Is the architectural history tourist informed, engaged or distracted by new mobile digital guides? Two studies in Melbourne investigate this question.

Hand-held histories: using digital archival documents on architectural tours

Hannah Lewi and Wally Smith

The desire to learn about buildings, cities and cultural artefacts by journeying to experience them *in situ* pervades architectural history. It can be seen in the rise of the grand tour in the eighteenth century, subsequent formalised academic study tours, the ascendancy of cultural museums in the nineteenth century, and the institutionalisation of heritage sites and attractions in the twentieth century. More informally, such journeys are pursued in personal and less prescriptive ways through habitual urban strolling and site-seeing.[1]

Guidebooks and iPods

Accompanying these various kinds of architectural exploration have always been pragmatic concerns about how to assist and inform the traveller – about where to go and what to look at. On the grand tours, personal guides attended to the practical, intellectual and aesthetic needs of wealthy travellers. Later, as the accessibility and scale of tourism grew in the nineteenth century, other methods arose to invent and inform the romantic figure of the independent traveller. Notably, the guidebook took on a new significance. Edward Mendelson has described how the German writer and publisher Karl Baedeker developed a style of guidebook in the 1840s that took a refreshing 'middle-way' between two prevailing forms: one providing minimal lists of landmarks and facts without any images, practical advice or historical instruction; the other giving an overwhelming amount of detailed information and personal opinion, including appropriate emotional responses.[2] In the words of Baedeker, his new guides helped to 'keep the traveller at as great a distance as possible from the unpleasant *[...]* to assist him in standing on his own feet *[...]* and to place him in a position from which he may receive his own impression with clear eyes and lively heart.'[3]

The guidebook has remained a durable companion for the architectural tourist to the present day and Baedeker's 'middle-way' has become familiar. But today's wireless digital technology is beginning to contest this role. The tourist can now carry in their pocket an interactive machine capable of reproducing film, images and sound in the manner once found only in the tailor-made installations of major museums. The creation of technologically novel modes of interpretation and display in museums has been pursued vigorously – albeit with accompanying angst – from the nineteenth century to present times.[4] Yet most of these displays have been short-lived, and their instability makes for an interesting contrast with the relative stability of the tourist's guidebook.

Which of the various methods of guiding might the new personal mobile digital platform model itself upon: the human guide, the guidebook or the interactive museum display? Or, as commentators like Richard Coyne have recently suggested (**arq** 13.2, pp. 127–32), might there be novel opportunities for architecture 'to explore new modes of interaction in spaces' that facilitate the ready accessibility of a variety of digital documents in the environment as 'an extension of a library in the field'.[5] The flip side of this new potential is the widely-held fear that mobile digital guides distract the visitor away from their environs, and that any intended immersion in architecture and place is defeated by immersion in a virtual reality.

These broad questions motivated two projects we have carried out in Melbourne to build and evaluate mobile guides for architectural touring. The first is a walking tour for undergraduate architectural history students and the second provided interpretation materials for visitors to a prominent war memorial called the Shrine of Remembrance. The projects investigated the use of mobile devices – in this case Apple's iPod Touch – to deliver visual, sound and film material to augment visitor experience and learning about architectural heritage and history. Advances in IT for architectural heritage and museum applications are often associated with sophisticated simulations and complex 3D rendering of historical artefacts and sites.[6] But of more interest in our two projects were questions around the straightforward presentation of text, audio, images and film *in situ*. As with 3D simulations, but in a different way, the simple juxtaposition of digital historical documents with

https://doi.org/10.1017/S1359135511000376 Published online by Cambridge University Press

architectural reality might allow new things and meanings to be uncovered and experienced.

The central challenge in designing a mobile guide of this sort revisits Baedeker's pursuit of a 'middle-way'. What balance can be struck between providing visitors with valuable supplementary information, yet not overpowering their personal experience of actual places and artefacts, nor pre-empting it with simulations that leave the deadening impression that nothing is left to discover? We will first survey some previous research on mobile guides for historic sites and describe our design approach. The two projects are then presented in turn, including their context, their design, and the main findings of observing the guides in use. Finally some conclusions are offered on the continuity or discontinuity of mobile digital guides with former methods of architectural guiding, and we examine the issue of the informed or distracted visitor.

New mobile technologies for the independent traveller

Over the past decade, researchers in fields concerned with novel applications of IT have investigated the potential of mobile interactive devices to enhance the experience of historic places. Location-triggered audio content, for example, has been studied in various situations: graves have spoken to passers-by in the historic Oakland Cemetery in Atlanta,[7] and a dramatisation of the violent suppression of a riot in Bristol's Queen Square has been fed in snippets to visitors according to their movements in the space.[8] Studies of visual content are less common but, in one case, visitors at the 2005 Biennale of Contemporary Art in Venice followed talking-heads of local characters who led them to 'hidden' points of interest in the city.[9] This line of research emphasises the challenge of designing meaningful non-linear narratives that are sequenced partly by the free-roaming of visitors. Another significant point of interest has been the effects of mobile devices on the social dimension of visiting.[10] Ethnographic studies of people's behaviour in galleries and museums reveals that their experience is formed not only through viewing exhibits but also through interactions with other visitors.[11] Conventional audio-tours – still the dominant form of mobile guide – are often criticised for trapping individual users in an 'information bubble' and for removing incidental social exchanges.[12]

In the wake of Apple's iPhone and App Store, a new world of grass-roots digital development has opened up, yielding many mobile history tours with visual content. Cultural institutions are rushing to develop dedicated Apps in various forms, and even a quick browse on the App Store shows that mobile guidance for the cultural tourist is plentiful and widespread.[13] However, the actual use of these Apps *in situ* reveals that, although they present a wealth of content, many comprise a jumble of conflicting modes of guiding such as: directional maps (but often half-hearted); image galleries; television documentaries with talking-head experts; and tips to find the nearest café. Awareness and consideration of the act of walking around sites and buildings, as a fundamental enhancement of the experience of place, can seem strangely absent in many of these App guides. Only a notable few, such as at Tate Modern's 'Trumps' game, are designed around a specific visitor activity with restrained servings of content.[14]

In describing their more directly architectural project, that has recreated Palladio's guidebooks for an audio-only iPod, Alan Day and Vaughan Hart argue (**arq** 11.2, pp. 151–8) that digital mobile guides are bringing about a transition in the way media technologies help to construct new meaning and knowledge for the cultural tourist. They see this as a reversal of an earlier shift when the modern guidebook, with its linear order, replaced medieval forms of cultural communication through myths and legends. The mobile iPod platform, Day and Hart suggest, is taking us away from logical structures of information and recovering a 'mythic' form characterised by decontextualised fragments of content and a multiplicity of sources. This echoes more general claims about recent changes in cultural communication such as Barbara Stafford's account of the renewed centrality of the visual in the information age,[15] and Umberto Eco's suggestion that we may have returned to a 'neo-medieval' period where visual communication is used to bridge the gap between knowledge and popular culture.[16]

Consistent with the papers in this issue of **arq** on 'Print and Pixel', the two projects described here set out to explore the nature of the transition from the printed guidebook to the pixellated digital mobile guide. It is clear that the transition brings with it more than just a change of medium. One key difference is the hypertextual structure of digital technologies in which users explore a densely interconnected network of pieces of content. To some extent, this convention conveniently avoids the expectation placed on a book for its overall structure to be self-evident through devices like hierarchical contents listing, headings, pagination and indexing. More like Day and Hart's reference to mythic communication, the digital device can be intentionally surprising, with isolated images, film segments and fragments of text appearing unannounced as the user explores. Another key difference is that the digital guide brings the possibility for a synchronous form of interpretation: it is likely to be present during a visit, with the visitor's gaze flicking between screen and reality. This contrasts with the more asynchronous format of the guidebook which invites reading before leaving home, while en route or during a rest stop, but not at the precise moment of engaging with the site or artefact.[17] Mindful of these particular differences between print and pixel, the two following projects attempt to carry forward Baedeker's insight of the middle-way into the hypertextual and synchronous form of interpretation invited by the digital mobile guide.

A digital walking tour of architectural history

In 2009 we developed a mobile guide, called the 'Formative Histories Walking Tour', for a class of over 300 undergraduate students in a subject examining

https://doi.org/10.1017/S1359135511000376 Published online by Cambridge University Press

nineteenth-century architecture *[1]*.[18] The tour was motivated by a desire to galvanise student interest in architectural history by 'taking learning to the streets' and presenting rich visual and aural information through the seductive platform of the iPod Touch. The creation of a surrogate human guide to replace lecturer-led fieldwork was also a pragmatic response to ever-larger class sizes due to the growth of university education in Australia.

While the use of computers is expected in architectural design and science subjects, far less technological innovation has occurred in the teaching of architectural and art history; with exceptions including experimentation with panoramas and photogrammetry. The traditional slide lecture format – where audiences once waited in dark anticipation for the carousel to jam – has actually been little changed by digital images and data projectors. The mobile digital walking tour guide was seen as an opportunity to consider the new potentials of re-presenting archival documents on a personal device in the field.

The mobile guide took the students on a two-hour walk along Collins Street, a prominent central city axis in Melbourne, with twenty marked stops at significant buildings from the nineteenth and early twentieth century. They navigated using a map screen and menu. At each stop a brief audio presentation provided historical details about architecture and urban history and directed students on how to view the buildings, sometimes involving brief detours down side roads. Between one to three related images were presented. The students, each with an iPod, travelled in small groups and completed a related assessment activity on paper during the tour that involved looking and drawing. In contrast to many of the tour Apps referred to above, which use dense scrolling text and relatively complex navigation structures, our prototype presents fixed screens of information that are navigated using minimal but salient buttons and text. This 'walk-up-and-use' interface style is a common approach in museum displays and ticket machines where users have a one-off interaction with the device as opposed to habitual use.

The guide opens up opportunities to re-think more directly how, as Iain Borden remarks, the modes of interpreting, communicating and disseminating architectural history 'necessarily involves images as an integral part of its operations'.[19] The images shown on the individual screens of the guide include an index thumbnail that orientates the user to the present building or site, alongside selected comparative images that show: the buildings in historical context (for example the Old Treasury Building at the top of Collins Street) *[2]*; or comparative international examples by architects of influence (for example, the Melbourne Club by Leonard Terry showing the direct influence of Charles Barry's Reform Club, London) *[3]*; or details of the buildings that might not be readily discerned by a disengaged student eye (for example the Minton tiling in St Paul's Cathedral by William Butterfield) *[*for example, *4]*. This reliance on comparative



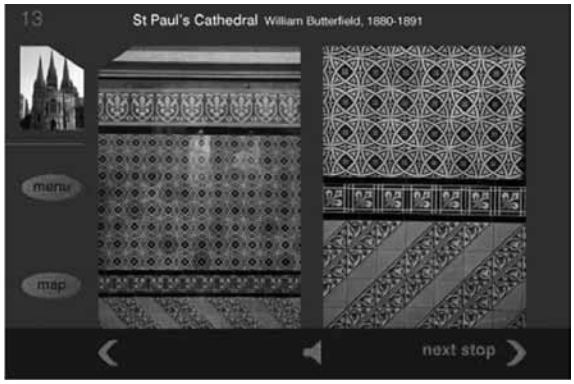
1



2



3



4

1 Architecture walking tour: home screen

2 Stop 2: Old Treasury Building, showing historic image capturing everyday time in 1874

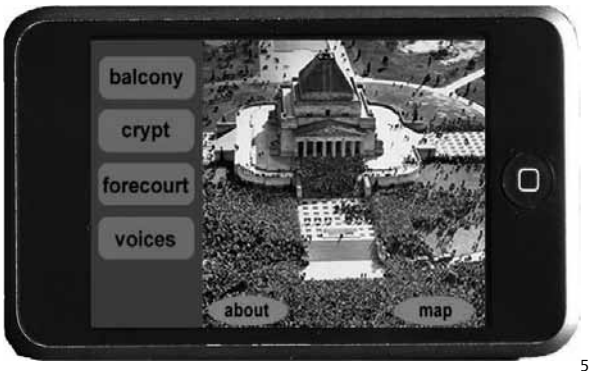
3 Stop 5: the Melbourne Club, showing a comparison image of the Reform Club in London (Charles Barry)

4 Stop 13: St Paul's Cathedral, showing a tiling detail

https://doi.org/10.1017/S1359135511000376 Published online by Cambridge University Press

viewing reproduces the convention of twin slide projectors from art and architecture history lectures. Borden also discusses how images in architectural histories have been used dialectically, for example in 'compare and contrast' images that communicate difference and contextual influence, or between images and texts. Photographic images are categorised by the manner in which they capture temporality; whether of 'everyday' time that serves to date buildings, or through particular historical events at the precise time when something happened to or around an architectural object, scene or monument.[20] The inclusion of archival photographs in the Formative Histories Walking Tour illustrates the passing of everyday time and invites comparison to the present *[3]*. The mobile personal guide makes possible a stronger emphasis on a dialectic comparison between then and now through a synchronous contrast between the digital content and the 'real' scene as witnessed by the user.

Feedback from students in 2009 showed that the guide was a success in terms of usability and ease of navigation through the content. They enjoyed the simple walk-up-and-use interface style suggesting that they did not want a more intricate interaction with the device. Students' endurance for listening to the audio segments was challenged, both by their stamina and the battery life of the device. However, their capacity for looking at images at each stop was not saturated, with many saying they would have liked more. In further refining the tour in 2010, it was consciously decided to resist the urge to add further photographs that might increase variety but decrease the actual time spent looking at each image. But the appetite for more images perhaps supports the broad hypothesis that we have returned to an 'age of looking', with communication reliant ever more on viewing images and ever less on reading coherent texts.



5



6



7

A mobile guide for the Shrine of Remembrance

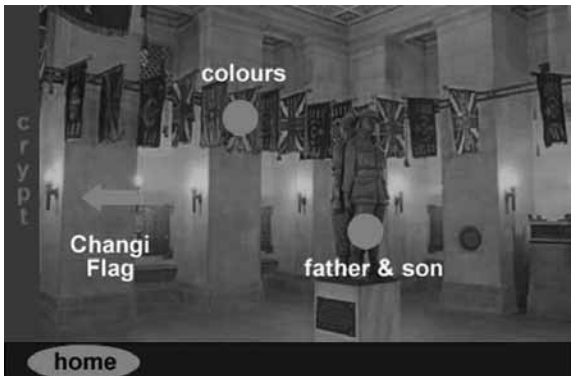
The second project reviewed here involves a setting of public history and commemoration: a significant and substantial Classical Greek Revival war memorial called the Shrine of Remembrance in Melbourne. The alignment of the Shrine with the central grid of Melbourne created a strong ceremonial and visual axis between the city, its river and botanical gardens. It was opened in 1934 to commemorate war service in the First World War, and later extended following subsequent conflicts. Around the year 2000, the Shrine was self-consciously remodelled to promote public education alongside personal commemoration, in recognition of its shifting significance for younger generations. A new exhibition and visitor centre was added, designed by the architects Ashton Raggatt MacDougall.

Despite a new and very visible emphasis on public education – people are now directed to enter through the new Visitor Centre rather than climbing the ceremonial steps into the sacred Sanctuary – this remains a site of genuine personal and collective 'active remembrance'.[21] It is these potentially conflicting curatorial motivations that provided the context of our interpretation project. We worked with staff at the Shrine to create a mobile guide that could serve both as a general research tool to investigate the potentials of the iPod medium, and also as an experiment in future educational material to be delivered at the site.[22]

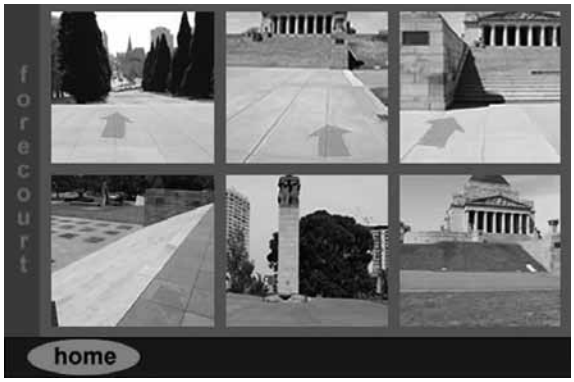
One advantage of working with the Shrine site and its custodians was access to a wealth of currently unseen archival material that might be presented. The aim was not to construct a completely self-guided tour nor an encyclopaedic resource. Rather, the intention was to offer a rich but selective form of interpretation to potentially enhance visitor experience. The approach reflected a desire to find one version of Baedeker's 'middle-way' between bare facts and overwhelming or complete presence. With this in mind, the same walk-up-and-use interface style was adopted to avoid users becoming absorbed in the device itself.

The guide for the Shrine was designed around four discrete zones in the site, and these were mirrored through four corresponding zones of digital

https://doi.org/10.1017/S1359135511000376 Published online by Cambridge University Press



8



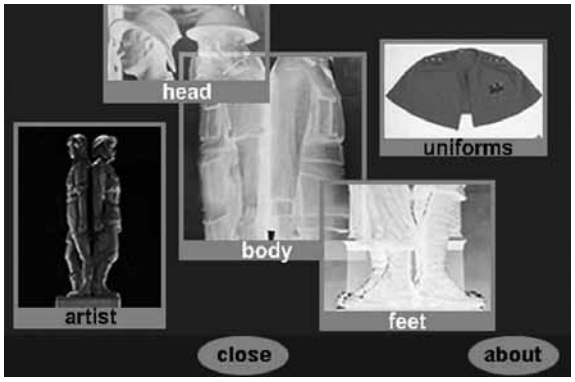
11



9



12



10

content, all accessible from an entry home screen *[5]*. The physical zones were:

(i) an external, elevated viewing *Balcony* that affords views of the surrounding park and city;
(ii) an internal *Crypt* that houses various artefacts including regimental flags, a 'father and son statue' to mark the single generation between the First World War and the Second World War, and the 'Changi flag' that was brought back to Australia by Second World War prisoners of war;
(iii) an external *Forecourt* that was added following the Second World War, containing several monuments including an eternal flame and cenotaph, and which has long provided a focal space for ceremonies and other events; and,
(iv) a larger *Shrine Reserve*, containing numerous smaller statues and memorial gardens.

The emphasis throughout the guide was on the juxtaposition of historic documents – images, films and audio recordings – with present reality. Again, Borden's analysis of the use of photographs in architectural histories was informative when considering the ways in which archival and contemporary images might illustrate aspects of everyday temporality, events, and allow for dialectical comparison. As the guide took shape, we identified four key dimensions of its design. These dimensions are now elaborated before describing the findings of the guide's use by visitors.

5 The Shrine of Remembrance guide: home screen

6 The Balcony zone: timeline showing one point selected and providing entry to related image gallery

7 The Balcony zone: example of image in 'after Second World War' image gallery

8 The Crypt zone: an 'image map' interface providing entry to content about selected artefacts on display

9 The Crypt zone: an example from the 'colours' image gallery showing a detail of a regimental flag

10 The Crypt zone: dissection of 'father and son statue'

11 The Forecourt zone: array of vantage points, providing entry to one-minute films

12 Solitary participant in evaluation of mobile guide at the Shrine of Remembrance

https://doi.org/10.1017/S1359135511000376 Published online by Cambridge University Press

Modes of historical interpretation

Various interpretation frameworks that are common to historiography and museology were employed. The Balcony zone presented a visual chronology of the site and setting organised along a simple graphical timeline *[6]*. Changes over time were conveyed through image galleries: sequences of archival images with sparse text captions *[7]*. In the Crypt zone, we concentrated on object-based or material interpretation accessed through an 'image map' style interface presenting an image of the Crypt's interior that can be touched to explore selected objects *[8]*. By showing images of the regimental flags, for example, that are currently 'laid up' in the Crypt (yet hanging too high for easy viewing), the guide directed and assisted visitors to look at particular details more closely, almost like an optical device *[9]*. Another technique in the Crypt was to dissect the 'father and son' statue into parts that each led to images and text about particular aspects of military uniforms *[10]*. Outside in the Forecourt zone, the emphasis was on social history, with the focus on ceremonies and events that have happened there. These were evoked through six short one-minute films including: the dedication ceremony to open the Shrine in 1934; an anti-war protest in the 1980s; and a current-day crowd at the annual ANZAC day Dawn Service *[11]*. The fourth zone of the guide, that we called Voices, provided purely audio recordings of oral histories of war experience intended to accompany free roaming of the extensive Shrine Reserve.

Level of user control

Across the zones, different degrees of user choice and control were introduced, resonant of post-modern narrative experiments in historiography. In the Balcony and most of the Crypt, users were free to scroll through image galleries at their own pace. Between two to seventeen images were presented in each gallery, this variation intended to test the saturation point raised by the architectural walking tour project. In direct contrast, the Changi flag exhibit locked the user into a four-minute fully-automated slide show with voice-over narration.

Directness of association between digital content and reality

Careful consideration was given throughout the guide as to how readily specific items of digital content could be matched to features in physical reality. In the Balcony, the thematic grouping and chronological ordering of images created a relatively indirect association of content to elements in the striking visual panorama. In the Crypt, the emphasis on material interpretation led naturally to a stronger association, although this varied across exhibits. The regimental flags were represented in a direct way, while the father and son statue was far less direct, associating the uniform of the statue with digital images of typical war uniforms that were not actually present in the Shrine *[10]*. Similarly, the Changi flag's automated slide show included images of non-present personal artefacts that had been made by prisoners of war. The films shown in the Forecourt zone offered a different kind of direct association: for each film, the guide indicated to visitors where to stand so that their current vantage would be aligned with a principal viewpoint of the film's construction *[11]*.

Scope for social interaction

The fourth dimension encountered in the guide's design was the possibilities it afforded for social interaction between visitors. Audio-based content made this difficult through the need for earphones, while the inclusion of visual-only displays gave opportunities for groups of visitors to converse.

Observing the mobile guides in use

Thirty-two people volunteered to take part in a trial evaluation study at the Shrine. They were led, in groups of eight, to the four zones of the site by the researchers and then observed as they explored freely, each with a mobile guide. Subsequent questionnaires and focus group discussions were used to probe experiences of the site and the guide. The most striking observation was the immediate and ongoing lack of social interaction between the visitors, despite some being friends and family and despite our encouragement to interact with each other *[12]*. Even when the displayed content was purely visual, participants appeared locked into their own viewing choices and thoughts. The minor exchanges that did occur were generally about how to work the device. Such isolation has been interpreted as a problem for audio guides and for other mobile technologies because it breaks down the social basis of learning in which groups of co-visitors interact to construct a collective meaning.[23] However, another view of the Shrine visitors' solitary behaviour is that they were exhibiting rapt attention to place and its reading through the device and its contents. In follow up interviews, one participant spoke of enjoying the chance for 'private contemplation'.

A second broad observation, clear in both the questionnaires and focus groups, was that the thirty-two users were divided on their assessment of the mobile guide's value. Although reactions were sometimes highly personal and were mixed across the different zones, two clear and distinct voices could be imputed in the comments that were made.[24] The distinction between these two voices mirrors Day and Hart's discussion of the modern and the mythic. A modern voice expressed disappointment and discomfort with the mobile guide because its material was not ordered in a linear and logical fashion, and no overarching narrative was presented to introduce the Shrine or its zones. Against this, a mythic voice expressed delight at the surprising and disparate content, and the loosely connected thoughts and experiences that it created. Interestingly, though, nearly all visitors preferred the situation of high control over the device and the four-minute slide show was more than most could bear; the exception being one person with a personal connection to the story of Changi Prison.

Thirdly, we observed that when visitors were positively engaged, the power of the guide to provoke

https://doi.org/10.1017/S1359135511000376 Published online by Cambridge University Press

experiences and offer new readings of the site often appeared to spring from the strength of the association between historical documents and reality. The most positive experiences were provoked by the directed looking at regimental flags, and the alignment of historic films in the Forecourt with the visitor's current viewpoint. In contrast, the exhibition of entirely absent objects, like artefacts from other museums or collections, although liked by some, was found confusing and of less interest by many others. Similarly, the chronological ordering of images relating to the spatial panorama of the Balcony zone elicited a negative reaction in many visitors. This discomfort, around displays of absent items and unexpected orderings, reveals how the mobile guide ran into difficulties when it strays from the conventions of the guidebook and the guided tour.

Conclusions

The presentation and management of architectural heritage has been described as creating museums without walls: transforming significant buildings and sites into tourist destinations with interpretive signs, defined walking paths and tours.[25] Mobile digital guides take this metaphor further by bringing the museum's form of interactive display out into the realm of heritage places and historic cities. We began this article by asking what techniques of guiding might these new mobile technologies appropriate from the past? The architecture walking tour guide, like many audio-tours, firstly carries forward a model of the human guide by transforming a rehearsed route and patter into spatially-indexed audio segments. But the addition of images introduces a second model, that of the slide lecture. These two stable parents – tour and slide lecture – produce a robust digital offspring that is readily and consistently comprehended by architecture students.

In contrast, the attempt to carry forward the model of a fragmentary exhibition to the mobile guide for the Shrine of Remembrance led to a more volatile reception. Diverging responses indicated that some participants imposed different views of what the guide might be or should be. Those receptive to techniques of exhibitionary display were apparently comfortable. But others who expected a conventional linear and didactic guide were not. Those who desired a surrogate human guide to lead them 'by the hand' systematically through the site were also disappointed. These differing reactions point to the difficulty of moving beyond existing models of architectural tours. While Day and Hart might be correct that mobile digital interpretation is bringing about a transition in touring experience, it is less clear that we have comfortably arrived at a new form of mythic communication, or any other form. Instead, the evidence of the Shrine study, and the mixed design metaphors underlying many other guides available on Apple's App Store, together suggest that a prolonged and ongoing transition is taking place. In the language of some social theorists of technology, mobile technologies for the traveller are still 'interpretively flexible' and appear to be resisting closure around a stable form.[26]

The second issue that motivated our study was whether these digital guides could provoke new ways of experiencing architectural history. Although no conclusive answers can be given, the evidence gained indicates that visitors could take in the relatively fragmentary images, text and film as they explored these sites. Moreover – consistent with the idea of synchronous interpretation – attention flicked between reality and digital content on both the walking tour and the Shrine visit, the interrogation of one encouraging that of the other. These mobile digital guides clearly instigated a different experience of place, whether or not it was always desirable for the visitor.

This leads to a final point about the possibly negative effects of mobile guides and in particular the commonly expressed fear that the delivery of information *in situ* threatens to distract rather than inform. As Mieke Bal and many others have discussed, museums and historical buildings are valued as guardians of the 'real', while interpretation – no matter the format – forms an explanatory accompaniment, and does not conventionally occupy centre stage unless the real artefacts or buildings are no longer there.[27] The concern that new digital displays and interpretation technologies are diminishing the appreciation of the 'real' has been a long-standing accusation, and has been amplified by a broader refrain that contemporary culture is too reliant on fleeting visual material.[28]

Yet when this problem of distracted looking is examined for the architectural tourist, we face an irony observed by Walter Benjamin, and discussed recently by Katja Grillner, that architecture is typically experienced in a collective state of distraction because people visit buildings and places for a myriad of reasons other than dedicated appreciation.[29] Benjamin describes how, in normal use, 'buildings are appropriated in a twofold manner: by use and by perception – or rather, by touch and by sight', and how this 'occurs much less through rapt attention than by noticing the object in incidental fashion'.[30] In making this point, Benjamin contrasted the normal user with a 'tourist' who is able to show 'attentive concentration'. However, although tourists are indeed not typical users of buildings, they are nevertheless exposed to a rich diversity of emotional and physical imperatives, all of which can divert attention from the act of sustained appreciation and apprehension. They too are distracted viewers of architecture. Bearing this in mind, and countering the frequent claim that display technologies distract the visitor, the evidence of our two projects suggests that a carefully chosen image or narrative presented on a mobile guide can reclaim some moments of dedicated attention for the architectural setting and its history. It is this possibility, coupled with the ongoing search for appropriate metaphors of guiding, that currently leaves the door open for more productive and personalised design explorations of the digital mobile guide for architectural touring.

https://doi.org/10.1017/S1359135511000376 Published online by Cambridge University Press

Notes

1. Gordana Korolija Fontana-Giusti, 'Urban Strolling as the Measure of Quality', *arq*, 11:3–4 (2007), 255–64 (p. 255).
2. Edward Mendelson, 'Baedeker's Universe', in *Yale Review*, 74:3 (1985), 386–403 (p. 389). See also: Mark Campbell, 'Aspects not Things: Geoffrey Scott's View of History', *AA Files*, 59 (2009), 42–9.
3. Quoted in Mendelson, 'Baedeker's Universe', p. 387.
4. Alison Griffiths has recently traced these developments from the 1920s when experiments began in earnest to bring mechanically operated visual interpretation material about exhibits to the attention of museum-goers and tourists. For example, the *dramograph*, popular in the years after 1925, was a cabinet that presented translucent images and accompanying narration. Of appeal to curators was its automated presentation activated by a button-press and the fact that it did not depend on a specially darkened room. Together with other devices, like *automatic lanterns* and *mutoscopes*, these new machines responded to the motivations of museums to both educate and attract visitors. See Alison Griffiths, *Shivers Down Your Spine: Cinema, Museums, and the Immersive View* (New York: Columbia University Press, 2008), p. 243.
5. Richard Coyne, 'Interpretative Communities as Decisive Agents: On Pervasive Digital Technologies', *arq*, 13:2 (2009), 127–31 (p. 130).
6. For one example, see Mathan Ratinam, 'Falling into the Image', *arq*, 9:3–4 (2009), 237–44.
7. Steven Dow, Jaemin Lee, Christopher Oezbek, Blair MacIntyre, Jay Bolter and Maribeth Gandy, 'Exploring Spatial Narratives and Mixed Reality Experiences in Oakland Cemetery' in Proceedings of the ACM SIGCHI International Conference on Advances in Computer Entertainment Technology, Valencia, Spain (2005), 51–60.
8. M. Blythe, J. Reid, P. Wright and E. Geelhoed, 'Interdisciplinary Criticism: Analysing the Experience of Riot! A Location-sensitive Digital Narrative', *Behaviour & Information Technology*, 25:2 (2006), 127–39.
9. Michael Epstein and Silvia Vergani, 'History Unwired: Mobile Narrative in Historic Cities' in A. Celentano (ed.), *Proceedings of the Advanced Visual Interfaces Conference*, Venice, Italy (2006), 302–05.
10. Motivated by the possibility of retaining social interaction, one research team has developed a prototype mobile guide for a historic house (Filoli, in Woodside, California) that allows visitors to 'eavesdrop' on material heard by their partner. See Margaret H. Szymanski, Paul M. Aoki, Rebecca E. Grinter, Amy Hurst, James D. Thornton and Allison Woodruff, 'Sotto Voce: Facilitating Social Learning in a Historic House', *Computer-Supported Cooperative Work*, 17 (2008), 5–34.
11. Dirk Vom Lehn, Christian Heath and Jon Hindmarsh, 'Exhibiting Interaction: Conduct and Collaboration in Museums and Galleries', *Symbolic Interaction*, 24:2 (2001), 189–216.
12. D. Martin, 'Audio Guides', *Museum Practice*, 5:1 (2008), 71–81.
13. Apps exist to guide the visitors of most cities in the affluent world. In London, for example, 'Maxi Guides' and 'City Slicker' are just two extensive digital packages of text, image and video material for various themed areas of the city; and most major galleries have dedicated Apps, including the British Museum, the National Gallery, the Royal Academy of Arts, and Tate Modern. At the time of writing, the 'App of the week' is Unesco's 'Fotopedia' which offers '890 UNESCO world heritage sites [...] 20,000 pictures [...] 3000 points of interest ... thousands of photographs, hundreds of curators'. See http://www.apple.com/iphone/apps-for-<iphone/#heroOverview> – [accessed 5 September 2010].
14. <www.tate.org.uk/tatetrumps> [accessed 5 September 2010].
15. Barbara Stafford, *Good Looking: Essays on the Virtue of Images* (Cambridge, MA: MIT Press, 1997), p. 39.
16. Umberto Eco, *Travels in Hyperreality* (London: Picador, 1986), p. 80.
17. This distinction between *synchronous* and *asynchronous* is borrowed from the field of computer-supported cooperative work where it is used to distinguish methods of communication in which all participants are simultaneously engaged (e.g., telephone) from those where they are not (e.g., email).
18. The 'Formative Histories Walk' App, created by Hannah Lewi, Wally Smith, Helen Stitt, Streamer Design and Daniel Trembath, is available as a free download from the Apple App Store, or via http://www.abp.unimelb.edu.au/history-pocket/.
19. Iain Borden, 'Imaging Architecture: The Uses of Photography in the Practice of Architectural History', *The Journal of Architecture*, 12:1 (2007), 57–77 (p. 58).
20. Borden, 'Imaging Architecture', pp. 69–71.
21. Ken Inglis, *Sacred Places: War Memorials in the Australian Landscape* (Melbourne: Melbourne University Press, 2008), p. 303.
22. The guide for the Shrine of Remembrance is in the form of an App for the iPhone/iPod. It was designed for research purposes but not for public release.
23. Christian Heath and Dirk vom Lehn, 'Configuring "Interactivity": Enhancing Engagements in Science Centres and Museums', *Social Studies of Science*, 38:1 (2008), 63–91.
24. This approach of imputing 'voices' in participants' comments is taken from John Law, *Organizing Modernity* (Oxford: Blackwell Publishers, 1994).
25. On the metaphor of the 'museum without walls', Quatremère de Quincy wrote of his distaste for the unstoppable ascendancy of museums and art galleries in the early nineteenth century, and Malraux described a future museum without walls. More recently, see Hal Foster 'The Archive without Museums', *October,* 77 (Summer 1996), 97–119 (p. 98).
26. See Trevor J. Pinch and Wiebe E. Bijker, 'The Social Construction of Facts and Artefacts: Or How the Sociology of Science and the Sociology of Technology Might Benefit Each Other', *Social Studies of Science*, 14:3 (1984), 399–441. Also relevant are theories of technology life-cycles that describe new innovations as entering an 'era of ferment' marked by 'ambiguous user preferences' and 'technical uncertainty'; see Sarah Kaplan and Mary Tripsas, 'Thinking about Technology: Applying a Cognitive Lens to Technical Change', *Research Policy*, 37 (2008), 790–805 (p. 794).
27. Mieke Bal, *Double Exposures* (New York: Routledge, 1996), pp. 2–8.
28. Fears that conditions in modern cities may cause the over-stimulation of visual attention at the expense of the auditory, 'so that people may be beginning to find it harder and more fatiguing to listen than to look', were already being voiced in the early twentieth century. On this discussion, as cited from the *British Museums Journal*, see Griffiths, *Shivers Down Your Spine,* p. 241.
29. Walter Benjamin, 'The Work of Art in the Mechanical Age of

https://doi.org/10.1017/S1359135511000376 Published online by Cambridge University Press

Reproduction' as reprinted in *Illuminations* (Hammersmith: Fontana Press, 1992). For a further discussion on Benjamin's notion of distracted looking, see Katja Grillner, 'In the Corner of Perception – Spatial Experience in Distraction', *arq*, 9:3–4 (2005), 245–54.

30. Benjamin, 'The Work of Art in the Mechanical Age of Reproduction', pp. 232–3.

Illustration credits
arq gratefully acknowledges: Authors, all images.

Acknowledgements
The authors would like to thank the co-creators of the two projects including co-investigators of the funding grant provided by The University of Melbourne, staff at the Shrine of Remembrance, and Daniel Trembath, Helen Stitt, Streamer Designs and Greg Wadley. Thank you also to Marc Treib for his comments on an earlier talk presented at the SAH conference, Chicago 2010.

Biographies
Hannah Lewi teaches architecture history, theory and design. Her research areas include modern Australian architecture, new media for history and heritage applications, and theoretical inquiry into heritage and conservation. She is the current Chair of Docomomo Australia, and recent publications include Hannah Lewi and David Nichols (eds) *Community: Building Modern Australia* (Sydney: UNSW Press), 2010.

Wally Smith teaches and researches in the fields of human-computer interaction and knowledge management. Recent publications explore the role of commercial demonstrations of information technology, and the connections between stage magic and the history of informational artefacts.

Authors' addresses
Dr Hannah Lewi
Faculty of Architecture, Building and Planning
The University of Melbourne
Parkville, 3010
Victoria
Australia
hlewi@unimelb.edu.au

Dr Wally Smith
Department of Information Systems
The University of Melbourne
Parkville, 3010
Victoria
Australia
wsmith@unimelb.edu.au

https://doi.org/10.1017/S1359135511000376 Published online by Cambridge University Press

CAMBRIDGE JOURNALS

Urban History



Editors
Simon Gunn, *University of Leicester, UK*
Rosemary Sweet, *University of Leicester, UK*
Multimedia Editor
Philip J. Ethington, *University of Southern California, USA*

Urban History occupies a central place in historical scholarship, with an outstanding record of interdisciplinary contributions, and a broad-based and distinguished panel of referees and international advisors. Each issue features wide-ranging research articles covering social, economic, political and cultural aspects of the history of towns and cities. The journal also includes book reviews, summaries of PhD theses, and surveys of recent articles in academic journals. In addition, *Urban History* acts as a forum for stimulating debate on historiographical and methodological issues.

Urban History
is available online at:
http://journals.cambridge.org/uhy

To subscribe contact Customer Services

Americas:
Phone +1 (845) 353 7500
Fax +1 (845) 353 4141
Email
subscriptions_newyork@cambridge.org

Rest of world:
Phone +44 (0)1223 326070
Fax +44 (0)1223 325150
Email journals@cambridge.org

Free email alerts
Keep up-to-date with new material – sign up at
journals.cambridge.org/register

For free online content visit:
http://journals.cambridge.org

CAMBRIDGE UNIVERSITY PRESS

https://doi.org/10.1017/S1359135511000376 Published online by Cambridge University Press