting of prayers, that excluded blind people outside these blind brotherhoods and other people with disabilities, blurs the idea of a common category that encompasses them all. Belonging or not belonging to the brotherhood marked a clear distance between one and the other. Within the brotherhoods, it is possible to distinguish various forms of membership that erode any monolithic image. From a gender perspective, it must be noted that blind brotherhoods admitted women, but not under the same conditions as their male counterparts.⁴⁴ Blind women could not access the higher ranks within the brotherhood, they were not allowed to teach prayers, and they had different norms when it came to reciting prayers in the streets (for example, women could not carry out this activity at night). These women's identity was necessarily shaped and determined by at least these three elements: their visual impairment, their membership in the brotherhood, and their female condition.

Another example of diversity within the brotherhoods is provided by the admission, in certain cases, of "people of sight" among their members. During the first

42 Gomis, 'Pious Voices', 46.

43 *Ibid.*, 48–51.

44 *Ibid.*, 52 and 57.

half of the fifteenth century, the blind brotherhood of Barcelona welcomed blind individuals as well as “crippled” people with no visual impairment.⁴⁵ This seems to be the case of Valencia too. In a privilege granted by King Ferdinand II in 1479, it is mentioned that “other miserable people” were likewise admitted in the city’s brotherhood of the blind.⁴⁶ Seville’s brotherhood of the blind was called *Hermandad de ciegos y vistosos* (“*Brotherhood of the blind and the pretended blind*”), also implying the presence of both blind and non-blind members. Nevertheless, blind individuals held the highest positions within these brotherhoods, outnumbering those members who were not visually impaired. Over time, the presence of non-blind individuals vanished in the brotherhoods’ written records as well, at least in Barcelona and Valencia. In any case, this heterogeneity within the brotherhoods necessarily forces us to be cautious when attributing a collective identity to these organizations.

We have little information about how brotherhoods managed their internal diversity. We know more about the image they wanted to project to outsiders, displaying different registers of self-representation depending on the circumstances. Thus, when the brotherhoods of the blind negotiated their demands with the authorities (the monopolies of both the reciting of prayers and, in the eighteenth century, that of the sale of loose sheets, and certain tax exemptions), they presented themselves as poor individuals whose impairment and misery made them worthy of public charity. However, when it came to coping with poor laws, passed by municipal governments during the early modern period, the brotherhoods of the blind strove to distance themselves from the poor and beggars who were the object of this welfare policy. In these cases, the members of the brotherhoods did not rely on their visual impairment or misery to support their claims, but rather on their professional activity as reciters of prayers, which they proudly wielded as proof that they were not “idlers” or beggars.

When Madrid’s authorities ordered in 1674 that the city’s beggars be admitted to a hospital, members of the local blind brotherhood energetically opposed being included in this measure, alleging that they “were not beggars, vagabonds and badly entertained, annoying and harmful”.⁴⁷ Thanks to their “profession” they lived “without begging, like others, from door to door, but with what they earn from the prayers that they recite at various people’s houses”.⁴⁸ Thus, this strategic use of the brotherhoods’ discourse and representation is another example of the proactive attitude and agency of the blind, which together with the other aspects mentioned earlier, we have tried to convey through Josep’s character.

45 *Confirmación de los privilegios y prerogativas del Gremio y Cofradía de Sto. Espiritu y Ntra. Sra. De la Fuente de la Salud* (Barcelona: Imprenta de la V. Torrás, 1868).

46 Historical Archive of the City of Valencia, MC A-41, f. 283r-285v.

47 Cristóbal Espejo, ‘Pleito entre ciegos e impresores (1680–1755)’, *Revista de la Biblioteca, Archivo y Museo* 2 (1925): 220.

48 *Ibid.*, 221, as quoted (translated) in Gomis, ‘Pious Voices’, 50–51.

Conclusion

Over the past decades, social inclusion has become a key concern in the fight against inequality and discrimination. Integrating people with disabilities into our society is part of this task. Education and culture play a very important part in our personal development and growth. For this reason, major efforts have been made to ensure disabled people's access to cultural venues and institutions, such as museums. These measures and policies seek to eliminate physical barriers as well as making the museum experience richer and more meaningful. Museums have increasingly become places for debate and civic engaged institutions. They now have the potential to create new narratives to incorporate the history of disability while giving voice to its protagonists.⁴⁹ In recent years, both academic and public historians have shown a greater interest in the lives of disabled people, stepping beyond the traditional view that portrayed them as people at the margins of society. The app *Hidden Valencia* and its "Revolutionary Road" trail contribute to this inclusive approach and new body of research while at the same time highlighting the suitability of the use of digital humanities as a powerful tool to present the history of disability to wider audiences.

In early modern Spain, and elsewhere in Europe,⁵⁰ blind street singers were critical in the dissemination of written culture among an illiterate population. Josep, the fictional blind street singer who acts as the historic guide of the *Hidden Valencia* app, brings users closer to historical places that witnessed crucial moments of the Revolt of the Brotherhoods and its aftermath during the early sixteenth century. By showcasing the hidden meanings attached to these sites, we present Valencia's urban public space as a dynamic key player during this troubled time in history. Josep's itinerary serves to illustrate how narratives about these events were constructed and informed by both first-hand accounts and place-based experiences. In doing so, we underline the active role of early modern blind street singers as cultural mediators, thus offering a valuable example of blind people's historical agency. Furthermore, Josep's character provides users with the opportunity to understand how attitudes towards disability and the meanings we attach to it may shift overtime, as well as being culturally and socially shaped.

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49 See, for example, the exhibition *Touching the Book: Embossed Literature for Blind People in the Nineteenth Century*, curated by Heather Tilley and held at Birkbeck College, University of London in 2013.

50 Carnelos, 'Street Voices.'

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5 Navigating places of knowledge

The Modern Devotion and religious experience in late medieval Deventer

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Introduction

Katharina Kerstkens, the character with whom the user of the *Hidden Deventer* app (Fig. 5.1) walks through the city in the year 1495, visiting several places of knowledge (*lieux de savoir*¹), is based on a historical woman who lived and worked in Deventer until her death, shortly after 1539. Her husband was an artisan, a stonemason, and Katharina probably continued the business with success after being widowed in 1496, because at the end of her life she had accumulated considerable wealth. Several pieces of material evidence allow us to grasp some parts of her life which form the basis for the *Hidden Deventer* app: the religious networks in which she participated, and the textual culture supporting her religious experiences. Through the information contained in her two wills and her personal prayer books, Katharina can be connected to several places of religious knowledge in Deventer itself, as well as in other cities in the eastern and northern Low Countries. In this chapter, we will present historical details about Katharina Kerstkens and broader background information based on our research into the topography of religious knowledge transfer in late medieval Deventer. We will also demonstrate how the design of the *Hidden Deventer* app has contributed to a better understanding of late medieval religious space in a lay and urban context.

Located on the IJssel river, Deventer was in the fifteenth century one of the main market towns in the Eastern Netherlands, a hub in the commercial routes linking the Rhinelands and the North Sea coasts. Next to its commercial ambitions, Deventer was the city of the Modern Devotion, one of the most influential late medieval religious movements, which started in the city at the end of the fourteenth century with the activities of its founder Geert Grote. The places of knowledge in Deventer that Katharina visits during the imagined walk through the city are interconnected not only through the social–religious network of the Modern Devotion, a movement of religious renewal and observance, but also through the network of streets itself, a spatial network that linked places of knowledge and facilitated religious knowledge transfer. In this chapter, we will

1 Christian Jacob, *Qu'est-ce qu'un lieu de savoir?* (Marseille: Open Edition Press, 2014). DOI: 10.4000/books.oep.423.

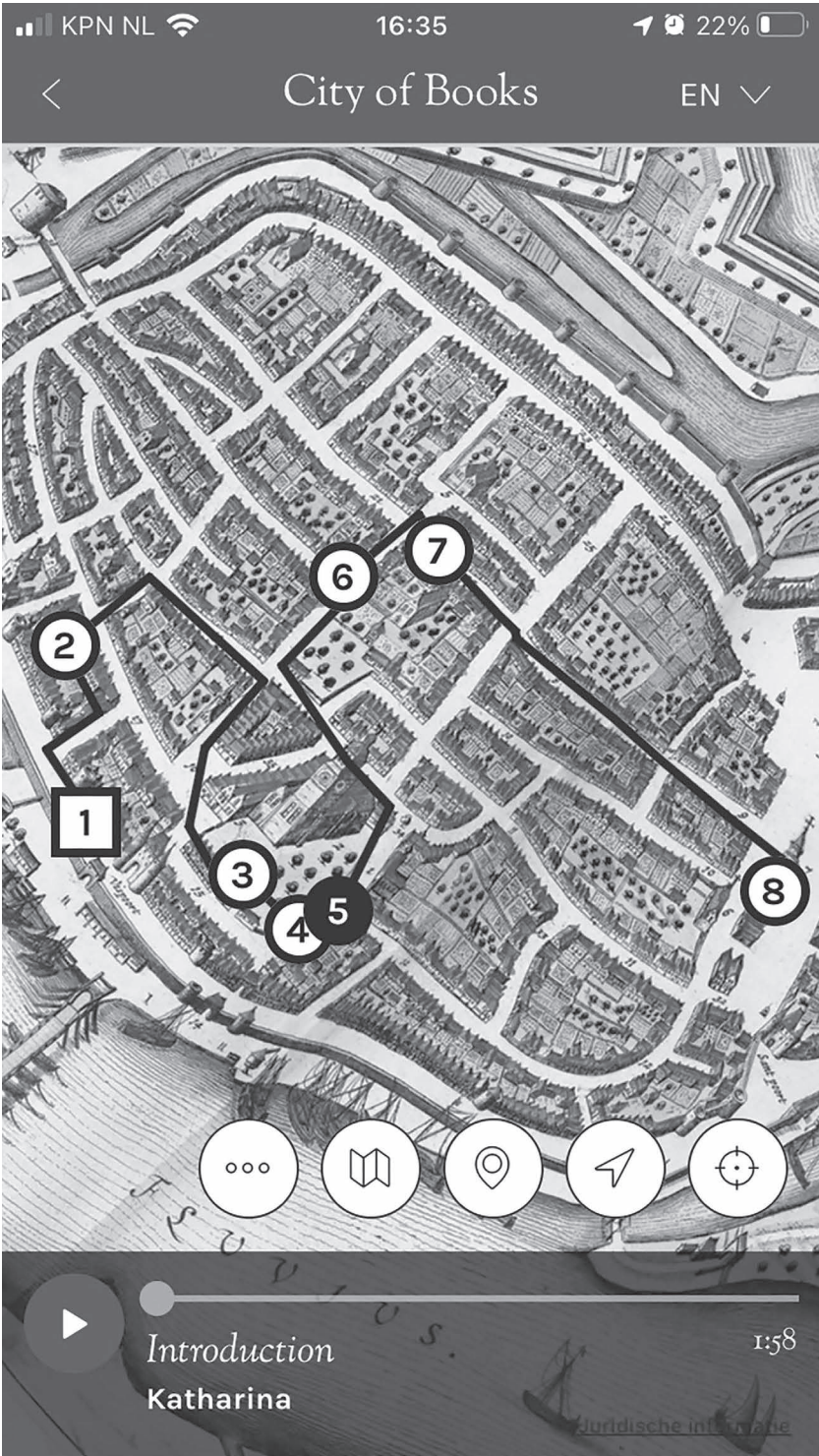


Figure 5.1 Screenshot of the *Hidden Deventer* walk projected on the Joan Blaeu map (1649). © Calvium and University of Exeter

retrace how lay people such as Katharina could navigate this urban and inter-regional spatial topography of devotion, and how libraries, books, communities, and conversations contributed to the creation of shared reading cultures. This will also elucidate how our research into spatial aspects of Katharina's religious reading and spiritual activities has been translated into the narrative of the *Hidden Deventer* app.

Katharina's social practices in relation to religious texts open the way to new research questions about the mobility of religious knowledge, in a spatial sense as well as in a social sense: the religious reading cultures that were shared by reading communities, including laity and clergy. This approach leads much further than studying the transmission of religious knowledge and linking it to specific places and spaces. It stresses the relevance of researching religious books and texts in combination with social relations, and informal exchanges and discussions. It also describes to what extent Modern Devout practices could create a specific kind of emplaced religious knowledge for contemporaries. The combination of "traditional" historical research with the design of the app *Hidden Deventer* allows us to uncover the kinetic and mobile process of late medieval religious knowledge transfer.

The high concentration of religious places of knowledge, the presence of religious texts in "open access", and the frequent instances of religious knowledge sharing that we know about in the urban topography of late medieval Deventer are all strongly related to the Brothers and Sisters of the Common Life. This was one of the most important manifestations of the Modern Devotion, which originated in Deventer during the 1370s and was among the most influential late medieval religious movements in the Low Countries and Western Germany. Its inception is often associated with the conversion of Geert Grote (1340–1384), son of a rich merchant and one of Deventer's mayors. Grote had studied in Paris and obtained prebendaries in Aachen and Utrecht, but decided to abstain from his privileges and to live in voluntary poverty. In 1374, he donated his deceased parents' house in Deventer to give shelter to poor women and to accommodate a community of women living in voluntary poverty and chastity. This Sisterhouse was locally known as the Meester Geertshuis.² New Sisterhouses, for lay women living in a religious community without taking monastic vows, and communities of their male counterparts, the Brothers of the Common Life, spread across the Low Countries and the Rhineland through the fifteenth century. Moreover, Modern Devout ideals, such as following Christ's example (*Imitatio Christi*), voluntary

2 For a comprehensive overview of Geert Grote, the Meester Geertshuis, and the early years of the Modern Devout movement, see John Van Engen, *Sisters and Brothers of the Common Life: The Devotio Moderna and the World of the Later Middle Ages* (Philadelphia: University of Pennsylvania Press, 2008), 11–13, 37, 45–69; Wybren Scheepma, 'Geert Grote en Deventer', *Vernieuwde innigheid. Over Moderne Devotie, Geert Grote en Deventer*, ed. Koen Goudriaan (Nieuwegein: Arko, 2008), 29–52; Anne Bollmann, *Frauenleben und Frauenliteratur in der Devotio Moderna. Volkssprachige Schwesternbücher in literarhistorischer Perspektive* (PhD thesis, Groningen, 2004), 48–79.

poverty, the restoration of the purity of the early Church, and a strong focus on inward religious experience, impacted religious life well beyond Dutch-speaking areas. In the context of this chapter, it is moreover important to stress that the proliferation of religious communities linked to or inspired by the Modern Devotion substantially transformed the late medieval urban “topography of devotion” in Deventer. It led to the foundation of substantial numbers of new formal and informal religious communities throughout the cityscape, which made this religious fervour highly visible.

The Modern Devout created a coherent programme of Christian devotion, centred around contrition and inner conversion, a response to Christ’s injunction to leave behind one’s possessions and to imitate him in poverty and humility. Alternating with manual labour (weaving textiles, copying books), the spiritual exercises of the Modern Devout concentrated on individual inward contemplation, supported by frequent sessions of reading religious and biblical texts, as well as memorizing and ruminating on them. As a consequence, religious texts, Bibles, and prayer books played a central role in the spirituality of the Sisters and Brothers of the Common Life.³ Their daily programmes included moments dedicated to reading, often following lists of recommended religious texts.⁴ The houses of Sisters and Brothers usually owned several books or a full library. Moreover, followers of the Modern Devotion composed religious texts, such as the famous *Imitatio Christi* and collections of biographies of deceased Sisters and Brothers. Their textual production also included translations of the Bible and other Latin works into Middle Dutch and Middle Low German vernaculars.⁵ In addition, communities of Modern Devout and the students of Deventer’s famous Latin school, housed by the Brothers, copied religious texts for their own use and for commercial sale.⁶

3 Mathilde van Dijk, ‘Nieuwe doelen, nieuwe doelgroepen’, in *Deventer Boekenstad: twaalf eeuwen boekcultuur aan de IJssel*, eds. Suzan Folkerts and Garrelt Verhoeven (Zutphen: WalburgPers, 2018), 36–89.

4 Van Engen, *Sisters and Brothers*, 135–143, 269–281; Mathilde van Dijk, ‘“The Root of Your Study, the Mirror for Life”. Putting the Bible into Practice in the Devotio Moderna’, *Renaissance und Bibelhumanismus*, eds. J. Marius J. Lange van Ravenswaay and Herman J. Selderhuis (Göttingen, Vandenhoeck & Ruprecht, 2021), 139–158.

5 On authorship and translating activities, see Van Engen, *Sisters and Brothers*, 77–81; Suzan Folkerts, ‘People, Passion, and Prayer. Religious Connectivity in the Hanseatic City of Deventer’, *Religious Connectivity in Urban Communities. Reading, Worshipping, and Connecting through the Continuum of Sacred and Secular (1400–1550)*, ed. Suzan Folkerts, NCI 1 (Turnhout: Brepols, 2021), 263–276. The translations into the Dutch vernacular were very useful for the laity, but they were also intended for those who had proficiency in Latin.

6 On book production by the Modern Devout, see Wybren Scheepisma, *Medieval Religious Women in the Low Countries: The “Modern Devotion”, the Canonesses of Windesheim, and Their Writings* (Woodbridge: Boydell Press, 2004), 18–21; A.C.F. Koch, ‘De collecties van de Deventer Stads- of Athenaeumbibliotheek in historisch perspectief’, *Stads- of Athenaeumbibliotheek Deventer 1560–1985* (Deventer: De Bibliotheek, 1985), 30–95, at pp. 36, 41; A.G. Weiler, *Volgens de norm van de vroege kerk. De geschiedenis van de huizen van de Broeders van het Gemene Leven in Nederland* (Nijmegen: Centrum voor Middeleeuwse Studies, 1997), 5, 11–12.

Reading books and collecting religious knowledge while keeping personal notes in scrapbooks (*rapiarium*) was not only paramount for spiritual exercises and the process of inner conversion, but was also the basis for teaching and admonishing fellow Sisters and Brothers. This was not, however, limited to the Modern Devout communities themselves; the knowledge accumulated through religious reading activities was disseminated into the world through preaching and the spiritual counselling of the laity. Spiritual charity and lending books transformed the houses of the Modern Devout in Deventer into public places of religious knowledge transfer. It should be noted, however, that lay people, such as Katharina Kerstkens, also donated books to the houses of the Modern Devotion, thus influencing the textual transmission from the communities to the urban laity and creating a reading culture shared by both groups.⁷

Common profit books and libraries in Deventer

Within the city walls of late fifteenth-century Deventer, public places of religious knowledge were present in relatively large numbers and this facilitated the transmission of religious knowledge to everyone interested, while potentially reaching the entire urban population. In this section, we will retrace common profit books and libraries present in several religious institutions in the town and which Katharina visits in the *Hidden Deventer* app: those of the convent of the Franciscan friars, and the communities of Sisters and Brothers of the Common Life (sites 2, 6, and 7 of *Hidden Deventer*). We will also present our research into social practices related to the transmission and sharing of religious knowledge. The historical documentation has allowed us to uncover the agency of the laity, who were often instrumental in the establishment of common profit books and libraries,⁸ as well as the sharing of religious texts by laity, semi-religious, and professed religious, thus blurring the often-perceived boundaries between these groups.

Medieval books, especially books with religious texts, were never intended for a single user. In fact, cultural mentalities, reinforced by directions in the texts themselves, encouraged readers to share their books and their religious knowledge with other people. Charity was considered one of the most important Christian virtues and this included spiritual charity, which could take the form of sharing books, giving religious instruction to other people, or encouraging a fellow Christian by citing good examples from the Bible and other religious texts. In this spirit, lay people and clerics regularly bequeathed books for “a common profit”, which meant placing books in a public place, so they were free to be read by all, often chained to a lectern in order to facilitate collective use.⁹ Likewise, private book

7 Folkerts, ‘People, Passion, and Prayer’.

8 Stooker and Verbeij, *Collecties op orde*, vol. 1, 178–180.

9 Sabrina Corbellini, Margriet Hoogvliet, ‘Late Medieval Urban Libraries as a Social Practice: Miscellanies, Common Profit Books, and Libraries (France, Italy, the Low Countries)’, *Die Bibliothek – The Library – La bibliothèque: Denkräume und Wissensordnung*, ed. Andreas Speer, Lars Reuke (Berlin: De Gruyter, 2020), 379–398.

collections and institutional libraries were usually accessible to a larger group of readers, a practice stimulated by a late medieval cultural climate that was overwhelmingly open to lending books.¹⁰ In terms borrowed from communication science, these open-access books and libraries can be considered as public places of knowledge and as hubs in networks of religious knowledge transmission.

One of the common profit libraries that Katharina refers to in the *Hidden Deventer* app is located in convent of the Franciscan friars, which was founded in Deventer in the early years of the fourteenth century (Site 6).¹¹ The Book of Donors of the Deventer Friars, an obituary in which they noted donations to the convent and their obligations for prayers and masses, contains a reference to the presence of common profit books in their church. In 1508, the lay man Hendrik Spiegel donated a silver vessel to St Ann's altar and "some books to be chained in the sacristy so that the common people can study them".¹² It is noteworthy that it was a layman who made his religious books available in a public place for the common profit of other lay people.

Just like Katharina who in the *Hidden Deventer* app is on her way to donate a book to her niece in one of Deventer's Sister houses, the burghers of Deventer donated books to the communities of Brothers and Sisters of the Common Life. The Modern Devout used their substantial libraries (the books either being copied by themselves, purchased, or received by donation) for the religious education and spiritual admonishment of their own communities and of the lay inhabitants of the city, thus turning their houses into religious places of knowledge. By 1463, the communities of Sisters in Deventer must have grown enormously and included considerably more than 172 women, spread unevenly over five Sisterhouses.¹³ The Meester Geertshuis, the oldest and one of the larger houses, certainly included a library, from which three manuscripts survive.¹⁴ Furthermore, Sister Griete Otten (d. 1452) is recorded as the librarian of the Meester Geertshuis, and several

10 Geneviève Hasenohr, 'L'essor des bibliothèques privées aux XIV^e et XV^e siècles', *Histoire des bibliothèques françaises, vol. 1: Les bibliothèques médiévales du VI^e siècle à 1530*, ed. André Vernet (Paris: Électre, 2008), 274–361, at p. 301. For the Low Countries, see Karl Stoker and Theo Verbeij, *Collecties op orde. Middelnederlandse handschriften uit kloosters en semi-religieuze gemeenschappen in de Nederlanden* (Leuven: Peeters, 1997), vol. 1, 124, 183.

11 C.M. Hogenstijn, *De Broederenkerk in de geschiedenis van Deventer* (Deventer: Praamsma, 1981), 15–23.

12 Gerrit Dumbar, *Het kerkebyk en wereltyk Deventer* (Deventer: Lucas Leemhorst, 1731–1788), vol. 1, 501: "Sante Annaes Autaer. Hier aen gaf Hendrik Spiegel in het jaer 1508 by uiterste wille 'een silveren pijpkanneken/ om daer meede dat gemeine volck op die vier hoogtyden di spoelinge uit te geven ende eenige boeken om in de sacristi aen kettene vast te leggen/ daer die gemeene uit studeren moge". Some researchers have concluded from this brief note from 1508 that prior to Spiegel's donation, the Friars would already have had a library in their church, which was available for consultation by lay people.

13 The town council was trying to bring the total number of women down to 172; see Bollmann, *Frauenleben und Frauenliteratur*, 157.

14 Mainly biographies of Brothers and Sisters of the Modern Devotion, see Stoker and Verbeij, *Collecties op orde*, vol. 2, 126–127. I am grateful to Suzan Folkerts for sharing the overview of surviving books from the Sisterhouses in the collection of the Athenaumbibliotheek.

biographies of Sisters contain references to frequent and intense reading activities.¹⁵ Some of the Sisters did use their religious knowledge for giving advice to lay people and inspiring them to abstain from sin, such as Katherina van Arkel (d. 1421), who used her “little book” (*boexken*) to read religious texts aloud to the lay people with whom she interacted for business transactions on behalf of the convent.¹⁶

Quantities of books were also present in the other four Sisterhouses in Deventer, not least because privately owned books were inherited by the community after the death of a Sister: the Brandeshuis (also St Ursulahuus, founded c. 1400; merged around 1470 with the adjoining Kerstekenshuis, founded c. 1400)¹⁷; the richer Lamme van Diesehuis (founded in 1388, number 7 of *Hidden Deventer*) where Katharina’s niece Agnes was living¹⁸; and the Buiskenshuis (founded in 1401–1402).¹⁹ These Sisters, too, shared their religious knowledge with the lay world outside the house, by giving spiritual counsel, by opening their libraries, or by lending books.²⁰ The Sisterhouses owned books in the vernacular with sermons (*collationes*, see subsequently), which would have been read aloud for the edification of the community itself, but probably also for the instruction of family and lay friends. In other cases, the Sisters sent letters to communicate their knowledge to the lay world outside the walls of their house.²¹ These almost priestly activities performed by women were a more widespread phenomenon than can also be detected among female semi-religious elsewhere in Western Europe. For example, Beguines in thirteenth-century Paris and *soeurs grises* (Franciscan Tertiaries) in fifteenth-century Amiens transmitted their religious knowledge through admonishing and counselling the lay people they encountered.²²

15 Van Engen, *Sisters and Brothers*, 136–137, 269–281.

16 Van Engen, *Sisters and Brothers*, 57–58, 282, 292–293.

17 Twenty-three known manuscripts, mainly collections of sermons, parts of the Bible, collections of spiritual and devotional texts. Stooker and Verbeij, *Collecties op orde*, vol. 2, 116–122, 123–126, 127–130.

18 Two known manuscripts: Private collection Herman Mulder, Hs 7 (biographies of Sisters); Nijmegen, Universiteitsbibliotheek, Hs. 301 (Letters by Church Fathers and by Modern Devout). For the recently rediscovered book with biographies of Sisters, see Herman Mulder, ‘Het zusterboek van het Lamme van Diesehuis te Deventer. Een verloren gewaand handschrift teruggevonden’, *Queeste* 16 (2009): 112–140.

19 Two known manuscripts; see Stooker and Verbeij, *Collecties op orde*, vol. 2, 122–123; and two printed books in Latin from the early sixteenth century, see Koch, ‘De collecties van de Deventer Stads- of Athenaeumbibliotheek’, 44.

20 Folkerts, ‘People, Passion, and Prayer’; Van Engen, *Sisters and Brothers*, 292–293; Thérèse de Hemptinne, ‘Reading, Writing, and Devotional Practices: Lay and Religious Women and the Written Word in the Low Countries (1350–1550)’, *The Voice of Silence: Women’s Literacy in a Men’s Church*, eds. Thérèse de Hemptinne and María Eugenia Góngora (Turnhout: Brepols, 2004), 111–126, communication by books on pp. 122–126; Claire Lingier, ‘Boekengebruik in vrouwenkloosters onder de invloed van de moderne devotie’, *Boeken voor de eeuwigheid. Middelnederlands geestelijk proza*, ed. Thom Mertens (Amsterdam: Prometheus, 1993), 280–294.

21 Bollmann, *Frauenleben und Frauenliteratur*, 265–271, 550–551; Scheepsma, *Medieval Religious Women*, 111–134, 231–232.

22 Tanya Stabler Miller, *The Beguines of Medieval Paris: Gender, Patronage, and Spiritual Authority* (Philadelphia: University of Pennsylvania Press, 2014), 81–125; Margriet Hoogvliet, ‘City of

As for spatial aspects of the spiritual advice given by the Sisters to lay people from Deventer, originally the Sisters moved around in Deventer and interacted with lay inhabitants for transactions related to their textile production and their subsistence, as well as for Sunday Mass in their parish church. In the course of the fifteenth century, a process of progressive enclosure is detectable, probably because the Sisters wished to dedicate their lives quietly to God without the distractions of the sinful outside world.²³ However, they stayed in contact with the lay world through family ties and spiritual friendships. Lay people, probably especially women, sometimes with their children, continued to visit the Sisterhouses to receive comfort and religious instruction.²⁴ Similarly, as will be addressed further subsequently, Katharina Kerstkens remained connected with her nieces Agnes in the Lamme van Diesehuis and Derick in the Brandeshuis, as well as with a larger network of religious houses connected to the Modern Devotion.

Founded as voluntary communities of lay converts, the Sisters of the Common Life lived in private homes donated by their benefactors. As a consequence, the Sisterhouses did not stand out visually in the urban structure of late fifteenth-century Deventer.²⁵ Although the locations of the five Sisterhouses in Deventer were decided upon by private initiatives and not by spatial considerations, all five were situated in the northern part of the town in residential areas, but not far from the city's spiritual centres and places of religious knowledge: St Lebuïn's Church (Site 3 of *Hidden Deventer*), the adjoining St Mary's parish church, the church of the Franciscan Friars, and the community of Brothers of the Common Life in the Heer Florenshuis. We have translated Katharina's close relation with her nieces into the *Hidden Deventer* walk, as well as the spatial proximity linking Katharina's home to the Sisterhouses in Deventer.

In the *Hidden Deventer* app, we suggest that Katharina would have also been familiar with one of the richest "open access" libraries in the medieval Low Countries, the library of the Brothers of the Common Life who lived in a number of adjoining houses called the Heer Florenshuis (Site 6 of *Hidden Deventer*), after one of the owners, the priest Florens Radewijns, who was also their first rector.²⁶ The community of Brothers of the Common Life in Deventer was founded around 1381, aided by donations by Geert Grote and by other burghers from Deventer. The library of the Heer Florenshuis started with the donation by Geert Grote, also an avid book collector, of most of his books just before his death.²⁷ Towards the

Lay Readers, A Spatial Approach to Bible Reading by the Laity in Pre-Reformation Amiens (c. 1400–1522)', *Renaissance und Bibelhumanismus*, eds. J. Marius J. Lange van Ravenswaay and Herman J. Selderhuis (Göttingen: Vandenhoeck & Ruprecht, 2020), 194.

23 Van Engen, *Sisters and Brothers*, 157–161, 233–237.

24 *Ibid.*, 293.

25 *Ibid.*, 128, 306.

26 On the Brothers of the Common Life in Deventer, see Van Engen, *Sisters and Brothers*, 69–75; Weiler, *Volgens de norm van de vroege kerk*, 4–25.

27 Van Engen, *Sisters and Brothers*, 72; Weiler, *Volgens de norm van de vroege kerk*, 11; Koch, 'De collecties van de Deventer Stads- of Athenaeumbibliotheek', 35; W. Lourdeaux, 'Het boekenbezit

end of the fifteenth century, the library of the Brothers of the Common Life in the Heer Florenshuis must have contained the impressive number of 1,000 to 1,500 books.²⁸ Some of the books were copied by the Brothers themselves, while others were bought or donated by clerics and lay people, for example by the Deventer notary and alderman Johannes Marquardi.²⁹ Fragments of an inventory made in the late fifteenth century have survived, which recorded all books present in the library with a detailed description and a system for retrieval (Fig. 5.2).³⁰

The library was intended for the Brothers, who used it for their personal daily reading sessions, as described in the rules for the Brothers' daily routines, the *consuetudines*, and following a list of books recommended for reading and spiritual growth.³¹ But the readership of the library was wider than the Brothers alone: Geert Grote himself had already endorsed sharing the books with readers outside the religious community and a generous policy of lending them.³² The Deventer *consuetudines* instructed the librarian (*armarius*) to keep a record of the names of the readers and to make sure that the books were returned in time.³³ The loan of books is also testified by a note in one of the surviving books which shows that it was intended for common use by the students.³⁴ The library in the Heer Florenshuis was another public place where religious texts were accessible to a wide readership, including lay people as Katharina Kerstkens. But this was not all: the Deventer Brothers also disseminated the knowledge they had obtained through reading and studying the books from their library among lay people by way of admonishing and public events.

Collationes by the Deventer Brothers of the Common Life

To the citizens of Deventer, adherents of the Modern Devotion would have been a familiar sight. In spite of their movement towards claustration and rejecting the world and urban daily life, the houses of Sisters and Brothers of the Common Life

en het boekengebruik bij de Moderne Devoten', *Contributions à l'histoire des bibliothèques et de la lecture aux Pays-Bas avant 1600/Studies over het boekenbezit en boekengebruik in de Nederlanden vóór 1600* (Brussels: Instituut voor Middeleeuwse Studies van de K.U.L., 1974), 247–325.

28 Weiler, *Volgens de norm van de vroege kerk*, 11, 196–206; Stooker and Verbeij, *Collecties op orde*, vol. 2, 114–116 (manuscripts only); Koch, 'De collecties van de Deventer Stads- of Athenaeumbibliotheek', 35–41; M.E. Kronenberg, 'De bibliotheek van het Heer-Florenshuis te Deventer', *Nederlands Archief voor Kerkgeschiedenis* 9/3 (1912): 252–300; P.F.J. Obbema, *Een Deventer bibliotheekcatalogus van het einde der 15e eeuw: een bijdrage tot de studie van laat-middeleeuwse bibliotheekcatalogi*, 2 vols. (Tongeren: Drukkerij Michiels, 1973).

29 Deventer, Athenaeumbibliotheek, KL 111 E 4 and KL 111 E 5.

30 Deventer, Athenaeumbibliotheek, KL 101 A 35. Obbema, *Een Deventer bibliotheekcatalogus*.

31 Weiler, *Volgens de norm van de vroege kerk*, 6–7. Directions for reading and meditation from the Heer Florenshuis: Pieter Obbema, *De middeleeuwen in handen. Over de boekcultuur in de late middeleeuwen* (Hilversum: Verloren, 1996), 135–142.

32 Kronenberg, 'De bibliotheek van het Heer-Florenshuis', 290.

33 Van Engen, *Sisters and Brothers*, 276–277.

34 Kronenberg, 'De bibliotheek van het Heer-Florenshuis', 285, nr. 185: 'liber jacobi fabri daventric qui erit fratrum domus florentiani in communem usum studiosorum'.

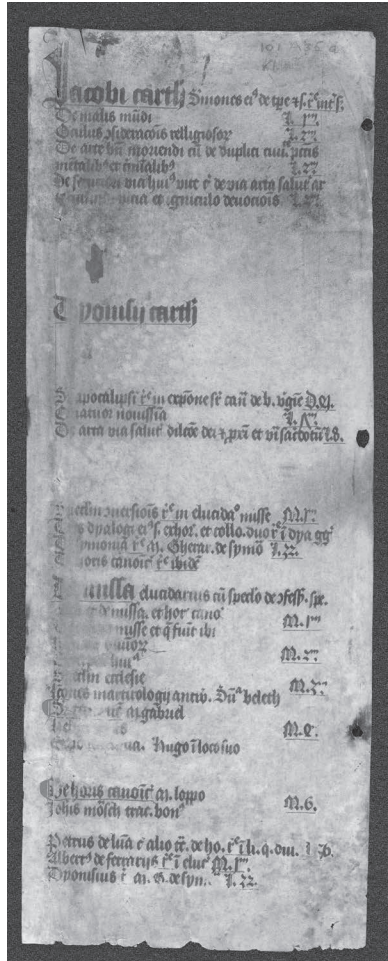


Figure 5.2 One of the two surviving fragments of the inventory of the library in the Heer Florenshuis, with references to authors, titles, and shelfmarks (1490–1500). © Deventer, Athenaeumbibliotheek

remained firmly located in the city centre. Communities of the Modern Devotion remained in touch with one another and were connected to the larger cityscape. The transmission of knowledge is especially noticeable as the Brothers of the Common Life invited students and lay people to visit their house and engage in a process of communicating religious knowledge, a practice known as the *collatio* (plural *collationes*). In the story of the *Hidden Deventer* app, Katharina is familiar with the outreach activities of the Brothers, and in reality, the historical Katharina

may very well have participated in them. The following section will show how the Brothers of the Heer Florenshuis in Deventer opened up a space that was in theory closed off from the world, but nevertheless presented an opportunity for burghers of Deventer such as Katharina Kerstkens to interact with the individuals forming a religious community and participate in the circulation of religious knowledge (Site 6 of *Hidden Deventer* and Fig. 5.3).

Since around 1381 when a devout group started to gather in the house of Florens Radewijns (1350–1400), the Brothers of the Common Life maintained relations with the students and lay people of Deventer. An important aspect of this was the *collationes*: communal reading sessions using books from their library, admonitions, and spiritual advice the Brothers of the Heer Florenshuis offered to their visitors, and through which they made an effort to express their own devotion to the urban laity. To offer their admonitions, the Brothers did not go out into the city, instead inviting students and lay people to visit them in their home, just as the communities of Sisters invited friends to their homes. At these *collationes*, the townsfolk could hear religious texts read in the vernacular. Readings were specifically composed by excerpting passages from authoritative texts (for instance, the sermons of Chrysostom) or reading directly from a suitable book (such as a vernacular translation of Heinrich Suso's *Horologium sapientiae*, present in the library). The reading was then followed by personal exhortations or, potentially, a private talk between one of the Brothers and a visitor. From the Heer Florenshuis in Deventer, these *collationes* grew to be a common practice among communities of Brothers of the Common Life. For instance, the Brothers in Zwolle, Emmerich (modern-day Germany), and Gouda also opened their houses to the urban lay population – the community in Gouda in particular was known as the Collatiebroeders, inhabitants of the Collatiehuis. It is important to note that the *collationes*



Figure 5.3 A digital 3D reconstruction of the *domicilium fratrum* © <https://broeders3D.org>

were not sermons, and the Brothers did not preach: their activities were framed as humble, well-meaning exhortations to guide one another on the right path. Thus, they did not need special permission or clerical status to be performed. For instance, John Kessel (d. 1398), one of the earliest members of the Heer Florenshuis, though never ordained as a cleric, nonetheless delivered admonitions to students who visited the house.³⁵

The *collationes* were no replacement for attending the sermon in one's parish church, instead being considered an additional option for devotional activity: lay-people could participate in the *collatio* after hearing the sermon preached in the local church. The Heer Florenshuis was located in close proximity to St Mary's parish church, the collegiate church of St Lebuïn, and the Broederkerk of the Franciscan Friars. Even St Nicholas or Bergkerk, Deventer's second parish church, was not terribly far away. The location of the Heer Florenshuis within the city allowed it to be a place of knowledge on an urban scale. Its position in the city centre made it easily accessible, and when visitors entered the house they found themselves in what was essentially a regular home: the earliest Brothers first gathered in the house Radewijns occupied as part of his position as *vicarius* of St Lebuïn's Church, and the community moved to a larger house around the corner in the Pontsteeg in 1391.³⁶ Visitors could participate in the *collatio* in the entry hall or *atrium* of the house. We know that Radewijns himself, as well as John Kessel, among presumably many others, used this room to offer some admonitions to students.³⁷ Yet visitors were allowed to enter the house beyond the hall as well: procurator John of Hattem (d. 1485), for instance, was visited by students of all ages who came up to his room and even climbed onto his bed to receive some spiritual aid and guidance.³⁸ The *collationes* took place in the relatively informal, semi-domestic setting of a regular home – albeit one inhabited by a religious community – a major benefit to the confidential and personal transmission of knowledge.³⁹

The customs or *consuetudines* of the Heer Florenshuis do not offer much information on how the *collatio* involving lay people was to take place, and instead only regulate how the Brothers are to communally read a religious text and admonish each other.⁴⁰ However, the customs of its daughter-houses, which originally adopted those of Deventer before making their own adaptations, offer an

35 G. Dumbar, *Analecta seu vetera aliquot scripta inedita* (Deventer, 1719), 38, quoted from Van Engen, *Sisters and Brothers*, 285.

36 Weiler, *Volgens de norm van de vroege kerk*, 4–6.

37 B. Kruitwagen, 'Het "Speculum Exemplorum"', *Bijdragen voor de Geschiedenis van het Bisdom van Haarlem* 29 (1905): 388–390; Van Engen, *Sisters and Brothers*, 285.

38 Dumbar, *Analecta*, 184–185, quoted from Van Engen, *Sisters and Brothers*, 293.

39 Compare Pieter Boonstra, 'In *Ecclesia Nostra*: The Collatiehuis in Gouda and Its *Lieux de Savoir*', *Le Foucauldien* 7 (2021): 1–13.

40 The customs of the community in Deventer are published in W.J. Alberts, ed., *Consuetudines fratrum vitae communis* (Groningen: Wolters, 1959), 1–13, on the basis of manuscript The Hague, Koninklijke Bibliotheek 70 H 79; the text has been identified as the customs of the Heer Florenshuis by T. Klausmann, *Consuetudo consuetudines vincitur. Die Hausordnungen der Brüder vom*

impression of how the *collationes* in Deventer took place. For instance, the house in Emmerich (present-day Germany) also offered devout exhortations to students and others on feast days in the afternoon. These admonitions were not to be set up as sermons, but were to be performed “in a simple, *collatio*-like manner”.⁴¹ In Zwolle, second rector Dirc van Herxen (1381–1457) took special care to include the urban lay people in the communication of religious knowledge, writing two large books of vernacular religious texts to be read during the *collatio*.⁴² The customs of the Gregoriushuis in Zwolle call for the Brothers to take an active interest in their visitors so that they could have a more personal conversation: “a private and confidential encouragement works more strongly for an individual, so that it is good to address them personally and excite them to higher matters based on their condition and needs”.⁴³ The *collationes* in Deventer likely proceeded along the same lines, with an emphasis on the personal connection between the visiting students, lay people, and the organizing Brothers. A close relation between the Brothers and their visitors allowed for targeted advice, thus yielding greater results in communicating a religious message. The words of librarian Petrus Horn (d. 1479), for instance, could cut straight to the marrow, regardless of whether he was speaking to students or his fellow Brothers.⁴⁴ A story from the *Speculum exemplorum*, printed in Deventer in 1481 by Richard Paffraet, alludes to the devotional merits of participating in the *collatio*. It tells of Thomas à Kempis (who stayed with the Brothers before entering the monastery of Mount St. Agnes near Zwolle) having a vision of the Virgin Mary attending a *collatio* under the care of Florens Radewijns, and embracing the participants – with the exception of Thomas himself, who had been slacking in his Marian devotion.⁴⁵ Though Thomas’s vision is an appeal for Marian devotion, the envisioned setting also points to the beneficial effect of attending the *collationes* to foster devotion.

Thus, for participating students and lay people, the *collatio* was an opportunity to practice their devotion and engage with the library of the Brothers through the

gemeinsamen Leben im Bildungs- und Sozialisationsprogramm der Devotio moderna, Tradition – Reform – Innovation. (Frankfurt am Main: Peter Lang, 2003), 154–160.

41 The customs of the community in Emmerich are published in W.J. Alberts and M. Ditsche, eds., *Fontes historiam domus fratrum Embricensis aperientes* (Groningen: Wolters-Noordhoff, 1969), 78–115, at p. 102: “Fiant admonitions non per modum sermonis sed per modum simplicis collationis”.

42 On Dirc van Herxen and his First Book of Collations, see L. van Beek, *Leken trekken tot Gods woord. Dirc van Herxen (1381–1457) en zijn Eerste Collatieboek* (Hilversum: Verloren, 2009). On the interaction between the Brothers of the Common Life and lay people participating in the *collatio*, see Pieter Boonstra, *Reading by Example: The Communication of Religious Knowledge in the Collationes of the Brothers of the Common Life* (PhD thesis, Groningen, 2021).

43 The customs of the community in Zwolle are published in M. Schoengen, ed., *Jacobus Traiecti alias De Voecht: Narratio de inchoatione domus clericorum in Zwollis. Met akten en bescheiden betreffende dit fraterhuis* (Amsterdam: Johannes Müller, 1908), 239–278, at p. 247: “Quia vero privata et familiaris allocutio unumquemque plus movet, bonum est, nunc unum, nunc alium in privato alloqui, et secundum statum et exigentiam cuiusque ad meliora provocare”.

44 Dumbar, *Analecta*, 153, quoted from Van Engen, *Sisters and Brothers*, 285.

45 Kruitwagen, ‘Het “Speculum Exemplorum”’.

process of communally reading a text and exchanging exhortations. The texts the Brothers read to their visitors were constructed from the same authoritative texts they read in the process of shaping their private devotion, so that on the surface, the *collatio* was little more than the Brothers repeating the words of such experts as Augustine, Bernard, or Chrysostom. It is telling that despite visitors coming up to his bedroom and sitting on his bed for guidance, John of Hattem claimed to be a simple man who only dared to read them some texts on saints, the Four Last Things, chastity, or contempt for the world.⁴⁶ Even though the Brothers placed themselves in a highly textual and learned environment, the *collationes* were presented as little more than an act of passing on the wisdom of others.⁴⁷ In the *collatio*, however, the Brothers were able to communicate their own attitudes towards these texts: the meeting offered an opportunity to show which texts were worth reading, as well as how to read them. The *collatio* offered a model of how to engage with a text: to take note of the wisdom of authoritative writers, to combine their advice on a specific topic (such as marriage, preparing for the Last Judgment, or preventing vice), and to effectively use texts to further one's personal devotion. The visitors were thus introduced to the spiritual lives of the Brothers and encouraged to imitate them. Like the Sisters of the Common Life receiving friends and family into their houses, the Brothers in Deventer did not close themselves off from the urban lay people. They invited them to visit the Heer Florenshuis and, at least momentarily, be part of the community. From an urban and spatial perspective, the Brothers not only remained in the world, they also actively opened their house to allow the urban world to come to them.

The ties that bind: Katharina Kerstkens' donations

The prayer book that Katharina Kerstkens, the guiding character in the app, donated to her nieces living in Sisterhouses has been adopted as the starting point for the *Hidden Deventer* walk that encompasses places of religious knowledge transfer in the city. The manuscript, together with her two wills (that include donations to a great number of religious institutions), allows for further analysis of religious networks. In fact, Deventer's religious cityscape is a rich setting in which to reflect on the interconnectedness of its urban places of knowledge and on the possibilities for lay people to actively participate in the process of knowledge production and transmission traditionally associated with religious communities, in particular those in the sphere of influence of the Modern Devotion.

As mentioned in the introduction, Katharina lived at the Vispoort (Site 1 of *Hidden Deventer*), one of the city gates near the river port, most likely up until 1495.

46 Dumbar, *Analecta*, 184–185, quoted from Van Engen, *Sisters and Brothers*, 285.

47 See also Catrien Santing, 'Learning and the Modern Devotion: Contradictio in Terminis or Inextricably Bound Unity?', *Die Räumliche Und Geistliche Ausstrahlung Der Devotio Moderna – Zur Dynamik Ihres Gedankenguts*, eds. I. Kwiatkowski and J. Engelbrecht (Münster: Aschendorff, 2013), 207–225.

She was a wealthy woman who left us two testaments as well as the prayer book she had gifted to her niece Agnes (Fig. 5.4), currently kept at the City Archives (Collectie Overijssel – Stadsarchief Deventer) and the City Library (Athenaeumbibliotheek, KL 101 E 9). The two testaments, written in 1507 and 1539, allow us to draw out important details about Katharina’s life: her affluence becomes clear, for example, from the lengthy list of individuals and institutions to which she left bequests. Her social network was not limited to Deventer and reached at least as far as the Dutch cities of Groningen and Utrecht (Fig. 5.5). Katharina was a widow when she drew up her testaments – her husband, a stonemason, had died around 1496 and she outlived him by many years – and she likely had to run her own affairs and did so with great success. The strength of her network and her ability to participate in a systematic exchange of books and texts between religious communities and city dwellers are also evidenced by her manuscript prayer book, produced, used, and still kept in Deventer.

In fact, the manuscript contains precious information about Katharina, her family, and the circulation of religious knowledge in the Deventer cityscape. The rubricated colophon (fol. 208v) reveals that:

Dit boeck hoert toe meyster kerstkens huysrouw Katherina wonende op die wisport. Die dat wint die geuet oer weder oem gades wille

(“This book belongs to master Kerstken’s wife Katharina, living at the Vispoort. If you find it, give it back for God’s sake”)

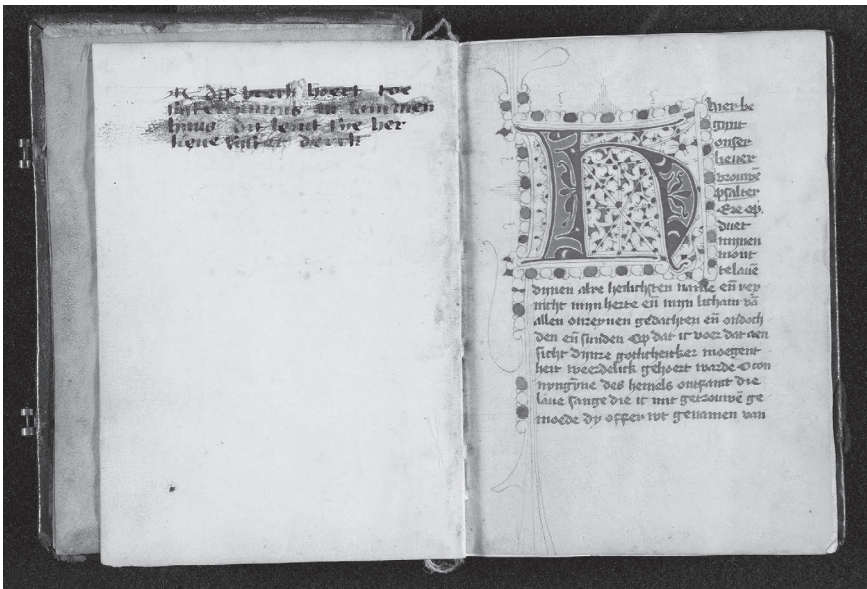


Figure 5.4 Katharina Kerstkens’ prayer book. © Deventer, Athenaeumbibliotheek



Bron: CBS, Kadaster (2020)
Geodienst, Rijksuniversiteit Groningen (rug.nl/geo)

Figure 5.5 The geographical spreading of the donations by Katharina Kerstkens to religious institutions in the Low Countries and Western Germany, as listed in her two testaments (1507 and 1539) © Authors

A second ownership mark is written in a later hand on the flyleaf and uncovers a second step in the history of the manuscript:

Item dit boeck hoert toe suster annus int lammen huus. Dit lenet sie her lieue suster derck

(“This book belongs to sister Annus (possible Agnes) in the Lamme van Dieshuis. She lends it to her dear sister Derick”)

These two notes, which provide us with unique details about Katharina's identity, living place, and family network, disclose three important practices related to the transmission of religious knowledge in the late medieval urban cityscape: the possibility of lending and borrowing books; creating semi-public networks of book exchange; and the use of books in public spaces and the existence of a "shared religious reading culture", connecting lay people and members of religious orders.⁴⁸ The explicit mention of Katharina's name and residence at the Deventer Vispoort, and the request to take the book to the owner, may indicate that the manuscript was indeed lent or at least used outside the domestic space, leading to the risk of the manuscript getting lost or at least misplaced. The mention of the name and address of the owner may have increased the possibility that the object would be retrieved and handed over to the owner. Although still not systematically reconstructed, this circulation of manuscripts in public space, as well as the exchange of books within semi-public networks, is one of the main features of late medieval urban cultural experience, and stresses the importance of considering books as moveable goods and as pivotal elements for the scrutiny of public cultural dynamics.⁴⁹

The information on the flyleaf also opens up a new perspective on the circulation of knowledge, which involves lay and religious alike. The note states that the manuscript was at some point in its history owned by one Agnes, sister in the Lamme van Diesehuis, who was reading and using it together with her sister Derick. This scanty reference is somewhat clarified by Katharina's testament, which indeed refers to "mijnen twen nichten derrick toe brantz huijs Jnden agnieten dit een stede gegeuen ijs toe lammenhuijs" ("my two nieces, Derick in the Brandehuis and Agnes, who has gotten a place in the Lamme van Diesehuis").⁵⁰ The manuscript had probably been donated by Katharina to her niece or inherited by Agnes after Katharina's death, coming into the joint ownership of the two sisters, spending their lives in two of the most renowned communities of Sisters of the Common Life.⁵¹ With this donation, Katharina followed the example of Wysa

48 This theme has been discussed by Johanneke Uphoff, 'Dit boec heft gegeven. Book Donation as an Indicator of a Shared Culture of Devotion in the Late Medieval Low Countries', *Religious Connectivity in Urban Communities (1400–1550): Reading, Worshipping, and Connecting through the Continuum of Sacred and Secular*, ed. by Suzan Folkerts, NCI 1 (Turnhout: Brepols, 2021), 99–124. The article has been written within the framework of the research project *Cities of Readers. Religious Literacies in the Long Fifteenth Century* (2015–2020), funded by the Netherlands Organization for Scientific Research.

49 See for example, Sabrina Corbellini, 'Beyond Orthodoxy and Heterodoxy: A New Approach to Late Medieval Religious Reading', *Cultures of Religious Reading in the Late Middle Ages. Instructing the Soul, Feeding the Spirit, and Awakening the Passion*, ed. Sabrina Corbellini (Turnhout: Brepols, 2013), 33–53.

50 Collectie Overijssel, Stadsarchief Deventer, nr. 722, inv. 26q.

51 For a study of the connection between Modern Devout communities and the Deventer city dwellers, see G.A. van der Toorn-Piebenga, 'De Ter Poortens, een Deventer gezin uit de tijd van de Moderne Devotie', *Deventer Jaarboek* 45 (1992): 42–55.

Grotenbeyen, a Deventer citizen, who bequeathed a missal to the chapel of Holy Ghost hospital in 1334 after the institution burnt to ashes.⁵²

Even though the practice of donating books to religious communities is certainly not unique to Deventer, this procedure opens up new research possibilities and raises important questions about late medieval reading cultures and the strict separation between lay and religious reading cultures.⁵³ It also contributes to the reconstruction of the “visibility” of the Modern Devotion and of the relationship between religious and urban communities, built on family networks, as in the case of Katharina, and on a shared textual culture.⁵⁴ This shared textual culture, as evidenced by the texts transcribed in Katharina’s manuscript, consisted of vernacular texts that had gained popularity in part, thanks to the intensity of processes of translation and adaptation promoted by the Modern Devotion, such as Psalms and Gospel translation, lives of Christ and Marian devotional texts. It also included forms of personal devotions and texts focusing on sins, repentance, and the importance of prayer and meditation.

The importance of thinking in terms of social and spatial connections for the reconstruction of late medieval urban life is reinforced by scrutinizing Katharina’s two testaments, dated 1507 and 25 May 1539.⁵⁵ The two documents testify to Katharina’s connections with the two communities of the Sisters of Common Life, the Brandeshuis and Lamme van Diesehuis where her two nieces were living, but also with all other Deventer communities within the orbit of the Modern Devotion, both female (Meester Geertshuis, Buyskenshuis and the convent of Diepenveen) and male (Heer Florenshuis). Her network is even broader, however, as

52 Jeroen Benders, ‘Het geschreven woord in kerk en stad (768–1400)’, *Deventer Boekenstad: twaalf eeuwen boekcultuur aan de IJssel*, eds. Suzan Folkerts and Garrelt Verhoeven (Zutphen: Walburg-Pers, 2018), 10–35; A.C.F. Koch, ‘Aantekeningen uit een 14e-eeuws missaal van het Deventer Gasthuis’, *Vereeniging tot Beoefening van Overijsselsch regt en geschiedenis. Verslagen en Mededelingen* 74 (1959): 39–46.

53 This point has been developed in Johanneke Uphoff, ‘Dit boec heft gegeven’. This practice clearly emerges, for example, from the study of the memorial books of the Adamashuis, one of communities of the Sisters of Common Life in the city of Zutphen, about 20 km from Deventer. The entries in the memorial book, which register the gifts to the community from 1408 to 1602, testifies to the process of exchange of books between lay people and religious communities. In some cases, the donated manuscripts had been copied and previously owned by lay people and subsequently donated to the community (see Zutphen, Erfgoed Centrum, 0209 Inventaris van het archief van Vrouwenconvent Adamanshuis, 1.) For an overview of the circulation of books in Zutphen, see also M.M. Doornink-Hoogenraad, *Adamanshuis een zusterhuis van de moderne devotie in Zutphen* (Zutphen: Walburg Pers, 1983). For an overview of sources concerning donations to religious communities in the medieval Low Countries, see the database Memoria Online, <https://memo.sites.uu.nl/>

54 These family networks follow very often the female line, as in the case of Katharina donating or bequeathing her book to her two nieces. On this topic, de Hemptinne, ‘Reading, Writing and Devotional Practices’.

55 Collectie Overijssel, Stadsarchief Deventer, nr. 722, inv. 25 and inv. 26q. A scrutiny of the two versions of Katharina’s testament will be the topic of a later publication. A first analysis of the two testaments shows that Katharina is adding a few new details in the second version, while the list of bequeathed institutions remains unchanged.

she mentions communities of beguines (Stappenhuis and Oldenconvent), Cellites, and Franciscans, as well as Deventer hospitals. Besides Deventer communities, Katharina mentions communities in Utrecht (Birgittines), Kampen (Birgittines), near Hatten (Clarenwater, female Benedictines), near Zwolle (Augustinian canons of Windesheim, the leading house of the Modern Devotion), Zutphen (Franciscans and Dominicans), Groningen (Dominicans), and Rees (Sisters of the Common Life, present-day Germany) (Fig. 5.5).

Nevertheless, it is clear that, despite the wide array of religious communities she remembered in her testament, Katharina does seem to have a strong preference for female communities, in particular those in which religious activities are performed in a somewhat “voluntary” form, as she explicitly refers to “every small female community”; furthermore, she reserves a sum of money for the foundation of a small community of four to five people in one of her houses, and she herself was probably living in such a small informal community in 1539, together with three women described as her “spiritual sisters”.⁵⁶ Katharina is not only sharing Modern Devout ideals at textual level, she seems to have absorbed the ideals to the point of recreating, in the long years of her widowhood, organized meetings of lay women in her home to discuss religious matters, possibly based on the sharing of texts and books. In this respect, Katharina is following the example of many Deventer city dwellers whose lives have been “touched” by religious transformations in the city, by literally offering a space for the foundation of new communities, through the gift of moveable goods to the newborn houses, and by maintaining a strong personal and spiritual connection with the members of the communities.⁵⁷ It is particularly relevant to stress that the focus on religious institutions did not imply isolation from other manifestations of civic religiosity. In the long list of institutions remembered by Katharina, there are also Deventer’s main churches, the altar of the main guilds in St Lebuin’s Church (Site 3 of *Hidden Deventer*), and the Holy Sacrament confraternity.

In conclusion, the testaments offer an interesting context for a reflection on Katharina’s prayerbook in the light of the transmission of religious knowledge, *lieux de savoir*, and a “public” history of the Modern Devotion, that is the impact of the Modern Devotion and its ideals outside religious communities and institutions. The visibility of Modern Devout communities in the Deventer urban cityscape also implies a strong connection with the local population and the blurring of traditional boundaries between lay and religious, as they were literally sharing texts, books, places, and spaces. As moveable goods, books offer an excellent starting point for a spatial reconstruction of late medieval cultural dynamics and for exploring processes of formation, transmission, and transformation of knowledge.

56 Collectie Overijssel, Stadsarchief Deventer, nr. 722, inv. 26q: “Item Joffer van heeck Joffer engelbert van twickel Ind Machtelt Kijppijnx myn giestelicke susteren”.

57 Van der Toorn-Piebenga, ‘De Ter Poortens, een Deventer gezin uit de tijd van de Moderne Devotie’.

The study of the historical sources that form the backbone of the Deventer app and the publication of *Hidden Deventer* offer the opportunity to produce “public history” in both senses of “public”. They form a cornerstone for the reconstruction of a topography of the circulation of religious knowledge, a process strongly stimulated by the Modern Devotion and involving lay and religious alike, and the creation of new knowledge networks. The spatialization of religious knowledge, realized through the linking of the information contained in the selected sources with the actual and physical places within the Deventer cityscape, is further developed in the app, which connects 1495 Deventer to the present-day city. By mediating the chronological gap between the late Middle Ages and the app users’ experience, the app makes them participants in the very same processes of circulation, and indeed production, of knowledge. As a simulacrum of these processes, *Hidden Deventer* fully exploits the potential of locative media in raising the awareness of the kinetic or mobile process of late medieval religious knowledge cultures.

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 Zutphen, Erfgoed Centrum, 0209 Inventaris van het archief van Vrouwenconvent Adamshuis, 1.
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6 “Trento, the last chance for a beer”

Mobility, material culture, and urban space in an early modern transit city¹

Massimo Rospocher and Enrico Valseriati

Walking around a frontier transit city

In 1673, travelling into Italy after crossing the Alps, Swedish architect Nicodemus Tessin the Younger noted in his travel journal: “Here [in Trento] was your last chance for a beer”.² It was thanks to the presence of German innkeepers and tavern landlords that northern travellers descending from the Alps were still able to enjoy a good tankard of beer in Trento. The architect noted an important geo-cultural shift, the transition from a beer-drinking to a wine-drinking country. This anecdote epitomizes the complex nature of Trento in the early modern period, a gateway city and a transit point between different cultures, languages, urban layouts, and political regimes.

Trento was an important urban node in a network of trans-regional, long-distance transport infrastructures (integrating roads, alpine passes, rivers, postal services, inns, etc.) linking the Habsburg Empire with the northern Italian states. The city lay on the main road to the Brenner Pass, midway along a commercial route that led north to Bolzano, Innsbruck, Augsburg, and Nuremberg, and south to Mantua, Milan, Brescia, Verona, and Venice.³ The perception of being astride the German and Italian worlds was very clear to *ancien régime* visitors, in terms of infrastructure and mobility no less than of food and drink. An example of this hybrid identity was an inn located on the road to Trento from the north, in the hamlet of San Michele all’Adige, right on the border between the Bishopric of Trento and the county of Tyrol. Recent restoration work on the building revealed an external fifteenth-century decoration depicting two characters, a female German innkeeper and a (potential) Italian male customer, along with two inscriptions. One, in German, was meant for those coming from the north (“*Gasthaus*”)

1 This chapter is the result of a collaborative project and it owes much to the work done by Serena Luzzi, Alessandro Paris, and Rosa Salzberg.

2 Giuseppe Osti, *Attraverso la regione trentino-tirolese nel Seicento. Con due appendici per il Quattrocento e il Cinquecento* (Rovereto: Osiride, 2017), 631.

3 Jean-François Bergier and Gauro Coppola, eds., *Vie di terra e d’acqua. Infrastrutture viarie e sistemi di relazioni in area alpina (secoli XIII-XVI)* (Bologna: Il Mulino, 2008).

and the other, in Italian, for those arriving from the south (“*Hostaria all’Aquila*”) (Fig. 6.1). These images and texts were a form of public advertising aimed at travellers or merchants following the Imperial road between Italy and the Holy Roman Empire, or “*Lombardia*” and “*Alemania*” as they were identified in the signs. This bilingual advertising is material testimony to the importance of this area as a transit zone.⁴ Recent historiography has suggested that internal political borders of the Holy Roman Empire had relatively limited influence on the channelling of trade flows and everyday forms of travel up until the mid-eighteenth century.⁵ Nevertheless, the case study of early modern Trento remains an interesting one precisely because of its strategic position within crucial transport infrastructures.

The monumental and architectural aspects of the city of Trento today still reveal glimpses of this fluidity between cultures, sometimes marked by profound differences. Wandering around the medieval streets in the northern sector of the city, one comes across the bell tower on the church of San Pietro that strongly recalls German and Tyrolean aesthetic models.⁶ Some old views of the city, like those depicted in ex-votos from the seventeenth and eighteenth centuries, emphasize the unusual nature of this bell tower and its strong northern associations.⁷ From the late medieval period until well into the modern era, the most important migrant community in Trento, of Germanic origin, lived close to this bell tower. Between the fifteenth and nineteenth centuries, the bell tower was a fully-fledged material symbol for the German-speaking immigrants based in the city, perceived by many as a frontier between the Italian and German worlds.

Trento’s geographic position required it to provide hospitality for numerous Italian and foreign travellers, who stayed for variable periods of time. Already in the early modern period this liminal geopolitical status led chroniclers, travellers, and intellectuals to ask whether Trento should be considered a German or an Italian city. In 1577, the Venetian ambassador, Leonardo Donà, reached Trento on the way to Vienna and noted the linguistic divide in the city in his travel journal:

All of the city speaks Italian, although there is one quarter inhabited by Germans and called the German Quarter that speaks the German idiom together with Italian. The Germans consider this a city of Germany, but it is not, either in its language or its site, which is located on this side of the Alps.⁸

4 Federica Rigotti, ‘Gli affreschi dell’Osteria di S. Michele all’Adige e la committenza quattrocentesca della famiglia Thun’, in *Sigismondo Thun l’Oratore*, eds. Alberto Mosca and Alessandro Paris (Trento: Associazione Castelli del Trentino, 2021), 73–90; Lucia Longo-Endres, ‘Note di buon costume negli affreschi di un’osteria di confine. I dipinti all’Aquila Nera di San Michele all’Adige nel Quattrocento’, in *Artisti e mercanti in viaggio. Oltre le Alpi, attraverso il Tirolo*, ed. Ead. (Bologna: Pàtron, 2020), 167–186.

5 Luca Scholz, *Borders and Freedom of Movement in the Holy Roman Empire* (Oxford: Oxford University Press), 2020.

6 www.hiddencities.eu/trento/s-pietro-parish/s-pietro-church (accessed May 27, 2021).

7 www.hiddencities.eu/trento/s-martino-gate/s-martino-gate (accessed May 27, 2021).

8 Umberto Chiaromanni, ed., *Il viaggio a Vienna di Leonardo Donà, ambasciatore della Repubblica veneta, nell’anno 1577. Diario* (Padova: CLEUP, 2003), 56.



Figure 6.1a Fresco paintings on the *Osteria all'Aquila Rossa*, fifteenth century, San Michele all'Adige (Trento). © Alessandro Paris

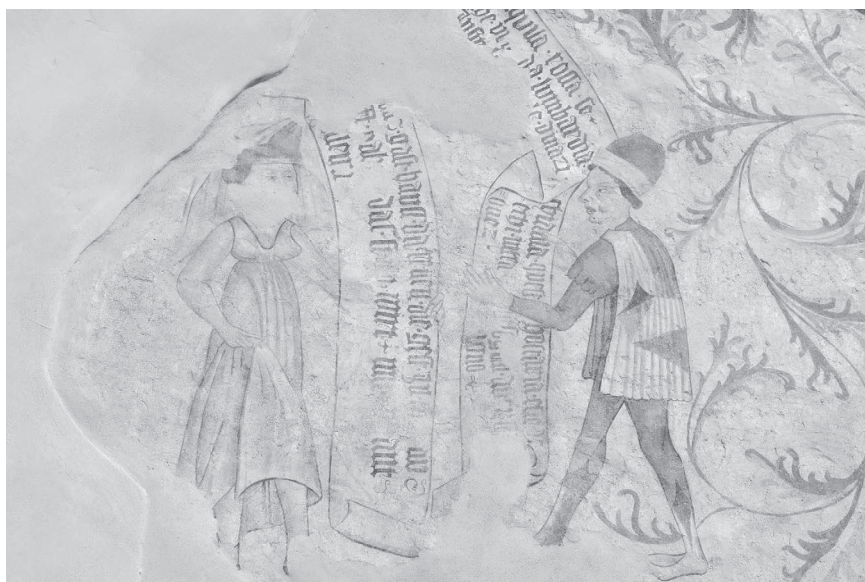


Figure 6.1b Fresco paintings on the *Osteria all'Aquila Rossa* (detail). © Alessandro Paris

In 1673, the clergyman Michelangelo Mariani, in his work *Trento con il sacro Concilio*, stated that “in formal terms, it is effectively part of Germany”, referring to its geopolitical location within the borders of the polycentric Holy Roman Empire.⁹ At the same time, chroniclers referred to Trento as a “mixed frontier city”, an urban, linguistic, and cultural reality that intermingled two worlds.¹⁰ Certainly, those passing through or living permanently in Trento between the sixteenth and seventeenth centuries were aware that, while politically the city was part of the Empire, from a linguistic perspective it was mainly Italian. In border zones and multi-ethnic cities, language represented a decisive element for the definition of cultural identity. The most recent studies have confirmed that in the early modern period, Italian was the most common mother tongue for the population of Trento. The image of a city “ethnically” divided in two, between German and Italian residents, is effectively just a stereotype, perpetuated in chronicles at least up to the beginning of the 1700s and fuelled by the strong impact of the German community (resident or transitory) on everyday life.¹¹

Demographic data also confirm that between the 1400s and 1500s, Trento was mainly populated by Italians. In the period between 1440 and 1500, the Germans registered in the city numbered 284, about 1/15 of the total population, which was estimated at around 5,000 inhabitants.¹² Nevertheless, regardless of numbers, the impact that German immigration had on the economic fabric and society of Trento helped define certain characteristic traits of the city.¹³ In terms of administration, Trento was a prince-bishopric from the eleventh century with powers of secular governance within the larger political framework of the Holy Roman Empire. The geopolitical position and commercial role of Trento made it an attractive destination for migrants arriving from both the Po plain to the south and from transalpine territories, in particular from Tyrol, Bavaria, and Franconia. Miners from the north had come to Trentino in the twelfth and thirteenth centuries to exploit the mineral resources around Trento, often basing themselves in the city. In 1278–1279, they founded a professional association, the *Hauerbruderschaft* (Confraternity of Miners), in the city centre. This was the first core of the local German community’s associative and cultural life.¹⁴ German immigration became more substantial from the 1400s. The attraction of the urban centre cannot be explained solely in economic terms. The court of the

9 Michelangelo Mariani, *Trento con il sacro Concilio et altri notabili* (Trento: Carlo Zanetti, 1673), 191.

10 Mariani, *Trento con il sacro Concilio*, 191.

11 Serena Luzzi, *Stranieri in città. Presenza tedesca e società urbana a Trento (secoli XV–XVIII)* (Bologna: il Mulino, 2003), 47–52. For an English summary of this research, see now Ead., ‘Migration, Identity, Urban Society: The German Community of Trento’, in *Migration and the European City: Early Modern and Contemporary Perspectives*, eds. Beat Kümin, Christoph Cornelissen, and Massimo Rospocher (Berlin: De Gruyter, 2022), 51–70.

12 Luzzi, *Stranieri in città*, 56–57.

13 Marco Bellabarba, *La giustizia ai confini. Il principato vescovile di Trento agli inizi dell’età moderna* (Bologna: il Mulino, 1996).

14 Serena Luzzi, ‘Confraternite e aristocrazie: l’élite tirolese e tedesca nella Hauerbruderschaft di Trento (secc. XV-inizi XVII)’, *Geschichte und Region / Storia e Regione* 5 (1996): 317–343.

prince bishop became a focal point, attracting the Trentino and Tyrolese aristocracy along with numerous officials, humanists, and even some bishops from the German sphere. The influence of the German community in Trento in the early modern period thus derived more from its strong political and cultural identity than from numbers. Furthermore, while the resident population was mainly Italian, a constant traffic of temporary travellers, merchants, and migrants from German-speaking areas encouraged a perception of the city as being hybrid in nature.

The attention of historians on the impact of German immigration on Trento’s social and urban fabric is mainly a result of Serena Luzzi’s seminal work which inspired the development of the experiment in digital public history described here.¹⁵ Her in-depth studies were the starting point for the conception throughout 2019 and 2020 of the first walking tour for the *Hidden Trento* smartphone app, titled *Ursula. Innkeepers, princes, and migrants*. The aim of the tour was to disseminate historical research that had never been used for a communication project aimed at the wider public. The research team aimed to narrate the impact of mobility on the life and public spaces of Trento at the start of the sixteenth century, through the voice of a female innkeeper of German origins. Ursula is a fictional character, but one constructed from a patchwork of real or credible information and events. Attention was centred in particular on the relationship between material culture (which still testifies to the presence of the German minority in Trento) and a new way of experiencing cultural heritage on the part of citizens and visitors. *Hidden Trento* specifically wanted to showcase the connections between architectural and urban design elements still visible today in the old “German” district of San Pietro, and artefacts connected with these places but now preserved in the main local museums. Given the emphasis on the material dimension of mobility, special attention was dedicated to three themes connected with everyday life in the city of Trento around 1520: geographic and social mobility; public spaces as places for socializing and communicating; and facilities for hospitality and accommodation.

With the help of locative media and the methodologies developed in the field of digital and public history, the research team was able to show how the past is revealed in the material traces left in urban public spaces.¹⁶ In addition to ensuring a historically reliable account, *Hidden Trento* also gives users a fully immersive, densely detailed historical experience of the Renaissance city. Movement and rhythm play a key role in this experiment from the historiographic, experiential, and educational perspectives. While urban walking was a social activity for people in the past, walking through the historic centre of a small city is in itself an

15 Serena Luzzi, ‘Immigrati tedeschi a Trento tra identità etnica e auto-rappresentazione (secc. XV–XVII)’, *Mélanges de l’École Française de Rome. Italie et Méditerranée* 115, no. 1 (2003): 211–226.

16 Thomas Cauvin, *Public History: A Textbook of Practice*, London: Routledge, 2016; David Dean, ed., *A Companion to Public History* (Chichester: Wiley Blackwell, 2018); Hannu Salmi, *What Is Digital History?* (Cambridge: Polity, 2020).

immersive experience for contemporary visitors.¹⁷ At the same time, walking is both a distinctive learning experience and a kinetic activity that can be used to connect past and present:¹⁸ users are encouraged to empathize with the character of Ursula, walking side by side with her around town and integrating her everyday experiences and personal memories into their own journey. Ursula's story in turn reflects the social and cultural environment of a transit city in the early sixteenth century.

The choice of this historical theme was intended to shed light on a little-known aspect of Trento's history, the material heritage of a minority otherwise not particularly obvious to present-day citizens and visitors. The heart of the tour is the German quarter of San Pietro, a part of the city less frequented by visitors compared to more iconic venues on the traditional tourist itinerary, such as the Buonconsiglio Castle or the Cathedral and its square. Though present, the city's more monumental components form only a backdrop for Ursula's narrative, which instead concentrates on recounting the everyday lives of men and women from the lower social classes. Artisans, town-criers, domestic servants, and guards are featured as co-protagonists in the story, more so than members of the social elites of the city, orbiting around a female innkeeper from the German minority. This choice of focusing on a migrant community and on an artisan female character was also made with the aim of reassessing an often neglected aspect in the narration of *ancien régime* societies in the cultural heritage sector, and in tourist promotion of Renaissance cities in general.

Ursula: a female innkeeper in sixteenth-century Trento

The guide-protagonist, Ursula, is pitched as a woman about 30 years old who migrated to Trento with her family at a young age, around the end of the fifteenth century. Ursula becomes a paradigmatic figure representing and embodying many of the salient features (both historic and historiographic) that the narrative strives to bring to light. In order to shape the image of a young *ostessa*, or innkeeper, dressed appropriately for her state, a detail depicting a domestic servant was selected from *Cena in Emmaus* (c. 1525) by the Lombard painter Alessandro Bonvicino, also known as "*il Moretto*" (Fig. 6.2).

The use of a female narrative voice is intended to highlight a very important element in the history of German immigration to Trento in the early modern period. The workers arriving in Trentino from German-speaking areas included numerous women from the beginning. Apart from their role within the nuclear family, little was known about how they fitted into urban society and the labour market. Luzzi's studies, in particular, have demonstrated that German female immigrants

17 Filippo De Vivo, 'Walking in Sixteenth-Century Venice: Mobilizing the Early Modern City', *I Tatti Studies* 19, no. 1 (2016): 115–141.

18 Michel de Certeau, *Walking in the City*, in *The Practice of Everyday Life* (Los Angeles: University of California Press, 1984), 91–109.



Figure 6.2 Alessandro Bonvicino, also known as “il Moretto”, *Cena in Emmaus*, c. 1525, Brescia, Pinacoteca Tosio-Martinengo (detail). © Brescia, Pinacoteca Tosio Martinengo – courtesy Fondazione Brescia Musei

responded dynamically to the demand for services in their new urban context. Their most common occupation in early modern Trento was domestic service. There was no shortage of opportunities in the city, thanks to the presence of the court of the prince-bishop and other aristocratic palaces, some of which were located in the district of San Pietro, mainly along the street of *Contrada Larga*, the end point of the walking tour. Female labour was also in demand in shops, markets, and other commercial activities, while some women worked in the sex trade. All worked mainly to meet expenses and, in the absence of parents who

would normally handle dotal obligations, to set aside the necessary money for a dowry and subsequently marriage.¹⁹

However, the context of Trentino presented some peculiarities that this project aims to reveal through the figure of Ursula. Numerous German female immigrants between the fifteenth and seventeenth centuries are documented in work roles that are not at all marginal or subordinate within the familiar patriarchal organization of European society in the early modern period. Many of the city's inns were run by women like Ursula, who were responsible for managing and organizing them, and even directed male workers, such as barmen and inn hosts. Even though they normally worked alongside their husbands or sons, the German female innkeepers of Trento played an important social role, due to the public and civic responsibilities associated with catering and accommodation. Inns were multifunctional spaces with a central role in everyday urban life. Innkeepers performed multiple tasks, which included maintaining public order, identifying foreign travellers, contributing to urban sanitation, and even providing credit.²⁰ This is demonstrated by the city statutes of 1528, by which landlords of public houses and inns were forbidden from extending credit to wives, people under 25 years, and the children of respectable families in general.²¹ To underline this, the *Innkeepers, princes and migrants* walk includes a simulation of a situation that was rather frequent in early modern European society: in a world in which life expectancy was low and widowhood or the absence of a husband was common, we decided to leave Ursula alone to manage her inn, the *Osteria alla Rosa*. The realism of this condition is supported by various pieces of documentary evidence and the name Ursula appears in listings and registers dating back to this period.²² In the storyboard, Ursula is alone because her husband, Kaspar, has been imprisoned for disregarding a civic proclamation mandating that innkeepers clean the public areas around their premises, in particular removing manure, stones, straw, and refuse. An analogous episcopal proclamation from 1590 was backdated for narrative purposes. Today the document is preserved in the Trento Public Library and it made it mandatory for innkeepers to maintain public sanitation and cleanliness in the areas around their establishments.²³ Ursula thus finds herself in the difficult emotional and economic situation of having to manage the family business without the support of her husband: Kaspar is, in fact, imprisoned in the civic bell tower overlooking the main city square, the city's gaol during the early modern period.²⁴

19 Luzzi, *Stranieri in città*, 76–92.

20 Rosa Salzberg, 'Controlling and Documenting Migration via Urban "Spaces of Arrival" in Early Modern Venice', in *Migration Policies and the Materiality of Identification in European Cities, 1500–1930s: Papers and Gates*, eds. Hilde Greefs and Anne Winter (London and New York: Routledge, 2018), 27–45; Teresa Bernardi and Matteo Pompermaier, 'Hospitality and Registration of Foreigners in Early Modern Venice: The Role of Women within Inns and Lodging Houses', *Gender & History* 31, no. 3 (2019): 624–645.

21 <https://bdt.bibcom.trento.it/Testi-a-stampa/6#page/n3> (accessed May 27, 2021).

22 Trento, Biblioteca Comunale, Archivio della Congregazione di Carità, n. 909.

23 Trento, Biblioteca Comunale, ms. 2112.

24 Franco Cagol, Silvano Groff, and Serena Luzzi, eds., *La torre di piazza nella storia di Trento* (Trento: Società di studi trentini di scienze storiche-Comune di Trento, 2014).

In *Innkeepers, princes and migrants*, the user is urged to join Ursula on a typical day in her life in 1520, articulated by the demands of work, the relationship between city dwellers and the authorities, and the need to deliver a letter to the police captain of the city begging for the liberation of her husband. Along the way, Ursula reveals a cross section of public life in her community, in particular the activity in the busy streets, piazzas, and at street corners. As we shall see in more detail subsequently, one aspect that emerges strongly from Ursula’s narrative is the role of the local parish and church of San Pietro as the most important public place for migrants of German origin as they arrived in Trento in various migratory waves and settled in the district surrounding this church.

Mobility and urban space in Renaissance Trento

In recent years, historians have investigated how movement and mobility shaped urban space and animated everyday life in early modern cities.²⁵ Within this broad historiographic trend, Trento is an interesting case study revealing how mobility directly affected the social and material fabric of the city. Obviously, Trento lacks the social and economic complexity of Florence or the cultural and linguistic variety of Venice, but it nevertheless represents a valuable laboratory for investigating these dynamics in depth.

The mobility of the Germanic immigrants had a concrete effect not only on Trento’s social life, but also on material culture and urban development, leaving clear traces in the street and place names of the contemporary city.²⁶ Unlike other foreign communities, most Germans settled in a specific section of the city, the district of San Pietro. This northern quadrant of the city was never imposed as a residential enclave for German-speakers by public authorities; the district seems to have developed organically. The presence of Germans in the area, especially from the first half of the fifteenth century, was the result of a combination of environmental conditions, the professional profiles of the immigrants, and the strategically favourable position of the district – close to a commercial street that connected to the main Brenner road and to the river port on the Adige river, not far from the residence of the prince bishop in the Buonconsiglio Castle.²⁷ The natural environment must also have played an important role in the settlement of Germanic workers in the parish of San Pietro. The streams running through the area, fed by the Fersina creek, supplied the water required for the commercial activities of German immigrants, which included hide tanning and butchery. A number of

25 Luca Zenobi, ‘Mobility and Urban Space in Early Modern Europe: An Introduction’, in *Cities in Motion: Mobility and Urban Space in Early Modern Europe*, eds. Pablo Gonzalez Martin, Rosa Salzberg, and Luca Zenobi, special issue of “*The Journal of Early Modern History*”, 2021, 2–10.

26 In the current ‘Vicolo della Contrada Tedesca’.

27 Chriscinda Henry, ‘Navigating the Palace Underworld: Recreational Space, Pleasure, and Release at the Castello del Buonconsiglio Trent’, in *Early Modern Spaces in Motion: Design, Experience and Rhetoric*, ed. Kimberley Skelton (Amsterdam and New York: University of Amsterdam Press, 2021), 33–57.

streets were named after these activities, like the *Contrada del macello* (Butchers' Street), located in the extreme south of the area, or the *Fossato dei conciapelli* (Tanners' Ditch), running south parallel to Contrada di San Pietro. The street that most clearly identified the relationship between occupation and "ethnic" origin was the so-called *Contrada delle osterie tedesche* (Street of the German Inns), today Via del Suffragio, where the catering and accommodation services managed by Germanic immigrants were concentrated. The main streets of this lively commercial area of the city converged at an unusual point, the so-called *Canton* (Street corner). Resembling a road lay-by, the *Canton* was one of the public areas, together with the main piazza of the Duomo, where the city statutes allowed farmers and merchants to sell their products. In addition to being the location of the urban bread ovens, this was a busy gathering point, a meeting place for establishing social and economic contracts or hearing town-criers read out public proclamations from the local council and ecclesiastical authorities.²⁸

The district of San Pietro was not inhabited exclusively by Tyrolean, Bavarian, or Swabian immigrants. For example, up until the alleged ritual homicide of the 2-year old Simone (1475) by the Jews of Trento, a well-known "blood libel" in early modern studies, there was a small three-family community of Ashkenazi Jews living right alongside the *Canton*.²⁹ The various parts of the district were also widely populated by native Trento citizens and foreigners originating from Lombardy, Emilia, and Veneto. Despite the fact that in 1559 only 22.5% of the population of the district was of proven Germanic origin, it was nevertheless the presence of the Germans that characterized the urban and economic fabric of San Pietro.³⁰ The German population also left a characteristic mark on the architecture of the district, importing the use of shops with porticoes (still present on Via del Suffragio), along with skylight windows ("erker") and balconies ("corfenster"), the latter disappearing only during the urban renewal projects of the nineteenth and twentieth centuries.

The social, religious, and political lives of the Germans in Trento essentially revolved around two focal points: the Confraternity of Miners (or *Hauerbruderschaft*) and the church of San Pietro. The first provided for the welfare, social, financial, and housing needs of the community. The second was the parish of preference for German-speaking immigrants throughout the early modern period, thanks to the presence of a German priest who supported an Italian clergyman in giving pastoral care.³¹ In addition to being a religious venue, the church of San Pietro was also an important public space, facilitating a strong group identity in the daily social life of the community.

28 Luzzi, *Stranieri in città*, 147–160.

29 Domenica Primerano, Domizio Cattoi, Lorenza Liandru and Valentina Perini, eds., *L'invenzione del colpevole. Il 'caso' di Simonino da Trento dalla propaganda alla storia* (Trento: Museo Diocesano Tridentino, 2019); Ronnie Po-Chia Hsia, *Trent 1475: Stories of a Ritual Murder Trial* (New Haven: Yale University Press, 1992).

30 Luzzi, *Stranieri in città*, 156.

31 *Ibid.*, 165–179, 195–220.

In summary, the district of San Pietro was profoundly characterized by the presence of men and women of German origin throughout the early modern period. It will suffice to note that the confraternity founded in the thirteenth century existed until 1811, when a vice-regal decree abolished all the old charitable-welfare organizations of medieval origin. It might be assumed that the tangible signs of the German community in this part of the city would be abundant and obvious to anyone walking through the old streets of the district of San Pietro today. However, it is unlikely that contemporary visitors to these public spaces would recognize the relationships between foreign presence, commercial activities, and urban fabric without adequate didactic support and the help of locative media.

In order to grasp the impact of mobility on the urban fabric of Trento as a transit city between the German world and Italian states during the 1500s, it is impossible to ignore the relationship between the urban centre and its river, the Adige, which linked the Alps to the Adriatic Sea. Only in recent history Trento has lost its close ties to this navigable watercourse, which during medieval times flanked the city on its northern and western sides, flowing from north to south, and providing a fundamental element of urban life. The old riverbed is easily recognized on the map of 1562–1563 by Giovan Andrea Vavassore (Fig. 6.3).³² This was used for georeferencing the *Hidden Trento* app, and is presented as a narrative instrument to help visitors imagine urban features that are no longer visible. The historical maps of the city are an indispensable source to this end, not only for historians but also for the computer programmers reconstructing urban phenomena and transformations, and creating geospatial displays and analyses using the techniques and instruments of augmented reality and 3D.³³

On the wide bend in the Adige River to the north of the city stood the city gate and fortified suburb of San Martino on the Imperial road, the Torre Verde look-out tower, and the city port. The river curved south again at the Torre Vanga tower, constructed to guard the port of San Lorenzo, which was reached over a wooden bridge of about 300 m in length, today replaced by a concrete bridge. For the entire early modern period, shipping goods down the river, was conducted using wooden rafts of several meters in length and capable of supporting loads of up to a few tons. Upstream fluvial transport was instead achieved on vessels towed from the river bank. Moving goods on water was quicker and cheaper than land transport. The old course of the Adige River was redirected in the 1800s by the Austrian government. It was straightened in order to avoid ever-more frequent flooding, allow urban expansion towards the north, and facilitate the construction of the Verona-Bolzano railway line.³⁴ The urban landscape and the image of the

32 Renato Bocchi and Carlo Oradini, *Le città nella storia d'Italia. Trento* (Bari-Roma: Laterza, 1983), 98–104.

33 Elisa Mariarosaria Farella, Emre Özdemir and Fabio Remondino, ‘4D Buildings Reconstruction with Machine Learning and Historical Maps’, *Applied Sciences* 11 (2021): 1445, <https://doi.org/10.3390/app11041445>.

34 *Il paesaggio negato. Il fiume Adige e la città di Trento* (Milano: Mazzotta, 1987); Vito Rovigo, *Il fiume, le terre, l'immaginario. L'Adige come fenomeno storiografico complesso* (Rovereto: Accademia roveretana degli Agiati-Osiride, 2016).

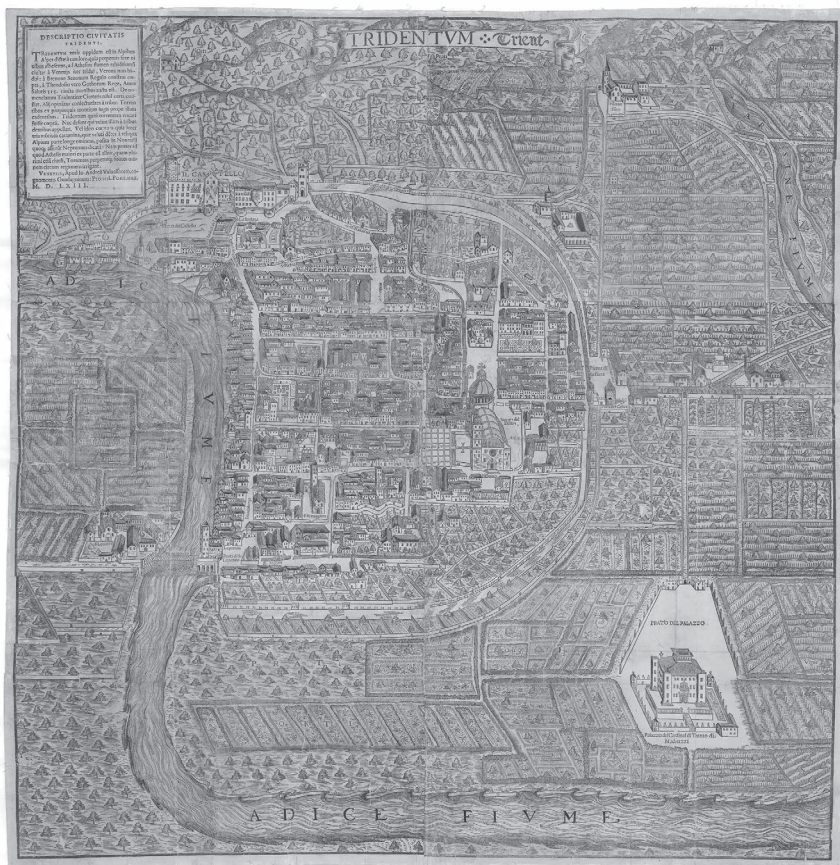


Figure 6.3 Giovan Andrea Vavassore, *Mapa di Trento*, 1562–1563, Vienna: Haus-, Hof- und Staatsarchiv. © Österreichische Staatsarchiv

city itself were completely transformed from that time. The boat landing wharves were replaced by the railway station, presenting yet another long-term demonstration of how mobility and its associated infrastructures can decisively impact the urban fabric of transit cities like Trento.

Of all the old commercial infrastructures on the river and the fortifications defending the northern entrance to the city, today there remains only the isolated and decontextualized Torre Verde. There is no visible sign of the old port of San Martino other than some traces in place and street names. The former course of the Adige is difficult to recognize in the current Via Torre Verde, one of the busiest roads in contemporary Trento, apart from two rows of trees that are intended to evoke the river that is no longer there. How then to evoke the significance and

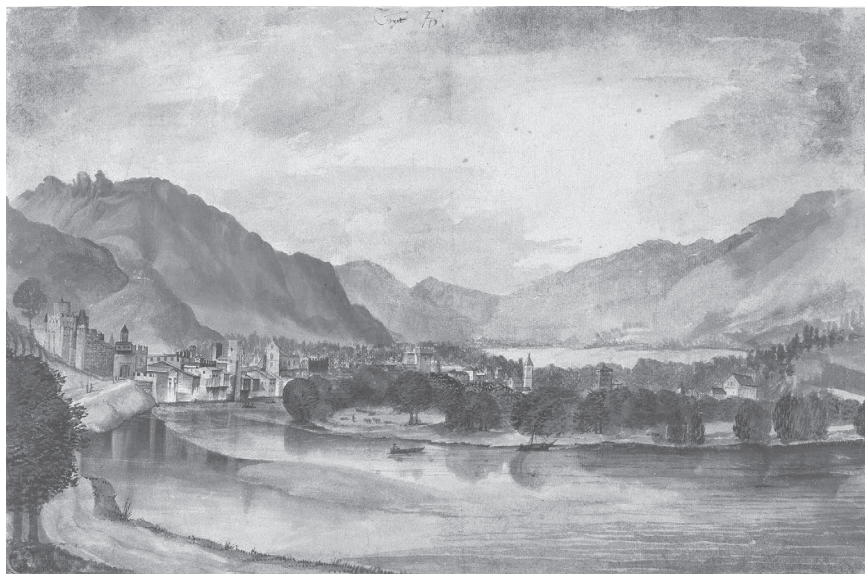


Figure 6.4 Albrecht Dürer, *Veduta di Trento*, ca. 1495, Bremen, Kunsthalle. © Wikicommons

impression of this busy northern entrance to the city, as it appeared in the early modern period? On the first section of the walking tour, *Innkeepers, princes and migrants*, at the location of the vanished port of San Martino, three main types of sources were utilized: (1) visual sources; (2) material remains; (3) archival documents. Both in *Hidden Trento* and on the further study platform hiddencities.eu, users can see a watercolour by Albrecht Dürer (c. 1495), preserved in the Kunsthalle in Bremen (Fig. 6.4). It depicts Trento seen from the north, as it would have appeared to travellers, migrants, and merchants arriving from the Brenner Pass in the 1500s, before the urban transformations of the nineteenth century.³⁵ The function of the port of San Martino, which also served as a public office for the payment of commercial fees and registration of foreigners, is also recalled in a customs sign, once located at an unspecified city gate and now held in the provincial collections of the Buonconsiglio Castle.³⁶ Finally, the registration of foreigners upon entrance into the city is testified to by a register of the aforementioned confraternity held at the Trento Public Library.³⁷

Within the *Innkeepers, princes and migrants* walking tour, this section represents an extreme case of a “location” without physical elements on site to link into

35 www.hiddencities.eu/trento/s-martino-gate/view-of-the-city (accessed May 27, 2021).

36 www.hiddencities.eu/trento/s-martino-gate/epigraph (accessed May 27, 2021).

37 Trento, Biblioteca Comunale, Archivio della Congregazione di Carità, n. 909; www.hiddencities.eu/trento/s-martino-gate/german-names-register (accessed May 27, 2021).

the storytelling of the guide-protagonist Ursula. Consequently, we used Ursula's story, where she recalls her own experience of migration into the city through the Porta and her perceptions about the river itself, to translate our research materials into a narrative of place and experience. Ursula's story, the detailed observations of the research team, and the visual, material, and documentary sources do not aim at a reconstruction of a place that no longer exists. Instead, they aim to evoke a public space that has been profoundly transformed over the centuries, as is the case for the old port of San Martino. In this way, the user experiences the historical heritage in an immersive and not entirely passive manner. The aim is not to provide facts and figures about the lost northern port of Trento, but to recreate the idea of the social complexity, vibrant trade, and mobility of people and goods in a transit and border city during the early modern period. The historiographic method of bringing disparate sources together, in particular material remains and archival documents, enabled the research team to reconstruct a more dynamic social reality than would emerge from the use of a single type of source. The same methodology and aims were implemented for the other seven points on the walking tour, even where the storytelling is also supported by more obvious materiality.

Via del Suffragio as a case study and experiment

One of the areas influenced by the presence of German immigrants in the San Pietro district is the present-day Via del Suffragio, a fairly typical old city centre "canyon" and among the busiest public spaces in the Renaissance city, originally known as the *Contrada delle osterie tedesche* (Street of the German Inns). Like many parts of Europe, starting from the second half of the 1300s, Trentino began developing a network of accommodation facilities designed to host a growing number of travellers, merchants, and pilgrims. In a strategic position close to the northern port of San Martino, Via del Suffragio was identified as an ideal location for travel facilities like inns, hotels, and taverns, offering travellers accommodation, food, and drink. From the fifteenth to the seventeenth centuries, the management of inns in Trento was almost entirely in the hands of immigrants. Some accommodation and catering facilities inside the city walls were managed by immigrants from Lombardy, Veneto, and Piedmont, but it was above all the Germans who held something of a monopoly on the taverns and hotels in Trento, sited almost exclusively in the district of San Pietro. In the mid-1400s, there were as many as 14 German inns on the short section of Via del Suffragio running from the port of San Martino to the *Canton*, and over the following centuries there were never fewer than ten.³⁸ The name itself, *Contrada delle osterie tedesche*, indicates the street's association with German immigrants and the facilities they managed, making it a central component in the *Innkeepers, princes and migrants* walking tour narrative.

38 Elio Fox, *Storia delle osterie trentine. L'ospitalità dal XIII al XX secolo* (Trento: Curcu & Genovese, 1996); Luzzi, *Stranieri in città*, 230.

Over and above their immediate function of hospitality, inns were typically also venues for urban sociability, a central historiographic theme for *Hidden Trento*, as well as acting as travel nodes and managing relations between foreigners and the public authorities. In addition to room and board, inns provided citizens and travellers of diverse origins with the opportunity to meet, encouraging cultural exchanges. In the heated ground-floor rooms (*stuben*), between mealtimes guests could hear the latest local and international news, gamble with dice, enjoy songs and ballads, and mingle with minstrels, musicians, and jesters. For example, a group of Venetian diplomats are known to have stayed at the *Osteria alla Rosa* in 1492; over dinner, they enjoyed the antics of a jester and songs performed by a female guitar player who sang popular verses in German for the mostly northern European clientele.³⁹

Inns like those in Via del Suffragio were also informal political venues; not only for hosting foreign representatives, ambassadors, and foreign officials visiting Trento, but also because they were venues for expressing opinions and dissent, both political and religious. Over a carafe of wine or a tankard of strong ale, people debated the latest rulings by the authorities, discussed legal convictions, gathered information more or less legitimately, and sometimes ridiculed public officials.⁴⁰ In one example from 1513, a Venetian informer described the performance of a member of the bishop’s court of Trento singing a song defined as “gutter talk” in an inn. The bishop’s appreciation for this drunken song was used by the Venetians as propagandistic argument in the context of the Italian Wars, in order to present a stereotyped view of the prince-bishop of Trento, Georg Neideck, as a German speaker and a great drinker: “*il vescovo di Trento si fa cantar questa canzone, . . . qual è da imbrigi, come sono todeschi e vil canaglia*” (“the bishop of Trent calls for this song, . . . good for drunkards, since they are Germans and vile as dogs”).⁴¹ The city authorities exercised some forms of control over these varied and colourful microcosms, attempting to prevent the spread of unorthodox views and monitor immigrants they considered to be suspicious. It was inside the reception facilities themselves that foreign guests were identified and registered by the landlords, in order to avoid the presence or transit of undesirable individuals.⁴²

From a narrative perspective, evoking the historic role of Trento’s inns was possible, thanks to an abundance of material remains, both on site and in local

39 *Itinerario de Germania delli magnifici ambasciatori veneti, M. Giorgio Contarini, conte del Zaffo, et M. Polo Pisani . . . dell'anno 1492*, in Henry Simonsfeld (ed.), *Miscellanea di storia veneta* (Venice: Deputazione veneta di storia patria, 1903), 284.

40 On inns and public houses as spaces of political communication, Beat Kümin, *Drinking Matters. Public Houses and Social Exchange in Early Modern Central Europe* (Houndmills, Basingstoke: Palgrave Macmillan, 2007); Rosa Salzberg, ‘Spaces of Unrest? Policing Hospitality Sites in Early Modern Venice’, in *Unrest in Venice: Popular Politics in an Aristocratic Republic*, eds. Claire Judde de Larivière and Maartje Van Gelder (London and New York: Routledge, 2020), 105–128.

41 Marin Sanudo, *I Diarii*, XVI, Venezia: Visentini, 1887, coll. 531–532.

42 Hans Heiss, ‘The Pre-Modern Hospitality Trade in the Central Alpine Region: The Example of Tyrol’, in *The World of the Tavern: Public Houses in Early Modern Europe*, eds. Beat Kümin and B. Ann Tlusty (Aldershot: Ashgate, 2002), 159–176.



Figure 6.5a Doorway of the *Osteria alla Rosa*, fifteenth to seventeenth centuries, Trento, Via del Suffragio, 39–41. © Alessandro Paris

museums. At number 39–41 of the present-day Via del Suffragio, the red stone doorway of the most famous accommodation facility of Renaissance Trento, the *Osteria alla Rosa* (The Rose Inn), is still visible. Like all medieval and early modern inns, the venue took its name from its sign, which depicted an easily recognizable symbol for illiterate people or foreigners. Along the *Contrada delle osterie tedesche*, one could see a sequence of pictorial signs, for the inns at the Eagle, the Sun, the Rose, the Crown, the Star, and so on.⁴³ The doorway to the *Osteria alla Rosa* is clearly decorated with the flowers that gave the inn its name, small roses sculpted in relief. Of special interest is a sculptural detail on the key-stone of the arch depicting a postal horn. This was the symbol of the De Taxis family, originally from Cornello del Tasso (Bergamo), who were assigned the monopoly of the communications network within the boundaries of the Empire by Hapsburg Emperor Maximilian I at the end of the fifteenth century.⁴⁴ In the

43 Luzzi, *Stranieri in città*, 31.

44 Francesca Brunet, “Per essere quest’ufficio la chiave dell’Italia e Germania. . .”. *La famiglia Taxis Bordogna e le comunicazioni postali nell’area di Trento e Bolzano (Sec. XVI–XVIII)* (Camerata Cornello: Museo dei Tasso e della storia postale, 2018); on the Early Modern postal networks, Wolfgang Behringer, *Im Zeichen des Merkur: Reichspost und Kommunikationsrevolution in der Frühen Neuzeit* (Göttingen: Vandenhoeck & Ruprecht, 2003).

early 1500s, the De Taxis family guaranteed a quick and reliable postal service between the transalpine regions and northern Italy, the offices of which were very often hotels and inns. This made inns like *Alla Rosa* real infrastructural nodes for the movement of people and ideas, where mail carriers could rest, change horses, find refreshment, and deliver messages, possibly adding information by word of mouth and thus encouraging the migration of news from one region to the next across the continent. The architectural evidence on the doorway therefore gives a good indication of the role of the *Osteria alla Rosa* as a primary venue for communication, hospitality, and socializing (Fig. 6.5a).

The doorway’s excellent state of conservation makes it perfect for anchoring the storytelling to a material cultural element from the Renaissance still visible



Figure 6.5b Sign of the *Osteria alla Rosa*, sixteenth to nineteenth centuries, Trento, Buonconsiglio Castle. Provincial monuments and collections. © Castello del Buonconsiglio, Trento

today. However, another of the main objectives of the *Hidden Cities* app family is to reconnect material objects “hidden” in historical collections back to their original contexts. In the provincial collections of the Buonconsiglio Castle, there are at least four old Trento inn signs, which is rather rare for Italian cities of the early modern period. In addition to the wooden sign of the *Tre Re*, there are the wrought-iron signs of the *Due Mori*, the *Corona*, and even the *Osteria alla Rosa* (Fig. 6.5b).⁴⁵ As a result, while our guide-protagonist Ursula presents her inn, the *Osteria alla Rosa*, the app displays both the doorway and the antique sign. The further study platform (hiddencities.eu) shows all four antique Trento inn signs. As part of a collaborative initiative with local cultural heritage sites, the signs were photographed in high definition for the first time and made available to the public, following their restoration by the holding institution. It would be worth considering a future temporary dossier exhibition of the four signs, as well as their reproduction and display in their original locations, at the very least for the *Osteria alla Rosa*. With the support of new technologies, and in particular 3D printing, it would be possible to create a precise copy of the sign of the *Rosa* and accurately reconstruct the historical external appearance of the most famous inn in Trento.

The street corner: the “Canton”

At the end of the *Contrada delle osterie tedesche*, Ursula tethers her mule near the most important street junction in Trento, the *Canton*, which as noted earlier was a crowded intersection and busy focus of public life. Here, Ursula and the user encounter a town-crier who is heralded by trumpets as he prepares to deliver a public notice to the citizens. The user and guide hear the public announcement, which regards the serving of food and drink in the city inns, as well as the evening curfew and registration of foreigners. Once again, the storytelling is based on a combination of material evidence and documentary references. The *Canton* was effectively the most important public communication point where proclamations were posted or read aloud. The crier’s announcement, accompanied by trumpeting, is an amalgam of genuine proclamations conserved in local archives dating back to the sixteenth to eighteenth centuries (Fig. 6.6).⁴⁶

Street corners like this one were multifunctional spaces shared by locals and foreigners of various social classes in order to trade and gather news and exchange gossip or ideas.⁴⁷ The site of the *Canton* was not only used for formal government communications by town-criers, but it was also where political statements might be anonymously posted on the walls, sometimes attacking the ruling elites. Examples of this were scandalous broadsheets (“*cartelli*” and “*libelli famosi*”)

45 www.hiddencities.eu/trento/alla-rosa-inn/tavern-signs (accessed May 27, 2021).

46 www.hiddencities.eu/trento/street-corner (accessed May 27, 2021).

47 On street corners, Fabrizio Nevola, *Street Life in Renaissance Italy* (New Haven and London: Yale University Press, 2020).

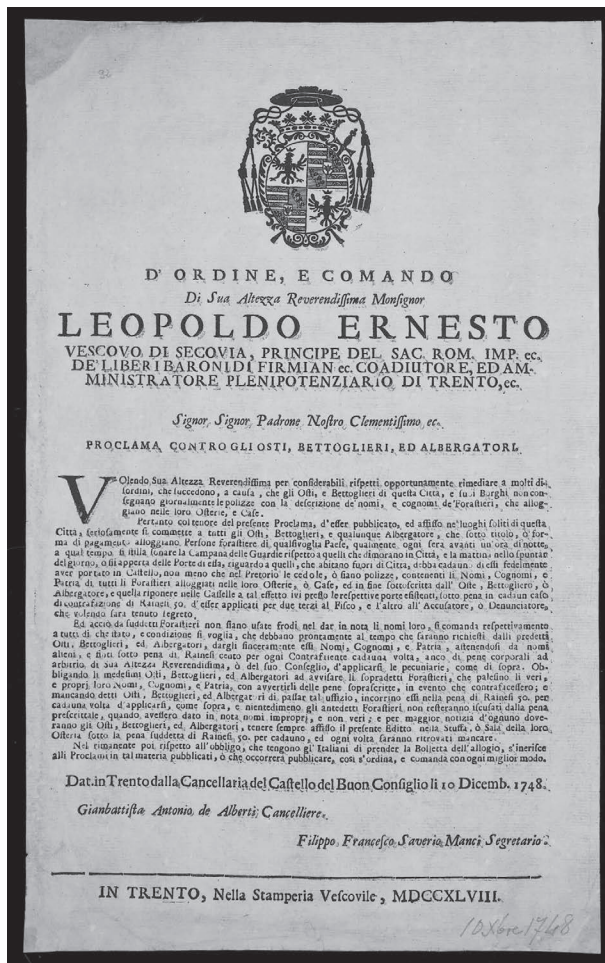


Figure 6.6 Proclama contro gli osti, bettoglieri, ed albergatori, Trento 1748. © Trento, Public Library

criticizing local magistrates that were fixed to a column in the city's main square (Piazza Duomo) and at the Canton street corner in May 1545, a few months before the opening of Council of Trent.⁴⁸ The dynamism and multifunctional nature of

48 "... quelli chartelli o libelli famosi quali dal mese prosimo pasato furno atachati per tempo di nocte alla colonna del Cantono et alla colonna de la Piazza in dishonore de li Consuli et altre persone"; Trento, Archivio di Stato, Archivio Principesco Vescovile, Libri feudali, vol. 38, cc. 8v-9r. We thank Alessandro Paris for this reference.

the Canton as an eminently public space for urban communication and sociability were brought to life through a combination of sources and various material remains. Ursula's narration engages, conceptually and materially, with the iron rings for tethering horses that are still found today below the porticoes of Via Suffragio, where she ties up her mule, close to the *Canton*. The presence of these animals and their interactions with people in public spaces, something that tends to be forgotten about early modern urban life, is recalled by a contemporary post, preserved at the Italian War History Museum of Rovereto. The commercial function of the *Canton* is instead evoked by a photograph from the late nineteenth century, showing the numerous commercial activities and shops that still occupied the area of the junction like a sort of extended bazaar.

Today the commercial and social importance of the area is much less significant than in the past. The various types of businesses that characterized the *Canton* in the 1500s are further illustrated with the heraldic symbols of the German artisans of the city, as depicted in the decorated register of the miners' confraternity preserved in the Trento Public Library.⁴⁹ The symbols of the members of the confraternity clearly indicate the occupations of the German families who lived or worked close to the *Canton*, always within the district of San Pietro. The recurrent symbols include those of blacksmiths, butchers, innkeepers, bakers, joiners, and other artisans.⁵⁰ Finally, the multifunctionality of this public space is revealed in a print showing a street vendor of prints, an omnipresent figure in the streets and squares of European cities in the early modern period. The image comes from the collections of the 'Per Via' Museum of Pieve Tesino (Trento), a museum dedicated to the extraordinary story of Val Tesino and its inhabitants, which from the early modern period specialized in trading and street vending prints all over Europe.⁵¹ The appearance of the print seller opens up additional insights into the history of printing, mobility, and their impact not only on urban contexts but also on mountain communities, as well as the history of this Alpine region in general in this period.

Conclusions and new challenges

The public history aspects of this project have been seen from the beginning as critical for bringing to light certain specific historiographic perspectives, implicit in the narration of the walking tour *Innkeepers, princes and migrants*. These include the history of mobility, material culture, and digital urban history, through a close interweaving of public history and historiography.

49 Trento, Biblioteca Comunale, Archivio della Congregazione di Carità, n. 49.

50 Luzzi, *Stranieri in città*, 241, 244.

51 See Niccolò Caramel, 'Rapporti commerciali, organizzazione dei viaggi, ripercussioni locali: nuove prospettive sull'ambulantato tesino (1685–1797)', *Studi Trentini. Storia* 98, no. 1 (2019): 155–184. Cfr. inoltre Massimo Negri, ed., *I Tesini, le stampe, il mondo. Uomini e immagini in viaggio* (Milano: Gabriele Mazzotta, 2014); Elda Fietta, *Con la cassela in spalla: gli ambulanti di Tesino* (Ivrea: Priuli e Verlucca, 1987).

From the historiographical perspective, our case study of a German tavern keeper began with archival research by Luzzi and then was reinforced with further research into the material culture of public spaces. The work on the digital outputs prompted the research team to critically reconsider a historiographic theme, already investigated in depth, from a more interdisciplinary perspective. This engaged the main Trentino institutions for historical preservation and thereby established synergies with cultural heritage institutions that would not always occur otherwise. Documents, prints, weapons, signs, ex-votos, photographs, and numerous other objects were used to recreate the complexity of the public spaces in which migrants and travellers lived and moved. Materiality can be difficult to interpret without the support of new technologies and cross-referencing to cultural heritage preserved in museums, libraries, or archives. Here they are given new meaning in a more articulated reading of relevant historical themes like the relationships between citizens and migrant communities, the role of women in the world of work, the management of commercial activities in urban contexts, and the use of public spaces as venues for socializing. The city is shown in particular in its role as a place of transit and as a frontier, a lively commercial centre sitting astride the German and Italian worlds.

From the point of view of public history, the decision to focus the storytelling on the interaction between migrants and public spaces in the city also had the purpose of shifting attention away from the most common themes and locations frequented by present-day citizens and visitors to Trento. Unlike the abundant range of cultural options available today, *Hidden Trento* does not aim to speak exclusively about the major protagonists in the history of the city, or its monumental and artistic highlights. Sovereigns, social elites, and artists do appear in the narrative, but only to the extent to which they influence everyday life within the urban context, and their depiction is filtered through the perceptions of innkeepers and artisans. Following Ursula around the city, one inevitably encounters significant artworks and monuments. One example is the Renaissance palace of Meli-Del Monte, opposite the *Canton*, which Ursula sees nearing completion in 1520.⁵² The guide-protagonist points out to the user the allegories and the trials of Hercules depicted on the façade of the building, dominating one of the main city roads. However, this pictorial cycle is not presented as a work of art in itself, with the purpose of revealing its iconographic complexity, but rather to reveal the meaning it might have had for a German innkeeper of the early sixteenth century. It is presented as a symbol of the power of the Empire over the city of Trento, highlighting the close political ties and identification that the German community felt in relation to the Germanic Emperor.⁵³ Observing this important work of Renaissance art through Ursula’s eyes and narrative interweaves the popular and high cultures of the time, delineating an unusual point of view.

52 www.hiddencities.eu/trento/meli-del-monte-palace (accessed May 27, 2021).

53 Marco Bellabarba, ‘Il principato vescovile dagli inizi del XVI secolo alla guerra dei Trent’anni’, in *Storia del Trentino. IV: L’età moderna*, eds. Marco Bellabarba and Giuseppe Olmi (Bologna: il Mulino, 2002), 15–70.

By the time this volume is published, *Hidden Trento* will be expanded with a second itinerary centred around a major event, the famous Council of Trento (1545–1563), but again picking up on the main themes adopted on the previous walking tour: attention to material culture, the impact of mobility on the urban fabric, and the use of public spaces. Trento was chosen to host the Council precisely because it was a frontier city in a strategic position in the heart of Western Europe, located between the Catholic and Protestant worlds. Hosting the Council caused the population to explode and turned the city into an even more significant transport hub, attracting clergymen and their entourages. The second walking tour will highlight unpublished archival sources on the history of public spaces and social life of Trento during the final stages of the Council. It will also introduce the general public to this well-known event from a new perspective, narrating a day in the life of Angelo Massarelli, secretary of the Council and contemporary guide of the walking tour.

The ever-faster development of digital media and application of innovative technologies are generating new challenges and opportunities in the cultural heritage sector. As regards the city of Trento, computer scientists are testing the possibility to reconstruct multi-temporal (4D) digital representations of the city from historical maps, while applying machine learning regression techniques for the analysis and presentation of historical data.⁵⁴ Within the wider context of digital humanities developments in recent historiography, historians should avoid being passive spectators of these new challenges, and instead actively promote more constructive dialogue between computer scientists, the humanities, and the heritage sector.

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7 Stewarding civic spaces

Place and social mobility in Elizabethan Exeter

Kate Osborne

In 1587, Thomas Greenwood, citizen haberdasher of Exeter, clad in light body armour and carrying the upgraded arquebus known as a caliver gun, might have made his way down the wide High Street, through the imposing East Gate and into the open space of Southernhay just outside the city walls. If he did – and his name appears on a fragment of a muster list of that date – he probably did so as a member of a ‘trained band’ taking part in an assessment of the city’s capability to defend itself, possibly against the Spanish Armada.¹ His actions would have combined a perceived need to be ready to defend his city against disorder with a sense of place and with material culture appropriate to the event.

Thomas was a real Exeter inhabitant whose name appears in a variety of civic documents, enabling prosopographical techniques to recreate some of his hitherto largely unknown life story. *Hidden Exeter*’s location-based, urban app trail provides a theatre in which Thomas can come to life, set as it is at the height of Elizabeth I’s reign. With Thomas as a knowledgeable companion and civic office holder at their side, app users can enhance their understanding of the significance of a selection of public spaces to the city’s then inhabitants. Through the app’s ability to cross-contextualize archival material, physical space and sixteenth-century museum artefacts, both everyday functionality and a ‘hidden history’ are revealed, in particular the part these places collectively played in reinforcing the need for obedience and unity in defence against disorder. Disorder, it was perceived at the time, would undermine Exeter’s ‘common wealth’ and it was an issue with which Thomas was deeply concerned.

This fictive assembling of factual material reflects Niall Atkinson’s work on the relationship between public space, memory and movement. Building on the work of Michel de Certeau, Atkinson observes that people can create their identities as they walk around a city – linking themselves to collective memories held in physical spaces and understanding themselves as a series of stories recollected by the act of walking about.² Thomas does just that; he is made to remember from personal

1 Devon Heritage Centre (DHC) Exeter City Archives (ECA) Miscellaneous Roll 73 (names of 120 men furnished by the city for the militia, 1587–1588).

2 Niall Atkinson, ‘They Rang the Bells at the Wrong Time’, <https://earlymoderncommunities.org/home/interviews-2/niall-atkinson/> (accessed August 21, 2020).

experience real events that had happened in his lifetime, roles he had actually undertaken and people he had really encountered. In so doing, an evidenced narrative of how an urban Elizabethan might have experienced public spaces and related material culture is created that provides a fresh perspective on daily life in this city.

A stable context

In 1584, John Hooker, Exeter's City Chamberlain, surveyed and then commissioned an engraving of a bird's eye view of Exeter, executed by the London-based Dutch refugee Remegius Hogenberg.³ The first maps were printed in 1587 and a rare surviving example is housed in Exeter's Royal Albert Memorial Museum and Art Gallery (RAMM)'s collections. Depicting an ideal and orderly view of the city, with its prominent buildings picked out in some detail, the streets wide and clean and encircled by well-maintained walls, it provides the historic basemap for *Hidden Exeter*.

The context in which Hooker commissioned and printed his map was a relatively stable one in Exeter. Almost half a century ago, Wallace MacCaffrey stated that at the turn of the sixteenth century, 'Exeter varied from the usual English civic pattern simply in the very uneventfulness of its civic history'.⁴ It is a questionable assessment, and certainly not true in terms of attempted assaults upon the physical fabric of the city. Although no civil wars had been fought since 1485, the city had faced a significant attack in 1497 by Perkin Warbeck, pretender to the English throne.⁵ In 1549, it was besieged during the Western Rebellion, or 'Commotion', carried out by those protesting Edward VI's imposition of reformed religious worship by royal fiat.⁶ In 1588, the year in which *Hidden Exeter* is set, the country was at war with the Spanish Empire. While the fighting was being carried out on the European continent, the Spanish had their Armada directed against England, and the merchants and artisans of a port town had to be wary of how war might disrupt established trade routes.

Its earlier ability to resist attack and its later fortunate position of not being in any direct firing line meant Exeter's built environment was never subjected to major destruction and rebuilding. Rather, within the increasingly cramped space encircled by its Roman walls, its Saxon street pattern prevailed, with ongoing building replacement, upgrading, infilling, encroachment, subdividing and rebuilding upwards, though with expanding suburbs to its east and industrial areas to its west.⁷ The long, wide medieval High Street fulfilled the function of a piazza or central market square. The only place to muster large crowds, Southernhay,

3 Richard Oliver, Roger Kain and Todd Gray, *William Birchynshaw's Map of Exeter 1773* (Devon & Cornwall Record Society Extra Series 3, Boydell Press, 2019), 3–12.

4 Wallace T. MacCaffrey, *Exeter, 1540–1640: The Growth of an English County Town* (London: Harvard University Press, 1975), 18.

5 Mark Stoye, *Circled with Stone: Exeter's City Walls 1485–1660* (Exeter: University of Exeter Press, 2003), 70–72.

6 Walter J. Harte, J.W. Schopp and H. Tapley-Soper, *The Description of the Citie of Excester by John Vowell alias Hoker* (Exeter: The Devon & Cornwall Record Society, 1947), 55–96.

7 John Allan, Nat Alcock and David Dawson, eds., *West Country Households 1500–1700* (Woodbridge: Boydell Press, 2015), 45.

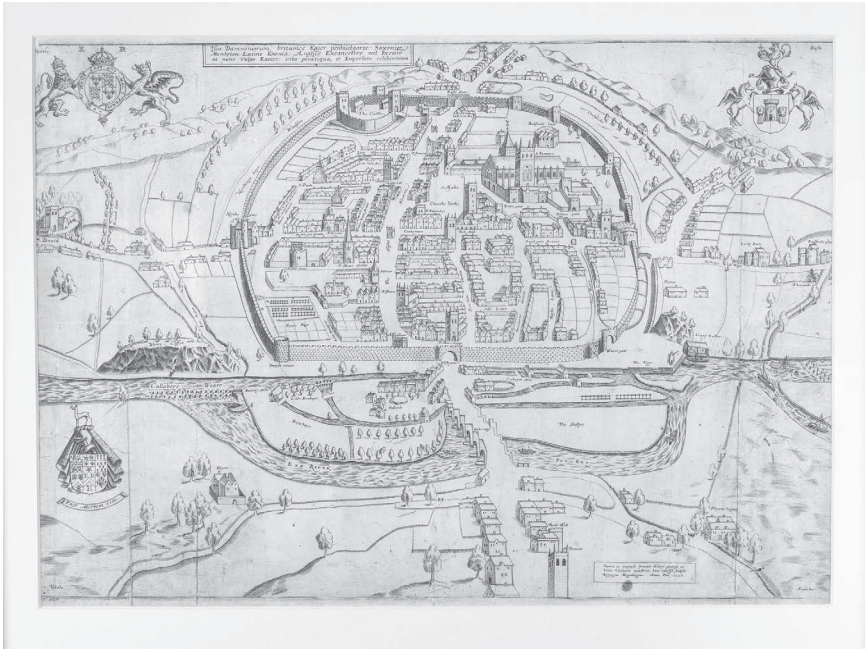


Figure 7.1 Hooker/Hogenburg Map/Plan of Exeter/Isca Dumnoniorum. © The Royal Albert Memorial Museum and Art Gallery, Exeter City Council

was outside the walls. Other public open spaces, such as Friernhay in the west quarter of the city, were largely full of racks upon which drying cloths were stretched as part of the cloth-finishing industry. The only other large open space was Cathedral Close, the place where most people were buried but also where all kinds of other activity took place, from trading to ball games.⁸ Most buildings were of traditional, vernacular style and mixed construction; timber-framed but with fire-resistant stone party walls. The more prestigious of these incorporated carved wood decoration on structural elements such as brackets supporting oriel windows. Outhouses and smaller cottages may have been built of straw and earthen walls known locally as cob.⁹ Stone-built constructions were mostly medieval and religious (Cathedral, churches and ex-monastic buildings), civic (the city gates, and originally Roman walls) or royal (the remains of the Norman castle – now a gaol – and its walls and gatehouse), though some of the most prestigious houses incorporated stonework too. The

8 Nicholas Orme, *Exeter Cathedral: The First Thousand Years, 400–1550* (Exeter: Impress Books, 2009), 23.

9 Derek Portman, *Exeter Houses 1400–1700* (Exeter: University of Exeter, 1966), 17 and 24.

city's Guildhall façade with its Italianate fluted pilasters built in 1593–1594 was a unique and radical departure for a civic building (its predecessor, with an arched covered walkway, is the one depicted on Hooker's map).¹⁰ The only other new civic architectural flourish was found in the water conduit houses, especially the Great Conduit, constructed in 1534–1535 in a style that echoed that of medieval churches and colourfully repainted in 1586.¹¹ Exeter's largely peaceful context meant that the built fabric of the city very largely represented continuity rather than change.

It is possible to argue that within this continuity, Elizabethan Exonians also enjoyed a relatively stable social life. Exeter was not a contested border or volatile transit city; its cathedral had no shrine or relics to attract pilgrims from outside its region.¹² It was not near enough to the continent to attract waves of religious refugees.¹³ It was too far away for the Queen and her entourage to venture a visit. Nevertheless, it was the social and cultural capital of the far south-west. Here, merchant families whose earned income had enabled them to achieve their goal of gentrifying themselves by purchasing land and moving out of the city sometimes kept a town house in addition to their 'mansion' house in the country.¹⁴

What underpinned this successful expansion of wealth and well-being was the development of local, inland, coastal, capital and continental import and export trade.¹⁵ The combination of being largely left in peace coupled with its geographical location at the head of the Exe Estuary enabled Exeter to thrive commercially, and its economic history was not 'uneventful'. During the later fifteenth and early sixteenth centuries, it experienced rapid growth with the expansion of the wool trade and by the 1520s became the fifth largest provincial capital/port city in England in terms of taxable wealth. The later sixteenth century was a period of more modest population and economic growth for Exeter, but it still housed approximately 8–10,000 inhabitants and continued to grow.¹⁶ The main trade was concerned with woollen cloth and increasingly with luxury goods, and the growth in wholesale and retail trade increased the population of craftspeople and professionals. In the 1560s, the Chamber (the city council comprising the Mayor and 24 Councillors)

10 Stuart Blaylock, 'Exeter Guildhall', *Devon Archaeological Society Proceedings* 48 (1990): 123–178.

11 Mark Stoyke, *Water in the City: The Aqueducts & Underground Passages of Exeter* (Exeter: University of Exeter Press, 2014), 84 and 104.

12 Nicholas Orme, *The Churches of Medieval Exeter* (Exeter: Impress Books, 2014), 2.

13 Nigel Goose, 'Introduction', in *Immigrants in Tudor and Early Stuart England*, eds. Nigel Goose and Lien Luu (Brighton: Sussex Academic Press, 2005), 1–38.

14 William G. Hoskins, 'The Elizabethan Merchants of Exeter', in *The Early Modern Town*, ed. Peter Clark (London: Longman, 1976), 148, 157.

15 MacCaffrey, *Exeter 1540–1640*, 160–173; John Allan, *Medieval & Post-Medieval Finds from Exeter 1971–1980* (Exeter: Exeter City Council and the University of Exeter, 1984), 355–356. See also Maryanne Kowaleski, *Local Markets and Regional Trade in Medieval Exeter* (Cambridge: Cambridge University Press, 1995).

16 Allan, Alcock and Dawson, *West Country Households*, 45.



Figure 7.2 Exeter Guildhall frontage 1593–1594. © Kate Osborne

commissioned the building of a canal to overcome long-standing problems of river access to the quay.¹⁷ This port expansion outside the city and down the hill where the river flowed was Exeter's biggest infrastructure project of the era.

Traditionalism rules

Between 1535 and 1537, Henry VIII granted Exeter the status of city and county, making its mayor and aldermen Justices of the Peace and Gaol Delivery and

¹⁷ MacCaffrey, *Exeter 1540–1640*, 126–136.

therefore the principal agents of royal authority within its jurisdiction.¹⁸ MacCaffrey describes the city's Tudor era leaders as follows:

Never revolutionaries, seldom reformers . . . the masters of Exeter remained traditionalists, reverential of the existing order, anxious to identify themselves with it and suspicious of any heterodoxy. . . . [I]n religion alone there was major change, accepted in Exeter because it bore the sacrosanct seal of royal authority.¹⁹

Exeter's elite had long been at pains to ensure it was very visibly on the side of the Crown. Thirty years after the Perkin Warbeck attack, a statue of Henry VII was incorporated into the city's rebuilt East Gate.²⁰ In the ecclesiastical upheavals of the sixteenth century, it closely followed the shifting dictates issuing from crown and Parliament. In 1531, before Henry VIII's break with Rome, city councillors were involved in the burning of early reforming protestant Thomas Benet.²¹ At the start of the monastic dissolutions five years later, a popular assault was made upon workmen beginning to remove the crucifix from the church of St Nicholas Priory. City authorities quickly suppressed the traditionalists, and initially hid word of the incident from the King's agents to try and avoid reputational damage. The demolition work went ahead.²² After the Dissolution, wealthy and influential citizens bought up ex-monastic properties within the city and sold them off to individuals who part-demolished or repurposed them. The impact of this was to reduce the threat of aristocratic footholds being established within the city and becoming a source of friction in terms of authority within its walls.²³

The protestant John Hooker's eye-witness retelling of 'The Commotion' of 1549 revealed that many of the city's ruling families were Catholic by religious conviction. They nonetheless remained on the side of Edward VI and enacted his order to introduce protestant rites and liturgies, despite the very real threat that both they and the city faced at the hands of the rebels.²⁴ Their loyalty was rewarded with the grant of the highly desirable manor of Exe Island just outside the city in 1550. This was a prized source of income from leases and rents for mills and racks and coveted for its riverside position, of which the Chamber wished to keep control.²⁵ This profitable reward likely reinforced the argument for continuing support for the Crown in matters of religion. This resulted in a pattern of back and forth adoption of whichever doctrine was imposed by the monarch at the time. In

18 Ibid., 19.

19 Ibid., 24–25.

20 Stoye, *Circled with Stone*, 73.

21 William G. Hoskins, *Two Thousand Years in Exeter* (Chichester: Phillimore, 1969), 56.

22 Ibid., 56–57.

23 Joyce Youings, 'The City of Exeter and the Property of the Dissolved Monasteries', *Transactions of the Devonshire Association* 84 (1952): 123–141.

24 Harte, Schopp, and Tapley-Soper, *The Description of the Citie of Excester*, 55–96.

25 MacCaffrey, *Exeter 1540–1640*, 19–20.

the Churchwarden's Accounts for the church of St Petrock, for example, the rood loft was destroyed in Edward VI's time then rebuilt under Catholic Mary Tudor and then destroyed again under Elizabeth I.²⁶ Likewise, John Hooker records that in 1558 on the accession of Elizabeth I:

Her Majesty's visitors came to this city . . . at which time they defaced, pulled down & burned all images and monuments of idolatry which were brought into the churchyard of St Peter's [the cathedral], and they within Queen Mary's days were accounted to be more forward in erecting them up and in maintaining of them were now made the instruments to make the fire and to burn them.²⁷

The message of obedience

The consistent message issued from local authorities to Exeter's inhabitants was that the 'common wealth', to use the contemporary expression, must be preserved from threats to its well-being, whether from inside or outside the realm. This in itself was nothing new. The new Church of England was becoming a state tool of social control, yet in his 1547 homilies Archbishop Thomas Cranmer reiterated previous centuries' urgings to parishioners to practice good behaviour. These were read out regularly and repeatedly in churches and were periodically reprinted. They were intended for preachers who were not themselves up to the job of writing sermons that focused the minds of their parishioners. A 1587 reprint included 'An Exhortation concerning good order, and obedience to Rulers and Magistrates' which emphasized that God had placed everything in a most excellent and perfect order, including Kings, Princes and other governors under them:

[W]ithout the whiche no house, no citie, no common wealth can continue and endure or last. . . . Take away Kings, Princes, Rulers, Magistrates, Judges and such estates of God's order . . . there must needs follow all mischief and utter destruction both of souls, bodies, goods and common wealthes.²⁸

The Exhortation explained that God had gifted England with Queen Elizabeth and that all were to obey her and her Magistrates and officers who were, of course, all placed and ordered by God.

The issue of obedience and civic unity had clearly penetrated the conscience of John Hooker after significant disunity in 1559 over the establishment of Exeter's Merchant Adventurers because it threatened crucial retailing monopolies for the

26 *Ibid.*, 193; Robert Dymond, 'A History of the Parish of St Petrock, Exeter as shown by Its Churchwardens' Accounts and Other Records', *Trans Dev Assoc* 14 (1882): 402–492.

27 Todd Gray, *Chronicle of Exeter 1205–1722* (Exeter: The Mint Press, 2005), 100.

28 Anonymous, *Certain Sermons Appointed by Her Queen's Majestie to be Declared and Read by all Parsons, Vicars and Curates Every Sunday and Holy Day in Their Churches and by Her Grace's Advice Perused and Overseen for the Better Understanding of the Simple People* (London: John Charlewood and Thomas East, 1587).

city's freemen. Addressing the Chamber in 1560 with the arbitration feedback from the Privy Council, he described the attributes of obedience and civic unity as being 'of suche force and effycacie, that therby all comonwelthes and all estates are preserved and kept, and without them all are turned to utter ruyn and desolation'. He went on to make an analogy with the city's walls;

[O]ur concorde and unitie amonge o' selves sholde be suche as that it sholde be a spectacle to the whole countrie adioyning to beholde: it is walled roudeabout wth lyme and stone, even sholde we fast ioyned one to another wth the hoate lyme of love and unitie and wth the sande of obedience wch shall better defend us than any wall of stone be it never so stronge.²⁹

Exeter's civic and ecclesiastical authorities drummed home the message of obedience, unity and good order. The message served those in Chamber, who could call on indisputable central government backing and who even made strong analogies with the city walls which framed their daily lives.³⁰ Some individuals surely felt cynical and disengaged about such things, but the apparent general lack of disunity in the city and its thriving economy perhaps suggest that bar inattentive behaviour in church, the odd personal misdemeanours, court cases and punishments seen in the city's Act Books and Presentments of Nuisances, Elizabethan Exonians were mainly buying into the message and getting on with the day-to-day business of making money through trade and commerce.³¹

Revealing the middling sorts

Life in Exeter may well have been 'stable and conforming'. Yet where I most take issue with MacCaffrey's characterization of it as 'uneventful' is with his statement that, in contrast to the elite, wealthy merchant/councillors of the city, everyone else "seems hardly to emerge from the shadows of history. At best they form a kind of chorus for the actions of this little group of leading actors".³² The picture that emerges from closer archival research challenges this view, at least for some sectors of society.

When we apply prosopographical methods (i.e. collective biography) to Exeter's civic archives, a host of more 'ordinary folks' do indeed emerge from the shadows. This is hardly surprising. After all, the city had an exceptional number and variety of characters when compared to a rural village or small market

29 William Cotton, *An Elizabethan Guild of the City of Exeter: An Account of the Proceedings of the Society of Merchant Adventurers during the Latter Half of the 16th Century* (Exeter: W. Pollard: 1873), 106.

30 The second collection of homilies states that 'where there appeareth at these days great slacknes and negligence of a great sort of people in resorting to the Church and also much uncomely and unreverent behaviour of many persons in the time when they are assembled'.

31 DHC, ECA Book 100 Presentments of Nuisances at the Sessions of the Peace 1554–1588 and Books 1–6 Act Books.

32 MacCaffrey, *Exeter 1540–1640*, 246 and 282.

town. While Hooker's map presents it beautifully as spotless and quiet, Exeter's civic archives collectively reveal a host of people trying to survive the ups and downs of life; learning skills, making money and establishing households (or alternatively, being punished for idle or incontinent living). They bent the rules, annoyed their neighbours, contributed to parish life and took up minor public office. Though not overwhelmed by strangers, native city dwellers were joined by the unfamiliar faces of ambitious migrants from within the British Isles and overseas, who could, if they had the will and good luck, make money and rise through the civic ranks. They were also joined by desperate, wandering homeless people – the latter always a potential source of trouble in the eyes of authority.³³

By unearthing incidental information on the roles, contacts, activities, alliances and material culture of individuals who are not among the elite, their richly complicated lives start to emerge.³⁴ My research involves systematic analysis of a wide range of civic, parish and personal documents. Most of these reveal individuals of interest to authority, either because they were expected to contribute money, perform some specific task or take on a particular responsibility. Some had broken the law, while others were mentioned in the *post mortem* affairs of those wealthy enough to leave wills and inventories. I have created a database comprising records made each time a personal name is found in the archives and undertaken some analytical gymnastics to separate people with the same name living simultaneously in the same parish. In this way it has been possible to recreate almost 100 outline biographies of 'middling sorts' of men (and a few women) who were not in the league of the city elite, though they would have styled themselves 'better sorts' at the time. They were identifiable by the relative value of their taxation assessments, their occupations, the parishes with which they were most closely associated within the city, the roles they undertook and the statuses they achieved. It is true that the 'poorer sorts' do remain elusive. Nevertheless, glimpses even of their lives emerge through this technique, and it corrects the concept of a monolithic 'chorus' of undifferentiated people.

The 'middling sorts' are just that – they pivot between the wealthiest elite and those who were nearer the bottom of society. They never made it to the rank of Councillor (although some were moving in that direction), but they were all freemen of the city sufficiently wealthy to have been assessed for tax, even if not making the largest individual contributions.³⁵ They dwelt in a wider range of parishes than did the city's elite and their occupations embraced craft trades, services, and provisioning to a greater degree than the elite, though some were merchants too. While the leading men were more likely to be armour providers at musters (as those assessed

33 *Ibid.*, 89–100; Mary Prior, 'Women and the Urban Economy: Oxford 1500–1800', in *Women in English Society 1500–1800*, ed. Mary Prior (London: Methuen, 1985), 102.

34 Kate Osborne, *Illuminating the Chorus in the Shadows: Elizabethan and Jacobean Exeter 1550–1610* (PhD thesis, University of Exeter) <https://ore.exeter.ac.uk/repository/handle/10871/24298> (accessed August 21, 2020).

35 Margery Rowe and Andrew Jackson, eds., *Exeter Freemen 1266–1967* (Exeter: Devon & Cornwall Record Society, 1973); Margery Rowe, ed., *Tudor Exeter: Tax Assessments 1489–1595 including the Military Survey 1522*, New Series, 22 (Torquay: Devon & Cornwall Record Society, 1977).

at a certain degree of wealth were bound to do), the middling sorts were more likely to be foot soldiers brandishing pikes or early firearms.³⁶ None of the city elite were of alien status, but several aliens did obtain city freedom and flourish in its middling ranks. While both elite and middling contributed to Exeter's poor relief scheme, the wealthier were more likely to be auditing it and the middling sort to be distributing its charity.³⁷ Those who acted as city councillors provided the city with its judges, the middling men with its jurors.³⁸ All this is in comparison with other men who were not freemen, who were more likely to live in the poorer, outer suburbs, more likely to be archers and billmen in musters, to be recipients of poor relief, and were the group in which an alien was much more likely to find himself. However, even this group were assessed for taxes, so in addition to these were those who were too lowly to feature in the records at all other than to have, perhaps, their births and deaths registered. These were people effectively described by what they did not do.

It is important not to overemphasize the strength of the aforementioned divisions. The documentary evidence is lacunary and incomplete at times and the results are necessarily somewhat impressionistic. Moreover, while it is possible to see a broad pattern of what seems to have been the prescribed roles for middling sorts of men alongside their occupational work, whenever some rule of behaviour or life stage was discerned, exceptions and overlaps could always be found – a case of 'grasping something of the reality of social identity'.³⁹ There was no hard-and-fast geographical zoning discernible either: the modest number of overseas migrants were not located in a particular quarter or parish but were absorbed into the population across the city. Inhabitants receiving parish poor relief were scattered in every parish (and the middling sorts could find themselves in poverty in times without insurance, pension schemes or savings banks). Occupations other than the 'industrial' ones were likely similarly spread around. There were no discernible ghettos within Exeter's walls.

There was, however, an official 'bridge' that middling sorts of men could take to make inroads into moving into the ranks of the elite. That was the role of bailiff or steward – an inspector-level status which appeared to act as a testing ground for potential candidates for councillorship, and one which was pertinent to the development of the *Hidden Exeter* Trail.

Four stewards were appointed each year and Hooker summarized their purpose.⁴⁰ They

ought to be men very wyse auntyent and grave and of greate experience as also indowed wth suche vertues conditions and qualities as be required in governors of the commonwealth. . . . [T]hey have a special care aswell for the conservation of the private citizens as of the whole bodye of the common-welth.

36 Thomas L. Stoate and Arthur J. Howard, eds., *Devon Muster Rolls* (privately published, 1977), 246–249.

37 DHC, ECA, Book 157, Accounts of the Poor.

38 DHC, ECA, City Quarter Sessions Rolls of the Peace, N13–09 1569–1610.

39 Jonathan Barry and Christopher Brooks, eds., *The Middling Sort of People: Culture, Society and Politics in England 1550–1800* (London: Palgrave Macmillan, 1994), 24.

40 Harte, Schopp and Tapley-Soper, *The Description of the Citie of Excester*, 807–808.

Specific roles included keeping their own court, being Clerks of the Market and seeing all weights and measures were correct, ensuring that bakers and brewers kept to their assize, searching for ‘idle and evell disposed persons’, removing ‘annoysaunces’, ensuring night watches in the summer were kept and making sure candle light was put outside doors in the dark winter nights. Hooker also notes that stewards ‘may not lye any night out of the Citie or depte out of the towne in any journey without lyciens of the Mayor’. It comes as no surprise to find that the first quality of a steward was to be ‘religiouse fearinge god and serving him principally in all godlynes and vertue’, even if this was, perhaps, just a standard line, rather like ‘must be flexible and adaptable’ is today. Bearing in mind the possibility that he delegated some of the less prestigious aspects of stewardship, a steward still had to be a believer in the divine imperative for obedience, unity and good order – or certainly had to sound like he was. So here was a role with an inbuilt need to notice and observe others and to know what was going on, particularly in public places. It was a role in a strong position to be able to reveal history hidden from the twenty-first-century visitors and it was a role held, in 1588, by Thomas Greenwood aged about 36. We do not know if he was picked for a specific reason or whether it was just ‘his turn’; most men who were appointed to this role held it once, though some twice.⁴¹

Thomas Greenwood – haberdasher and app guide

Thomas Greenwood was probably born around 1552 and obtained his civic freedom in February 1577.⁴² His occupation was that of haberdasher and his *post mortem* household inventory compiled in 1592 reveals that by that time he lived in a large, well-appointed house filled floor to ceiling with over 600 hats.⁴³ Haberdashers made and dealt in hats and caps while also selling small articles concerned with dress. Other men in Exeter were described as hatmakers, often immigrants, so it may be that Thomas was as much a dealer as a maker, although there were both finished hats and the fabrics for making them in his house. Thomas was not an immigrant, but came from a well-established family. His father William Greenwood had also been a haberdasher and at one time Keeper of the Cloth Hall, a position of some importance and respectability.⁴⁴ Thomas married Joan Barrett in June 1577. It may well have been that Joan was making hats alongside Richard Barrett, either her brother or perhaps her son from a previous marriage, and who had for the past 6 years been Thomas’s apprentice.⁴⁵ Thomas and Joan Greenwood

41 Alexander Jenkins, *The History and Description of the City of Exeter and Its Environs Ancient and Modern, Civil and Ecclesiastical* (Exeter: P. Hedgeland, 1806), 132.

42 Rowe and Jackson, *Exeter Freeman*, 93.

43 Jannine Crocker, ed., *Elizabethan Inventories and Wills of the Exeter Orphans’ Court Vol 2* (Exeter: Devon & Cornwall Record Society, New Series, Vol. 57, 2016), 284–296.

44 Vernon F. Snow, ‘John Hooker’s Circle: Evidence from His New Year’s Gift List of 1584’, *Devon and Cornwall Notes and Queries* 33 part 8 (1977): 317, 324.

45 DHC, C.A.T. Fursdon (trans) *St Mary Major Parish Registers vol 1 Marriages 1561–1837* (1933) [no page number]; Rowe and Jackson, *Exeter Freeman*, 101.

leased and occupied their substantial house in the parish of St Mary Major. This was not among the poorest nor the richest of parishes – and all parishes had their share of impoverished and well-to-do individuals – but it was a respectable one as John Hooker lived there too.⁴⁶

Thomas and other Exonians appear often enough in these records that we can locate him at the nexus of a web of human links that connect with certain sites in and around the city. In Southernhay, the field outside the walls used for mustering men to carry out ‘views of armour’, he would certainly have interacted with Giles Carpenter, the Muster Master, and William Knowles, the city armourer.⁴⁷ Within the walls of this small city, he would certainly have encountered Laurence Barcombe, proprietor of the Bear Inn and fellow churchwarden, or John Jones, one of Exeter’s most famous goldsmiths.⁴⁸ Parish registers tell us John’s daughter Alice was married to Thomas Bridgeman, another caliverman and Greenwood’s landlord.⁴⁹ He must surely also have known Gilbert Limbery, another hatmaker who had died only two years previously.⁵⁰ To these can be added individuals Thomas may have casually encountered who appear in the records in public places during his lifetime, such as Henry Milford, the Eastgate porter who was removed from his post in 1592 because of his failing eyesight.⁵¹

Mutual reinforcement

The network of Thomas’ known and likely contacts allows us to use him as an informed guide to the series of places visited along the *Hidden Exeter* trail that once accommodated significant sixteenth-century public practices. These de Certeau-ian practised spaces include the Guildhall (the seat of city governance), the

46 John Hooker was a churchwarden of St Mary Major and was assessed for tax between 1557 and 1586 in the same parish. Thomas undertook a variety of civic roles and actions, as did other men of his calibre, for example, supporting the call for funds for ships against the Armada and signing the Bond of Association to avenge the Queen in the event of her assassination (Beatrix Cresswell, ‘The Exeter Bond of Association with Some Notes on the Signatures’, *Trans Devonshire Assoc* 44 (1912): 226–227; DHC, ECA, Act Book 5,555). In 1586, he was assessed for tax at £8 in goods; definitely among the wealthy, though not the wealthiest of men but sufficient for him to be appointed a steward aged around 36 (Rowe, *Tudor Exeter*, 69). He appears in a 1584 list of recipients of one of John Hooker’s New Year gift pamphlets, the proof that the two men certainly knew each other and that Thomas probably moved in the kind of circles that would help any advancement in life he might have sought (Snow, ‘John Hooker’s Circle’, 317, 324). What Thomas did not know, of course, is that he would die in 1592 aged about 40, leaving an estate worth around £547 – a very considerable sum – but unable to fulfill any further political ambitions he might have had. His funeral costs were set out in his inventory and included a headstone and ‘blacks at London & Exeter’, revealing that he was not just a provincial trader (Crocker, *Elizabethan Inventories*, 296). The costs ran to £32, not outrageous for a man of his standing and well within the prescribed limits for such expenses (Harte, Schopp and Tapley-Soper, *The Description of the Citie of Excester*, 484–485).

47 Stoyle, *Circled with Stone*, 89; DHC, ECA, Act Book 4, 912.

48 DHC, ECA, Act Book 4, 434; TNA PROB 11/66.

49 DHC, ECA, Miscellaneous Roll 73; Crocker, *Elizabethan Inventories and Wills*, Vol 2, 296.

50 Rowe and Jackson, *Exeter Freeman*, 98.

51 DHC, ECA, Act Book 5, 221.

busy High Street (for shopping and public punishment), the East Gate (for movement control), Southernhay field outside the walls (for large gatherings), the walls themselves (once defensive, now becoming a quarry and leisure walk), the White Hart Inn (for drinking and gossip), the Great Conduit (for water supplies and a central viewing point across the city), St Petrock's church (for approved worship) and finally the Cathedral Close graveyard (for burials but also less sober activities). These were elected for the *Hidden Exeter* trail, both because they were central nodes of early modern social life and because the research of other scholars reveals pertinent associations with material culture.⁵² The further characteristic that ties them together is that all had some formal controlling impact on everyday life and all resonate with Thomas's central concern and talking point – the imperative to maintain good order within the city. Thomas' route through Exeter covers approximately 1.5 km/1 mile, and the physical act of walking it (and to a lesser extent the virtual equivalent) takes roughly one hour to complete at a moderate walking pace. This emphasizes the compact scale of the city in 1588 in comparison to its much expanded version today. Within a few paces, the user encounters elements of the early modern built environment where familiar, if not everyday, activity took place. Their inescapably powerful influence on individuals, particularly in relation to obedience to authority, is something that we are, perhaps, not accustomed to today.

The incorporation of material culture was developed in partnership with RAMM, which provided access to sixteenth-century artefacts and historic topographical works of relevance to the trail. These include protestant communion cups fashioned from melted-down Catholic chalices – one made by goldsmith John Jones; a pall or altar cloth, salvaged from the Reformation commissioners, unpicked, re sewn and repurposed; and a book reporting on a high-profile, Protestant propaganda debate. There are official weights and measures – commissioned nationally and at the heart of the local market economy along with a medieval carved statue of St Peter which used to overlook the city's main crossroads. Thomas notes many of these directly in his narrative, while a few are found in supplementary audio provided through 'Discover More' soundbites. *Hidden Exeter* thus lifts these artefacts out of their glass cases and recontextualizes them in the sites and situations where they were used. In so doing, it not only heightens the significance of the artefacts themselves but imagines activity back into the places to which they relate.

52 Mark Stoye's studies of the city walls, gates and the water system include much information on the human interaction with those features: Mark Stoye, *Circled with Stone*; Stoye *Water in the City*. Dymond's transcription of the St Petrock Churchwardens' Accounts reveals this parish's week-by-week reactions to the Reformation and its impact on church fabric and furnishings; Dymond, 'A History of the Parish of St Petrock, Exeter', 402–492; Nicholas Orme's study of the Cathedral, including its graveyard, draws attention to human activity not now associated with burial places: Orme, *Exeter Cathedral*, 23, and Blaylock's analysis of the Guildhall draws attention to its built history and its functions: Blaylock, 'Exeter Guildhall', 123–178.



Figure 7.3 Southernhay, Exeter. © Kate Osborne

The Southernhay site (also known as Croiditch) serves to illustrate how place, story and artefacts work together to emphasize the importance of good order. Southernhay is clearly depicted on Hooker's map, an elongated space immediately outside the city wall. There is no hint of its significance in the Tudor period as a military inspection parade and training ground. Today it comprises grassed areas with mature trees surrounded by parked cars and offices. It is an area through which people walk rather than a destination in itself, except for office workers during summer lunchtime. In Elizabeth's reign, it was where all Exonians between 16 and 60 had to muster when the Queen demanded it, forming a citizens' army for defence of the realm. After 1573, 'trained bands' were formed involving men most



Figure 7.4 Armour displayed in RAMM Museum. © Kate Osborne

suited to armed combat; Thomas's use of a long gun as a caliverman gives us some sense of his status, strength and skill.⁵³ In the 1580s, authorities had the threat of Spanish invasion very much in mind. Wealthier men provided their own armour and Thomas had listed in his inventory 'olde harness' or body armour, alongside both musket and caliver guns. Others wore kit provided by the city, polished up and repaired by the city armourer, William Knowles. Much of this armour was

⁵³ Lindsey Boynton, *The Elizabethan Militia 1558–1638* (London: Routledge and Kegan Paul, 1967), 16, 91, 105–106.

cheap, imported and of low-quality, reflected in the pieces at RAMM, which may even have been the leftovers that fitted no one, hence their survival in the city's ownership. The practised space on this occasion is that of a training session or a 'view of armour' when men had permission to bear arms in order to be counted and inspected, so that the state of defence could be assessed. Earlier musters had gathered over 400 men.⁵⁴ The threat to the commonwealth and to good order is potential attack from a foreign, catholic enemy, and the civic unity required for the good of all manifests itself as unquestioning obedience to the Queen's demand for an instant army. It may also be (though it cannot be proved) that such was the city's perceived loyalty at the time of the Armada in 1588, Elizabeth I granted the city the honour of bearing the motto *Semper Fidelis* – Always Faithful – under the city arms.⁵⁵

In a slight twist on this theme, a set of waits' chains, now housed in the Guildhall and which once formed part of the city's official musicians' uniform, are contextualized through interlude music called 'The Hunt's Upp'. This tune was played by city waits when waking people up at the crack of dawn and was designed to irritate them out of bed. Thus, users can experience for themselves a genuinely strident Elizabethan awakening played on authentic instruments similar to those played by Exeter's own waits around the very same streets.⁵⁶

Conclusion

The writing of a historical app trail is a highly iterative process which juggles judgements involving a three-way contextualization. The focus is on arriving at the most compelling combination of sites, stories and artefacts: the artefacts provide concrete evidence of life stories, the stories provide human context for artefacts and sites, and the sites provide a physical theatre for life stories and artefacts. Like Southernhay, the sites themselves may have 'vanished' under a myriad of modern uses, and the stories they tell may have fallen out of common memory. Yet *Hidden Exeter* pulls them back into our consciousness as we walk the streets.

The choice of guide is critical. Thomas Greenwood leads us through Exeter in part because his biography was fuller than for most men. That biography allows us to reconstruct him as an apparently conformist but also an ambitious man with a privileged view of the workings of the city because of the extent of his activities and networks within it. It would have been possible to take someone from the 'poorer sorts', though this might have entailed a good deal more fictionalizing of evidence taken from a wider source base than Exeter's own civic archives, because the life stories for nearly all people at this level do remain largely

54 Stoate and Taylor, *Devon Muster Rolls*, 246–249.

55 Stoye, *Circled with Stone*, 69–71; MacCaffrey, *Exeter 1540–1640*, 19–23, 204; Gray, *Chronicle of Exeter*, xii–xiii.

56 PIVA: *Heigh Ho Holiday: English Dance and Ballad Music from the Renaissance* (CD, La Roque Recordings, 2010) www.piva.org.uk (accessed January 8, 2021); Hugh Lloyd Parry, *Exeter Guildhall and the Life Within* (Exeter: Exeter City Council, 1936), 157–160.

invisible. Having a better-evidenced, real-life individual who was (literally and metaphorically) going places seemed a stronger choice than inventing a life story from more generalized material.

Tracing the path or trail is made complicated by the fact that some buildings are no longer standing. Although they are partly visible through historic topographical depictions in museum collections, they slip from the mind's eye along with their purpose. Some spaces that remain may have lost their original function, like Southernhay, while others continue to function in ways shared with the past (church, pub, shopping street) and so become almost invisible through familiarity. The lives of those who left a lighter archival trace – or none at all – are largely forgotten and the less obviously exciting, tangible and routine aspects of urban life fade from view. Chief of these is the constant reminder of the need for 'good order'. Stories of triumphant resistance to rebel forces may be more prominent in the historic narrative, but reveal less about day-to-day life. Similarly, museum objects in glass cases are detached in time and space from the context that revealed their meanings. The place-based approach of *Hidden Exeter* enables all these hidden aspects to be teased out, reexamined and reassembled in direct relationship to each other in order to construct a fresh and spatial take on what an earlier generation of historians may have described as 'uneventful' history.

Of course, exciting stories would make excellent frameworks for future *Hidden Exeter* episodes. The 1549 'Commotion' is one example, though some skill is required to generate a narrative that moves through the city with enough relevant stops to build a spatial narrative – trails will struggle if all the action takes part within one street. A different historical character leading the walk also provides an alternative historical viewpoint, both physically and conceptually. Joan Redwood, one of the best evidenced women in Exeter's Elizabethan archives, will lead a second Exeter trail at approximately the same date as Thomas's walk. Her trail will take in different public spaces and personalities, approaching them from the perspective of a working, though quite wealthy baker's widow.

Another research piece arising from *Hidden Exeter* will focus on soundscape. While only incidentally referred to in Thomas's walk (through the city waits' music, the occasional reference to bells, drums and the implication of sound through description of activities), future work is planned around recreating the sonic experience of sixteenth-century Exeter. It may be possible to detect sonic zones generated by everyday activities within the city as well as from its rural hinterland, which ran right up to its walls. Moreover, Exeter had its bells: the curfew bell, rung from the largest church tower, other parish church bells calling people to prayer and the Guildhall bell, rung to summon Councillors to meetings. As a relatively small city, Exeter can provide a scale-contrast with studies such as Niall Atkinson's work on mapping the sonic territories created by the various bells of Florence and the acoustic subdivisions and overlapping boundaries he detects.⁵⁷

57 Niall Atkinson, 'Seeing Sound: Mapping the Florentine Soundscape', in *Mapping Space, Sense, and Movement in Florence*, eds. Nicholas Terpstra and Colin Rose (Oxford: Routledge, 2016).

We hope that *Hidden Exeter* encourages sustainable tourism and that it encourages more visits to RAMM to see the ‘real things’ among its early modern and other excellent collections and a greater appreciation of Exeter’s remaining and vanished historic buildings. The ultimate outcome, however, is that *Hidden Exeter* enables more people with an interest in Exeter’s history to understand better the significance of their cityscape and its intersection with urban history. The app’s layered approach to history, setting individuals drawn from the archives into the streets that remain and having them explain the rhythms of early modern life gives an immediacy to the understanding what it might have been like to have lived in the city 450 years ago.

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8 City of women

Mapping movement, gender, and enclosure in Renaissance Florence

Julia Rombough and Sharon Strocchia

When Marietta, a sixteenth-century silk worker, introduces herself in the *Hidden Florence* app, she is in the midst of a busy day running errands, visiting contacts, and moving about the city. By contrast, her well-born counterpart Niccolosa finds herself in a more reflective mood, musing on the dangerous mix of Florentine politics and religion that cost two of her sons their lives. Marietta and Niccolosa serve as character guides in two distinct digital history tours of Renaissance Florence titled ‘Marietta: City of Women’ and ‘Niccolosa: Saints and Sinners’. Both tours take participants through central Florence, stopping at a collection of well-known or rarely visited sites geolocated within the app. Each site has a particular resonance for the character guide, who offers insight into different dimensions of the city’s past. Niccolosa and Marietta reveal the Florentine cityscape as it is rarely captured in public history. Instead of touring conventional monuments to a glorious Renaissance past, we encounter a hidden world of women’s economies, forgotten networks of piety, lost political affiliations, and sequestered institutions off the beaten path. Together the characters provide a window into experiences of widowhood, motherhood, enclosure, and mobility that both enrich and transform our understanding of early modern women and the cities they inhabited.

While the tours complement each other, Marietta and Niccolosa are nevertheless distinct characters who voice markedly different perspectives on Renaissance life. We encounter Niccolosa on April 9, 1492, the day after the de facto ruler of Florence, Lorenzo de’ Medici, has died. The city is gripped by political and religious tensions, which are stoked by the fiery preacher Savonarola and his followers. We meet Marietta many decades later in 1561 when Duke Cosimo I de’ Medici (r. 1537–1574) is ushering in great political and civic change. Of particular importance are the class differences that distinguish the two women. Niccolosa hails from the Florentine urban elite, buoyed by commercial wealth and powerful political connections, whereas Marietta is an orphaned working-class weaver raised in the city’s charitable institutions. These class dynamics pattern the social and physical spaces each woman inhabits, and by extension the historical worlds to which they introduce app users. Taken together, the tours highlight some of the rich diversity of urban life in Renaissance Florence.

This chapter reflects on the process of creating the characters of Marietta and Niccolosa as digital tour guides for the *Hidden Florence* app. Constructing this

app was a highly collaborative and iterative endeavour. We proposed characters based on our research and worked out routes with Nicholas Terpstra, with assistance from undergraduate students. The characters were then developed by two other historians in the project, the routes site-tested, and the scripts revised. Finally, we added secondary ‘researcher’ audio, a critical element that unpacks key historical themes at each site.¹ The project offered us, as historians of gender, an unparalleled opportunity to introduce some of the most innovative scholarship about women’s historical experiences to a broad-based audience. From the outset, we aimed to add new layers to users’ experience of the city while also challenging conventional narratives about Renaissance Florence. We quickly discovered the demands of crafting engaging women characters whose lives have been elided in the historical record when selecting their visual likenesses, which help voice the characters and provide a visual throughline for users. Because no portrait existed for either figure, we chose the portrait of Lucrezia Tornabuoni, a Florentine widow of comparable age and status, as a proxy for Niccolosa (Fig. 8.1); and we drew from the abundant depictions of women’s faces painted in the Innocenti charity home to visualize the young silk worker Marietta (Fig. 8.2).

Creating the figures of Marietta and Niccolosa also highlighted theoretical issues about whose voices have been prioritized in public history and digital humanities projects.² The historical characters we aimed to depict were at risk of double erasure: first by being obscured in the archival record because of their gender and then by being hidden yet again in unfolding historiographies. Throughout this exercise in digital place-making, restoring women’s voices and experiences to the historical narrative remained our paramount objective. Ultimately, our efforts showcased the importance of taking an intersectional approach within digital humanities projects that considers how the dynamics of gender, class, and race amplified each other.

The first part of the chapter discusses the evidentiary challenges encountered in creating these character guides. Both figures are grounded in archival sources, yet their depiction required different interpretive choices. The character of Niccolosa was drawn largely from a historical person of wealth and privilege who left substantial archival traces. Pinning this figure to a specific individual raised thorny questions about the creative license historians can take with documented people, places, and events. In contrast, Marietta is a hybrid character who integrates multiple sources and experiences to create an accurate historical voice. While there were hundreds of women whose lives resembled Marietta’s, no single individual captures her life course exactly. Developing her character in a historically responsible manner thus required us to pursue a different kind of fiction in the archives.

1 We would like to acknowledge Daniel Jamison and David Rosenthal, who wrote the character scripts for both itineraries. We also thank Spirit-Rose Waite for generously sharing her archival research on the Innocenti with the *Hidden Florence* team.

2 See the essays collected in *Intersectionality in Digital Humanities*, eds. Barbara Bordalejo and Roopika Risam (Leeds: Arc Humanities Press, 2019).



Figure 8.1 Domenico Ghirlandaio, portrait of Lucrezia Tornabuoni. © National Gallery of Art, Washington, DC (open Access)

The second part of the chapter situates the tours within recent scholarship on mobility and enclosure in the early modern period. We consider themes of mobility in two ways: firstly, in relation to the emerging paradigm of the ‘city in transit’, with its interest in physical movement within and between urban spaces; secondly, in relation to tensions between mobility and enclosure that are particularly salient for the Florentine urban experience and women’s place in it. This Tuscan city boasted a wide variety of cloistered institutions – convents, shelters, charity homes – that served as spatial nodes for women’s social, economic, and religious activities. While these enclosures loomed large in the cityscape, their fortress-like



Figure 8.2 Bernardino Poccetti, detail from *Massacre of the Innocents*, 1610. © Museo degli Innocenti, Florence

exteriors posed obstacles for public history tours designed to be experienced from the street. Users of the *Hidden Florence* app can only view these buildings from the outside looking in. Exploring their hidden spaces through the lens of women's lives thus extends the reach of app itineraries in significant ways.

Finally, we consider pedagogical applications of *Hidden Florence*, showing how this locative app and its supporting website can enhance classroom teaching as well as public engagement. Both of the co-authors have used the app and related resources as a teaching tool in university-level courses, albeit in different ways. Here we consider how instructors might transfer what initially were onsite experiences into the classroom. At the same time, we recognized that transitioning the app from the street to the classroom recasts the very meaning of 'user experience', prompting us to think more broadly about how digital technologies enable different users to visualize early modern cities and their inhabitants.

Part 1: creating the characters

In his 1596 survey of Tuscany, the Englishman Robert Dallington noted that when the Tuscan husband 'goeth abroad, [he] locketh up his wife (not because he is jealous . . . but because it is the custom)'. Dallington went on to claim that there

was no worse fate in Italy ‘than that of a faire wife’, who in his eyes was ‘ever a prisoner’ and ‘no better than a birde in a cage’.³ The reality, of course, was far more complex. A wealth of scholarship has shown that Renaissance women had vastly different life experiences; nor can their lives be easily compared to ‘a birde in a cage’. Although they faced persistent structural inequalities, women and girls occupied a wide variety of positions that were vital to the functioning of Florentine society. Wives, widows, and unmarried women were always a visible presence in the city as they laboured, socialized, and animated public spaces. Upper-class women contributed to place-making through complex political manoeuvrings, relying on a potent combination of family alliances, charitable works, and patronage relations to exercise influence. Women up and down the social ladder propelled local cultures of piety, despite their absence from the pulpit and ecclesiastical office; in the process, they fundamentally shaped the nature of Florentine civic religion. Similarly, the Florentine economy depended on the labour of girls and women who undertook textile work, oversaw family businesses, and produced and marketed numerous goods and services. The visibility of all these women contrasted sharply with the sequestration of thousands of others in religious and charitable institutions, who nevertheless managed to cultivate extensive networks.⁴

Our aim in creating Marietta and Niccolosa was to highlight these complexities and illuminate the myriad ways that women both contributed to and experienced the urban landscape of Renaissance Florence. Throughout the tours, Marietta and Niccolosa introduce us to women and girls who run the gamut from nuns and nurses to sex workers, widows, and orphans. Tracing their everyday movements shows us how they formed an integral part of the urban fabric at every step. In guiding users around the city, these two characters also direct visitors to important places of sociability and communication, such as neighbourhood tabernacles and street corners that contributed mightily to the formation of factions and friendships. Marietta and Niccolosa also call attention to lesser-known urban sites such as convents and women’s shelters, where civic and ecclesiastical authority was simultaneously constructed and contested.

Yet as our team plotted itineraries and gave voice to the characters, one question surfaced repeatedly: how could we convey the ways in which patriarchy constrained women’s choices while still highlighting women’s creativity in navigating this system? As feminist scholars, we believed it was imperative to tackle this issue within the framework of location-based storytelling. Digital humanities projects like *Hidden Florence* aim to bridge academic and public audiences using innovative technologies. Because they stand at the forefront of emerging public histories, locative apps help to create ‘digital monuments’ that reconstruct the past

3 Robert Dallington, *A Survey of the Great Duke’s State of Tuscany in the Year of Our Lord 1596* (London: E. Blount, 1605), 64.

4 Sharon T. Strocchia, *Nuns and Nunneries in Renaissance Florence* (Baltimore: Johns Hopkins University Press, 2009).

in particular ways. Consequently, we need to think carefully about what material to present and in what ways. Here questions about women's agency merge with larger concerns about what is lost by failing to include diverse groups of people in historical accounts. At stake in our decision-making was not only a responsible representation of women's historical experiences but questions about how to construct an inclusive, holistic past. Far from being mere abstractions, these considerations impacted user experience in concrete ways. Whose stories were being told? Who could see themselves in these walks? In thinking through these questions, we wanted to avoid repeating timeworn narratives in which certain stories were privileged as a matter of course.

Other interpretive issues stemmed from using a disparate evidentiary base for each figure. The character of Niccolosa emerged from rich but fragmentary sources related to an actual historical person. Daughter of the wealthy wool merchant Alessandro Alessandri (d. 1460), the historical Niccolosa hailed from one of the few Florentine families that could rival the Medici in power and prestige in the fifteenth century.⁵ Despite the lack of firm dates for her birth and death – a not uncommon gap in record-keeping even for upper-class women – documents ranging from tax reports to testaments depicted her natal and marital households in some detail. Her five brothers married women from major Florentine families, continuing a social practice that allowed local elites to dominate civic affairs throughout the fifteenth century. Her two younger sisters also followed traditional patterns: one married, while the other became a nun.⁶ Niccolosa herself married well when she wed her neighbour, Antonio Pazzi, in 1434; his father Messer Andrea, who had amassed a fortune in banking, commissioned a magnificent family chapel built in the new 'Renaissance' style five years earlier.⁷ All of these family connections linked Niccolosa to the world of high politics and Renaissance art patronage during her own lifetime.

Records also indicated that Niccolosa – a literate, cultured woman who embodied traditional religious values – returned to her ancestral home after being widowed in 1451. Much of Niccolosa's life story revolved around the twin hubs of family palace and parish church; indeed, she epitomized the deep attachment to neighbourhood that conditioned so much of Florentine social life.⁸ The massive

5 The Alessandri split off from the main line of the Albizzi family in 1372 for political reasons. Both branches maintained a close relationship with the parish and convent of San Pier Maggiore; Strocchia, *Nuns and Nunneries*, 44–45.

6 On the multi-generational household occupying the Alessandri family palace in 1427, see Archivio di Stato (= ASF). Catasto. Vol. 80, fol. 73r. Marriages of household members are recorded by Pompeo Litta, *Famiglie celebri d'Italia. Alessandri già Albizzi di Firenze* (Milan: P.E. Giusti, 1819–1884), Tavola XXV. Niccolosa's youngest sister Gostanza entered the convent of San Pier Maggiore in 1433. ASF. San Pier Maggiore. Vol. 73, fol. 4r/v.

7 Lauro Martines, *April Blood: Florence and the Plot against the Medici* (Oxford: Oxford University Press, 2003), 62–82.

8 Nicholas A. Eckstein, 'Prepositional City: Spatial Practice and Micro-neighborhood in Renaissance Florence', *Renaissance Quarterly* 71 (2018): 1235–1271; David Rosenthal, 'The Spaces of Plebeian Ritual and the Boundaries of Transgression', in *Renaissance Florence: A Social History*, eds. Roger Crum and John Paoletti (Cambridge, UK: Cambridge University Press, 2006), 161–181.



Figure 8.3 Alessandri coat-of-arms, Palazzo Alessandri, Borgo degli Albizzi, Florence.
© Hidden Florence

Alessandri palace visibly asserted claims over its locale by displaying the family coat-of-arms on its facade (Fig. 8.3). Compared to most Florentine widows, Niccolosa enjoyed ample financial resources, which she used to support charitable efforts at her parish church of San Pier Maggiore, site of the family tombs.⁹ She

9 ASF. Notarile Antecosimiano. Vol. 172, fols. 35r-38r. Testament of Alessandro Alessandri, dated 15 May 1454. Alessandri bequeathed 200 florins to each of his daughters Brigida and Niccolosa, to be invested in real estate or government shares; he also granted them control over their dowries, which must have been substantial. Both women were granted lifetime usufruct of these funds, along with the customary right to live in their natal home.

frequently visited the adjacent convent, where she brokered favours and loaned money to the nuns, several of whom were close relatives. In fact, convent records often allowed us to break through documentary silences shrouding laywomen's lives. Spiritually self-confident women like Niccolosa were central to the city's charitable operations – dispensing alms, caring for the sick poor, sheltering vulnerable girls – that offered an avenue for practicing piety while proclaiming one's status.¹⁰ Yet Niccolosa's comfortable life was torn apart when two of her sons were summarily executed after participating in the bloody Pazzi conspiracy against the Medici in 1478.¹¹

Given this substantial documentary trail, we wondered how much liberty we could take in adapting her character for the app. To what extent could we fictionalize key episodes of her life story without undercutting its historical integrity? One flashpoint centred on choosing dates to increase the itinerary's dramatic impact. We wanted to capitalize on the proximity of two events that spoke directly to the walk's religious theme: the election of her sister Gostanza as abbess of San Pier Maggiore in 1489, which fulfilled decades of Alessandri family ambition¹²; and the death of Lorenzo de' Medici in 1492, which left a power vacuum filled by Savonarola. Had Niccolosa been alive to witness these momentous events, she would have been quite elderly. Still, it seemed within the realm of possibility to place her in this scenario, especially because we lacked a firm death date. And there was no question that Niccolosa would be the perfect guide to elucidate the complex interplay of Florentine politics and religion for visitors.

We faced another practical hurdle in designing Niccolosa's itinerary. Beginning in the central cathedral district, the walk needed to end at the church of San Pier Maggiore so that an augmented reality (AR) app, *Hidden Florence* 3D, could be connected to the *Hidden Florence* app.¹³ This venerable church formerly housed a luminous altarpiece painted by Jacopo di Cione in 1371, currently at the National Gallery, London. Although the church no longer exists, its loggia still fronts the small square that hosted a fascinating civic ritual, the fictive marriage between incoming Florentine bishops and the abbesses of San Pier Maggiore.¹⁴ With its innovative 3D reconstruction, this AR component provides an extraordinary opportunity to experience a representation of the fourteenth-century church in Florence while viewing its original altarpiece in London.

What resulted from these logistics was a compact route that highlighted both the significance of civic religious sites and the centrality of neighbourhood to Florentine women's lives. Moving from the pulsating city centre to a more granular

10 Strocchia, *Nuns and Nunneries*, 48–49; Nicholas Terpstra, 'Mothers, Sisters, and Daughters: Girls and Conservatory Guardianship in Late Renaissance Florence', *Renaissance Studies* 17 (2003): 201–229.

11 Martines, *April Blood*, 82, 101, 126–129.

12 ASF, San Pier Maggiore. Vol. 77, fol. 184v.

13 See Chapter 11 by Donal Cooper, Fabrizio Nevola, Chiara Capulli and Luca Brunke in this volume.

14 Sharon T. Strocchia, 'When the Bishop Married the Abbess: Masculinity and Power in Florentine Episcopal Entry Rites, 1300–1600', *Gender & History*, 19 (2007): 346–368.

neighbourhood environment, the itinerary captures what religion meant to Florentines at street level by introducing users to different topographies and scales of experience. Indeed, one advantage of using a female guide like Niccolosa for this tour was that her everyday movements effectively connected the grand urban spaces and themes of civic religion with the sacrality embedded in localized sites and environments. By kinetically linking the city centre to neighbourhoods closer to home, Niccolosa's route fully centres women within the narrative of Florentine civic religion while giving app users a novel perspective on it.

The first half of the tour guides participants through some of the most important religious monuments ringing the cathedral. These sites were bound together not only by proximity to the city's religious heart, but also by their common associations with the Florentine diocese, its founding myths, and its saintly bishops. Taken together, these early stops foreground the religious bedrock on which Florentine civic identity was built. Visitors begin the walk at the ancient church of San Salvatore, where episcopal decrees were signed, before moving to the legendary column of the first Florentine bishop San Zanobi (d. 417), and finally to the bust of the charismatic but humble Renaissance bishop Antoninus (d. 1459). All of these monuments would have been familiar to Niccolosa through ritual and liturgical activities as well as occasional visits.

The second half of the route then moves out to lesser-known neighbourhood sites in order to showcase their importance for female religiosity. Neighbourhood landmarks like tabernacles and shrines cultivated a shared sense of belonging and helped residents create mental maps of their environs. Florentine patrician women relied heavily on these sacred sites to build extensive devotional networks within their own neighbourhoods. By engaging in pious practices such as lighting lamps or placing flowers at these venues, Niccolosa and other neighbourhood women spun everyday patronage activities into larger webs of association. Hearing mass at the local convent church – another node of sacral power – afforded still other opportunities for devout women to visit kin, exchange information across class lines, and advance charitable projects.¹⁵ In sum, both the figure of Niccolosa and her itinerary present gendered insights into the complex interplay between Florentine politics, religion, and society.

Creating our other character guide, Marietta degli Innocenti, posed dramatically different evidentiary challenges. In contrast to Niccolosa, Marietta is a composite character whose life experiences are drawn from disparate archival records. Marietta tells listeners 'I started off' as low as you can get, an orphan, a *putta*, in the Innocenti' and boldly claims that 'just like a clock, this city is a machine with some sharp edges. Those who don't take care of themselves risk getting caught up in the gears'. Marietta's life journey traces a long arc. After being abandoned at the Innocenti foundling home as an infant, she matured in the Orbatello widow's asylum, which provided her with a modest dowry, before becoming a wife and later a widowed mother (Fig. 8.4) Like many other Innocenti wards, Marietta

15 Strocchia, *Nuns and Nunneries*, 39–57.



Figure 8.4 Turnstyle, Ospedale degli Innocenti, Florence. © *Hidden Florence*

took the name of the institution as her surname. These experiences, coupled with her lifelong involvement in the textile industry, echo the stories of thousands of impoverished and working-class women who survived the city's 'sharp edges' by navigating Florence's charitable networks and seizing opportunities wherever they presented themselves.

Records of working-class women like Marietta are both everywhere and nowhere in Florentine archival collections. Despite playing a crucial role in the urban labour force, women who were impoverished, enslaved, or lacked a discernible lineage left few records written in their own hand. Sources usually do not

record their direct speech; instead they paraphrase or filter their voices through the concerns of various urban authorities. This archival reality reflects the marginalized status of the working poor, making it challenging to evaluate these women on their own terms. Many surviving archival snippets are nevertheless profoundly revealing. For instance, the 1520 regulations of the Orbatello, where Marietta spent several years, prohibited ‘enslaved black, dark-skinned, and clay-skinned’ women from living in the complex.¹⁶ This brief reference indicates that Florentine custodial institutions were likely important sites for constructing racial taxonomies and hierarchies that must be taken into account in future research.

Despite these archival silences, working-class women like Marietta remain a consistent presence in written records. Glimpses of their struggles and successes are woven throughout diverse manuscript collections, such as those recording the daily operations of the Innocenti, which by 1579 housed over 1,200 children and staff.¹⁷ These sources provide a window into patterns of work, prayer, and fasting that shaped daily life for thousands of abandoned children. Similarly, petitions on behalf of women seeking entry into charitable institutions like the Orbatello document the difficulties poor widows faced and the networks on which they relied. One such petition dated 1553, written on behalf of the young, recently widowed Francesca, described her as a ‘most poor and honest person’; without aid, said the petition, she could not feed her three young children, leaving the family on the brink of starvation.¹⁸ The Orbatello was a lifeline for women like Francesca. Her petition, which highlighted both her precarity and her status as an ‘honourable’ woman deserving of charity, would have been evaluated by a group of older, established widows within the institution. Even though powerful men belonging to the Parte Guelfa officially governed the Orbatello, this group commanded authority in day-to-day affairs, often prioritizing their own friends and relatives for admission to the home.¹⁹

Throughout the tour, Marietta references her friend Antonia, who was one of the city’s many sex workers. The two women grew up together in the Innocenti and Orbatello; their shared experiences of orphanhood, poverty and institutionalization indicate how Florentine girls and women navigated their realities differently. By the time they enter the Orbatello, both are searching for economic and personal autonomy after years of close supervision. Marietta uses this time to solidify her connections within the city’s textile industry, which relied heavily on female workers in the low-paid processes of reeling and spinning, as illustrated in Fig. 8.5. While Antonia may have engaged in some textile activities, her chief occupation is sex work. Young women from the Innocenti moved into the Orbatello

16 ASF. Capitani di Parte Guelfa (= CPG), numeri rossi, 12, 234v. See also Richard C. Trexler, *Dependence in Context in Renaissance Florence* (Binghamton, NY: Center for Medieval and Early Renaissance Studies, 1994), 423.

17 Philip Gavitt, ‘Charity and State Building in Cinquecento Florence: Vincenzo Borghini as Administrator of the Ospedale degli Innocenti’, *Journal of Modern History* 69 (1997): 230–270.

18 ASF. CPG, numeri neri, 701, no. 94.

19 Trexler, *Dependence in Context*, 428–430.



Figure 8.5 Jan van der Straet (called Johannes Stradanus or Giovanni Stradano), *Women reeling silk* c. 1595, pen and brown ink drawing with washes. By permission of Royal Collection Trust/Her Majesty Queen Elizabeth II 2021

in increasing numbers in the late sixteenth century, prompted by administrators looking for ways to confront overcrowding and financial strain in the foundling home.²⁰ The Orbatello struggled to accommodate these new residents and ensure their compliance with house rules. Despite tight restrictions, the Innocenti wards quickly gained a reputation for illicit activity; some of them engaged in sex work and perhaps used the widow's home as a quasi-brothel.²¹

Marietta ends her tour near the public offices of the Onestà, the Florentine civic magistracy that governed the sex trade, where she plans to pay years' worth of Antonia's fines on her behalf.²² This act of friendship speaks to the varieties of social care in Renaissance Florence and the role of constructed communities in sustaining women's networks. Although many poor women relied on state organized charities, these civic operations often featured intrusive programs of

20 Lucia Sandri, 'Gli Innocenti e Orbatello nel XVIII e XIX secolo: "nocentine" e "gravide occulte" tra progetti e necessità istituzionali', in *Ospedale di Orbatello: Carità e arte a Firenze*, eds. Christina De Benedictis and Carla Miloschi (Florence: Edizioni Polistampa, 2015), 137–145.

21 ASF, CPG, numeri neri, 751, no. 70; Kate Colleran, 'Scampanata at the Widows' Windows: A Case-study of Sound and Ritual Insult in Cinquecento Florence', *Urban History* 36, no. 3 (2009): 359–378.

22 John K. Brackett, 'The Florentine Onestà and the Control of Prostitution, 1403–1680', *Sixteenth Century Journal* 24 (1993): 273–300.

discipline, surveillance, and ‘reform’ resented by recipients.²³ Informal support and peer charity was therefore an alternative form of social care to which many women turned as they navigated the city’s ‘sharp edges’.

Part 2: mobility and enclosure

Our understanding of early modern cities has been transformed by a renewed emphasis on the importance of mobility and migration to everyday life. Recent studies have shown that physical movement, especially in the form of walking, helped constitute meaningful spaces of sociability. Resisting a static view of the urban landscape, scholars have highlighted the fact that business transactions were frequently conducted while ambling down neighbourhood streets and that complex cultural exchanges played out on street corners or bridges.²⁴ Other studies have revealed how shifting spaces of sex work, which attracted a steady stream of clients, altered the tenor of certain urban zones, especially as Renaissance magistrates regulated prostitution by means of spatial strategies.²⁵ In short, rather than seeing the city as a collection of settled spaces, they have advanced an alternative model of ‘the city in transit’. Scholars have also shown that migration between distant locales was commonplace in early modern life. Here they have asked how and why early modern people moved into and around urban spaces; what residential and occupational patterns they established; and what kind of constraints and agency characterized migrant experiences.²⁶

The picture that emerges from this scholarship is one of diversity: early modern cities brought together a wide range of disparate groups into a shared urban space. Scores of newcomers – rural and foreign migrants, skilled artisans, displaced soldiers, enslaved peoples, religious converts, sex workers – flowed into urban hubs across the continent. Their exact numbers and origins hinged on local economic opportunities, spatial connections, religious affiliations, migration policies, and regulatory practices. Institutional mechanisms for monitoring new arrivals, as well as the possibilities for social integration awaiting them, varied considerably

23 Alessandra Camerano, ‘Assistenza richiesta ed assistenza imposta: Il conservatorio di S. Caterina della Rosa di Roma’, *Quaderni storici* 28, no. 82 (1993): 227–260.

24 Filippo de Vivo, ‘Walking in Sixteenth-Century Venice: Mobilizing the Early Modern City’, *I Tatti Studies in the Italian Renaissance* 19, no. 1 (2016): 115–141; Luca Zenobi, ‘Mobility and Urban Space in Early Modern Europe: An Introduction’, *Journal of Early Modern History* 25 (2021): 1–10.

25 Nicholas Terpstra, ‘Locating the Sex Trade in the Early Modern City: Space, Sense, and Regulation in Sixteenth-Century Florence’, in *Mapping Space, Sense, and Movement in Florence: Historical GIS and the Early Modern City*, eds. Nicholas Terpstra and Colin Rose (New York: Routledge, 2016), 107–124; Saundra Weddle, ‘Mobility and Prostitution in Early Modern Venice’, *Early Modern Women: An Interdisciplinary Journal* 14 (2019): 95–108.

26 Hilde Greefs and Anne Winter, ‘Introduction: Migration Policies and Materialities of Identification in European Cities: Papers and Gates, 1500–1930s’, in *Migration Policies and Materialities of Identification in European Cities: Papers and Gates, 1500–1930s*, eds. Hilde Greefs and Anne Winter (New York: Routledge, 2019), 3–23.

from one city to another.²⁷ This was especially true on the Italian peninsula, where each city-state had a distinct political structure and topography.

Recent location-based apps associated with the HERA-funded *Hidden Cities* project, which uses *Hidden Florence* as a template, incorporate this paradigm of the city in transit and its accompanying notions of diversity and inclusivity.²⁸ The principal character guide for *Hidden Trento*, for instance, is a German innkeeper named Ursula, whose very ethnicity highlights the cosmopolitan nature of this sixteenth-century Italian Alpine city. Similarly, the lead character for the *Hidden Deventer* app is the native-born Katharina Kerstkens, whose kinship networks afford deeper insight into the city's many female religious communities that catered to migrants, itinerant workers, and other newcomers. Adopting a different lens, the *Hidden Valencia* app reveals the social diversity of Renaissance urban life by showcasing the experiences of blind street singers in the early modern city.²⁹

Although early modern Florence shared similar patterns of mobility, its kinetic dynamism was at odds with the proliferation of enclosed institutions dedicated to the care of girls and women after 1500. Visitors to Florence remarked on the number and grandeur of newly built or expanded institutions ranging from convents and hospitals to orphanages and charity homes. Collectively these institutions housed thousands of residents living under strict regulations, often for their entire lives, resulting in overcrowded, cash-strapped establishments. This dramatic increase in both the number and size of female enclosures in sixteenth-century Florence can be traced to several factors. First, Cosimo I de' Medici initiated a more expansive, centralized system of civic charity that emphasized ideals of confinement.³⁰ His efforts were reinforced by shifting conceptions of social care as well as new welfare initiatives at the heart of Catholic reform, which stressed claustration and long-term institutionalization. Renewed religious zeal also contributed to soaring numbers of nuns and nunneries, although most religious women were cloistered involuntarily in order to conserve familial resources.³¹ Accelerating this spike was the greater integration of convents into circuits of political power and artistic patronage, both of which were fuelled by the familial ambitions of local elites. Female-centred enclosures also responded to the concrete needs of urban populations experiencing high levels of famine, plague, and economic stress throughout the sixteenth century. Finally, well-connected patrons used these institutions to satisfy their own interests; the Medici

27 Rosa Salzberg, 'Controlling and Documenting Migration via Urban "Spaces of Arrival" in Early Modern Venice', in *Migration Policies and Materialities of Identification*, 27–45.

28 For additional information, see www.hiddencities.org.

29 See Chapter 4 in this volume.

30 Nicholas Terpstra, 'Competing Visions of the State and Social Welfare: The Medici Dukes, the Bigallo Magistrates, and Local Hospitals in Sixteenth-Century Tuscany', *Renaissance Quarterly* 54 (2001): 1319–1355.

31 Jutta Spiering, *Convents and the Body Politic in Late Renaissance Venice* (Chicago: University of Chicago Press, 1999).

dukes, for instance, treated the Innocenti as a financial clearinghouse to procure loans and secure cash investments.³²

Tensions between these two faces of the Renaissance city – one in transit, the other sedentary – created significant interpretive challenges for situating women's experiences within urban spaces for two main reasons. Firstly, the meanings of women's mobility in the early modern period were multivalent. Reassessing the spatial categories of public and private, Danielle van den Heuvel has noted that urban spaces 'held multiple meanings that were constantly negotiated' through everyday use of the streets.³³ Residential spaces were never fully private; nor were contemporary notions of mobility associated solely with physical movement. Many Italian women and girls asserted their public presence by means of 'reversed contacts' as they looked and spoke from open windows, balconies, and doorways.³⁴ This interactive process of seeing and being seen (and heard) constitutes a hidden dimension of urban mobility by which girls and women contributed to the 'city in transit'. Issues of mobility and public engagement were even more complicated for cloistered girls and women. Neither Niccolosa's sister, the abbess of San Pier Maggiore, nor other nuns could traverse the city freely. Yet despite their apparent stasis, they engaged with family, friends, and associates who streamed into and out of their cloisters or sent letters and material goods. These rich exchanges sparked heated controversies around enclosure throughout the fifteenth and sixteenth centuries.³⁵ In other words, physical movement was not the only means by which Renaissance women participated in the 'city in transit' or created gendered geographies.

Secondly, experiences of mobility were fundamentally patterned not only by gender but also by class, social status, individual circumstances, and other factors. In general, patrician women like Niccolosa travelled in highly localized patterns; when they moved about the city, companions ensured their honour and safety. Even when carriages gained popularity as an elite mode of transportation in the sixteenth century, these mobile enclosures shielded patrician women from public view. By comparison, working-class women like Marietta often moved in wider patterns within and between cities that were determined by work, family, personal agency, and so forth. This increased mobility came with risks: local streets could also be 'mean streets'.³⁶ Girls and women lacking the shield of class or kin were

32 Lucia Sandri, 'L'attività di banco dell'Ospedale degli Innocenti di Firenze: Don Vincenzo Borghini e la "bancarotta" del 1579', in *L'uso del denaro: Patrimoni e amministrazione nei luoghi pii e negli enti ecclesiastici in Italia (secoli XV–XVIII)*, eds. Marina Garbellotti and Alessandro Pastore (Bologna: Il Mulino, 2001), 153–178.

33 Danielle van den Heuvel, 'Gender in the Streets of the Premodern City', *Journal of Urban History* 45, no. 4 (2019): 693–710, at 701.

34 *Ibid.*, 699; Elizabeth Cohen, 'To Pray, To Work, To Hear, To Speak: Women in Roman Streets, c. 1600', *Journal of Early Modern History* 12, no. 3 (2008): 289–311.

35 Strocchia, *Nuns and Nunneries*, 152–190.

36 Guido Ruggiero, 'Mean Streets, Familiar Streets, or the Fat Woodcarver and the Masculine Spaces of Renaissance Florence', in *Renaissance Florence*, 295–310.

far more susceptible to verbal and physical assaults, given the rampant nature of sexual violence throughout Renaissance Italy.³⁷ Navigating the city thus required continual caution, especially because the relative safety of certain streets could shift dramatically over the course of the day. Areas perceived as being safe for women during the daytime could become perceptibly more dangerous at night.³⁸

Responding to these complexities, the Marietta walk approaches gendered mobility by introducing sensory histories into the narrative. Although enclosed girls and women could not see the bustling streets beyond institutional walls, they could still hear the activities occurring there. Marietta references the sounds of sociability reverberating throughout city streets when young men gathered to gamble, play ball games, voice their grievances, and express a budding sense of manhood. Conversely, the sounds of bells and prayers emanated outward from the cloister, mixing with the ringing of the city's many civic bells to create a vibrant soundscape that echoed in multiple directions.³⁹ Many Florentine nuns perceived the frenetic urban soundscape as an unwelcome intrusion that could disrupt their sacred devotions and privileged religious status.⁴⁰ At the same time, these soundscapes enabled countless women who were enclosed involuntarily or isolated from institutional life to connect with people working or socializing nearby. Thinking sensorially as well as spatially thus allowed us to integrate women's enclosures into the larger urban fabric while registering the profound tensions riddling Florentine life.

Part 3: *Hidden Florence* as a teaching tool

Apart from its immediate functions as a locative app, *Hidden Florence* provides a tool for discovery in formal educational settings. Research-based apps like *Hidden Florence* present a range of pedagogical possibilities that can be adapted to various classroom needs and implemented at multiple learning levels. Both authors have successfully used the spatial and digital storytelling dimensions of *Hidden Florence* in the classroom, although in different ways.

Sharon Strocchia integrated the massive research platform undergirding these two itineraries into an upper-level university lecture course on the Italian Renaissance.⁴¹ The wealth of information on which the app is built offers a rich resource for igniting students' imagination and fostering historical understanding. Using a flipped classroom model, students moved through the walks at their own pace as

37 Guido Ruggiero, *The Boundaries of Eros: Sex Crime and Sexuality in Renaissance Venice* (Oxford: Oxford University Press, 1985).

38 Van den Heuvel, 'Gender in the Streets', 698.

39 Niall Atkinson, *The Noisy Renaissance: Sound, Architecture, and Florentine Urban Life* (University Park, PA: Pennsylvania State University Press, 2016) explores patterns of civic bell ringing in relation to political authority and urban space.

40 Julia Rombough, 'Noisy Soundscapes and Women's Institutions in Early Modern Florence', *Sixteenth Century Journal* 50 (2019): 449–469.

41 History 306, Fall 2020, taught by Sharon Strocchia at Emory University.

part of a group project. This assignment aimed to generate probing questions and informed responses about the experiences of Niccolosa and Marietta as part of a comparative investigation of Renaissance women's lives. Group members queried the characters' financial resources, social relationships, political power, personal agency, and scope of movement. This student research was then folded back into the classroom as groups shared their findings online and initiated focused discussions. Judging by the results, students appreciated the strong sense of personality and historical intimacy these life stories afforded. They also praised the way that digital storytelling helped them imagine a sense of place.

Taking a different tack, Julia Rombough and Nicholas Terpstra involved students directly in the creation of two *Hidden Florence* itineraries, 'Marietta: City of Women' and 'Ercole: Crime and Punishment'. Both walks were incubated in an upper-level digital humanities course which offered a unique opportunity to integrate public history, scholarly research, and pedagogical practice.⁴² Undergraduates worked alongside the *Hidden Florence* team to develop the initial characters and possible itineraries. These early iterations were site-tested in Florence by Terpstra and then edited within the context of the digital humanities course. After the course concluded, this material was handed over to the larger *Hidden Florence* team, who developed scripts using additional site-testing involving other students and researchers.

Developing character drafts and initial itineraries in the context of a digital humanities course allowed us to implement spatial and digital storytelling as an intentional pedagogical strategy.⁴³ Students learned about the history of Renaissance Florence while researching and workshopping possible characters and their itineraries. This interconnected process produced an environment where students acquired and applied knowledge simultaneously, rather than passively receiving information.⁴⁴ In crafting the location-based scripts, students strategized about how to communicate multilayered narratives in a succinct, compelling manner. Weekly discussions about possible walking routes and narratives created collaborative opportunities to think about women's historical experiences in an intimate way. To develop Marietta's character, students had to inhabit her world, which required both careful research and creative empathy. Digital storytelling thus allowed us to move beyond 'traditional' histories of the Renaissance, in which women's experiences are often obscured or treated as secondary.

As the character of Marietta gradually emerged, it served as a narrative thread that exposed students to varying representations of the city. The collaborative and iterative nature of this project meant that students and researchers could adjust

42 History 498, Winter 2018, taught by Julia Rombough and Nicholas Terpstra at the University of Toronto.

43 Rina Benmayor, 'Digital Storytelling as a Signature for the New Humanities', *Arts and Humanities in Higher Education* 7, no. 2 (2008): 188–204.

44 Jennifer M. DeSilva, 'Mapping the Transformation of Information into Knowledge in Early Modern Florence: Using the *Decima Project* to Assess Higher Order Thinking Skills through Student Reflection', *Teaching History* 45 (2020): 2–31.

scripts, tour locations, and character details, allowing flexibility in analysis and interpretation. As a result, several versions of Marietta were proposed. While not all proposals were included in the final script, they nevertheless centred student learning and produced valuable classroom discussions. For instance, students experimented with the idea of having Marietta visit a pharmacy as a way to foreground the important roles women played in Renaissance healthcare.⁴⁵ Although this particular stop was later scrapped, the discussion entered the final script when Marietta visits the Santa Maria Nuova hospital, where many nun nurses worked as healers.

The spatial element of *Hidden Florence* proved to be crucial from a pedagogical standpoint, allowing students to understand the topography of Renaissance Florence and its gendered implications in greater depth. This was particularly valuable in a classroom context where many students cannot travel to Florence. One student noted that, as a result of working on the project, ‘I was left with a much better understanding of Florence as physical space, rather than an abstract location simply mentioned within a historical narrative’. The ability to use the published app remotely is also an important option for users with mobility limitations, permitting a new type of access to the city and its history. Whether the *Hidden Florence* itineraries are used to introduce users to Florence for the first time or to enrich the understanding of people familiar with the city, the app can serve as a meaningful tool for teaching and public history.

Conclusion

As her tour ends, Marietta leaves her guests near the church of Orsanmichele and heads back to her loom to work on a new contract. This church, originally built as a market and granary, is a fitting place to conclude the tour. As the new Renaissance style took hold in the early fifteenth century, influential trade guilds commissioned statues of their patron saints to decorate the church exterior. Donatello’s figure of Saint Mark, guild patron of linen merchants, and Baccio da Montelupo’s statue of Saint John the Evangelist, protector of silk merchants, gave visual form to the intricate ways in which devotion, labour, and art were entangled in Renaissance Florence. Similarly, the patrician widow Niccolosa leaves her guests at another sacred site, the church and cloister of San Pier Maggiore. There she plans to pray at her family’s tombs before visiting her sister, the convent abbess. While this enclave was steeped in familial associations for Niccolosa, it also bore witness to the interlocking nature of Florentine politics and religion.

The two itineraries discussed here introduce a wide public as well as specific user groups to some of the key social structures and physical spaces that shaped women’s lives in Renaissance Florence. Taken together, the tours animate histories that are often neglected in conventional representations of the period. Developing the characters of Marietta and Niccolosa presented an opportunity to reflect on the

45 Sharon T. Strocchia, *Forgotten Healers: Women and the Pursuit of Health in Late Renaissance Florence* (Cambridge, MA: Harvard University Press, 2019).

importance of intersectional public histories that are engaging and inclusive. Collectively, we endeavoured to create figures that embodied the diverse experiences of premodern women, ranging from abandoned girls, sex workers, and cloistered nuns to working-class mothers and wealthy widows. Shaped by cutting-edge scholarship, their itineraries speak to the ways in which gender conditioned urban space and fostered tensions between mobility and enclosure throughout women's life cycles. Whether used onsite or in remote settings, these location-based stories open fresh pathways for understanding this remarkable Renaissance city.

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Part III



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9 *The Hidden Cities* apps

Digital engagement through geolocating museum collections

Suzan Folkerts and Rick Lawrence

1 Introduction

A distinctive aspect of the project design for the *Hidden Cities* app and website, developed as part of the Humanities in the European Research Area (HERA) funded ‘Public Renaissance’ research project, is the close collaboration between academic researchers and museum project partners.¹ It was important for the success of these collaborations that the research to be conducted, as well as the public-facing project outputs, would also be of value to our museum partners. In spite of the growing complexities of delivering this project during the period of the global pandemic (2020–2021), we were able to ensure productive working relations with our museum partners, in most instances through close dialogue with curators, who were able to work with members of our research team.² As has been discussed in the earlier chapters in this book, the geolocated *Hidden Cities* apps each provide historically accurate character-led stories through the early modern urban environment of five European cities, and in most cases connect places in the city to objects related to the material culture of public space, now housed in city museum collections. The identification of the itinerary and guide character, but particularly the selection of museum objects that relate to the themes addressed through each app trail, were reached collaboratively through dialogue between curatorial staff and the research teams.

1 The HERA funding scheme encourages the identification of non-higher education institution as ‘Associate Partners’; in our ‘Public Renaissance’ project, we approached museums from each of the five cities that would be the subject of the *Hidden Cities* apps. This chapter is composed of contributions by the authors that have been edited into a single contribution by Fabrizio Nevola, with Sabrina Corbellini. Very sadly Rick Lawrence died in the final stages of production of this collection.

2 We have held both all-team museum workshops (e.g. Exeter, July 2019; Trento, February 2020) and local project-development meetings with our partners; as the Europe-wide lockdowns project activity has been virtual, and in some instance staffing issues (e.g. furlough in the UK) have disrupted our original plans. The Public Renaissance team are very grateful to the many museum staff that have contributed to our project development. For an example of a virtual outcome of such collaboration, see our short project film: ‘*Hidden Cities* and Early Modern Pandemic’, www.hiddencities.eu/news/hidden-cities-and-pandemic (accessed February 23, 2021).

This chapter draws on two distinct contributions from museum professionals from our project partner institutions, to illustrate the quite different ways in which our project participated and contributed to the museum's activities. The first relates to the Athenaeumbibliotheek in Deventer, and focuses on the collaborative research work and how co-developing an app enabled engagement with objects from the collection that are otherwise quite difficult to explain to visitors, through narratives that highlight their mobility. In the second, from the Royal Albert Memorial Museum & Art Gallery in Exeter, the attention instead turns to more technical and practical aspects of user experience through digital engagement, to consider how the *Hidden Exeter* app operates within the museum's wider digital ecosystem. Our research focus on objects whose meaning directly derives from a contextualised understanding of those objects within the urban setting of particular early modern cities puts museum objects in motion, opening up the idea of 'museums without walls' through the affordances of augmented reality and locative media.

The chapter makes a strong case – from two quite distinct perspectives – of how locative apps are able to change the relationship between museum collections and their audiences, both through bringing the objects into direct contact with the sites for which they were originally created and by making these connections accessible to 'armchair' users outside the museum. As these two contributions show, such approaches can actively change how material culture – from fragile books, to ancient shop-signs – are interpreted, while the introduction of familiar new technologies – apps enabled by smartphones – build on wider strategies for extending the digital reach of these essential local, national, and international cultural institutions.

2 Books in motion: connecting with today's public through mapping and storytelling

2.1 Cooperation between the academic and heritage sectors

The Athenaeumbibliotheek is the oldest city library in the Netherlands, founded in 1560, when the city government purchased the books of the priest Johannes Phoconius after his death.³ Some decades later, when Deventer became a Protestant city, the religious houses of the city were closed, their books were confiscated, and were brought together at the city library. The library's name derives from the fact that from 1630 to 1873, it served as the library of the Athenaeum Illustre, a university without the right to award doctoral degrees. The Athenaeumbibliotheek continued to function as a scientific library throughout the twentieth century. Today, it is a heritage and research library, with a collection of around

3 J.C. Bedaux, 'De collectie van de Stads- of Athenaeumbibliotheek Deventer', *De Boekenwereld* 4 (1987–1988): 60–67. Unfortunately, almost no literature in English exists about the Athenaeumbibliotheek.

150 medieval manuscripts and fragments, 330 incunables, c. 30,000 early printed books, c. 750 modern manuscripts, 40 Middle Eastern and Asian manuscripts, and many other special collections (Figs. 9.1 and 9.2). It also houses the collection of the Academia Gelro-Zutphanica (Academy of the Province of Guelders), a university that operated in the town of Harderwijk between 1648 and 1811. These heritage collections are for the greater part hidden in depots. Some books are studied by researchers, some appear in exhibitions, and some are digitised. The Athenaeumbibliotheek is faced with the ever-pressing challenges of how to reach a broader public for these collections, how to unlock them in innovative ways, and how to increase their use.

In the process of creating the *Hidden Deventer* app, these concerns were narrowed down to two core questions: how can these hidden books be put in motion through narratives related to their early histories of use? How were these books shaped by the sociocultural context within which they interacted with residents of the city of Deventer, and how can users today recover an understanding of these interactions? As part of the cooperation with the academic research team of the ‘Public Renaissance’ project, the books of the Athenaeumbibliotheek were approached with a focus on histories, past contexts, and public space.

Deventer has no academic research and teaching university, so the Athenaeumbibliotheek has no natural local academic partner. There are some programmes at the local Saxion University for higher professional education that make use of our collections and knowledge, such as the History Teacher Training programme



Figure 9.1 Entrance of the Athenaeumbibliotheek at Klooster 12 in Deventer. © Pieter Leeftang, Deventer Fotokring



Figure 9.2 One of the five storerooms of the Athenaeumbibliotheek Deventer. © Pieter Leeftang, Deventer Fotokring

and the Applied Archaeology programme, but there are no academic research programmes in the Humanities. The institution therefore supports cooperation with academics and students from other universities, welcoming student interns, researchers, and professors who want to give a lecture on location or take their students on a guided tour. Cooperation between the library's specialist staff and academic researchers is maintained through conferences and publications, as well as through networks of libraries with special collections. What is more difficult is to bridge the gap between academia and our local and regional partners in the cultural heritage sector and engaging with the broader public.

In part this is a result of the fact that in the Netherlands, an expectation that academic research should involve outreach to a broader public was only introduced from 2010.⁴ Academics usually use historical materials as *sources* in an ongoing debate about our understanding of the past, through theoretical frameworks, new interpretation, and innovative readings of sources. On the other hand, museum and library professionals mainly view historical materials as *heritage*: tangible materials (and remains such as buildings) we inherit from the past and which are worth preserving and presenting, either as cultural, sociopolitical, or economic

⁴ From that year on, the Dutch Research Council NWO asked applicants to include a plan for outreach activities in their research proposals.

capital.⁵ The main purpose of heritage organizations is to interact with the public in order to give meaning to heritage together as a community.⁶ Heritage needs stories that can be explained to and embraced by the public, but these stories of meaning-making do not serve an academic debate, and they are seldom designed or reviewed according to new academic findings. It is evident then, that both the language and objectives of these two sectors differ quite substantially, albeit that there are evident overlaps.⁷ In fact, both academic and museum-based research is often informed by current societal debates, and museums often lead the way in framing collections through current issues, such as identity, canons, colonization, use of landscape, tourism, and entertainment.⁸ Interpretative frameworks – and indeed the stories we tell about the past and its material culture – change with each new generation.

As has been suggested thus far, cooperation between heritage organizations and academia is crucial in order to present heritage in innovative ways. A good case example for such collaboration can be seen in the participation of the Athenaeumbibliotheek as a project partner in the HERA-funded project ‘Public Renaissance’, in which academic research is closely combined with outreach activities. This is particularly the case with the audio-guided tour app *Hidden Deventer*, which uses a hitherto overlooked prayer book in the library collections as point of departure for a story about Deventer as a ‘City of Books’. This story of the role of books in the urban spaces of the late Middle Ages is complementary to the interpretation offered by the Deventer historical museum, the Archaeology department, and the city archive, which instead focus on the historical context of artefacts and monuments, the development of the city, archaeological findings in their historical context, and the stories of images, maps, charters, and

5 Phyllis Mauch Messenger and Susan J. Bender, ‘Introduction. History and Approaches to Heritage Studies’, in *History and Approaches to Heritage Studies*, eds. Messenger, Phyllis Mauch, and Susan J. Bende (Gainesville: University Press of Florida, 2019), 2; Gerard Corsane, ‘Issues in Heritage, Museums and Galleries: A Brief Introduction’, in *Heritage, Museums, and Galleries: An Introductory Reader*, ed. Gerard Corsane (London and New York: Routledge, 2005), 1–13; Brian Graham, Gregory John Ashworth, and John E. Tunbridge, ‘The Uses and Abuses of Heritage’, in *Heritage, Museums, and Galleries: An Introductory Reader*, ed. Gerard Corsane (London and New York: Routledge, 2005), 32.

6 Corsane, ‘Issues in Heritage, Museums and Galleries’, 3–4, 11.

7 In the seventeen years I spent in academia, I never heard historians talk about ‘heritage’, but only about ‘sources’. The gap between the two sectors was very clear to me when I attended a conference at the University of Groningen in 2019 on ‘Religious Heritage in a Diverse Europe. New Directions in Practice, Policy & Scholarship’. In a discussion between academics (panel ‘Historical perspectives on religious heritage’), I learned that heritage is seen as a creative engagement with the past, a construction which may not be true to history. Academics did not understand or appreciate the public outreach projects presented by the heritage professionals. They reviewed them as ‘superficial’, and not rooted in academic knowledge.

8 Corsane, ‘Issues in Heritage, Museums and Galleries’, 7–9; Robert Lumley, ‘The Debate on Heritage Reviewed’, in *Heritage, Museums, and Galleries: An Introductory Reader*, ed. Gerard Corsane (London and New York: Routledge, 2005), 15–27.

so on.⁹ Moreover, by selecting historical objects, sources, and data, the app ‘spatialises’ these data, allowing a dialogue between the information contained in *Hidden Deventer* with the same historical collections.

2.2 *Public space, connectivity, and books*

The medieval book collection of the Athenaeumbibliotheek and the history of Deventer in the late Middle Ages are strongly influenced by the religious movement of the Modern Devotion, which originated and flourished in Deventer in the fourteenth and fifteenth centuries.¹⁰ In their contribution to this book, Pieter Boonstra, Sabrina Corbellini, and Margriet Hoogvliet investigate the public role of the people and houses involved in this religious movement. Generally, stories about the Modern Devotion include the role of its founder Geert Grote, the houses of sisters and brothers of the common life, and the monastic communities that were inspired by Modern Devout ideals. In older Protestant historiography the Modern Devotion was seen as a lay movement, although more recently researchers have focused on the monastic and observant nature of the movement and on the *pragmatische Schriftlichkeit*, the textual culture of the movement.¹¹ Consequently, until recently, the houses and their inhabitants were studied without taking into consideration their surrounding urban environments. By contrast, the public role of the Modern Devotion and its visible presence in the Deventer cityscape, as well as the transmission of knowledge in relation to these physical spaces, have been foregrounded by the ‘Public Renaissance’ research. This spatial approach is given concrete form in the *Hidden Deventer* app, in which stories about the public interaction between citizens and religious people (and books) are literally put on the map (Fig. 9.3).

According to Jennifer Deane, space is an active, socially constructed participant in how and why things happen.¹² Understood in these terms, space is an important element in the reconstruction of lived experience, and informs the interpretation of late-medieval Deventer as a ‘City of Books’ in the app. While Deane

9 For more information about these institutions, see <https://museumdewaag.nl/?lang=en> (Museum de Waag) and www.deventer.nl/archeologie (Archaeology in Deventer). For an overview of objects from the historical Deventer collection, see www.collectiedeventermusea.nl/. The database contains a description of all objects from Deventer historical collections (accessed June 2, 2021).

10 The collection contains about 100 manuscripts belonging to the Deventer communities under influence of the Modern Devotion. About books in Deventer and the Athenaeum book collection, see Folkerts and Verhoeven, *Deventer Boekenstad*.

11 For a short overview and a bibliography, see Anna Dlabáčová and Rijcklof Hofman, eds., *De Moderne Devotie: Spiritualiteit en cultuur vanaf de late middeleeuwen* (Zwolle: WBooks, 2018); Van Engen, *Sisters and Brothers of the Common Life*, 1–10 (Introduction); Hildo van Engen and Gerrit Verhoeven, eds., *Monastiek observantisme en de Moderne Devotie in de noordelijke Nederlanden* (Hilversum: Uitgeverij Verloren, 2008); Nikolaus Staubach, ‘Pragmatische Schriftlichkeit im Bereich der Devotio Moderna’, *Frühmittelalterliche Studien* 25 (1991): 418–461, <https://doi.org/10.1515/9783110242232.418>.

12 Jennifer Kolpacoff Deane, ‘Medieval Domestic Devotion’, *History Compass* 11, no. 1 (2013): 67.



Figure 9.3 Map of Deventer in the atlas by Joan Blaeu, printed in Amsterdam in 1649, © Deventer, Athenaeumbibliotheek, 3004 D 1 KL

focused on domestic devotion, the domestic world of a laywoman named Katharina Kerstkens is linked in the *Hidden Deventer* app to the public space, with particular attention to places of knowledge. Katharina, an identifiable person who actually lived in Deventer around 1500, guides the app user to the print shop of Jacob of Breda to buy a psalter for her niece Agnes, a sister of the common life. She passes by the Latin school, the church of St Lebuin, and the Buiskenshuis (one of the five houses of sisters of the common life), which today houses the Athenaeumbibliotheek. Here, the library's books are put into motion through the app: Katharina was the actual owner of a prayer book, which is today kept in the Athenaeumbibliotheek (Fig. 9.4).¹³ Catalogued as a book from the Brandeshuis, it was only understood to be a book that connects lay and religious people when it was exhibited in 2018. The owner's inscription was deciphered and the remarkable story of the prayer book's exchange between Katharina and her nieces (or cousins) Agnes and Derck, sisters of the Lamme van Diesehuis and the Brandeshuis respectively, was ready to be told.¹⁴ As the introduction to the app states,

13 Deventer, Athenaeumbibliotheek, MS 101 E 9 KL.

14 The Dutch word *nicht*, which is used in Katharina's testament of 1539, can mean either cousin or niece. From historical sources, it is not clear which is the correct translation here. Collectie Overijssel-Stadsarchief Deventer, access no 0722 (Rechterlijk archief), inv. no 26q.

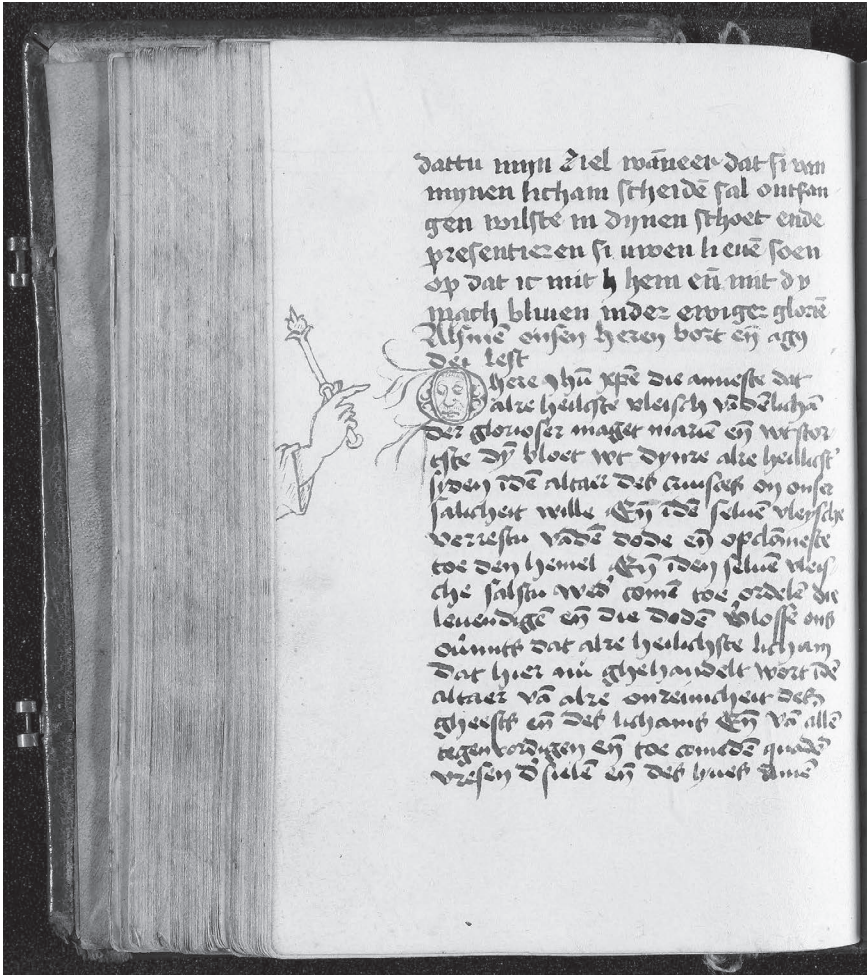


Figure 9.4 Prayer book of Katharina Kerstkens © Deventer, Athenaeumbibliotheek, 101 E 9 KL, fol. 97v

'Katharina shows how, even in a relatively small area, the city had several places where knowledge was collected and distributed, and she is able to move easily between them and take advantage of what they have to offer'.

A further point should be stressed regarding the relation between the app, the city, and Deventer historical collections. In the app, Katharina stops at places and buildings connected with books and more generally to the transmission of (religious) knowledge, offering the listener the chance to approach the city of Deventer as a museum without walls. Moreover, the information contained in the rubrics 'Discover more' and 'Read more' links the places and the spaces visited by Katharina

with objects from the collections of the Deventer historical museum.¹⁵ A case in point is the Deventer Franciscan convent, where Katharina stops on her way to the Lamme van Diesehuis, where Agnes is living.¹⁶ Katharina involves the listener in an overview of relevant topics for the reconstruction of ‘public religion’ in late medieval Deventer: the ‘visibility’ and ‘invisibility’ of religious men and women walking on city streets, the participation of the friars in activities organised by the city council, the presence of books in religious communities, and the availability of books through the organisation of libraries. Katharina’s narrative also contributes to linking the world of the religious with daily and practical activities. She also recalls how the first identifiable Deventer (and Dutch) bookseller had his residence and his bookshop close by the Franciscan convent, with a collection of books ranging from religious literature to astrology and medicine. The Deventer archives contain a unique document related to this bookseller, Wolter de Hoghe, including a complete inventory of his bookshop.¹⁷ In the ‘Discover More’ audio rubric, information on this archival document is shared with the user, who is made aware of the availability of books for religious and laity alike and of the nodes in Deventer’s book network. This reflection is enhanced in the ‘Read more’ for this site on the app’s website with a short text about the dissemination of religious information through preaching, as it was performed, for example, by the Franciscans. Combining information on the dissemination of books and texts with a description of preaching activities and their impact on the urban population, the app introduces the user to the process of dissemination of religious knowledge within the late medieval city.¹⁸

In this way, the *Hidden Deventer* app places the prayerbook in the world of its owners; it is placed on a map and connected to living persons in their historical cityscape. By mapping Katharina’s whereabouts in public space, and following in her footsteps, the lived experience of late medieval Deventer is brought to life for a present-day visitor. Walking with Katharina to her niece’s house, the user experiences how family connections, books, and knowledge strayed beyond the walls of religious houses. In previous work on book exchange in Deventer, the concept of connectivity was used as a lens through which to perceive this lived experience.¹⁹ Similarly, such connectivities are approached spatially through the exchange of knowledge and books between Katharina and her cousins. In this way, quite abstract theoretical approaches to space and connectivity are operationalised

15 The objects have been selected from the database containing the Deventer historical collections.

16 Stop ‘Engestraat’ is no 6 in the app *Hidden Deventer*.

17 CO-SAD, access no 0722 (Rechterlijk archief), inv. no 57, fols 46–47.

18 This point is further exemplified by an object selected from the collection of Deventer historical museum, Museum De Waag. It is a fifteenth-century carved bone handle for a knife. It is shaped like a friar, with a second face hidden in the hood of his mantle. This usual object is a material reference to the presence of friars in the city. See www.hiddencities.eu/deventer/engestraat (accessed June 2, 2021).

19 Suzan Folkerts, ‘People, Passion, and Prayer. Religious Connectivity in the Hanseatic City of Deventer’, in *Religious Connectivity in Urban Communities. Reading, Worshipping, and Connecting through the Continuum of Sacred and Secular (1400–1550)*, ed. Suzan Folkerts, NCI 1 (Turnhout: Brepols, 2021).

or embodied in the *Hidden Deventer* app, enabling the public to engage with both the historical evidence, but also with new academic insights. In so doing, this cooperation between the Athenaeumbibliotheek and the academic project team has put heritage books in motion in a truly innovative way.

3 Mobilising museum collections: the digital opportunity

3.1 From museum collection to digital engagement

The Royal Albert Memorial Museum (RAMM) is an archetypal English civic museum with diverse collections of over a million objects reflecting the city and region it is situated in, along with international collections.²⁰ In presenting objects digitally, RAMM has always aimed to provide an element of curation. Each object listed in the collections website includes at least an image and a brief description, while for digital content in distinct project websites, apps and exhibition interactives, the curation is more pronounced with increased metadata, interpretation, and related media. The foundation for all digital assets is the museum's collections management system (CMS), which contains almost a quarter of a million records, each recording an object or group of objects.²¹

New interpretations for museum objects can result from curator-led projects that can be initiated internally to the museum or through external collaborations, as for instance is the case with our involvement with the *Hidden Exeter* app, discussed subsequently. RAMM actively supports new research on collections objects, benefitting from research outputs by finding out more about an object or its context, while also promoting new research work through online features such as the 'research opportunities' in the Research Collection on RAMM's collections website.²² However, as with all museums, RAMM has a primary duty towards its audience and visitors, so that how research is presented is shaped by this priority, which also extends to drawing in new audiences – this also applies to how digital content is delivered. Audience identification and segmentation has become increasingly sophisticated over recent years, and where possible RAMM staff use their experience to identify digital assets that audiences may relate to for all new projects.²³

20 <https://rammuseum.org.uk/>.

21 In line with Arts Council England (ACE) accredited museums, RAMM's CMS conforms to the Spectrum standard for object metadata. See 'Museum Accreditation Scheme' Arts Council England, www.artscouncil.org.uk/supporting-arts-museums-and-libraries/uk-museum-accreditation-scheme (accessed February 9, 2021), and for 'The Spectrum Standard', Collections Trust, www.collectionstrust.org.uk/spectrum/ (accessed February 9, 2021). Records include acquisition source and method, location, research notes, web description, as well as images of the object and links to related content.

22 'The Research Collection – Opportunities', RAMM Research Collection, www.rammcollections.org.uk/curated-collections/?type=research (accessed February 9, 2021).

23 ACE-funded museums are supported by Audience Agency, for example their survey "Who Are Digital Audiences?", November 2020, www.theaudienceagency.org/asset/2444 (accessed

The traditional museum display gives a curator space for only a small interpretation label for each object, perhaps with a larger panel providing context to a group of objects. Digital can offer a wider canvas for interpretation, along with a choice of different media types to present with (images, audio, film etc.). Choosing the right medium for a project is challenging, but is essential for identifying an audience and defining the purpose of the interaction and user experience design. While there are diverse ways to do so, the recent Gift project (and website) provides a useful toolkit for planning and development, co-produced with a range of stakeholders, for museums that wish to adopt effective digital engagement for visitors.²⁴

There is no single right answer to digital engagement, and the connections that interactions promote relate to their intended audience. In some instances, these may be defined in relatively broad terms as a specific audience like cultural tourists, or as with the current RAMM museum iPhone app, need to be sufficiently general for visitors to choose what content they wish to access and use.²⁵ At the other end of the scale, *The Exeter: A Place in Time* project uses Minecraft to deliver digital engagement and collections context, aimed at a relatively targeted audience of young people and games players. Each Minecraft world gives a built heritage context to the objects it contains; in the Tudor Exeter World, a player will encounter a tennis ball from the collections in a digital Tudor Exeter and learn about it there.²⁶ We knew this audience would ensure good digital take up and when we held Minecraft days at the museum maximum visitor capacity was almost reached on various occasions. This example is also worth noting as it delivered an experience that exists outside the museum and can be enjoyed anywhere in the world by the 126 million Minecraft players worldwide.²⁷

3.2 Digital engagement through websites, web-apps, and apps

There are pros and cons to all platforms for the delivery of digital content. Websites are cost-effective to create and easy to maintain, while web-apps provide website content wrapped up to perform like an app; both require an internet connection to collect information from a server. By contrast, a native app may be more expensive to create, but is downloaded and can be self-contained without an internet connection, even though some apps have to pull and/or push content to the internet. An examination of past projects shows how these different platforms deliver effective interpretation and engagement tools, while highlighting their associated challenges.

February 9, 2021); another key resource is 'Morris, Hargreaves and McIntyre, Culture Segments', www.mhminsight.com/culture-segments (accessed February 9, 2021).

24 'The Gift Project', Gifting Digital, www.gifting.digital (accessed February 9, 2021).

25 'A New Time Trail App', Museum News Story, <https://rammuseum.org.uk/new-time-trail-app/> (accessed January 21, 2021).

26 'Minecraft at RAMM', Young Visitors, www.rammuseum.org.uk/young-visitors/minecraft-at-ramm/ (accessed February 10, 2021).

27 'Statista – Minecraft', Minecraft Active Players, www.statista.com/statistics/680139/minecraft-active-players-worldwide/ (accessed February 4, 2021).

In 2012–2017, RAMM worked with the University of Exeter on a project called *Moor Stories*, which produced a website to encourage visitors to tell their stories inspired by the history of, and museum objects connected to, locations on Dartmoor – the large moorland district and cultural landscape west of Exeter.²⁸ Work with schools and groups did produce results, but the call to action was really superseded by social media developments, as the approach was quite similar to how people use Facebook and Twitter to show where they have been and what they did. A practical obstacle also emerged as all too often there was no mobile signal near the archaeological sites highlighted to users, meaning that they could not interact as intended. In 2013, the *Time Trails* project adopted GPS tagging to locate places connected to objects in a time period specific tour, related to Exeter City Football Club.²⁹ The research and development for the project resulted in an online web-app platform for curating tours called Placeify and inspired the current tours system used on the museum's *Exeter Time Trail* website.³⁰ Two key findings emerged from this work: the first is that mobile signal is seldom an issue in a city, the second that GPS accuracy is affected by a number of variables (service provider, phone model and operating system).

Apps have continued to form part of RAMM's digital engagement approach, through a range of experimental projects and exhibition-specific offers, which have tended to have good take-up from cultural tourists, interested in exploring aspects of the relations between museum-based collections and the urban and regional environs.³¹ In the more recent 'Kurt Jackson: Revisiting Turner's Tourism' (2016), visitors were invited to go to where the artist painted a work of art seen in the exhibition, presented an overlay of the painting over the contemporary view by using the smartphone's camera and augmented reality, and allowed them to swipe between the historic painting and a contemporary painting of the same view. The apps had good take-up, were promoted with tourist partners, and contributed to the marketing of the exhibitions. They also provided RAMM, its creative industries partners and researchers valuable practical experience in creating heritage and digital resources. We observe that mobile users prefer to use apps to websites, a trend that can be seen as a continuum from 2014 to the present, albeit of course that apps are more costly to create and maintain.³²

28 'Moor Stories' Web Archive, <https://web.archive.org/web/20140221105926/http://moorstories.org.uk/> (accessed February 6, 2021).

29 The project was delivered as part of a collaborative PhD project between the University of Exeter and RAMM: William Barrett, 'The Phenomenalisation of Heritage: Digital Interactions through Mobile Devices with Tangible and Intangible Heritage', PhD diss., University of Exeter, 2019, <http://hdl.handle.net/10871/36960>.

30 Placeify, www.placeify.co.uk/ (accessed February 5, 2021); 'Tours and Trails' Exeter Time Trail, www.rammtimetrail.org.uk/Go-Mobile/ (accessed February 5, 2021).

31 For example, app related to the exhibitions, 'Masters of the Moor Exhibition' (2013) and 'Kurt Jackson, Revisiting Turner's Tourism' (2016), www.rammuseum.org.uk/past-exhibitions/ (accessed February 3, 2021).

32 'Apps More Popular Than the Web', Guardian Technology Blog, www.theguardian.com/technology/appsblog/2014/apr/02/apps-more-popular-than-the-mobile-web-data-shows (accessed February 4, 2021)

However, even with an app providing content in a visitor's hand, GPS accuracy remains a consideration within the museum, where GPS accuracy fails to provide a good user experience. Although Bluetooth Beacons and WiFi systems provide alternatives to GPS indoors, our most recent (2018) in-gallery app adopted a static map that the visitor orientates and zooms manually instead, as this provides a more stable experience.³³ A further essential consideration with any form of digital engagement is accessibility.³⁴ In the UK in 2018–2019, one in five people reported living with a disability, so it is important to apply best practice to avoid unintentionally excluding visitors.³⁵ With locative apps a basic consideration is: can a physically disabled or visually impaired visitor access a location safely? Making the digital product as accessible as possible is beneficial to visitors and ensuring wider take up of the product. This may mean adding captions to videos or simply ensuring user-determined accessibility controls on hardware and software will work with the content.

3.3 Using digital to provide context and engagement with collections

Objects come to museums from many sources but very few originate in the museum itself. An app, like the set of *Hidden Cities*, offers a great way to place objects close to or even in their original context, bridging the gap between museum case and the outside world. Digital media can provide a way to relate the object to its original setting and circumstances, taking the visitor and the virtual object beyond the museum. An example of such an object is the sculpture 'St Peter tramples the Devil' (Fig. 9.5).³⁶ Originally situated at Carfax, a central point in the city, the figure is dated to 1500 and was only removed from outdoor display roughly a century ago. Seeing the object today, in the gallery with a small interpretation text, is a limited experience because it cannot deliver a sense of place and context around the object. Digital technologies allow us to match images and information about objects like this with their original location and put them into a historical context. This mix of modern location, information, and images about the past gives a visitor a richer interpretive experience and can stimulate imagination and reflection.

and 'UK Internet Use 2019', OFCOM Report 2020, www.ofcom.org.uk/about-ofcom/latest/media/media-releases/2020/uk-internet-use-surges (accessed February 8, 2021).

33 'RAMM Museum App', RAMM Time Trail App, www.rammuseum.org.uk/new-time-trail-app/ (accessed February 4, 2021); for an example of the difficulties of using iBeacons, see the experience of Bristol Museums: 'iBeacons our experience', Hidden Museum App, www.labs.bristolmuseums.org.uk/ibeacons-our-experience-in-the-hidden-museum-app/ (accessed February 5, 2021).

34 'Family Resources Survey 2018–19', UK Government Reports, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/874507/family-resources-survey-2018-19.pdf (accessed January 27, 2021).

35 Website accessibility on central and local government owned or produced websites is part of equality legislation in the UK: 'Making online public services accessible', Accessibility Regulations, www.accessibility.campaign.gov.uk/ (accessed February 5, 2021).

36 www.hiddencities.eu/exeter/carfax-st-peter (accessed May 24, 2021).



Figure 9.5 Unknown sculptor, ‘St Peter tramples the Devil’, oak wood polychrome sculpture, late fifteenth century. Originally installed on the junction of High Street and North Street, Exeter. © Royal Albert Memorial Museum & Art Gallery, Exeter City Council

The *Hidden Exeter* app uses a historical character to engage the user, a well-established museum technique, that can also be delivered in print, on interpretation panels, through video or audio accessed online or directly in galleries displays.³⁷ Using characters is a key part of the app and careful selection resulted

³⁷ Among many examples, see the 2020–2021 lockdown ‘Captain Woodget: Master of Cutty Sark’, Historic Hits YouTube Channel with Royal Museums Greenwich (accessed January 27, 2021) www.youtube.com/watch?v=_pCN7fTrzYU.

in a character for Exeter that could illuminate as much about life in Tudor Exeter as possible. An advantage of using a character guide is that it gives the content authenticity it might otherwise lack, although connecting them with objects brings its own challenges. A character may be ideal in terms of locations and itinerary but a poor match to museum objects or vice versa. This is where collaboration between researchers and curators forms an essential part of the process of providing background research about an object that gives it a context that unites the object and character. Getting this fit between objects and character both authentic and credible to the visitor ensures a better user experience and satisfaction.

Today, more than ever, content quality is essential as users have become accustomed to well-designed digital products at heritage and museum sites, and visitor expectations are far higher. For example, only three years ago, most videos did not have captions but now museums realise the importance of captions not only for disabled visitors but for social media and other users viewing content in public places. Related to this is the decision about whether content is for the solo user or a group. A solo experience can be more immersive, but a group, social experience can create memories, for example a family might recall: ‘Do you remember the time we explored Exeter with a centurion?’ The question of devices to be used is also important; until the 2020–2021 pandemic, tablets handed to visitors provided an option of a group experience with a shared device. A larger screen size facilitates more interactivity, such as digital reconstructions overlaid as augmented reality, so that visitors see structures that are no longer there in their original context.³⁸ It seems likely that ‘bring your own device’ approaches, delivered as apps for personal smartphones will dominate the sector in the period following the pandemic, although larger screens do mean such interactions are not restricted to individual visitors.

In addition to the device type, the different media chosen also influences the level of engagement. Usually, media use in museum contexts is passive with a visitor looking or listening or both, although active engagement can be achieved by simply adding share buttons to a digital project. Various approaches can be adopted to enhance such engagement, for instance by fostering co-production of knowledge by users contributing to a project, or by inviting the user to interact with a site that has changed over time and comparing visually past and present.³⁹ The benefit of audio, as used in *Hidden Cities*, is that it gives the visitor’s imagination free reign to picture the people and places described, while encouraging the user to focus on the surroundings of the location they are in (as opposed to the screen!). The use of a character to connect history, place, object and visitor gives the experience a vital personality to engage with.

38 For example, see the Falstad (Norway) ‘Digital Reconstruction’, The Falstad Centre, www.falstadsenteret.no/en/hva-skjer/exhibition/digital-reconstruction (accessed February 4, 2021); also the *Hidden Florence 3D* app discussed in this collection.

39 For instance with the *Moor Stories* discussed above, or ‘The Gift Experience’, The Gift Box, www.gifting.digital/gift-experience/ (accessed February 5, 2021).

So, then, in the light of RAMM's experience and the considerations discussed earlier, it is worth asking what success might look like in a locative app? Without claiming too much for the suite of *Hidden Cities* apps, it is reasonable to observe that these fit a number of the criteria outlined here. The apps have a clear call to action to engage the visitor, in this instance by exploring a city's past with a real historic character. The use of objects within the interpretative framework of the app design (and its supporting website) fulfils the museum's desire to increase access to collections in a credible manner. Moreover, the dynamic by which the character and the objects share a physical and temporal context is communicated in a way that makes sense to the visitor. Based on the close collaboration between researchers and curators, the objects and the research around them form a part of the visitor's experience of interacting with the locations and the character that connects them, both inside the museum and in the surrounding city environment.

4 Conclusions

Hidden Cities changed our engagement with heritage objects in several ways. As both parts of this contribution demonstrate, the *Hidden Cities* app project not only brought heritage objects to the public in an innovative way, but also brought academic researchers and curatorial professionals together in order to communicate their knowledge via one framework – the *Hidden Cities* apps. The primary task of museums and heritage professionals is to narrate stories about heritage to a general public, whereas this is (mostly) of secondary importance to academic researchers. Through the collaboration, new academic insights and perspectives were introduced in a story for the general public. In the process of producing the *Hidden Cities* apps, curatorial findings were combined with the academic research on public space and civic communities. The technique used in the *Hidden Cities* apps makes it possible not only to present objects from the past within public space, but also to tell new stories about the past.

RAMM has worked on several collaborative projects to take objects outside of the museum. These have varied from simple trails with text and images to user created content in the wilds of Dartmoor. *Hidden Cities* allowed the museum to present a body of connected objects in a temporal and locative context that provides an experience for the app user. Past experience shows that using AR has been successful with audiences, but is costly to create. With the pandemic, consumption of digital content at home and through webinars or live streaming presents museums with an opportunity. This allows museums to reach visitors at home and, by offering experiences outside of the museum, to reunite objects with their original context, mediated through present-day interpretation. The audio element of *Hidden Exeter* has the potential to form the basis of museum and wider heritage podcasts. Again, the pandemic has seen a surge in podcasts with subscribers eagerly awaiting the next episode. While most museums may not be capable of producing audio content to the quality of *Hidden Cities*, the low entry costs to podcasting may allow for future expansion of audio on a subscription model.

Using a locative app to deliver guided character-based interpretation is a great way of letting visitors experience museum objects ‘in the wild’, so to speak. Collaborative projects bring resources and expertise to parts of the museum collection that might otherwise simply sit in their place in the gallery. *Hidden Exeter* has shone a light on objects with new research on their location, use, and context. For example, returning to the statue of St Peter, the wood carving style indicates it was made in a Low Countries or Germanic style and the *Hidden Cities* project confirmed the existence of immigrant communities from those areas in Tudor Exeter. Similarly, in *Hidden Deventer*, the prayer book of the laywoman Katharina, which was hidden in the depots of the Athenaeumbibliotheek, is introduced to public space through Katharina herself, who acts as a guide. Moreover, she demonstrates how religious knowledge was spread through and functioned in public space – a narrative which results from academic research. So then, for museums, apps can be a powerful tool in helping to make objects become mobile.

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10 Hidden in plain sight? AR apps and the sustainable management of urban heritage tourism

Tim Coles

Introduction

Urban tourism is a competitive business. These days ever more attractive offers and alluring messages are needed to draw-in visitors.¹ Place managers and business operators routinely seek ways to extract maximum value from those on day visits, short breaks, business trips or longer stay vacations. While visitation may be a central pillar of economic development, a delicate balance exists between marketing and management. On the one hand, there is a constant need to innovate: to offer new experiences, products and services; to attract more visitors and generate higher spend; and to be ‘one step ahead’ of competing destinations on the local, national and global stages. On the other hand, if too many visitors are attracted, their experience suffers and so too does the quality of life for residents.² In an era of social media and near-instant communication, reputational damage can be rapid yet enduring. Discourses about overtourism in many popular historic cities such as Barcelona, Dubrovnik and Venice attest to a problem that blights the *Hidden Cities* of Florence and Valencia, too.³

In one sense, overtourism is a consequence of the inexorable growth of international tourism, driven by the overwhelming pre-eminence of pro-growth tourism policies.⁴ In parallel, ‘smart’ approaches to tourism destination management⁵,

1 Waldemar Cudny, ed., *Urban Events, Place Branding and Promotion. Place Event Marketing* (Abingdon: Routledge, 2020).

2 Rachel Dodds and Richard Butler, ‘The Phenomena of Overtourism: A Review’, *International Journal of Tourism Cities* 5, no. 4 (2019): 519–528.

3 United Nations World Tourism Organization (UNWTO), ‘*Overtourism? Understanding and Managing Urban Tourism Growth beyond Perceptions*’ (Madrid: UNWTO, 2018). Aggelos Panayiotopolous and Carlo Pisano, ‘Overtourism Dystopias and Socialist Utopias: Towards an Urban Armature for Dubrovnik’, *Tourism Planning & Development* 16, no. 4 (2019): 393–410.

4 Freya Higgins-Desbiolles et al., ‘Degrowing Tourism: Rethinking Tourism’, *Journal of Sustainable Tourism* 27, no. 12 (2019): 1926–1944.

5 Dimitrios Buhalis and Aditya Amaranggana, ‘Smart Tourism Destinations’, in *Information and Communication Technologies in Tourism 2014*, eds. Zheng Xiang and Lis Tussyadiah (Cham: Springer, 2014), 553–564. https://doi.org/10.1007/978-3-319-03973-2_40. Josep Ivars-Baidal et al., ‘Smart Destinations and the Evolution of ICTs: A New Scenario for Destination Management?’,

especially in urban settings,⁶ have emerged. These have been positioned by their advocates as capable of delivering more sustainable tourism development in the face of significant growth. Digital ecosystems comprising various constellations of network configurations, platforms, apps, big data sets, artificial intelligence and so on provide a basis for ambitious, integrated solutions of destination-wide, real time scope.⁷ New products and offers ‘born digitally’ not only enhance experiences for current visitors by adding to the array of attractions and providing real-time data on what is happening around destinations. They also draw-in further visitors and they are able to spread the benefits of tourism more widely across destinations.

Many alternative reality apps have emerged to enhance visitor experiences,⁸ especially relating to urban heritage tourism.⁹ Although impressive achievements in their own rights in ‘making public history’, it is easy to forget that the *Hidden Cities* apps exist in broader tourism contexts and digital ecosystems. For all the intellectual and technical endeavour, a solely introspective gaze overlooks that public sector investors often support such apps with the expectation they will have positive effects on their host destinations. Moreover, while other chapters in this volume have a mainly humanities focus and methodological orientation, apps of this nature have been of considerable interest to, and speak to wider debates in, tourism studies which form the backdrop to this chapter. Local (cultural) heritage offers have long been recognised as differentiating urban destinations to prospective visitors.¹⁰ As more recent innovations, heritage tourism augmented reality

Current Issues in Tourism 22, no. 13 (2019): 1581–1600. Mariana Cavalheiro, Luiz Joia and Gabriel do Canto Cavalheiro, ‘Towards a Smart Tourism Destination Development Model: Promoting Environmental, Economic, Socio-cultural and Political Values’, *Tourism Planning & Development* 17, no. 3 (2020): 237–259.

- 6 Ulrike Gretzel, Lina Zhong and C. Chulmo Koo, ‘Application of Smart Tourism to Cities’, *International Journal of Tourism Cities* 2, no. 2 (2016), <https://doi.org/10.1108/IJTC-04-2016-0007>
- 7 Ulrike Gretzel et al., ‘Conceptual Foundations for Understanding Smart Tourism Ecosystems’, *Computers in Human Behavior* 50 (2015): 558–563; Kim Boes, Dimitrios Buhalis and Alessandro Inversini, ‘Smart Tourism Destinations: Ecosystems for Tourism Destination Competitiveness’, *International Journal of Tourism Cities* 2, no. 2 (2016): 108–124; Dimitrios Buhalis and Rosanna Leung, ‘Smart Hospitality – Interconnectivity and Interoperability towards an Ecosystem’, *International Journal of Hospitality Management* 71 (2018): 41–50.
- 8 Ryan Yung and Catheryn Khoo-Lattimore, ‘New Realities: A Systematic Literature Review on Virtual Reality and Augmented Reality in Tourism Research’, *Current Issues in Tourism* 22, no. 17 (2019): 2056–2081; Lena Jingen Liang and Statia Eliot, ‘A Systematic Review of Augmented Reality Tourism Research: What Is Now and What Is Next?’, *Tourism and Hospitality Research* 21, no. 1 (2021): 15–30.
- 9 M. Claudia tom Dieck and Timothy Jung, ‘A Theoretical Model of Mobile Augmented Reality Acceptance in Urban Heritage Tourism’, *Current Issues in Tourism* 21, no. 2 (2018): 154–174. Dai-in Danny Han, M. Claudia tom Dieck and Timothy Jung, ‘User Experience Model for Augmented Reality Applications in Urban Heritage Tourism’, *Journal of Heritage Tourism* 13, no. 1 (2018): 46–61. Shu-pei Tsai, ‘Augmented Reality Enhancing Place Satisfaction for Heritage Tourism Marketing’, *Current Issues in Tourism* 23, no. 9 (2020): 1078–1083.
- 10 Gregory Ashworth and John Tunbridge, *The Tourist-Historic City. Retrospect and Prospect of Managing the Heritage City* (Oxford: Elsevier, 2000). Hilary du Cros and Bob McKercher, *Cultural Tourism*, 3rd ed. (Abingdon: Routledge, 2020).

(AR) apps, including the *Hidden Cities*, have obvious implications for maintaining and/or producing competitive advantage¹¹ in addition to preserving and protecting vulnerable destinations for future generations.¹² This chapter examines some of the critical issues associated with the introduction, implementation and operation of heritage tourism AR apps in wider urban tourism systems of provision and affordances. In particular, it focuses on the juxtaposition of them with efforts to market and manage cities for visitors, and the challenges associated with simultaneously operating both in virtual and real space. Using insights from *Hidden Florence* and the other *Hidden Cities* alongside existing social sciences scholarship on heritage tourism AR apps, the chapter argues that they have considerable potential to contribute to more sustainable forms of tourism consumption and management in urban destinations. As yet though, there is insufficient evidence of the potential being converted into practical gains, nor of heritage tourism AR apps being widely integrated into local structures and frameworks for destination management, especially those that seek more sustainable urban tourism. First though, this chapter explores some of the potentials and possibilities (and rhetoric) of smart urbanism and smart tourism as a precursor for later discussion of how heritage tourism AR apps may feature in more sustainable tourism futures.

Smart cities, urbanism and tourism

There are clearly many more issues involved in the management of urban (heritage tourism) destinations than just overtourism. However, overtourism embodies an apparent conundrum which, for over a decade, is no closer to being solved. The persistence of congested towns and cities in peak seasons with all manner of social and environmental problems is in stark contrast to the expectation that advanced technologies and data-driven solutions will help address the many issues affecting urban spaces and their users.¹³

As the dual concepts of the smart city¹⁴ and smart urbanism¹⁵ attest, contemporary urban experiences are being mediated by a proliferation of technological systems and they depend on digital connectivity. Some view the smart city as bound up in a rhetoric of urban administration that connects economic development with innovation, such that ‘effective and efficient governance [is delivered] by means

11 Teresa Graziano and Donatella Privitera, ‘Cultural Heritage, Tourist Attractiveness and Augmented Reality: Insights from Italy’, *Journal of Heritage Tourism* 15, no. 6 (2020): 666–679.

12 Alexandra Bec et al., ‘Virtual Reality and Mixed Reality for Second Chance Tourism’, *Tourism Management* 83 (2021): 104256.

13 Simon Marvin, Andres Luque-Ayala and Colin McFarlane, *Smart Urbanism: Utopian Vision or False Dawn* (New York: Routledge, 2016).

14 Vito Albino, Umberto Berardi and Rosa Maria Dangelico, ‘Smart Cities: Definitions, Dimensions, Performance and Initiatives’, *Journal of Urban Technology* 22, no. 1 (2015): 3–21.

15 Hebe Verrest and Karin Pfeffer, ‘Elaborating the Urbanism in Smart Urbanism: Distilling Relevant Dimensions for a Comprehensive Analysis of Smart City Approaches’, *Information, Communication & Society* 22, no. 9 (2019): 1328–1342.

of state-of-the art technologies'.¹⁶ One major advantage in fostering 'smart cities' then is to engender greater sustainability in spaces where (environmental) resource consumption is high.¹⁷ Harnessing the latest data, ideas and technologies provides a basis for identifying, developing and implementing approaches to tackling the many and diverse challenges affecting people living in and using the city. Yet approaches to urban management still have to be grounded in place. Local contexts and 'their socio-political construction' are vital to fashioning solutions including the digital but which are not necessarily 'confined to the administrative boundaries of a city'.¹⁸ Towns and cities can be lived and experienced elsewhere, for instance, by non-residents or by residents temporarily away from home.

Smart tourism approaches are intended to embrace these possibilities and offer the prospect of delivering more sustainable tourism production and consumption.¹⁹ Through vast data-handling and intelligent systems, advanced technologies should be able to deliver more evidence-rich, agile and responsive destination management.²⁰ In the context of this volume, three key features are germane to note. Firstly, although a wide range of digital technologies have the potential to enhance tourism management, the smart device (usually phone) usually acts as the main interface with visitors providing a mechanism to steer behaviours.²¹ More modest approaches include pushing information to visitors (e.g. on parking, pricing, ticketing, offers) in real time. Mediated by GPS, big data analytics on the use of smartphones and apps facilitates the active monitoring of visitor flows within destinations, greater understanding of 'people-place' interactions²² and the generation of personalised experiences and offers across a range of services.²³ Social media and the co-production of content among visitors through their postings, images and recommendations (i.e. 'likes') can induce alternative visitor behaviours to those traditionally imagined by destination managers.²⁴ Rewarding

16 Verrest and Pfeffer, *Urbanism in Smart Urbanism*, 1329.

17 Albino et al., *Smart Cities*.

18 Verrest and Pfeffer, *Urbanism in Smart Urbanism*, 1328.

19 Gretzel et al., *Application of Smart Tourism*. Boes et al., *Smart Tourism Destinations*.

20 Buhalis and Amaranggana, *Smart Tourism Destinations*.

21 Dan Wang, Sangwon Park and Daniel Fesenmaier, 'The Role of Smartphones in Mediating the Tourism Experience', *Journal of Travel Research* 51, no. 4 (2012): 371–387. Janet Dickinson et al., 'Tourism and the Smartphone App: Capabilities, Emerging Practice and Scope in the Travel Domain', *Current Issues in Tourism* 17, no. 1 (2013): 84–101.

22 Rosabella Borsellino, Renee Zahnow and Jonathan Corcoran, 'Not All Those Who Wander Are Lost: Exploring Human Mobility Using a Smartphone Application', *Australian Geographer* 49, no. 2 (2018): 317–333.

23 Buhalis and Leung, *Smart Hospitality*. Dickinson et al., *Tourism and the Smartphone App*. Manuel Riviera, Robertico Croes and Yunying Zhong, 'Developing Mobile Services: A Look at First-time and Repeat Visitors in a Small Island Destination', *International Journal of Contemporary Hospitality Management* 28, no. 12 (2016): 2721–2747. Pasquale Vecchio, Gioconda Mele, Valentina Ndou and Giustina Secundo, 'Creating Value from Social Big Data: Implications for Smart Tourism Destinations', *Information Processing and Management* 54, no. 5 (2018): 847–860.

24 John Bustard, Peter Bolan, Adrian Devine and Karise Hutchison, 'The Emerging Smart Event Experience: An Interpretative Phenomenological Analysis', *Tourism Review* 74, no. 1 (2018): 116–128.

visitors for adapting their behaviours, gamification can nudge them towards otherwise harder-to-reach attractions and locales, especially where it is combined with augmented and virtual reality technology.²⁵

Secondly, smart approaches to destination management revolve around complex ‘ecosystems’ connecting both the virtual and real worlds.²⁶ From a purely digital perspective, user experiences require effective combinations of hardware and software²⁷. Visitors to attractions often make use of multiple digital resources, such as audio guides, text, QR markers and even AR and VR technologies.²⁸ As part of integrated travel experiences, visitors make use of apps and digital content to book accommodation, transport and hospitality services as well as to source information about the destination and onward travel.²⁹ Ultimately though, the ability to engage with digital content directly relates to issues such as signal strength, network type and coverage by providers.

In fact, urban tourism systems have always comprised diverse arrays of provision and affordances, and they are variously conceptualised as both complex systems³⁰ and ecosystems.³¹ Even in ‘analogue times’, the intricacy of producing urban tourism was noted.³² ‘Products’ and experiences were pieced together by travel agents, tour operators and independent travellers through their separate bookings of attractions, accommodation, hospitality, transport, retail and other services. Increased digitalisation has simply added a further, distinctive delivery mechanism (which is gradually replacing the analogue methods). While this may be axiomatic to note for some, it is worth recalling that contemporary visitor experiences – especially those relating to towns and cities – may be dynamic or passive, in situ physically or remote, and reality may be augmented or virtual.³³ In situ digital affordances are framed by, and consumed alongside, other services and systems of provision physically embedded in townscapes. Both are vital in mediating visitor behaviour and perceived satisfaction, and they are mutually implicated.

25 Ander Garcia, Maria Linaza, Aitor Gutierrez and Endika Garcia, ‘Gamified Mobile Experiences: Smart Technologies for Tourism Destinations’, *Tourism Review* 74, no. 1 (2019): 30–49.

26 Buhalis and Leung, *Smart Hospitality*.

27 Tsai, *Augmented Reality*. Mariapina Trunfio et al., ‘Innovating the Cultural Heritage Museum Service Model Through Virtual Reality and Augmented Reality: The Effects on the Overall Visitor Experience and Satisfaction’, *Journal of Heritage Tourism* (2021), <https://doi.org/10.1080/1743873X.2020.1850742>

28 Andrea Hausmann and Sarah Schuhbauer, ‘The Role of Information and Communication Technologies in Cultural Tourists’ Journeys: The Case of a World Heritage Site’, *Journal of Heritage Tourism* 16, no. 6 (2021): 669–683. <https://doi.org/10.1080/1743873X.2020.1819300>

29 Buhalis and Leung, *Smart Hospitality*.

30 Leticia, Romero-García, Norman Aguilar-Gallegos, Oswaldo Morales-Matamoros, Isaias Badillo-Piña and Ricardo Tejeida-Padilla, ‘Urban Tourism: A Systems Approach – State of the Art’, *Tourism Review* 74, no. 3 (2019): 679–693.

31 Håvard Ness, ‘Viable Destination Ecosystems: A Perspective Article’, *Tourism Review* 76, no. 1 (2020): 27–33.

32 Stephen Page, *Urban Tourism* (Abingdon: Routledge, 1995).

33 See Dobrica Jovicic, ‘From the Traditional Understanding of Tourism Destination to the Smart Tourism Destination’, *Current Issues in Tourism* 22, no. 3 (2019): 276–282.

Thirdly, while there may be an understandable temptation to focus on technology and its possibilities, human-to-human interactions are still integral to mediating visitor experiences. Smart approaches to destination management involve complex social politics among multiple stakeholders, including local residents. They are framed by the relative perceptions of the value of adopting such approaches in the context of the issues with which destinations have to contend.³⁴ While users consume opportunities afforded through smart technology, as ‘guests’ within destinations they are brought into contact with their ‘hosts’ (i.e. local residents). The nature of so-called host–guest encounters can be a major factor in determining visitor satisfaction.³⁵

AR apps in urban heritage tourism

As encouraging and forward-looking as smart approaches to destination management may be, their development is contingent in no small measure on the willingness of visitors to adopt different technologies. A growing array and an increasingly diverse taxonomy of apps ‘inhabiting’ and ‘supporting’ digital ecosystems in destinations have been noted.³⁶ Among these, virtual reality (VR) and augmented reality (AR) apps occupy distinct niches, especially where they are integrated in mixed reality experiences. However, as two extensive reviews have revealed, several critical issues characterise their recent deployment in tourism and leisure.

Yung and Khoo-Lattimore raised questions over terminology, including inconsistency and variability in the application of the terms.³⁷ This has been compounded by several persistent challenges, including awareness of the technologies among supply-side actors; the extent to which there is willingness to replace in-person, corporeal experiences with virtual ones; the usability of such apps; and the resource demands (especially time) on those deploying the technology to produce or roll-out new experiences. As discussed further subsequently, there is both a necessary ‘upfront’ investment in getting to know and/or use the technology proficiently as well as ongoing commitments to maintain the currency of the offer and operation of the technology. Liang and Eliot observed that perceived ease of use has been a major consideration in uptake.³⁸ In addition to notable work on user acceptance of AR, they noted a strong focus on the attributes of AR apps in tourism and the functioning of the technology. Among these were AR design and implementation; measuring user experiences; the implementation and management of AR systems; and the possibilities of connecting gamification with AR.³⁹

34 Ivars-Baidal et al., *Smart Destinations*.

35 Yim Ming Kwong and Yiping Li, ‘In-place or Out-of-place? Host–Guest Encounter under “One Country, Two Systems”’, *Current Issues in Tourism* 23, no. 12 (2020): 1460–1479.

36 Heather Kennedy-Eden and Ulrike Gretzel, ‘A Taxonomy of Mobile Applications in Tourism’, *E-Review of Tourism Research* 10, no. 2 (2012): 47–50.

37 Yung and Khoo-Lattimore, *New Realities*.

38 Liang and Eliot, *Systematic Review*.

39 *Ibid.*, 17

Somewhat surprisingly, neither review pointed to the wider contexts, conditions and environments in which AR apps function as subjects for substantive attention. Even research badged as ‘implementation and management’ was mainly focused on the organisation of visitor engagement with content and technology⁴⁰. Issues relating to the embedding of AR within structures, frameworks and conventions that govern, regulate and inform their operation were scarcely mentioned.

Heritage tourism AR apps were not the exclusive focus of either review. Yet it is apparent from both that heritage has been an important context of application.⁴¹ This is hardly surprising in the sense that AR is inherently associated with presenting ‘other worlds’ and what better than past worlds that have otherwise have to be imagined in the present? As such, in addition to representing exhibits, artefacts and collections in museums and galleries⁴², AR apps are well-suited in heritage tourism to animating particular buildings, streets or routes,⁴³ districts⁴⁴ and even the towns and cities⁴⁵ of those formerly inhabiting them. Indeed, this is a central tenet of *Hidden Cities* apps for Deventer, Exeter, Florence, Hamburg, Trento and Valencia discussed elsewhere in this volume.

Neither an especially large nor mature body of knowledge has emerged on heritage tourism AR apps within tourism studies per se. In the more typical channels

40 Ibid., 20–21.

41 cf. tom Dieck and Jung, *Theoretical Model*.

42 tom Dieck and Jung, *Theoretical Model*. Trunfio et al., *Cultural Heritage Museum*. Hausmann and Schuhbauer, *World Heritage Site*. Johana Dueholm and Karina Smed, ‘Heritage Authenticities – A Case Study of Authenticity Perceptions at a Danish Heritage Site’, *Journal of Heritage Tourism* 9, no. 4 (2014): 285–298. M. Claudia tom Dieck and Timothy Jung, ‘Value of Augmented Reality at Cultural Heritage Sites: A Stakeholder Approach’ *Journal of Destination Marketing and Management* 6, no. 2 (2017): 110–117. Timothy Jung et al., Cross-cultural Differences in Adopting Mobile Augmented Reality at Cultural Heritage Tourism Sites, *International Journal of Contemporary Hospitality Management* 30, no. 3 (2018): 1621–1645. Namho Chung et al., ‘The Role of Augmented Reality for Experience-influenced Environments: The Case of Cultural Heritage Tourism in Korea’, *Journal of Travel Research* 57, no. 5 (2018): 627–643. Dai-in Danny Han, M. Claudia tom Dieck and Timothy Jung, ‘Augmented Reality Smart Glasses (ARSG) Visitor Adoption in Cultural Tourism’, *Leisure Studies* 38, no. 5 (2019): 618–633. Mariapina Trunfio and Salvatore Campana, ‘A Visitors’ Experience Model for Mixed Reality in the Museum’, *Current Issues in Tourism* 23, no. 9 (2018): 1053–1058. Mariapina Trunfio, Salvatore Campana and Adele Magnelli, ‘Measuring the Impact of Functional and Experiential Mixed Reality Elements on a Museum Visit’, *Current Issues in Tourism* 23, no. 1 (2020): 1990–2008. Chris Little et al., ‘Innovative Methods for Heritage Tourism Experiences: Creating Windows into the Past’, *Journal of Heritage Tourism* 15, no. 1 (2020): 1–13.

43 tom Dieck and Jung, *Theoretical Model*; Tsai, *Augmented Reality*.

44 Chiara Garau, ‘From Territory to Smartphone: Smart Fruition of Cultural Heritage for Dynamic Tourism Development’, *Planning Practice and Research* 29, no. 3 (2014): 238–255. Chiara Garau and Emiliano Ilardi, ‘The “Non-places” Meet the “Places:” Virtual Tours on Smartphones for the Enhancement of Cultural Heritage’, *Journal of Urban Technology* 21, no. 1 (2014): 79–91. Nevola, Fabrizio, Timothy Coles and Cristina Mosconi, ‘A City Revealed? Critical Insights from Implementing an Augmented Reality Heritage Tourism App for the World Heritage City of Florence’, *Journal of Heritage Tourism*, accepted.

45 Graziano and Privatera, *Cultural Heritage*.

used to disseminate tourism, leisure or visitor research, fewer than 30 studies have appeared during the last decade. Be this as it may, a more important observation is that the way in which knowledge has been produced to date has had significant if unrecognised implications for the more sustainable management of urban (heritage) destinations in terms of missed opportunities. For instance, a strong theme has been measurement of the AR experience, specifically its relationship with visitor satisfaction.⁴⁶ This has been accompanied by theorisations of the acceptance and use of AR technology.⁴⁷ However, discussion of this nature has been lacking consideration of how practical uptake may be scaled-up significantly to encourage even more users, possibly away from the busiest or most famous attractions or locales.⁴⁸ Multiple stakeholders have been identified as necessary in developing and introducing AR initiatives to heritage attractions and destinations.⁴⁹ Yet, there has been little detailed or sustained consideration of the external operating environments in which such stakeholders, as well as the ‘products’ and services that result, function.⁵⁰ This is despite long-standing recognition of the nature, roles and interactions of stakeholders in delivering sustainable tourism management.⁵¹

Apps in the sustainable management of urban heritage tourism

There is a lot to unpack from the previous sections. One starting point is the range of urban settings for which heritage tourism apps have been developed. Without wishing to be pedantic, many such apps and their coverage are not *urban*; rather, they are predominantly sub-urban in scope and scale. Typically for reasons of resourcing, apps of this nature are selective not only in terms of the time periods they capture but also the extent of their spatial coverage. Yet they are often described somewhat casually with the moniker ‘urban’ or as relating to or delivering ‘urban heritage tourism’. Labelling in this manner does though stress the connection with urbanism and urban ways of living. It also reminds us that – reassuringly in the context of smart urbanism – they should be viewed relationally, and they are best understood by reference to the local contexts, structures and systems in the towns and cities they represent.⁵²

46 Jung et al., *Cross-cultural Differences*. Han et al., *User Experience*. tom Dieck et al., 2018. Tsai, *Augmented Reality*. Trunfio and Campana, *Mixed Reality in the Museum*. Trunfio et al., *Measuring the Impact*. Trunfio et al., *Cultural Heritage Museum*.

47 tom Dieck and Jung, *Theoretical Model*; Chung et al., *Role of Augmented Reality*.

48 cf. Graziano and Privatera, *Cultural Heritage*.

49 Garau, *Dynamic Tourism Development*. tom Dieck and Jung, *Stakeholder Approach*. Graziano and Privatera, *Cultural Heritage*.

50 cf. Garau, *Dynamic Tourism Development*. Garau and Ilardi, *Non-places*.

51 Erick Byrd, ‘Stakeholders in Sustainable Tourism Development and Their Roles: Applying Stakeholder Theory to Sustainable Tourism Development’, *Tourism Review* 62, no. 2 (2007): 6–13.

52 cf. Verrest and Pfeffer, *Urbanism in Smart Urbanism*.

In addition, discussions of heritage tourism AR apps are routinely decoupled from their wider tourism policy contexts and the local challenges faced by stakeholders in destinations.⁵³ Notwithstanding advocacy in the smart tourism canon of thought,⁵⁴ there appears to have been almost no critical examination of how they have been actively integrated into, or able to contribute towards, strategy and tactics for destination management, for instance in the struggle against overtourism. Some of the typical challenges faced by urban (heritage) destinations seeking more sustainable tourism development include, inter alia, visitor congestion, especially in peak season, in the centre and at a marquee destinations; spreading the benefits of tourism in time and space; pressure on local infrastructure, transport systems and services largely developed for the permanent population; pollution, littering, petty crime and vandalism; and gentrification and pricing out of residents from popular neighbourhoods, most recently associated with the rise of 'home stays' and the sharing economy. Within many urban heritage tourism destinations, these problems are amplified by such issues as the size and configuration of the 'old towns' and other central areas; the delicacy of the urban fabric; the challenges of retrofitting buildings and configuring spaces to accommodate visitors and technologies; and that touristed spaces are also lived spaces.

Neither list is intended to be exhaustive, as other fuller discussions reveal.⁵⁵ Rather, they point to the possible ways in which heritage tourism AR apps may contribute to urban management. For instance, by delivering experiences in off-centre, less-touristed and/or hard-to-reach locales within towns and cities, heritage tourism AR apps may spread the benefits of tourism more widely throughout destinations, both spatially and socially. More businesses and local communities may benefit, respectively, from the greater spending and cosmopolitanism associated with visitors. A wider array of products and services may encourage visitation throughout the year, as well as longer stays with higher total spend in a form of 'slow tourism' that enables a fuller immersion in the city. Fewer, longer stays of this nature may also contribute to lower total emissions relating to inbound and outbound travel. Further environmental benefits may accrue by encouraging (some) visitors away from 'honey-pot sites', reducing the pressures on the most congested attractions and, in the process, improving the experiences of those who still chose to visit them. Joined-up smart visitor management systems offer the prospect of combining real-time data on the use of (heritage tourism AR) apps with other data sources (e.g. visits, entry tickets, traffic and pedestrian cameras) to steer visitors to preferred spaces and places at given points in the day (for instance, by managing demand, bookings and entry more closely or by offering visitors live offers, deals, insider-tips, intelligence and so on). Perhaps most

53 cf. Garau, *Dynamic Tourism Development*. Graziano and Privatera, *Cultural Heritage*.

54 Cavalheiro et al., *Smart Tourism Destination*.

55 Carlo Aall and Ko Koens, 'The Discourse on Sustainable Urban Tourism: The Need for Discussing More than Overtourism', *Sustainability* 11, no. 15 (2019): 4228. Maria Garcia-Hernandez, Manuel de la Calle-Vaquero and Claudia Yubero, 'Cultural Heritage and Urban Tourism: Historic City Centres under Pressure', *Sustainability* 9 (2017): 1346.

radically, heritage tourism AR apps may contribute towards tackling these sorts of issues through non-visitation; in other words, by encouraging visitors to stay at home or experience the city beyond its boundaries⁵⁶ through ‘arm chair tourism’ or ‘non-human tourism’.⁵⁷

All of which appears impeccable in its apparent logic. However, as yet there is no substantive evidence base on the extent to which principle has contributed substantive gains in practice, either relating to *Hidden Cities* or other heritage tourism AR apps. Of the former, only *Hidden Florence* has an extended history of user analytics. Between May 2013 and March 2018, during its first phase of development, it was downloaded 3,492 times, with Google Play the more popular platform than iTunes (595). Over double the number of the *Hidden Florence* users accessed the app outside the city than inside it. Viewed in comparison to the total number of visitors to Florence every year, uptake and use was relatively limited in the city itself and more visitors used the app outside Florence than within it.⁵⁸

There is mixed evidence regarding dispersion. The *Hidden Cities* of Exeter, Valencia, Deventer, Trento and Hamburg focus their narratives on locations that may be regarded as their traditional city centres, their old towns. In Exeter, one of the long-standing challenges has been to integrate its two main spaces for visitors, the area around the cathedral in the old town and the much harder-to-reach locale of river, quayside and customs house; the two are separated by a major inner-city road. By virtue of its content, the app inadvertently reinforces the popularity of the former over the latter. In one of the few studies to inspect spatial and temporal patterns of user data in situ, significant variations in the popularity of walks and distance decay effects were observed in the two original *Hidden Florence* walks. Both were designed to encourage visitors away from the traditional honey-pot sites of the Duomo, Uffizi and Ponte Vecchio.⁵⁹ Six times fewer engagements with the app were recorded for the San Ambrogio Walk which took visitors further out of the historic central area than the walk starting at, but leading visitors away from the Ponte Vecchio. Content at each location was consumed variably, locations were visited selectively and not every location was visited by each user. In general, content and locations at the beginning of both walks were consumed more than those at the end of them. For the Central Walk, there was around three times the level of engagement with the first stop (Ponte Vecchio) compared to the ninth and final stop (Palazzo Strozzi).

In fact, further consideration may be required as to what constitutes redistribution, especially in large, multi-focal cities. *Hidden Hamburg* offers its users the prospect of exploring ‘seventeenth century Hamburg. . . [to] [g]et a new perspective on some of the city’s major sites, and discover places off the beaten

56 Verrest and Pfeffer, *Urbanism in Smart Urbanism*.

57 Tomáš Gajdošík, Vanda Maráková, Jana Kučerová, ‘From Mass Tourists to Smart Tourists: A Perspective Article’, *Tourism Review* 76, no. 1 (2020): 47–50.

58 Nevola, Coles and Mosconi, ‘A City Revealed?’

59 Nevola, Coles and Mosconi, A City Revealed?

path'.⁶⁰ Although much of the city's promotion now focuses on the off-centre iconic *Elbphilharmonie*, the port and warehouse district,⁶¹ *Hidden Hamburg* focuses on attractions in the traditional city centre, the Altstadt. While the app provides particular readings, several sites it includes like the Deichstrasse appear in most popular tourist guides which de-differentiate it to the casual user. Both the Exeter and Florence observations indicate the role of content in driving the spread (or not) of visitation and its benefits in time and space and the importance of joined-up delivery to benefit the wider visitor economy. The lower popularity of the San Ambrogio walk may also be read as a function of the ability of the district to cater for and accommodate visitors, even for a relatively short time during a walking tour. As a less-touristed location, existing infrastructure for visitors was less well developed, including the more obvious refreshment and retail facilities as well as the availability of free WiFi. In other words, research of this nature suggests very strongly that the uptake of such apps and their ability to contribute to new management outcomes is contingent on the nature of both the urban tourism ecosystem and the wider digital ecosystem. Hence, it may be tempting to assume that, because of their general penetration and pervasiveness in the developed world, new digital technologies are widely capable of supporting the spread of visitation. However, this may not necessarily be the case across all districts in a town or city. As the municipal authorities in Florence have recognised by embedding the app and the nature of urban development in the visitor management plan, a more active coupling of strategies is necessary if new digital technology is to contribute to a more sustainable future for residents and visitors.⁶²

This appears to be the exception rather than the rule currently. Thus, the postulation that heritage AR tourism apps may contribute to more effective, smart or sustainable visitor management in urban destinations, remains largely unproven. Several themes suggest themselves as imperatives for future investigation. Although there are variations in how stakeholders perceive the value of AR apps,⁶³ very little is known about the social politics or processes of valorisation and the consequences of juxtaposition for the success or failure of their performance. For instance, some stakeholders (e.g. destination managers) may advocate the spread of tourism to other, less-touristed locations, encouraged by heritage tourism AR apps and their content. In contrast, other stakeholders, including local residents, may not welcome the growth of tourism resulting in awkward host–guest encounters, the disneyfication or gentrification of their home districts or increases in property prices as the sharing economy permeates erstwhile residential areas. An app like *Hidden Valencia* that focuses on the city centre, also emerges into complex local politics involving host–guest tensions.

60 'Welcome to *Hidden Hamburg*', *Hidden Hamburg*, www.hiddencities.eu (accessed May 21, 2021)

61 'Sights in Hamburg', Hamburg Tourismus, www.hamburg-travel.com/see-explore/sightseeing/ (accessed May 21, 2021)

62 Nevola, Coles and Mosconi, A City Revealed?

63 tom Dieck and Jung, *Stakeholder Approach*. Graziano and Privatera, *Cultural Heritage*.

As the third largest city in Spain, Valencia strongly subscribes to the Sustainable Development Goals, it has a strong commitment to carbon neutrality and it has been proactive to introduce curbs to private holiday rentals (like Airbnb) in attractive parts of the city to improve local quality of life.⁶⁴ The positioning of an app and its content can have implications in terms of social inclusion and exclusion among residents and visitors. Previous research has noted that the narratives delivered by heritage tourism apps are not of the same interest to, nor valorised equally by managers and visitors.⁶⁵ Encouraging some user groups to explore alternative destinations may add to their ‘choice architecture’ but not others’; it may also inadvertently foster a sense of differential access to, and who’s welcome in, key settings within towns and cities. For residents and local communities, there are important issues relating to which period(s) are presented to visitors and where. *Hidden Hamburg* focuses on the seventeenth century but only a fraction of the current city area and a small cross section of its rich history, particularly in the nineteenth and twentieth centuries. To complicate matters further, there are notable differences in the way that the city is perceived by external parties and residents.⁶⁶

A perhaps even more fundamental knowledge gap exists around the users of such apps, especially in-destination. This is somewhat ironic given the rhetoric of smart cities⁶⁷ and smart tourism,⁶⁸ and that apps generate vast volumes of detailed, granulated, micro-level data about their use and their users, including socio-demographic attributes. Such data are capable of driving multi-variate analyses. Routinely used in social marketing for tourism,⁶⁹ segmentation studies seek to identify groups (i.e. ‘clusters’) of users through a range of shared attributes and common characteristics which, in turn, form the basis for bespoke, tailored interventions to shift audiences (i.e. visitors) towards alternative, more sustainable behaviours.⁷⁰ Used to understand more about who uses heritage tourism AR apps and how, the identification of user groups may enable more effective messaging about, and targeting of, the app to (more) users who are more favourably predisposed to behave differently during their visits.

64 UNWTO, ‘The Decarbonization of Tourism in Action: The Case of Valencia’, last modified February 22, 2021, www.unwto.org/covid-19-oneplanet-responsible-recovery-initiatives/the-decarbonization-of-tourism-in-action-the-case-of-valencia. ‘The Battle against Vacation Rentals Spreads beyond Madrid’, *El Pais*, last updated April 1, 2014, https://english.elpais.com/elpais/2019/03/28/inenglish/1553767032_107018.html

65 Dueholm and Smed, *Heritage Authenticities*.

66 Sebastien Zenker and Suzanne Beckmann, ‘My Place Is Not Your Place – Different Place Brand Knowledge by Different Target Groups’, *Journal of Place Management and Development* 6, no. 1 (2013): 6–17.

67 Albino et al., *Smart Cities*.

68 Cavalheiro et al., *Smart Tourism Destination*.

69 C. Michael Hall, *Tourism and Social Marketing* (Abingdon: Routledge, 2014).

70 D. Scott Borden, Timothy Coles and Gareth Shaw, ‘Social Marketing, Sustainable Tourism and Small/Medium-Size Tourism Enterprises: Challenges and Opportunities for Changing Guest Behaviour’, *Journal of Sustainable Tourism* 25 (2017): 903–920.

There are though some significant barriers to using data of this type in this way. The General Data Protection Regulation (GDPR) of the European Union has implications for all forms of research.⁷¹ Very briefly stated, this places legal obligations on those operating apps (such as web developers and tech companies) in terms of the use, management and wider dissemination of the data they generate. In many cases, in order to comply with the principles of GDPR and/or to keep costs down, it appears that otherwise valuable user-related data is not being collected or processed (i.e. prepared) during the operation of apps.⁷² As a consequence and judging by the limited published evidence, post-hoc analyses – which would and could lead to more intelligent approaches to promoting more widespread usage and possible behaviour change among visitors – are not taking place.

The ‘sustainability’ of heritage tourism AR apps

A major assumption in the previous section is that heritage tourism AR apps, once implemented and brought online, will continue to function, *ceteris paribus*, in the same manner. If the Coronavirus pandemic in 2020 is anything to go by, this is simply not the case. Heavy restrictions on domestic and international travel have increased the significance of virtual experiences as substitutes for corporeal visits.⁷³ Just how enduring this elevation in status will be, is unclear. Some have argued that the pandemic is a time for transformation, a reset and a ‘new normal’. Previous, ‘old normal’ practices are, or should be, a thing of the past.⁷⁴ Relatively limited mobility and in-person consumption of place is perhaps indicative of a more desirable, sustainable future for tourism.⁷⁵

Analytics data of the types mentioned earlier may offer some important clues to this transition if they are collected systematically and when they eventually come into the public domain. Be this as it may, if we assume that heritage tourism AR apps have experienced and will continue to experience a short-term boost in popularity and usage as a result of the pandemic (or even a renaissance for older apps), the question arises as to what will happen in the future? In other words, what is the

71 Miranda Mourby, Heather Gowans, Stergios Aidinlis, Hannah Smith and Jane Kaye, ‘Governance of Academic Research Data under the GDPR – Lessons from the UK’, *International Data Privacy Law* 9, no. 3 (2019): 192–206.

72 Nevola, Coles and Mosconi, A City Revealed?

73 Priyakrushna Mohanty, Azizul Hassan and Erdogan Ekis, ‘Augmented Reality for Relaunching Tourism Post-COVID-19: Socially Distant, Virtually Connected’, *Worldwide Hospitality and Tourism Themes* 12, no. 6 (2020): 753–760. Daniel Sarkady, Larissa Neuburger and Roman Egger, ‘Virtual Reality as a Travel Substitution Tool during COVID-19’, in *Information and Communication Technologies in Tourism 2021*, eds. Wolfgang Wörndl, Chulmo Koo, Jason Stienmetz (Cham: Springer, 2021), 452–463, https://doi.org/10.1007/978-3-030-65785-7_44

74 Mariana Sigala, ‘Tourism and COVID-19: Impacts and Implications for Advancing and Resetting Industry and Research’, *Journal of Business Research* 117 (2020): 312–321.

75 Dimitris Ioannides and Szilvia Gyimóthy, ‘The COVID-19 Crisis as an Opportunity for Escaping the Unsustainable Global Tourism Path’, *Tourism Geographies* 22, no. 3 (2020): 624–632.

longevity (or, at the risk of creating terminological confusion, sustainability) of such apps and over what period is there significant usage after they are released?

Much of the current research on heritage tourism AR apps implicitly assumes their enduring appeal, and lifespan is overlooked. In a corollary of product life cycle model, some authors have pointed to the distinctive patterns of development and uptake of apps more generally.⁷⁶ Originally developed in marketing and, incidentally, adapted in tourism management to conceptualise the development and sustainability of destinations,⁷⁷ time is plotted against the popularity (i.e. use, uptake) of the product (i.e. app). The resultant S-shaped curve (i.e. normal distribution) is divided into stages of initial introduction, growth leading to maturity after which there is a critical moment where the product either declines or is the subject of reinvestment and reinvigoration. Numerous approaches also exist to theorising the diffusion of innovations – especially tech-related – among consumers.⁷⁸ In one of the most widely known, five groups of users are identified sequentially relating to the nature and timing of their adoption of innovations after they have been commissioned, handed-over and are ‘on the market’.⁷⁹ Again, these are modelled through a normal distribution of the number of users over time. ‘First movers’ are the earliest group to take up a new technology; they enjoy the benefits of using the latest advances but suffer some of the costs of ongoing development. They are followed by ‘early adopters’ who are still at the vanguard of the market but benefit from a (relatively) more refined product. Greatest market penetration is reached when the product is more mature, adopted by the ‘early majority’, and subsequently embraced by the ‘late majority’. ‘Laggards’ are the last to buy-in to the ‘innovation’ (if it may still be termed thus) and are, like the ‘first movers’, a smaller (minority) group.

Both approaches introduce notions of time and changing patterns of usage and users, and they adopt biological metaphors of birth, growth, maturity and death. They also point to the change in effects as the appeal of an innovation widens to the ‘early’ and the ‘late’ majority. Arguably, most studies of heritage tourism AR apps have focused on their initial development and early implementation,⁸⁰ a feature implicit in work seeking to theorise the acceptance of such new technologies.⁸¹ In other words, they focus on the early stages of the product life cycle and innovation diffusion models, not on the continuing operation or perhaps growing popularity of such apps, their longitudinal performance, and their longer term

76 cf. Anushruti Vagrani, Niraj Kumar and P. Vigneswara Ilavarasan, ‘Decline in Mobile Application Life Cycle’, *Procedia Computer Science* 122 (2017): 957–964.

77 Timothy Coles, ‘Enigma Variations? The TALC, Marketing Models and the Descendants of the Product Life Cycle’, in *The Tourist Area Life Cycle: Conceptual and Theoretical Issues*, ed. Richard Butler (Clevedon: Channel View Books, 2016), 49–66.

78 John Bessant and Joe Tidd, *Innovation and Entrepreneurship*, 3rd ed. (Chichester: Wiley, 2015).

79 Everett Rogers, *Diffusion of Innovations* (New York: Free Press, 1962).

80 For instance, see Garau, *Dynamic Tourism Development*. Garau and Iardi, *Non-places*. Little et al., ‘Innovative Methods’.

81 tom Dieck and Jung, *Theoretical Model*; Chung et al., *Role of Augmented Reality*.

endurance and effects. Methodologically, most, if not all current research on AR apps in heritage tourism is cross-sectional in nature.⁸² With the exception of work on *Hidden Florence*, very little is known about how long heritage tourism AR apps hold their appeal, and – as a consequence – over what period they are able to make meaningful contributions to integrated destination management.⁸³

Concentration of the gaze in this manner is even more curious because ‘productivity’ over time is a significant feature in assessing funding applications *pre hoc* and appraising investment decisions *post hoc*. Arguably, this is even the case for the *Hidden Cities* too where the funder, Humanities in European Research Area (HERA), on behalf of the European Commission, has as one of its aims to ‘promote the full potential of citizens’ engagement with European public and cultural spaces’.⁸⁴ Volume, value and spread of beneficiaries are popular metrics among the public funding bodies that in one guise or another invest in, and have to defend, such technologies in the wider public interests. Typical user engagement metrics for time-based analysis include, but are not restricted to, the total number of users and visits; total number of unique users; the length of visit (time); the completion of content (steps or time); and the number of downloads. Basic digital auditing measures of this nature assume greater importance in investment appraisal where financial values can be ascribed to user engagement that, in turn, inform cost-benefit analyses and considerations of ‘return on investment’.

In such cases, data collected over extended periods from the original point of funding until the moment when public responsibility contractually comes to an end, is more likely to demonstrate the full impact and value of the investment. Framing apps in this way also stresses the intimate conceptual and practical connections with project management. As a central construct in this distinctive field of study, the project life cycle model stresses that over time each project comprises several stages to allow for better management and control.⁸⁵ Several variants have emerged relating to projects of different scale, scope and sector.⁸⁶ Early models deconstructed the ‘basic project life cycle’ into four phases of: concept and initiation; design and development; implementation; and finally, commissioning or handover.⁸⁷ Updated in contemporary texts, this is now described through the five essential processes of scoping, planning, launching, monitoring and control and, finally, closure.⁸⁸ Earlier refinement, although necessary, regrettably also

82 Liang and Eliot, *Systematic Review*, 18–20.

83 Nevola, Coles and Mosconi, *A City Revealed?*

84 ‘Public Spaces: Culture and Integration in Europe (2019–2022)’, Humanities in European Research Area (HERA), <https://heranet.info/projects/public-spaces-culture-and-integration-in-europe/> (accessed May 21, 2021)

85 Rory Burke, *Project Management. Planning and Control Techniques*, 4th ed. (Chichester: Wiley, 2003).

86 Robert Wysocki, *Effective Project Management. Traditional, Agile, Hybrid, Extreme*, 8th ed. (Chichester: Wiley, 2019).

87 Burke, *Project Management*, 29–31.

88 Wysocki, *Effective Project Management*.

caused potential terminological confusion, noting the relationship between the ‘project life cycle’ and the ‘product life cycle’.⁸⁹ The former refers to the ‘project from concept to handover’ (i.e. to the client). The latter also includes ‘the efficient operation of the facility’ where, for instance, the project involves ‘build[ing] a facility, a factory, a computer system or sports stadium [or AR app] . . . [and] considers the facility from the cradle to the grave’.⁹⁰ In fact, the product life cycle comprises eight phases in total: a pre-project phase, usually related to assessment of the conditions, drivers or triggers in the external operating environment; the four phases associated with the project life cycle; and at least three phases associated with the so-called ‘operation life cycle’ of the facility, comprising multiple ‘Maintenance Projects’ and ‘Upgrade Projects’ as well as a ‘Disposal Project’ (i.e. decommissioning).

Even employing the older framework,⁹¹ a more nuanced view of this nature demonstrates that rarely if ever is the distinction between product, project and operation life cycles made in most academic and practice-based research on heritage tourism AR apps. Extended views associated with longer term operation appear absent. Although difficult to map precisely, most studies consider the ‘project life cycle’, perhaps extending into the early parts of the ‘operation life cycle’ but not the full extent of the ‘product life cycle’. Juxtaposed against this, the value of heritage tourism AR apps to the sustainable management of urban tourism is not as a (development) project but as an operational ‘product’ or ‘facility’. In principle, the greatest contribution to local urban tourism ecosystems accrues after handover and the termination of the ‘project life cycle’; that is, during the ‘operation life cycle’. This is also when user engagement data is at its most relevant for appraising apps as (public) investments. There is a further disjuncture. As noted earlier, basic user engagement data in an aggregated form provides ‘key performance indicators’ to report to funders. Yet such data are of limited use in the sustainable management of urban tourism. Success in this context is not necessarily revealed through coarse quanta – the number of users, the average time of visit and so on. More disaggregated, spatially – and/or temporally – granulated data are more appropriate to assessing the contribution of apps to high-level policy objectives such as spreading visitation around the city, around the year.

Thus, the majority of (public) investment in heritage tourism AR apps appears to be in the ‘project’ not ‘operational’ life cycle. This also appears to be the case in the *Hidden Cities* programme and its antecedents in *Hidden Florence*. More generally, this is because of higher initial start-up costs than subsequent operating costs, and an ethos – particularly where public funders are concerned – that over time such initiatives should become financially independent and sustainable in their

89 Burke, *Project Management*, 28–42.

90 *Ibid.*, 37.

91 *Ibid.*

own rights. Typical of long-established approaches to economic governance,⁹² having taken the (financial) risks to establish the initiative, responsibility for the continuing operation (and eventual decommission) is often transferred to private sector organisations or public–private partnerships as too are the potential rewards, especially the profits. Restrictions in public funding schemes may also make it difficult to support (open-ended) maintenance and upgrade costs in the ‘operation life cycle’. Nevertheless, this is just at the time when an app may make its most significant contribution to tourism consumption and efforts to manage the diseconomies and unacceptable outcomes of (excess) visitation. Adding further to the dilemma, during the ‘operation life cycle’ apps are vulnerable to competition while threats to their wider adoption are at their greatest. App design, production and usability are key determinants in visitor uptake and satisfaction.⁹³ Effective and timely operational maintenance is vital as is update and upgrade. Without continued investment, apps may stagnate or decline as products. In these sorts of circumstances, the dual issues of the ephemerality and precariousness of apps raise legitimate questions about the viability and feasibility of using them as components in building approaches to managing urban tourism.

Conclusion

Smart tourism has much to commend it as do the canons of thought surrounding smart cities and smart urbanism. The transformation towards smart destination management has started and this trajectory of development looks likely to accelerate. The number of AR apps relating to urban heritage tourism is on the increase and this trend will, no doubt, continue into the future. As the technology becomes more permissive and costs decrease, both capacity and capability to produce apps of this nature will rise. As other chapters in this volume have demonstrated, facilitation by the technology alone is no guarantee of attractive, user-friendly apps that benefit from high production values, including rigorous (academic) research (by historians) and incorporating tightly crafted narratives. Nor, as argued here, will it automatically result in apps that are integrated into the digital ecosystems of destinations and capable of contributing to more sustainable forms of tourism consumption and management. To function optimally from a perspective of tourism, leisure and the visitor economy, apps have to be well-embedded in structures and frameworks of tourism policy and strategy as well as in wider ‘urban tourism (eco)systems’, including the physical infrastructure and supporting services required for in-person visitor experiences.

There is a clear need to move beyond the rhetoric of the potentials of smart tourism and user-centred discourses that stress the development and experience of AR,

92 David Harvey, ‘From Managerialism to Entrepreneurialism: The Transformation in Urban Governance in Late Capitalism’, *Geografiska Annaler* 71B, no. 1 (1989): 3–17.

93 Yung and Khoo-Lattimore, *New Realities*. Tsai, *Augmented Reality*. Chung et al., *Role of Augmented Reality*.

to a wider consideration of the practicalities and pragmatics involved in the deployment of AR in heritage tourism destinations, many of which are struggling under immense visitor pressures. Without closer integration of the digital and analogue, the real and the virtual, the original and the augmented, app and destination are effectively hiding in plain sight from one another. In principle, AR apps can be deployed as part of an integrated, intelligence-driven, almost real-time approaches, for instance, to manage visitation, shape visitor flows and tackle issues such as overtourism through ‘digital’ and ‘armchair’ tourism. In practice, the lived experience of producing, implementing and using such apps often results in a series of tactical decisions that are necessary in terms of their realisation but ultimately constrain their ability to contribute to wider, locally-grounded agendas for the sustainable management of urban tourism. At the current time, there is insufficient evidence that the potential of heritage tourism AR apps for effective visitor management is being realised to the full, and ‘smart’ may be a really unfortunate way of describing them.

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11 3D models and locative AR

*Hidden Florence 3D and experiments in reconstruction**

Donal Cooper, Fabrizio Nevola, Chiara Capulli and Luca Brunke

As this collection has shown, the spatial turn in the humanities that cultural geographer Denis Cosgrove identified over a decade ago has been much invigorated, thanks to digital technologies and the widespread adoption of mapping systems delivered through GPS-enabled smartphones, an emerging field within the spatial digital humanities.¹ Smartphones have ensured that we are all familiar with mapping transitions between maps, aerial/satellite views and the ‘streetview’ landscape that online map services provide for everyday use.² The application of GPS to humanities research, and particularly to the interpretation of historic or heritage sites, has led to a wide range of locative tour apps, as outlined in the opening section of this collection. Among these, *Hidden Florence* (since 2014) and the five apps thus far created within the *Hidden Cities* project (2020) have pioneered the use of GPS-enabled approaches to research-based public history that provides a location-based understanding of the social, art historical and architectural history of the built environment of pre-modern cities.³

More recently, related research has tested a new approach to situate 3D digital artefacts in real-world settings, resulting in the publication of the app *Hidden Florence 3D: San Pier Maggiore* (2019). This app is one of the first outcomes of ‘Florence 4D’, a Digital Art History project funded by the Getty Foundation,

* Over the past seven years, many individuals have contributed to the virtual recovery of San Pier Maggiore and its artworks. The present authors would like to thank the following for their contributions, assistance and support: Susanna Agostini, Joanne Allen, Nicola Amico, Monica Bietti, Caroline Bruzelius, Caroline Campbell, Riccardo Camporesi, Andrew Chen, Lawrence Chiles, Benjie Croce, Ross Gill, Kieron Gurner, Andrea Misuri, Jo Morrison, Cristina Mosconi, Roberta Mottola, Franco Niccolucci, Ginevra Niccolucci, Jack Norris, François Penz, Giovanni Pescarmona, Jo Reid, Paola Ronzino, Miguel Santa Clara, Rocco Simone, Jennifer Sliwka, Gail Solberg and Amy Spreadbury. The various stages of the project have been funded by the Kress Foundation, the University of Cambridge, the University of Exeter, the UK Arts and Humanities Research Council (AHRC), and the Getty Foundation.

1 Denis Cosgrove, *Geography and Vision: Seeing, Imagining and Representing the World* (London: I.B. Tauris, 2008).

2 Tilo Felgenhauer and Karsten Gäbler, *Geographies of Digital Culture* (London and New York: Routledge, 2018).

3 For bibliography and websites, see Part I of this collection.

which brings together a research team from the University of Exeter and the University of Cambridge in partnership with London's National Gallery, and builds on prior collaborations with technical partners Calvium (app design) and Zubr (augmented and virtual reality).⁴ The new app provides users with a unique experience of the lost Florentine church of San Pier Maggiore, built at full scale using augmented reality. This innovative use of location-based consumer technologies builds on recent research on the church and its paintings. Taking advantage of the 2018 rehang of the National Gallery's Sainsbury Wing, it shows the church's high altarpiece within its original ecclesiastical and architectural setting, allowing the app's users in London to visualise the artwork's historic Florentine context around the painting in the gallery space. Conversely, in Florence, the user is able to visualise the altarpiece now in the National Gallery on the site it was first created for, gaining an understanding of both the interior of the Renaissance church and its later transformation into a bustling residential neighbourhood.

The underpinning research work on San Pier Maggiore has been primarily aimed at an audience of specialists, interested in the artistic heritage of the lost church, now displaced and dispersed in museum galleries around the world. By repurposing part of this research through locative and digital means, *Hidden Florence 3D* has proved especially effective in engaging the local community in Florence, as well as visitors to the National Gallery in London. This chapter outlines the steps by which a collaborative research project has gradually expanded since 2015, bridging the gap between art historical expertise and public engagement, and involving the inhabitants of the San Pier Maggiore neighbourhood in Florence in both the research process and its results. In so doing, we position our work more broadly within the emerging field of locative AR/3D and consider new directions that the first iteration of *Hidden Florence 3D* anticipates for this exciting new research area, situated between research-based visualisation and public engagement.

San Pier Maggiore and locative 3D

Today, the seventeenth-century portico-façade is the most visible survival of the convent church, still serving as a monumental framing feature for the piazza (Fig. 11.1) Before its suppression at the end of the eighteenth century, the convent of San Pier Maggiore was a major ecclesiastical site in Florence, belonging to the city's most prestigious community of Benedictine nuns, which could track its origins back to the eleventh century.⁵ The convent enjoyed an unusually prominent position in the ceremonial topography of Florence, associated through miracles

4 The project website can be accessed via: www.florence4d.org, and the San Pier Maggiore work is outlined at <https://florence4d.org/s/florence4d/page/a-neighbourhood-story>.

5 Donal Cooper, 'Firenze scomparsa: le chiese di Santa Chiara e San Pier Maggiore e la loro ricostruzione digitale presso i musei di Londra', *Archeologia e Calcolatori*, Supplemento 10, *Progetti digitali per la storia dell'arte medievale*, ed. Paola Vitolo (2018): 67–80.



Figure 11.1 Present-day view of the remaining seventeenth-century portico-façade of San Pier Maggiore © Miguel Santa Clara

with the city's patron Saint Zenobius and with the investiture of its archbishops through the ritual marriage of the bishop to the abbess on his entrance to the city.⁶ Visual traces of the nuns' considerable property portfolio can still be identified around the neighbourhood via the convent's crossed-keys emblem (referring to the keys of its titular, Saint Peter) displayed on houses and tabernacles. Throughout the medieval and early modern periods, the convent church attracted donations from the wealthiest families in the area, including the Albizzi and the Alessandri, whose imposing palaces can still be seen on the street (Borgo Albizi) leading from the heart of the city to the piazza in front of the church.⁷ Extensive archival records document these and other families' patronage of elaborate tombs and private chapels adorned with paintings by the city's leading artists.⁸ When

6 Maureen C. Miller, 'Why the Bishop of Florence Had to Get Married', *Speculum* 81 (2006): 1055–1091.

7 Monica Bietti, 'Dal Savonarola al pontificato di Leone X: artisti e patroni in San Pier Maggiore a Firenze', in *Nello splendore mediceo*, ed. Nicoletta Baldini and Monica Bietti (Livorno: Sillabe, 2013), 127–137; Claudio Paolini, *Borgo degli Albizi: case e palazzi di una strada fiorentina* (Florence: Edizioni Polistampa, 2008).

8 The convent's archives were absorbed into the Florentine Granducal (later State) archives in remarkably complete condition after the suppression in 1784 (in contrast to documentation from the Florentine religious houses suppressed in much more disorderly fashion in the early 1800s during



Figure 11.2 Francesco Botticini, *The Assumption of the Virgin*, 1475–76. Tempera on wood, 228.6 × 377.2 cm. © National Gallery, London

San Pier Maggiore was demolished in 1784 by the city authorities on the pretext of structural problems, the area was soon exploited as a public market and – aside from the massive portico – the architectural footprint of the building faded over the years.⁹ The blocks of buildings now on the site of the former church are occupied by commercial properties at ground level and private apartments on the upper floors. The nave of the church has vanished, its central axis transformed into an open-air street, the Via di San Pier Maggiore.

The idea to make use of digital technologies to virtually reconstruct the lost church took shape in early 2015 during preparations for the National Gallery exhibition ‘Visions of Paradise: Botticini’s Palmieri Altarpiece’ (4 November 2015–28 March 2016), curated by Jenny Sliwka.¹⁰ The exhibition’s centrepiece, the *Assumption of the Virgin* by the Florentine painter Francesco Botticini (NG1126), was commissioned for a side altar in San Pier Maggiore in 1475–76 (Fig. 11.2).¹¹ The focus on this painting called for new research on its meaning and context,

the Napoleonic period). While the church no longer survives, it is thus exceptionally well documented, with a dedicated *fondo* ‘San Pier Maggiore di Firenze’, in the Archivio di Stato di Firenze.

9 For a general overview of the urban development of the area, see Emma Mandelli, ‘La piazza di San Pier Maggiore in Firenze’, *Studi e documenti di architettura* 3 (1973): 115–173.

10 Donal Cooper and Jennifer Sliwka, ‘In Context: San Pier Maggiore’, *Apollo* 182, no. 636 (2015): 76–81.

11 Jennifer Sliwka, *Visions of Paradise: Botticini’s Palmieri Altarpiece* (London: National Gallery, 2015).



Figure 11.3 The 3D model of San Pier Maggiore overlaid on present-day urban fabric. © University of Cambridge, Miguel Santa Clara and National Gallery, London (2015). Accessible via: www.youtube.com/watch?v=ZUXa1nDtOB0

concentrated on San Pier Maggiore and its neighbourhood where the altarpiece's patron, the apothecary, humanist and politician Matteo Palmieri (1406–75), had his home and shop (on the Canto alle Rondini, around the corner from the church).¹² As the potential of San Pier Maggiore became clearer, the show expanded to encompass another altarpiece in the National Gallery which came from the church: Jacopo di Cione's multitiered polyptych (NG569-NG578) commissioned for the high altar in 1370–71.¹³ The 'Visions of Paradise' installation would display the separate panels from Jacopo di Cione's altarpiece – hitherto arranged as individual works in the Gallery's permanent Sainsbury Wing hang – recomposed in their original tiers to a height of around 5 m. By juxtaposing the two altarpieces, painted over a century apart, the exhibition would express the devotional environment Palmieri grew up in and indicate how his own commission for San Pier Maggiore – Botticini's *Assumption* – would have been seen alongside works of different periods.

12 Ibid. See also, for an itinerary connecting a number of sites in the area, the *Hidden Florence* walk, 'Giovanni: Neighbourhood World' and related web articles: <https://hiddenflorence.org/stories/giovanni/> (accessed April 5, 2021).

13 On Jacopo di Cione's altarpiece: Dillian Gordon, *National Gallery Catalogues: The Italian Paintings before 1400* (London: National Gallery and Yale University Press, 2011), 52–91; Gail E. Solberg, 'The Political Genealogy of the San Pier Maggiore Coronation of the Virgin', in *The Historian's Eye*, ed. Shelley E. Zuraw and Hayden B.J. Maginnis (Athens, GA: Georgia Museum of Art, 2009), 67–81.

In May and July 2015, National Gallery and University of Cambridge researchers undertook fieldwork in Florence, combining archival research with a survey of the neighbourhood and its built environment.¹⁴ Cross-referring between historic plans and surviving fragments in the urban fabric allowed the research team to build up sufficient evidence to reassemble the building. While some features from the church reused in later buildings were immediately visible – like the seventeenth-century façade portico and the medieval piers of the north transept overlooking Piazza Salvemini – major new findings were made, thanks to the participation of residents in the local neighbourhood who assisted the research team in revealing further architectural fragments hidden inside their houses and shops.¹⁵ This crowdsourced research process led to the identification of the original bell tower and several chapels, clarifying the building's plan and elevation. Using photogrammetry to survey these elements, it was possible to anchor them within an overall model of the neighbourhood block, and from this to define a first iteration of the 3D reconstruction of the church, presented in a short documentary film produced by François Penz and directed by Miguel Santa Clara to accompany the National Gallery exhibition (Fig. 11.3).¹⁶ As this first phase of research left a number of aspects unresolved or uncertain, the reconstructed architecture of the church was rendered as a neutral (white) point cloud in the film, providing an evocative yet ethereal presence of the building nested within the present-day fabric of the neighbourhood.¹⁷ The reconstruction reinstated Botticini's *Assumption of the Virgin* and Jacopo di Cione's high altar polyptych within both the architecture of the lost church and today's built environment. The model is shown in an animated sequence at the end of the film, most of which is dedicated to documenting the research process

14 The 2015 research team comprised Jennifer Sliwka (National Gallery and exhibition curator), François Penz (University of Cambridge, Department of Architecture), Miguel Santa Clara (photographer, digital modeller and filmmaker), and Donal Cooper (University of Cambridge, Department of History of Art). Funding was provided by the Kress Foundation and the University of Cambridge (via the Cambridge Humanities Research Grant Scheme).

15 Additional material was provided by Joanne Allen, whose research on San Pier Maggiore is forthcoming in *Transforming the Church Interior in Renaissance Florence: Screens and Choir Spaces from the Middle Ages to the Tridentine Reform* (Cambridge: Cambridge University Press, 2022). The fieldwork attracted local coverage in the Florentine edition of *Corriere della Sera* (January 19, 2016), https://corrierefiorentino.corriere.it/firenze/notizie/arte_e_cultura/16_gennaio_19/firenze-chiesa-perduta-ricostruita-national-gallery-02227380-be8d-11e5-a556-7c5e0a989731.shtml (accessed April 5, 2021).

16 The documentary played in a continuous loop in the film theatre adjacent to the 'Visions of Paradise' exhibition in the Sunley Rooms space and was also uploaded onto the National Gallery YouTube channel: www.youtube.com/watch?v=ZUXa1nDtOB0 (accessed April 5, 2021; over 28,000 views to date). In addition to directing the film, Miguel Santa Clara was responsible for creating the reconstruction in all its stages (scanning, photogrammetry, post-processing, modelling and rendering).

17 The point cloud allowed the coherent presentation of the reconstruction in the film, without committing to detailed rendering solutions for capitals or other architectural features for which data is lacking.



Figure 11.4 The comprehensive rehang of Galleries 57–60 in the Sainsbury Wing, displaying the panels from San Pier Maggiore’s high altarpiece at the north end of the penultimate cross-axis. © The National Gallery, London

underpinning the reconstruction, with the film itself conceived as a vehicle to capture metadata in the spirit of the London Charter.¹⁸

18 The format of the documentary film was much influenced by discussions with Prof. Franco Niccolucci of the University of Florence, one of the co-authors of the London Charter (for the computer-based visualisation of cultural heritage): www.londoncharter.org (accessed April 5, 2021). Niccolucci has written extensively on how to address uncertainty in 3D modelling, see for example: Franco Niccolucci and Sorin Hermon, ‘A Fuzzy Logic Approach to Reliability in Archaeological Virtual Reconstruction’, in *Beyond the Artifact. Digital Interpretation of the Past: Proceedings*

A second phase of work on the site followed four years later, this time uniting the University of Cambridge's experience of researching and modelling the building with University of Exeter expertise in locative apps.¹⁹ The aim was to refine the 3D model and to explore ways to digitally reinstate the building on site in Florence using augmented reality (AR). In this phase, it became necessary to abandon the point cloud aesthetic in favour of a fully rendered model that would be more visually effective on site; this required a new phase of on-site survey work to inform the additional detail included in this revised model.²⁰ The aim of this new work was to provide a kinetic and embodied experience of the church through rendering the 3D model at 1:1 scale, using AR technologies on mobile devices to visualise the layout of San Pier Maggiore's interior, and to uncover the relationship between the lost architecture, its displaced artworks and their original settings.

Working closely with app and VR industry specialists, a new, rendered, yet also lighter version of the digital model of San Pier Maggiore was created that could run on location on handheld devices (smartphone and tablet) using spatial awareness powered by ARKit for iOS.²¹ This new iteration of the project was also able to take advantage of the comprehensive rehang of the Sainsbury Wing, completed in October 2018, which arranged the 12 panels from Jacopo di Cione's high altarpiece in their original tiers to a height approaching that of their original frame. This reprised the temporary installation from the 'Visions of Paradise' exhibition for the permanent hang but significantly increased its prominence by placing the reconstructed altarpiece at the northern termination of one of the Wing's principal vistas, running through four interconnected spaces from galleries 57–60

of the CAA2004 Conference, ed. Franco Niccolucci and Sorin Hermon (Budapest: Archaeolingua, 2010), 28–35. Niccolucci's research group would employ a similar documentary film approach in their 2016 reconstruction of Giorgio Vasari's *Last Supper* within the Florentine convent of Le Murate: www.prisma-cultura.it/1-ultima-cena-del-vasari/ (accessed April 5, 2021).

19 This second phase of work was supported by two research grants from the AHRC and the Getty Foundation that brought together the work of Fabrizio Nevola and Donal Cooper in locative apps and 3D modelling. New survey work was conducted on site in June 2019 by a research team comprised of Nevola, Cooper, Chiara Capulli and Luca Brunke.

20 A key consideration was that the point cloud only functioned when animated, with the building's form effectively dissolving into the cloud when viewed statically. Moreover, in the short period since the 2015 film, public familiarity with the technology of LiDAR 3D scanning and its point cloud aesthetic had increased markedly (in the UK most notably via the 2017 BBC television series *Invisible Cities* which featured urban-scale LiDAR scanning of Naples, Rome and Florence). Whereas the point cloud structure in the 2015 film was derived from a procedural model, the aesthetic is now increasingly associated with reality-based scanning techniques like LiDAR.

21 As noted earlier, the project was completed as a collaboration with app designers Calvium Ltd and the virtual and augmented reality studio Zubr.co. In order to run smoothly on a mobile app, the number of polygons making the model needed to be reduced. Source files for the development of *Hidden Florence 3D* have been made available via GitHub: <https://github.com/ZubrVirtualReality/Hidden-Florence> and further information on the technical challenges behind the app are discussed by: <https://zubr.co/work/hidden-florence-3d/> and <https://calvium.com/projects/hidden-florence-3d/> (accessed April 5, 2021).



Figure 11.5 Exploring San Pier Maggiore using the AR app *Hidden Florence 3D*. Frame from the video ‘San Pier Maggiore a Neighbourhood Story’ © University of Exeter and University of Cambridge (2020). Accessible via: www.youtube.com/watch?v=uAvjkmKOzOs&t=4s

(Fig. 11.4).²² It was this recomposition of Jacopo di Cione’s polyptych in such a prominent axial setting of the permanent hang that opened new possibilities for overlaying the Florentine church onto the gallery space in London. Similarly, in Florence, the former location of the high altar sits in the middle of a quiet back street, the Via di San Pier Maggiore, allowing the geolocated visualisation of the polyptych without infringing private or commercial property. The reinstatement of the altarpiece into an open street had also been one of the most powerful passages of the 2015 film. For these reasons, the new version would focus on Jacopo di Cione’s polyptych over the high altar as the highlight of the 3D model and AR experience.²³

Special attention was given to thinking about multiple modes of user experience, so that the locative AR model works effectively in three different settings: on the former site of the church in Florence; in the National Gallery’s Sainsbury Wing in front of the altarpiece; and an ‘anywhere’ mode that allows users

22 The new installation of the polyptych was singled out for praise in the editorial ‘Rehanging the Sainsbury Wing’, *The Burlington Magazine* 160, no. 1388 (November 2018): 911: “One of the challenges of a building in which vistas are so important is the choice of paintings to place at their ends. Among the great successes of the rehang is the spectacular display that closes the east [sic] end of the penultimate cross-axis, the twelve main panels from one of the largest altarpieces commissioned in fourteenth-century Florence, painted by Jacopo di Cione for S. Pier Maggiore”.

23 The intention is to integrate Botticini’s *Assumption of the Virgin* and other artworks from the church in the new version of the app currently in development, discussed below.

to try out the app elsewhere. Users experience the church with its high altarpiece through a bespoke transition effect, created through a depth-based camera shader, which overlays the model gradually onto the built fabric, changing the user's perception of their daily surroundings. Experienced in Florence, the walls of present-day shops and houses can therefore be understood as elements of the lost church, as the modern-day streetscape merges with the elements of the convent church. Given the 1:1 scale delivery of the model, users can interact with it by walking and exploring the building. The Via di San Pier Maggiore can be readily understood as the former nave of the church, while the rest of the neighbourhood acquires historical contextual significance that people can continue to explore even after they stop using the app (Fig. 11.5).

The three-way exploration approach – that connects the experience to either the original site of the church in Florence or the altarpiece that stood on its high altar now in London, or alternatively allows for a free exploration mode that can be enabled anywhere – is especially versatile and visualises effectively a form of digital restitution, as building and artwork once again interact with the moving bodies of viewers. In London, the app unlocks the digital model using image recognition of the *Coronation of the Virgin* (with the depiction of the church held by the kneeling figure of Saint Peter providing the marker key). The Sainsbury Wing's new hang has the altarpiece as the focal point of an axis that is almost equivalent to the length of the nave of San Pier Maggiore. Making the most of this opportune parallel, the app was designed to allow for the digital reinstatement of the church across the full length of the Sainsbury Wing. Once the app recognises the painting, the camera view transitions to reveal the digital reconstruction. Users are then free to navigate the church from the altarpiece at the east end to the front door on the west façade, at the far end of the Sainsbury Wing axis, thus gaining a sense of the relative scale of the church and the painting that stood on its main altar.²⁴ In so doing, the *Hidden Florence 3D* app addresses one of the key challenges faced by museum displays where the original viewing context is largely lost.²⁵

Locative AR, heritage sites and user interaction

Within the rapid development of tools powered by augmented reality delivered on smartphones, *Hidden Florence 3D* has been a trailblazer for the use of this technology at 1:1 building scale in the field of Cultural Heritage. Locative AR delivery of digital objects is evolving rapidly as developers explore the potential of this new affordance of handheld devices; an app developed as a tie-in to the recent BBC *Civilisations* series is an example of successful implementation of this technology applied to the Cultural Heritage sector, although the models

24 ARKit plane tracking ensures that the model remains calibrated even when the user is at the other end of the gallery axis.

25 A challenge discussed in relation to the app by the National Gallery's chief curator Caroline Campbell in the mini-documentary viewable at <https://hiddenflorence.org/hf-3d/research/>.

delivered in this app are object-scale rather than full buildings.²⁶ It allows interactions with to-scale artefacts from UK museum collections, which are built as 3D models that users can move, rotate, and interrogate to reveal curated content and special features. Similarly, recent additions to Google Arts and Culture (app and website) enables the exploration of ancient artefacts in AR, while also allowing users to virtually step into a selection of at-risk buildings.²⁷ Ongoing work on apps that deliver pre-rendered 360° content are also being developed to enrich visitor engagement through immersive or AR experiences at heritage sites. For instance, the implementation of AR/VR powered tools at a number of National Trust sites in the South West of England suggest the potential for such interventions to improve access and enhance interpretation; so, for instance, at the Botalack industrial landscape site in Cornwall, AR visualisation is deployed to show users how the idyllic coastal landscape might have appeared at the height of the mining industry in the nineteenth century.²⁸

The technology behind the delivery of content at building scale is a relatively recent capability, introduced with the release of the ARKit platform for developing augmented reality apps for iPhone and iPad in summer 2017, while the concurring platform for Android (ARCore) was only launched in the following year.²⁹ Using environmental understanding and motion tracking on a mobile device exploits the possibilities of interaction between digital features and the real-world spaces they operate within. Such technologies have been widely adopted within commercial sectors; so, for instance, interior design apps that can scan a room and perform live positioning of furniture have revolutionised communication between companies and their customers, who become actively involved in the process of designing their own spaces.³⁰ The ability to calibrate the model onto features from the surrounding environment has also proved an innovative way to test the design and impact of larger structures in the context of the real estate sector; here for instance AR can help visualise completed projects for buyers and investors while construction is underway.³¹ Among recent applications of the newly available technology

26 www.bbc.co.uk/taster/pilots/civilisations-ar (accessed April 5, 2021).

27 Google Arts and Culture Reality Check is available via the Google Arts and Culture mobile app: <https://artsandculture.google.com/project/ar> (accessed April 5, 2021).

28 The collaborative Vista AR project is an example involving sites that differ both geographically and in their visitors' segments www.vista-ar.eu/en/ (accessed April 5, 2021) and www.vista-ar.eu/en/collaboration-between-the-national-trust-and-vista-ar/ (although here the landscape-scale experience is delivered at scale around a diorama model).

29 <https://developer.apple.com/videos/play/wwdc2017/602/> (accessed April 5, 2021); ARCore was launched in February 2018, <https://blog.google/products/google-ar-vr/announcing-arcore-10-and-new-updates-google-lens/> (accessed April 5, 2021).

30 An example is the STAGE AR app developed by STAGE interior design studio. <https://stage-interior.com/ar-app> (accessed April 5, 2021).

31 For instance, the Calvium Battersea redevelopment in London, see <https://calvium.com/projects/battersea-power-station-redevelopment/> (accessed April 5, 2021); a proof of concept app has been developed by Zubr for the development site of Ruskin Square, London. We thank Jack Norris for showing us a preview of their project.

in the cultural heritage sector, an extended-reality-enabled app, running on pre-loaded iPads, reconstructs the site of the Falstad Nazi concentration camp in Norway.³² Here, users are free to explore quite an extensive site, finding buildings that are no longer standing as 3D to-scale models, while hotspots provide short text, audio, video and visual contents to enrich their experience. The potential of 3D full-scale models delivered on site is further being explored within the context of Roman and other archaeological sites, although thus far most projects remain at experimental testing stage.³³

The innovative application of AR in the *Hidden Florence 3D: San Pier Maggiore* app has been noted, although work to improve its content and user experience design is currently underway.³⁴ The app offers innovative solutions to traditional research questions in art history: it connects the altarpiece with the space for which it was once commissioned and it challenges linear narratives of display in gallery collections by suggesting that artworks can be spatialised in situ with non-invasive techniques. Moreover, in the context of other contributions in this collection, the 3D app connects with the content in the geolocated tours of *Hidden Florence* (through the Giovanni and Niccolosa tours) to extend the experience of the historical guide characters by showing the user the church within the built environment as they knew it. In this way, the map and audio mediated AR features of the audio-guide directly come into contact with the more visually complex and compelling 3D AR; future developments will seek to make these connections seamless within the user experience.³⁵

We are also seeking to expand the expert content provided within the app. The first and current version of *Hidden Florence 3D* only shows the high altarpiece, one of many works of art that were once installed over the church's altars, in the digital model. Especially among the academic and specialist audiences, an opportunity is missed to provide additional information about the church that could be made available via the app, alongside the reconstruction.³⁶ An initial 'wow! factor' of the AR experience could be followed up with additional content presenting

32 A collaborative project between Eodyne Systems S.L. in Barcelona, the SPECS research group at the Barcelona Institute of Science and Technology and the Falstad Centre: <https://falstadsenteret.no/en/hva-skjer/exhibition/digital-reconstruction> (accessed April 5, 2021).

33 For instance, see the AR app work in progress for Roman Trier, developed at the Technical University of Darmstadt: https://www.archaeologie.architektur.tu-darmstadt.de/forschung_klarch/forschungsprojekte_klarch/augrec_klarch.de.jsp (accessed April 5, 2021).

34 Winner of the <https://ukappawards.co.uk/2020-winners/> for 'Use of AR/3D' and shortlisted for the same category in SPARKies award, www.techspark.co/blog/2020/11/30/sparkies-2020-the-shortlist/ (accessed April 5, 2021).

35 Currently, the two apps promote one another, inviting the user to explore content provided through each, but requiring a manual handover to move between the two apps; integration of 3D/AR with the *Hidden Cities* audio-guide software is a technical challenge we would aim to address in future iterations, but is funding-dependent.

36 Anecdotal feedback from the launch at a fully subscribed research seminar at the National Gallery ('Florence in the Sainsbury Wing', 7 November 2019) suggested a need for additional content to be included to our first published app.

the research that backs up the digital model. By adding opportunities for user interaction within the app, we hope in future to make the experience more compelling and provide more opportunities for learning through using this technology.

A new version, currently under development, will run on both iOS and Android devices and will present enriched content that users can engage with more extensively, and the possibility of linking outside the app as an option to discover more to suit a more specialist audience. These improvements address the primary problem of the first version of the app, namely that once the experience has been delivered there is little else for the user to do. As we develop the work into the next phase, we are implementing hotspots into the model, so that users can interact with features, and learn more as they explore the model. Underpinning the 3D model in the app is a research-intensive workflow that is the primary focus of the Florence4D project; as we reconfigure the *Hidden Florence* 3D app, so we will operationalise a design pipeline that allows us to rework research-based models to include the latest results of our 3D scanning campaigns and annotations that link to the sources underpinning the reconstruction.³⁷

Recent work on the reconstruction of the fifteenth-century interior of another Florentine church, Santa Maria degli Innocenti, has provided the context within which to develop this research workflow.³⁸ Our model of the Innocenti church integrates reality-based reconstruction with modelling resulting from interpretative choices, and recontextualises the altarpieces from the church that are currently displayed in the adjacent Museo degli Innocenti. In order to provide a guided experience to the user, the model is accessed online through a customised web viewer, allowing users to explore the church interior; the approach underlines change over time as a dynamic and diachronic process, showcasing three selected moments in the history of the building.³⁹ The web viewer has been designed to run in Unity, a cross-platform game engine designed for 2D and 3D web interactions, that also runs within our *Hidden Florence 3D* app, thus allowing a relatively simple transfer between these two environments. The exploration of the model takes place at a generic eye level, and points of interest within the space are enriched with hotspots that link to the project database, revealing the evidence base for the interpretation presented in the visualisation, including sources and further visual and textual content. By also presenting the model through an app targeted to the Innocenti museum visitors, the experience of the museum is enriched by

37 See Fabrizio Nevola, Donal Cooper, Chiara Capulli and Luca Brunke, 'Immersive Renaissance Florence: Research-Based 3D Modelling in Digital Art and Architectural History', *Getty Research Journal* 15 (2022): pp. 203–227. The new iteration of the app has been funded by the Arts and Humanities Impact Fund at the University of Cambridge.

38 Ibid. and Fabrizio Nevola, Donal Cooper, Chiara Capulli and Luca Brunke, 'Research-based 3D Modelling of Santa Maria degli Innocenti: Recovering a Context for the Quattrocento Altarpieces', in *Common Children and the Common Good: Locating Foundlings in the Early Modern World*, ed. Nicholas Terpstra (Florence: Villa I Tatti and Istituto degli Innocenti, 2022), forthcoming.

39 To access the model and underlying data, see www.florence4d.org.

contextualising the artworks and enabling virtual access to the church that is currently closed on account of urgently needed conservation work.⁴⁰

***Hidden Florence 3D* and community engagement with research**

In addition to the technical and research considerations thus far discussed, the *Hidden Florence 3D* app has played an important part opening up our research to a wider audience. The app is provided free for download on personal devices from the iOS App Store, which democratises the experience to a wider audience than more exclusive and expensive gallery applications branded as ‘digital experiences’, which are often part of ticketed temporary exhibitions. Moreover, given that the app runs on personal devices (as opposed to tablets and other equipment provided by a museum), there are limited costs to deploy these within museum venues.⁴¹

The app had its soft launch November 2019, only a few months before the global COVID-19 pandemic that led to the collapse of tourist travel and prolonged periods of closure for museums and galleries. The resulting lockdowns have restricted the opportunities for distribution and promotion: the app received some publicity, thanks to a social media campaign run by the National Gallery over the summer 2020, at a time of very limited access to UK museums. Nevertheless, during the month of August, out of almost 100,000 impressions, tweets promoting the app received over 10,000 views and 1,400 engagements, while a new behind-the-scenes documentary film revealing how researchers had worked with the support of the local community in Florence reached over 23,000 people and obtained 3,200 total views, with over 500 engagements.⁴² On Instagram, the Stories that the National Gallery account posted on 5 August 2020 totalled an average reach per Story of almost 20,000 users. Numbers decreased substantially in the month of September, when tweets promoting the app reached half the users of the previous month, maintaining the same percentage of interaction. User-posted comments highlighted the opportunity that the app provided to enrich the context of the artwork on display in gallery, while others remarked on the non-invasive nature of the experience that encouraged people to return to view the material object in the gallery space. Certainly, the app has provided a new way to consider how galleries might adopt bring-your-own device apps to enhance the user experience of museum objects in the gallery, as well as how these might

40 The 3D model of Santa Maria degli Innocenti is part of the expanded *Hidden Florence 3D* app, published in summer 2021.

41 Free at the point of use, apps have development costs and require some marketing from venues to promote adoption. At the time of writing, during the worldwide COVID-19 pandemic bring-your-own device is an especially attractive solution for museums as there is no additional practical need to sanitise shared devices.

42 We are grateful to the National Gallery marketing for compiling a brief report on which these comments are based, ‘*Hidden Florence*: Social posts – National Gallery Channels – August 2020’.

provide remote experiences that extend the reach of collections and learning opportunities associated with them.

Conversely, in spite of the fact that we have thus far been unable to schedule a public launch for the app in Florence, the project has proved particularly successful in communicating the five-year long research project to San Pier Maggiore's local community. As part of our final user-testing of the app in October 2019, we were able to share the app with local residents and gather feedback and responses for a new documentary film, 'San Pier Maggiore: A Neighbourhood Story'.⁴³ When provided with the app, residents and business owners described the excitement of being able to travel back in time to revive the material and immaterial heritage of a building that no longer survives, gaining a clear sense of the historical and material stratification of the area and spaces they inhabit. The shopkeepers of the local fast food restaurant were surprised to see their street tiled with a terracotta floor; others responded that they 'had always known that an old church once stood there – but now, thanks the research work, they can understand exactly what it looked like'. A local craftsman stressed that 'it is fantastic to see the result of such research, especially because it is showing something that does not exist anymore', and on the same theme of memory, one of the residents expressed her gratitude for producing something that will effectively communicate the past to the generation of her grandchildren.⁴⁴

Moreover, the app has also helped to re-brand the community's identity as one associated with the now-lost church of San Pier Maggiore. Riccardo Camporesi, the owner of the local café, now proudly promotes the presence of a Renaissance pilaster from one of the church's chapels, now embedded within the wall of the establishment's restroom. The centre for local social life, his café has hosted meetings of the research team over the years, and many encounters between scholars and residents of San Pier Maggiore. This constant exchange has left Riccardo with a desire to continue to tell the story of the lost church to his customers, and he has had an informative poster printed that is displayed in the café; he is keen to acknowledge that people's curiosity about the past that is tangible in the walls of his family business has frequently sparked interesting conversations. In this way, a research project that has been primarily based on the analysis of archival evidence has become relevant and accessible to a local community, raising a renewed interest in the spaces they inhabit.⁴⁵ It may be said to offer a new model for public

43 The ten-minute documentary film, shot and produced by Fresh Ground Films, is viewable via YouTube: www.youtube.com/watch?v=uAvjkmKOzOs; and also our project website: <https://florence4d.org/s/florence4d/page/a-neighbourhood-story> (accessed April 5, 2021).

44 Ibid. All examples cited from the film; we are enormously grateful to local residents and businesses for allowing us to film their responses and hope still to present the documentary as part of a public launch in the city when conditions allow.

45 The demonstration of the app to the local neighbourhood attracted renewed attention in the local press, see Ivana Zuliani, 'La chiesa di San Pier Maggiore revive dov'era', *Corriere fiorentino*, October 27, 2019, www.pressreader.com/italy/corriere-fiorentino/20191027/281917364868257 (accessed April 5, 2021).

engagement that recognises the lived-experience of spaces in the present day as a valid continuum with academic research and museum display,

Conclusions

As this chapter has suggested, locative AR delivered through handheld consumer devices (smartphones and tablets) can take complex research-based 3D models and repurpose these for public-facing outputs aimed at the wider audience of museum-goers and tourists. Through the first iteration of the *Hidden Florence 3D* app that we have discussed here in relation to the church of San Pier Maggiore, it has been possible to identify the potential of 1:1 scale AR reconstructions of lost or heavily modified sites. Within a gallery display, such an approach can enhance the viewer experience by providing a better contextualised understanding of artworks that are displayed in such a way that they are largely divorced from their original (ecclesiastical) settings. Instead, within the urban environment, AR interventions can provide the visitor with a deeper appreciation of the historic fabric, and the layered palimpsest of the urban built environment. Such enhancements are of interest not only to visitors, but can also engage local resident communities. As we found with the neighbourhood of San Pier Maggiore, the app provided an immediate means by which local residents could access new research which they had in part contributed to, rewarding their support with a tangible result they could share within their social groups – this is rarely the case for scholarly outputs of academic research.

As with any experimental application of innovative methodologies or technology, there is also much to learn from and improve in the framework adopted for *Hidden Florence 3D* app. Above all, we have observed the need to introduce more content to the AR experience, so that the user may navigate and explore the locative 3D model, searching for and triggering information contained in selected hotspots and thus making for a longer interaction with the potential for additional learning at each step. While perhaps the most impressive element will likely remain the 1:1 scale virtual ‘construction’ of the building within the screen environment, it will be possible to find out more about architectural features (e.g. the nuns’ gallery) or other artistic works originally found within the church (e.g. the Palmieri altarpiece in the south transept). Future iterations will hopefully enrich the interpretative functionality of the app in new directions, especially through the incorporation of diachronic time-slide features to capture and relate the multiple phases that can be reconstructed for the building from surviving documentation and artworks.

Furthermore, as we build out from the San Pier Maggiore example, so we are exploring ways in which to make the *Hidden Florence 3D* app more of a versatile system through which we can present multiple models as these are produced – in this sense creating an extensible app in the same way that the *Hidden Cities* apps are all structured on the same template. Such an approach will make it significantly easier to add new content to the app as the Florence4D research project creates new work, again ensuring a workflow that connects

original research through to public-facing outputs aimed at wider audiences. In so doing, of course, the research is also tested in the field as the locative AR approach ensures that the ‘lab-based’ research-based 3D models encounter the physical environments which they reconstruct, leading to new observations and findings.⁴⁶ As Victoria Szabo has also noted, AR technologies have the potential to enrich lived space by bringing together abstract, curated scholarly knowledge with the intuitive experience of on-site engagement.⁴⁷ In this respect, it is important to remember that while publicly available AR apps are an important way of presenting research to a wider public, they also demonstrate the rich potential of digital spatial humanities methods and approaches to interpretation and understanding applied to the wider field of art and architectural history as a whole.

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46 Further on the virtuous cycle of the research-based modelling workflow, see Nevola, Cooper, Capulli and Brunke, ‘Immersive Renaissance Florence’.

47 Victoria Szabo, ‘Apprehending the Past. Augmented Reality, Archives, and Cultural Memory’, in *The Routledge Companion to Media Studies and Digital Humanities*, ed. Jentery Sayers (London: Routledge, 2018), 372–383.

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