Microstoria 2.0:
Geo-locating Renaissance Spatial and Architectural History

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"There is still one of which you never speak."
Marco Polo bowed his head.
"Venice," the Khan said.
Marco smiled. "What else do you believe I have been talking to you about?"
The emperor did not turn a hair. "And yet I have never heard you mention that name."
And Polo said: "Every time I describe a city I am saying something about Venice."
"When I ask you about other cities, I want to hear about them. And about Venice, when I ask you about Venice."
"To distinguish the other cities' qualities, I must speak of a first city that remains implicit. For me it is Venice."
(Calvino 1974, 69)[1]

Italo Calvino's fictional account of Marco Polo's dialogue with the Emperor of Cathay, Kublai Khan, has become a *topos* among urban theorists and historians for its characterization of the infinite variety of urban form and identity. In *Invisible Cities*, Calvino offers a series of short descriptions of cities and their inhabitants, each of them filtered through a particular frame: emotion and the senses, color and texture, materials, ethnography. When

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[1] The examples selected for discussion in the text and notes are no more than selective and have been chosen as much as possible to focus on research and projects that address early modern material. My thanks to Alex Butterworth and Jo Reid for discussions about apps, mapping, and geo-location over the past couple of years, and to David Rosenthal, who has worked with me on the *Hidden Florence* project, discussed below.

challenged by the Emperor about the fact that he has made no account of his hometown, Venice, Marco responds that each and every one of the descriptions he has provided was of that city. Through Marco's voice Calvino engages in a postmodern writing exercise; the multiplicity of interconnected evocations of place conjures varieties of forms and styles resolved in a single physical place. It is also a richly evocative articulation of the idea of the city as a palimpsest—a physical text layered with multiple meanings and interpretations that supersede one another on the lived surface of any one era. Long before the idea of the Anthropocene, Calvino captures the physical sense of distinct, deposited, and intelligible layers of the human past interwoven into the physical and sensory fabric of the current urban environment.

Calvino's text has inevitably caught the imagination of many academics and urban theorists, and is introduced here to provide a sense of the power of digital tools to access and order multiple and overlapping narratives of the cities of the past. In particular, this essay considers the ways in which GIS (geo-information systems), GPS (global positioning systems), and more broadly geo-locative technologies have been adopted by both historians and art and architectural historians of the early modern European city to reconfigure research questions and present new findings, often to wider audiences than have traditionally been the principal beneficiaries of academic research. Specifically, the focus here is on how mapping and other geo-spatial approaches have addressed urban history, and how a variety of new technologies have been harnessed to deliver innovative research. The first section of this essay offers a broad overview and selective sampling of projects that adopt GPS and GIS technologies in relation to early modern urban and architectural history. This is followed by a specific case example, delivered as a result of a research project led by the author: the creation of an immersive, location-sensitive audio tour of the Renaissance city of Florence as a smartphone app called *Hidden Florence.* In the final section, this project, which explores the affordances of locative digital tools and participates in the wider technology-enabled spatial turn, will be discussed in relation to the experimental historical methodology of microhistory (or *microstoria*) that emerged in the late 1970s. It will be suggested that technology-led experiments such as *Hidden Florence* do more than simply reconfigure existing historical practices to the digital medium: rather, they also have the potential to propose new approaches and methods in the practice of history.

Digital technologies and the rapid and pervasive adoption of everyday mapping technologies delivered through GPS-enabled devices have renewed and

invigorated the "spatial turn" in humanities that cultural geographer Denis Cosgrove identified around a decade ago (Nevola 2013). Digital humanities are rapidly reconfiguring the field of Renaissance and early modern studies, with the spatial turn particularly evident in the application of GIS technology to mapping aspects of past urban environments (Ullyot 2013). Meanwhile, the seemingly unstoppable uptake of smart handheld devices offers an opportunity for exploration of how interactive map interfaces might be deployed on location and applied to urban history research. That so many European cities preserve extensive portions of historic fabric (and street layouts) makes these environments uniquely suited to reinscribing past meanings onto places through tagging of information to them—the city understood as text and palimpsest is one that is now more widely open to interpretation through digital tools that enable spatial visualization and located sensory experiences (Presner et al. 2014).

In fact, there is a growing tradition of historic maps being adapted to digital platforms by researchers to explore the social and architectural history of pre-modern cities (Favro 1999). Such maps obviously allow the historian to engage with the physical fabric and urban layout of cities prior to the widespread major changes that have resulted from the town planner's zeal to accommodate wider boulevards from the nineteenth century onwards. By deploying "urban markup" on historic maps, digital humanities projects operate on past layers of the city, offering a more authentic representation of period-specific information (Farman 2013b, 529–32).[2]

A first generation of the digital application of historic maps as interactive and enhanced environments can be observed in two early projects that used Giovanni Battista Nolli's remarkable figure-ground map of Rome, created in 1748 and one of the most accurate depictions of the city in the pre-modern period (Pinto 1976). Already in the later 1990s at Princeton, John Pinto was exploring the potential of a CD-ROM support for a database of information relating to the city and monuments of Rome and linked to highlighted areas on Nolli's map (Connors 2011; Waldron 1999). In turn, the interactive Nolli Map Website, launched in 2005 and based at the University of Oregon, was an innovative attempt to make this stunning and highly detailed map into a web-based "dynamic, interactive, hands-on tool."[3] Less than a decade on, it is easy to overlook the significance of a project in which the interactivity of

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[2] Farman (2013b, 532) discusses the term "urban markup," citing analog equivalents described by Malcolm McCullough.

[3] Jim Tice and Erik Steiner, http://nolli.uoregon.edu/preface.html.

the Nolli Map Engine 1.0 does little more than offer the user clickable layers (as in Photoshop) that highlight such landmarks and sites as walls, gates, gardens, and the River Tiber. Nonetheless, it is an important stepping-stone in the development of interactive mapping of an early modern city, and suggests how powerful the combination of historic basemap with contemporary historical interpretative interventions can be. It is also primarily designed in relation to user experience, with a clear aesthetic that draws attention to the historic map itself as an artifact worthy of study.

Considerably more ambitious is the *Aquae Urbis Romae: the Waters of the City of Rome* project, developed by Katherine Wentworth Rinne, initiated in the 1990s and updated in 2007, and evolving with the emerging opportunities of online presentation.[4] Here, the basemap interface is not a historic one, but rather the 1992 Cadastral Plan of Rome; while perhaps less visually compelling than that of Nolli, it offers a clear map onto which the complex website plots not only key elements in the hydraulic infrastructure of the Eternal City, but does so in chronological sequence through the use of a slidable timeline. This enables the user to track the construction, use, and decline phases of particular features from classical antiquity to the sixteenth century. Moreover, by hovering the mouse over a particular object marked on the map as a pin (e.g., fountains, sewers, aqueducts, and other features), the user is able to draw up additional text-based information about each element. A prodigious amount of material has been assembled in the website, which in turn underpins a traditional monographic study of Rome's Baroque water supply system (Rinne 2011). It is also clear that the project's ambitions extended beyond the specific research publications of its initiator and sought a dialogue with "historians, classicists, archaeologists, hydrologists, engineers, and geographers" by offering a long chronological coverage and proposing that other scholars might contribute to the site contents, as well as to an online journal also hosted on the site.[5]

More recently, the *Orbis Urbis* project, developed through the Biblioteca Hertziana Max-Planck-Institut in Rome, has gone further still in terms of proposing the city map as a means of accessing and interrogating a vast mixed-media database.[6] Here, the large corpus of library holdings—including early printed books, etchings, and photographs—has been provided

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[4] See http: //www3.iath.virginia.edu/waters/first.html; the project owes a great deal to the personal research of its director, published as a book (Rinne 2011).

[5] *Aquae Urbis Romae*, accessible at http://www3.iath.virginia.edu/waters/first.html.

[6] See http://db.biblhertz.it/orbisurbis/html/ou/frameset.htm.

with location coordinates and linked to a map or satellite view of the city of Rome. This enables users to identify a monument (e.g., the Coliseum) and draw down the items in the collection pertaining to it. This is a massive undertaking, and is designed with the potential to be extensible to other library holdings and collections—in essence adding a spatial geo-reference code to the more traditional library codes and search terms usually used to classify objects.

While ambitious in its scope, projects such as *Orbis Urbis* tend to focus on the process of tagging documents (be these historical events or material objects) to location coordinates on a map. Concurrently, over the last three or four years, various web-based resources have begun to redefine spatial and mapping practices, making urban markup into a simple practice embedded in social media platforms and tools, so that both academics and the general public can deploy powerful instruments to tag material to place. Such sites as Pinterest and Historypin enable mapping of any subject through the tagging of objects to place on easy-to-use map interfaces; Historypin in particular has been taken up by museums, local community groups, and individuals to assemble visual archives of impressive proportions.[7] Indeed, the popularity of Historypin as a social media platform makes it a powerful tool in the mobilization of crowdsourced citizen-science-style projects, where the general public can be drafted to assist scholars in such tasks as locating the subjects of paintings or the particular viewpoint chosen by an artist.[8] The Tate Gallery's ArtMap project, for example, sets out to locate the subject of artworks in the museum's collections from 1500 to 1900, while the British Library's geo-referencing project has tagged over 3,000 maps to their modern-day locations; both rely on crowdsourced contributions.[9] There is of course some debate about how such collaborative projects are checked for quality, although a growing body of evidence from the sciences as well as humanities suggest that crowdsourcing can make a valuable contribution while also extending the research process outside the narrow pool of professional researchers (Dunn and Hedges 2012).

While the volumes of geo-tagged historical data are growing, it is nevertheless worth observing that such processes of cataloguing do not significantly

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[7] See https://www.pinterest.com/ and https://www.historypin.org/en/ (both were founded in 2010).

[8] See, for example, the Imperial War Museum project, *Putting Art on the Map*, www.historypin.org/project/41-putting-art-on-the-map/#!mysteries/index/.

[9] See artmaps.tate.org.uk/ and www.bl.uk/maps/georeferencingmap.html.

alter interpretative paradigms unless they are interrogated in new ways. Indeed, it is, I think, helpful to consider such efforts in the light of a dichotomy observed in the context of archaeology, where field survey practices ("broken pots and meaningless dots") have become quite detached from theoretical and interpretative frameworks applied in other areas of the discipline (Witcher 2006). In the instance of GIS mapping and tagging projects, the risk would seem to be that while the amounts of things and events that can be tagged is almost limitless, critical and interpretative frameworks are required to put such information to good use. In this respect, mapping projects that layer multiple data sets—and offer the potential for external contributions and extensions of the material they support over time—offer quite a different degree of potential.

Michael Ullyot has recently written about a number of mapping projects that use the visual, pictorial interface of historic maps as the key public-facing point of access for complex underlying databases in relation to *The Map of Early Modern London* (MoEML: University of Victoria), which uses the 1560s "Agas Map" of London, and *Locating London's Past* (Universities of Hertfordshire and Sheffield), which is structured on John Rocque's 1746 map of the city (Ullyot 2013, 240–41; Nevola and Rosenthal 2011).[10] Geo-information systems applied to historical research (H-GIS) underpin such projects that are built on GIS-compliant historic maps; location coordinates are added to the other database archiving coordinates (such as date, unique ID number, etc.), so that items can be precisely plotted on the maps that have been rendered machine-readable as map tiles (Gregory and Geddes 2014; Bodenhamer 2010). To this small family of projects, the recently-published Digitally Encoded Census Information and Mapping Archive (DECIMA)—based at the University of Toronto and developed by a research team led by Nicholas Terpstra—has begun to provide a remarkably fine-grained spatial-historical account of Florence in the mid-sixteenth century, using census data overlaid on Stefano Bonsignori's 1584 map of the city (Terpstra 2016).[11] The DECIMA project distinguishes itself from the outset as being "open" in that its historical basemap is structured so as to be able to accommodate layers of additional data following the first input of the census material. As such, it has the ambition to be "a collaborative resource built by and for Early Modernists of

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[10] See https://mapoflondon.uvic.ca/ and www.locatinglondon.org/.

[11] See http://decima.chass.utoronto.ca/. For another earlier use of the Bonsignori map, in addition to the *Hidden Florence* project discussed below, see Robert Burr Litchfield's searchable Online Gazetteer of Sixteenth Century Florence (2006): http://cds.library.brown.edu/projects/florentine_gazetteer/.

all stripes," in which future participants might add new documentary data sets that would combine to offer a growing body of searchable information that can be cross-referenced on screen.[12] This opens up huge possibilities for researchers, as well as providing a remarkable teaching resource that visually frames database queries through the important relationship between the archival evidence and the physical place where events were played out, plotted on a map.

In all these cases, and there are of course many others, the basemap serves as a tool for the user to visualize locations of historical events, ranging from census data to architectural monuments or events that occurred at particular locations. The use of the historical map functions as a visual strategy that gives a historical "look and feel" to the interface, while also providing the user with a more chronologically accurate rendering of the urban environment than satellite-delivered basemaps such as Google Earth. With growing computing power and large research teams working in digital humanities projects comes the potential for layering more data on maps, and the opportunity for users to dynamically interact with the underlying mapping systems. Looking for a parallel to another area of digital humanities, we can see how the groundbreaking *Mapping the Republic of Letters* (Stanford University's network visualization project), which explored the intellectual and correspondence networks of the Enlightenment, has led to the development of Palladio, a platform for editing and visualizing any sort of comparable data set (Ullyot 2013, 939–40).[13] What is exciting here is to see how an initially "closed" project for analysis of a particular set of historical information has been turned into a platform that might be used by students and researchers alike; it seems likely that the fine-grained spatial detail of city-map projects such as DECIMA or MoEML will similarly expand in unanticipated ways as they become more collaborative and open.

It is of course also worth noting that significant innovations in mapping outside humanities point the way for future directions in historical digital research. Thus, as researchers working in the contemporary fields of political and environmental studies, sociological analysis, or urban planning and design have long realized, smartphones create prodigious quantities of data relating to users' consumption practices in their everyday interactions, a form of real-time data that can be aggregated and analyzed through maps

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[12] See the home page statement at http://decima.chass.utoronto.ca/.

[13] See http://republicofletters.stanford.edu/ and http://hdlab.stanford.edu/projects/palladio/.

(Bauman and Lyon 2012; Silva and Frith 2012; Presner et al. 2014). Such data ceases to be static; real-time maps can trace both physical and temporal movement in dynamic ways through new forms of visualization in which the two-dimensional vectors of the map, latitude and longitude, are enhanced through the action of time. In the work of MIT's Sense*able* City Lab, for instance, real-time movement in an entire city can be viewed to understand such factors as commuting and traffic patterns, infrastructure capacity, or crowd behaviors at occasional events (e.g., sports events and concerts).[14] As early as 2008, a project called *Real Time Rome* analyzed the city, revealing how people favored particular streets over others in their pedestrian movement, or gathered and socialized in specific places at particular times (Ratti and Calabrese 2008; Girardin et al. 2008). Referring to the Nolli map discussed above, Carlo Ratti and Francesco Calabrese note that "Nolli didn't think that what happened in the spaces of the city was any of his cartographic business," while "we can now model the city as a dynamic system in which social, architectural and technological aspects cohabit" (Ratti and Calabrese 2008, 43).

Naturally, no sufficient body of real-time data can help us visualize movement and experience in past urban environments. As we have seen in the opening examples above, historical maps have primarily served historians as a static base for digital humanities projects that layer historical evidence. Nonetheless, the dynamics of everyday use and movement might be at least in part recovered through digital mediation. The potential of real-time geo-location enabled by smartphones through apps that adopt the affordances of geo-location technologies have yet fully to be explored by historians. Apps enable the research process to be locative, embodied, and kinetic, and lead in potentially quite different directions to the desk-based screen projects discussed in the opening section of the paper. At their most basic level, portable handheld devices enable research content to be taken out "into the field" to interact directly with the urban environment; this has obvious benefits for research dealing with urban history. So, to take an example, the Museum of London's *Streetmuseum* app allows users to interact on-site with historic images (prints, paintings, and photographs) of London overlaid onto the contemporary street view, and to select various enhanced reality historical trails through the city following particular themes.[15] GPS and compass features in

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[14] See http://senseable.mit.edu/. For *Real Time Rome*, see http://senseable.mit.edu/realtimerome/.

[15] See http://www.museumoflondon.org.uk/Resources/app/you-are-here-app/home.html.

the handheld device help the user reach specified locations and facilitate quite accurate image overlays. A similar strategy underpinned the *Artist's View* app produced in 2012 to allow the public to overlay painted views of Florence onto extant sites in the city.[16] In both cases—and these are no more than examples of an emerging genre—the portable screen allows the user to compare the real urban environment with its representation in earlier periods.

Other apps focus on more traditional forms of content delivery on location, using GPS to pinpoint sites in the city at which various types of information are delivered on screen as text, photographs, or film. This is a standard format for the repurposing of guidebooks as apps, and again, as with the desktop-based projects discussed earlier, social media tools such as Historypin also provide an app-based service that enables users to access tagged information in real time through GPS-enabled devices. The format is also starting to be adopted in the context of early modern research as a means of presenting findings to a peer community and the general public, usually in the form of themed itineraries.[17] So, for example, ShaLT (*Shakespearean London Theatres*) is a research project based at De Montfort University (Leicester, UK) that set out to trace and map theatres active in the capital at the time of Shakespeare; a simple app offers five walking itineraries that invite the user to explore these theatre locations and to understand better their connections and proximity to other sites such as ale-houses, courtrooms, and churches, delivered on site in the form of short texts and images.[18] While most of the original buildings no longer survive, their proximity to modern-day sites of sociability are richly evocative, and reward the user with a valuable site-specific experiential encounter.

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[16] Produced to coincide with the exhibition *Americans in Florence* (2012).

[17] This is a fast-growing area, especially when viewed as a focus for audience engagement (what in UK research funding is usually termed as "impact"). Public funding from the UK's Arts and Humanities Research Council (AHRC), for example, has contributed to the development of a range of apps; examples developed at the University of Exeter are discussed at https://humanities.exeter.ac.uk/classics/news/title_422730_en.html.

[18] See http://shalt.dmu.ac.uk/. Another approach that has been adopted for "locating" history is through the use of QR codes, literally attached to sites and locations of significance (a physical tagging of real objects to virtual content held on a website). I am not discussing this approach, however, as it is somewhat mechanical and misses many of the innovative affordances of technology discussed here.

Apps functioning on smartphones can immediately set up quite a different relationship between the information they draw on and the urban fabric with which they engage, as the screen serves as a direct interface between the physical environment and the enhanced or augmented reality that can be triggered through the user's location-aware device. Moreover, immersive experiences can be designed whereby the user does not manually access information through the phone, but through GPS triggers (such as geo-fences or i-beacons) that can automate the release of content on the go (Farman 2012; Farman 2013a).[19] Here, significant innovations have been made primarily through the medium of audio, whereby curated experiences can be designed that use movement, GPS, and audio content to offer a seamless narrative experience through the urban realm, a form of audio guide such as those that have long been used in museums, extended through GPS into the streets of the city. The museum comparison is pertinent here especially for the disciplinary areas of art and architectural history, as an app design focus centered on audio allows the end user to concentrate on looking at the urban environment rather than gazing at a screen.

Hidden Florence, a project I led and recently published for Apple and Android phones, allows us to explore more closely the potential of apps, and more specifically app-enabled walking trails as a medium for delivering an innovative research practice and process that directly engages with the urban fabric (Figure 1).[20] We developed *Hidden Florence* in 2013 during an intensive six-month research collaboration between two academics, an IT developer specializing in the creation of location-based apps, and an audio producer, and it was published in 2014.[21]

[19] Farman discusses the potential for such technologies in relation to narrative and storytelling.

[20] Available from the AppStore and GooglePlay in July 2014, this is a collaboration with the developers Calvium Ltd., funded by the AHRC and published by the University of Exeter. For the full project team see: http://www.hiddenflorence.org/credits/.

[21] Further details can be read at http://hiddenflorence.org/about/ and on the project blog.
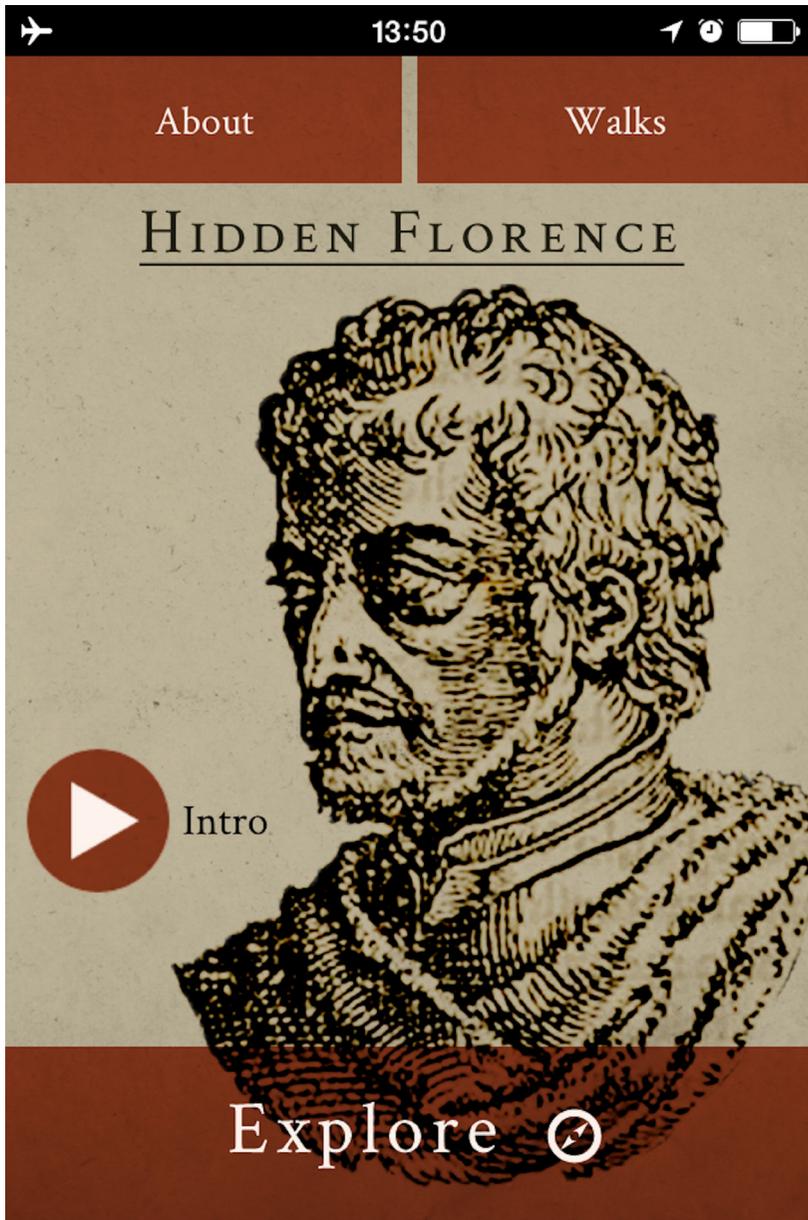
Figure 1. Screenshot of home screen of the *Hidden Florence* app (© University of Exeter).

While a number of audio-guide apps have been published that engage with European historical urban spaces, these have to date tended to relate to quite recent periods no earlier than the nineteenth century, and one of our objectives was to explore how we might evoke the more remote past of early modern Italy.[22] This project, designed as an experiment, proposed to use smartphone technology to provide an on-site audio guide to the architectural and socio-cultural features of Renaissance-era Florence.

Hidden Florence adopts a GPS-triggered audio-guide format which enables an engagement strategy that seeks to combine elements of specialist information delivered in a standard museum audio guide with a more immersive experience provided by a narrative-driven character, on site in front of actual places and objects scattered around cities. Working with app-developers at Calvium, we benefited from their guidance in user experience design, and as a result created a semi-fictional character—Giovanni di Marco, a late-fifteenth-century wool-worker—to lead the user on a context-specific themed walking tour through the city of Florence.[23] Giovanni was scripted and written by historians and voiced by actors (English and Italian language options are provided).

Furthermore, in order to add a heightened level to the immersive experience created by the audio, the modern-day user navigates the city through the interface of a sixteenth-century map of the city (Figure 2). Stefano Bonsignori's 1584 map of Florence was etched in spectacular detail (it is also used as the basemap for the DECIMA project discussed above), and the relatively precise cartography enabled it to be overlaid on the modern street map.[24]

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[22] We chose to approach Calvium because they had developed a number of projects, including audio App-trails for the National Trust and the Guardian newspapers; see http://calvium.com/services/app-trails/. Among other interesting projects created around the concept of GPS-triggered audio walks, see the Wellcome Trust's "Magic in Modern London" (developed by Amblr): http://wellcomecollection.org/magic-modern-london.

[23] For Calvium's user experience design, see http://calvium.com/research/, as well as Farman 2012 and Farman 2013a. The "Giovanni" character was developed using firm historical evidence, much of which is made available through the project website in articles written by Fabrizio Nevola and David Rosenthal.

[24] For a summary account of the process applied in transferring the map and overlaying it to the satellite route-map, see http://hiddenflorence.org/about/about-bonsignori-map/.
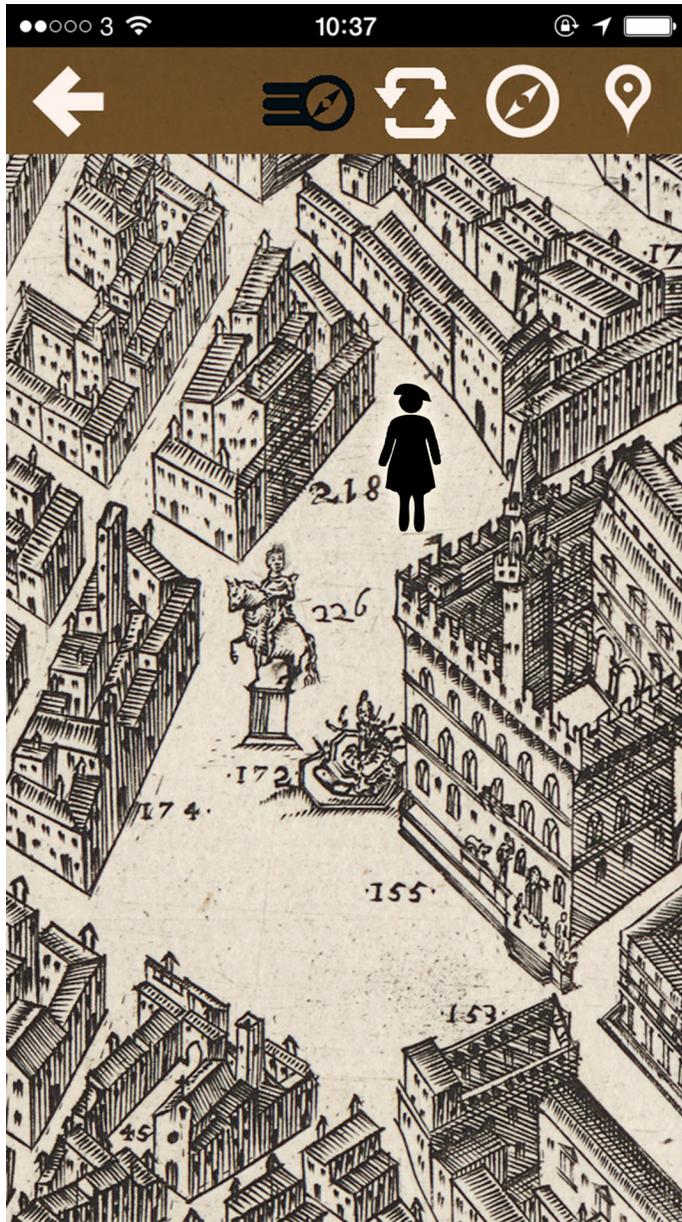
Figure 2. Screenshot of a navigation screen from the *Hidden Florence* app, which uses Stefano Bonsignori's 1584 map of Florence (© University of Exeter).

Bonsignori's remarkable piece of mapmaking combines a more traditional axonometric (bird's-eye view) approach with the innovative ichnographic (accurate figure ground) survey to offer the most accurate contemporary map of Florence in the sixteenth century (Frangenberg 1994; Else 2009; Ballon and Friedman 2007). Thus the key network of streets stands out (and is indeed revealed to be quite similar to the modern layout in most areas), while landmarks are also prominent. The use of the historic map as a navigational tool both historicizes the experience of moving through the city and estranges the user from their surroundings, and by so doing highlights ways in which the Florence of today is different from its Renaissance self. As far as we know, *Hidden Florence* is the first geo-located app to adopt a pre-modern map interface; it offers a remarkable experience akin to walking in the city using what we might loosely term a sixteenth-century street view interface.

The app is composed of two guided walks, one that takes the user to the neighborhood where the narrator lives (the eastern parish of Sant'Ambrogio), while the second takes him to the city center and the world of work. In so doing, of course, this choice sets up a comparison between the nature of spaces on the working-class periphery of the Renaissance city and the densely packed urban core.[25] Each walk is made up of a series of locations plotted along a route; each location offers a significant building-type or site in the city (a street corner, an apothecary's shop, a tavern, a bridge), and this provides an opportunity to consider its social, cultural, and visual history. As will be discussed further below, the choices made for each location are fundamental to the structure of the app and the nature of the information encoded in it. In addition to the fictional guide, further content is provided in the form of brief audio-interviews with academics on subjects directly pertinent to each site. The app is tightly integrated to a website compatible with the app's design and layout; each site page is linked to a page on the *Hidden Florence* website, where additional information and interpretation is provided in the form of short articles, bibliography, and web links to further resources. The app and website also include Twitter feeds to enable full integration with social media used by target user groups.[26]

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[25] I have chosen not to provide bibliography references in this article for the underpinning historical research (which is far too extensive to be cited adequately), as this is not the main substance of the discussion.

[26] While this article does not discuss the technical details of the app, it is worth noting that it has been designed to work using basic GPS services and does not rely on roaming, 3G, or other higher level location services. This has been done to avoid charges for users who will in many cases be tourists or students using phones with roaming
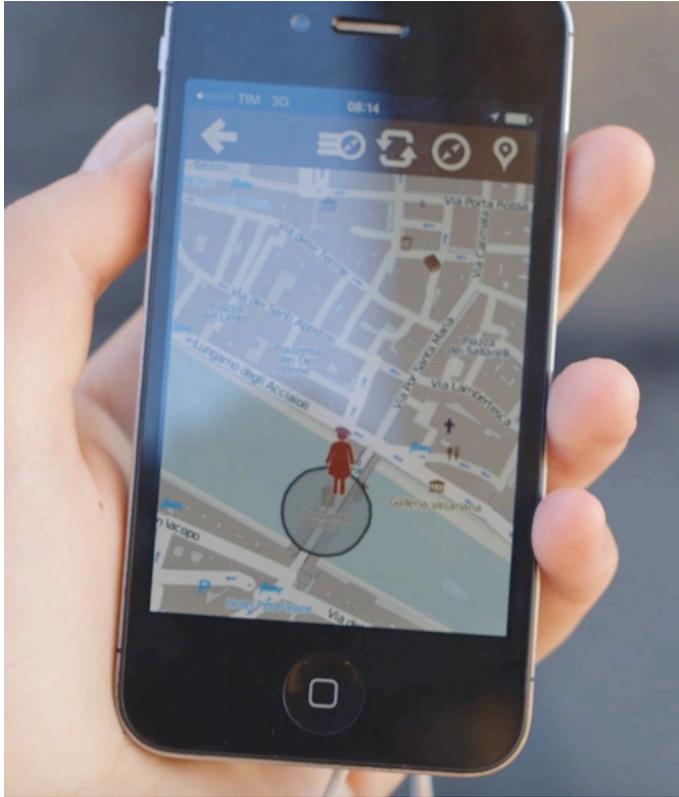
Figure 3. Guided tour through Florence showing the OpenStreetMap under-lying map in the *Hidden Florence* app (photo: Ross Gill).

The app functions as a publication that integrates a range of different types of content. Users taking a tour of the city then move conceptually from the physical fabric of the city, through the screen interface of the sixteenth-century map, to hear an immersive audio "located" in the Renaissance past, from which they can then link out from the app to more traditional text content delivered on the website. They can then interact with that content through social media, potentially offering further information, or simply comment-ing on their experience. As such, the project participates in the wider actions of social media communities, although the content is carefully scripted and curated. Furthermore, the app has been designed so that it can also be used remotely in "armchair mode," and initial analytics evidence suggest that to date it has been used as much remotely as on site. We also decided to make

turned off.

all the audio content and map routes available through the website as down-loadable files so that it can be accessed without a smartphone.

To give a sample of the user experience, I will discuss the example of one site, the Bargello. Users navigate to the site using the Bonsignori map—a sort of immersive Renaissance street view experience in which a Renaissance-styled avatar character plots their movement until they are in sight of the object they are to look for. At this point the geo-fence triggers a new screen showing a photographic cue to identify a window on the building, with the prompt: "Look for the small window on the corner of the first floor—the hanging window."

The user then presses "found it" and the Giovanni audio begins:

> Now you're gonna have to just believe me when I tell you that sometimes, just sometimes when you come by this way, what do you get when you look up at that window? A hanging body!
> You do, honest!!
> This is the Bargello. It's the fortified home of the chief of police in this city.
> You don't want to end up in there. If you do, you're in trouble, believe me ...
> The cops—the *birri*—are based there—and there's a law court, torture chambers, and a prison—and for the worst of crimes, you don't get to languish in the jail down the road. Oh, no, it's a public execution straight out of the window up there. That's what happened to the Pazzi conspirators who plotted to kill the Medici a few years ago. Everyone came to see them—and that just added to their family's shame.
> ... Y'see, shame is almost worse than death in this city. That wall there, below the windows, it's usually covered in portraits. *Pitture infamanti*, we call them—shaming portraits. It's a rogues' gallery of traitors, turncoat fighters, and also of people you can't trust your money with—debtors and people that have been declared bankrupt.
> Some say that the risk of getting your portrait painted up there is the main reason people avoid getting into trouble. Well, yes ... it's certainly quite a warning.

This short sample offers a taste of a block of the full two-minute audio script for the Giovanni piece delivered at the site. Should users wish to pursue their interests further, they would then press "hear more" to launch the addition-al two-minute interview with a historian (in this instance Fabrizio Nevola)

talking about the Bargello in the exercise of policing and justice in the city. They could then follow a link further to the website article, or indeed listen to Giovanni in Italian.

Readers of the above text—and historians who might use the app—will note a number of things here. There is no intention to tell a full history of the Bargello as a monument (as a guide book might try to do); rather, a clear set of decisions have been made by the researcher—to explore a series of themes specifically associated to the object of inquiry. From the window on the building façade, we move to the Bargello as police headquarters, to touch on the phenomena of portraits used as a form of punishment, to capital punishment, to the place of reputation (*fama*) in Renaissance urban society. These issues are woven into a brief narrative delivered in front of a physical object and are all the more memorable for this; they can of course be explored further by both curious tourists and students through reading the linked website article and its associated further readings and links. Place, and the user's embodied experience in the spaces of the city, underpins the narrative (Freedberg 2009; Crowther 2001).

As we have already seen, the spatial turn and interest in street life in the early modern city is a fast-growing area in Renaissance and early modern studies, and this approach is both at the center of my own research and also of the questions that the *Hidden Florence* app sought to address and present to users (Nevola 2013). A recent collection of essays places sensory experience (sound, speech, performance, vision) at the heart of an analysis of urban space (Nevola and Clarke 2013a). Overarching and innovative research areas that emerge from such an approach include, but are not limited to: the performative nature of everyday actions and exceptional rituals played out in public space (including crime, punishment, and violence); the agency of public space and strategic locations for information and knowledge exchange (street-corners or piazzas); the interplay of public and private spaces occurring on the interface of the street (property, sounds, exchange of goods) (Nevola and Clarke 2013b). It is themes such as these that have informed the app design, in which a close reading and focus on sites, locations, and objects still extant in the city fabric is proposed. The research process serves to conceptualize the meaning embedded in the material culture of public space in relation to the fluid and dynamic nature of urban experience. As such, I would suggest that the medium of the app shapes the message—and perhaps more significantly the research questions and methods—that we can explore in relation to the urban environment of cities of the past. This more direct engagement with the embodied and everyday experiences of living,

and walking, in the city of the past extends the potential of traditional text-based research (books and articles; static web supports), without of course replacing the significance of these.
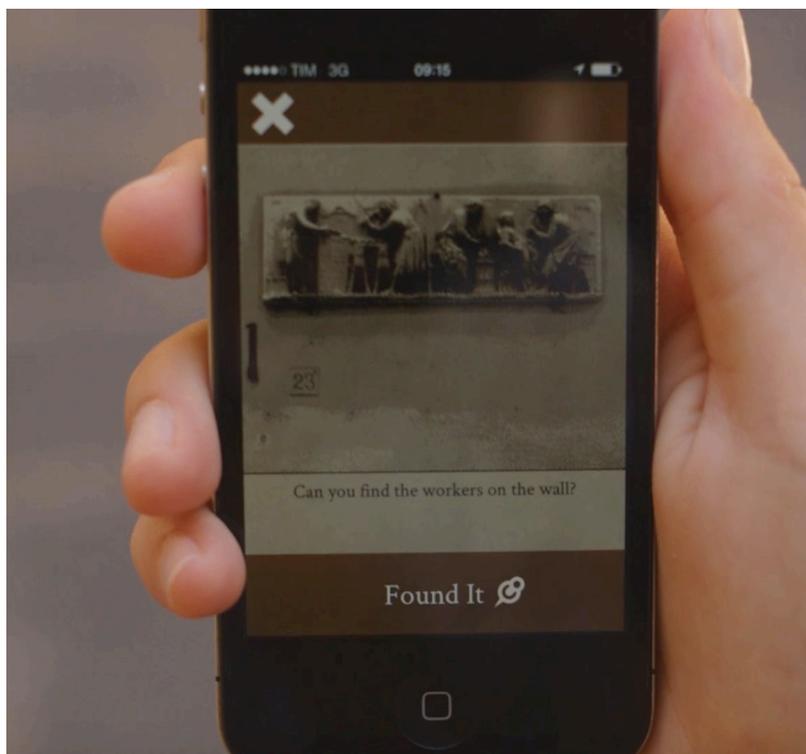
Figure 4. Screenshot of the "found it" screen from the *Hidden Florence* app (photo: Ross Gill).

Hidden Florence is a stand-alone app produced with the support of UK research council funding as an experiment to explore the potential and affordances of the medium, as applied to Florence in the early modern period. We have built an analytics package into the app to monitor how it is being used, and plan to report on this after a year has elapsed from its publication. We are also seeking funding opportunities in the context of further academic research projects to develop an editing platform that will enable us to simplify the process by which new content can be implemented for Florence, and so that new cities might also be more easily added. As will be readily imagined, the app format is extensible in a multitude of ways; it is easy to imagine how new

stories might be developed to present the research of other academics, and indeed also how the basic concept could be repurposed for any urban setting. There is also considerable potential—which I am beginning to explore—for adopting this format in a simplified form in the context of teaching.[27] At present, audio-guide apps such as *Hidden Florence* tend to be custom-built products, but like some of the mapping projects discussed above, the movement is toward the creation of editing platforms and technologies that would result in the production of such work being both easier and less expensive. Calvium, the developers of *Hidden Florence*, offer a service called *AppFurnace* that enables relatively easy editing and creation of geo-located apps.[28] Such offerings suggest that a service allowing users to create geo-located audio walks (like Historypin for tagging and WordPress for blogs and websites) may be only a short way off.

In conclusion, the *Hidden Florence* project raises questions about the nature of the work in relation to the methods and practice of history. It is evident, as this article has shown, that it contributes to an evolving field of digital humanities applied to the early modern period; likewise, I have also suggested that it is particularly well-suited to exploring specific concerns of the spatial turn as applied to studies of the material culture of the early modern city. Rather than simply an output that presents research on space using digital tools, however, I would argue that geo-located historical narratives of the sort described here can be understood to constitute an innovative methodology in their own right (Nevola and Rosenthal 2016). In seeking parallels with existing approaches, perhaps the strongest affinity can be found with *microstoria*—microhistory, or a practice of history that is often told from "below," from the perspective of the everyday, and through close analysis and description of almost ethnographic precision.

Microstoria was defined in part by a book series Giovanni Levi and Carlo Ginzburg edited from the late 1970s for the Turin-based publisher Einaudi, in which the choice of a narrative mode for historical writing owed something

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[27] In January–March 2015, I experimented with writing for geo-location with a group of students using a platform (http://www.placeify.co.uk) developed by colleagues at the University of Exeter.

[28] Additional information can be found at http://www.appfurnace.com/home, with links to the educational (school) package they have also launched. Announced in 2014 was a service called Detour, which provides "tools for anyone to create" location-aware audio walks, although none have yet been published; see http://www.detour.com.

to the literary family background of both historians and to the experimental writing (as Ginzburg has often noted) of Raymond Queneau's *Les fleurs bleues*, translated into Italian by Italo Calvino in 1967 (Ginzburg 1993, 14–16, 30–32). Microhistory affords special attention to the narrative mode, with detailed stories of individual actors in the historical process presented to illuminate a wider picture, or an overlooked perspective. Giovanni Levi and Carlo Ginzburg, the founder-practitioners of *microstoria* as it developed in the 1970s in Italy, never set down a set of hard-and-fast methodological rules. And yet, if we turn to Levi's identification of their key concerns as being for "the reduction of scale [...] the small clue as scientific paradigm, the role of the particular (not, however, in opposition to the social), the attention to reception and narrative, a specific definition of context and the rejection of relativism," I think there is clear resonance with the spatial and geo-located research questions that underpin *Hidden Florence* (Levi 1991, 113, 117–19). Likewise, Ginzburg has described microhistory as:

> based on the definite awareness that all phases through which research unfolds are constructed and not given: the identification of the object and its importance; the elaboration of the categories through which it is analyzed; the criteria of proof; the stylistic and narrative forms by which the results are transmitted to the reader [...] the insistence on context. (Ginzburg 1993, 32–33)

In the *Hidden Florence* project, the choice to propose an oblique perspective on a well-known period through directing the spotlight on non-canonical or peripheral sites (street-corners, street-shrines, taverns and apothecaries' shops, minor neighbourhood piazzas) or non-elite protagonist perspectives is also informed by the objectives of *microstoria*. While critical of the deployment of microhistory in some cases as a practice for revealing no more than "human interest stories" from the archives of the past, Peter Burke has spoken of it as a "'strategy of knowledge' which keeps close to human experience" (Levi 1991, 116). Moreover, it is also worth noting that microhistory was not uniquely confined to social histories of "minor" events and individuals from social history—Ginzburg wrote a well-known book on the painter Piero dell Francesca, while the influential architectural historian Manfredo Tafuri contributed to the series with a book about the church of San Francesco della Vigna, by Palladio, in Venice (Ginzburg 1981; Foscari and Tafuri 1983).

It might then be suggested that *Hidden Florence* coincides in a number of ways with how historical evidence is deployed in the practice of microhistory,

albeit that it does so through digital means, and that its experimental approach still needs to be tested, challenged, and refined. Moreover, by engaging both the researcher and the user in a dialogue between real and virtual environments, the geo-located narrative audio guide format could even be said to conform to web 2.0 characteristics of interactivity. Rather than merely tagging information to place, the audio-guide app format proposed has inquiry and interpretation at its heart—it is intentionally a work of history, not of information delivery.[29] In the final chapter of his magisterial overview of historical methodologies, John Burrow discusses the place that the TV documentary has taken as a new form of "making" history, with special reference to Ken Burns's sophisticated use of images to convey dynamic narratives about eras that predate the moving image (Burrow 2009, 518). While it is all too easy to see such work as public-facing outreach, I would like to suggest that easily accessible geo-location services delivered through smartphones offer an opportunity for methodological innovation, creating a means by which history is not only presented, but researched. "Altering the scale of observation" and putting research—physically locating it as practice and process—back in the actual spaces where events were played out allow us to explore and reveal the powerful layers and traces of the past that still populate the public realm of the present (Levi 1991, 102).

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[29] The first iteration of *Hidden Florence* includes links to Twitter, and we anticipate that future versions would develop further the potential for user interactivity through social media-enabled participation, comment, and perhaps even content creation.

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