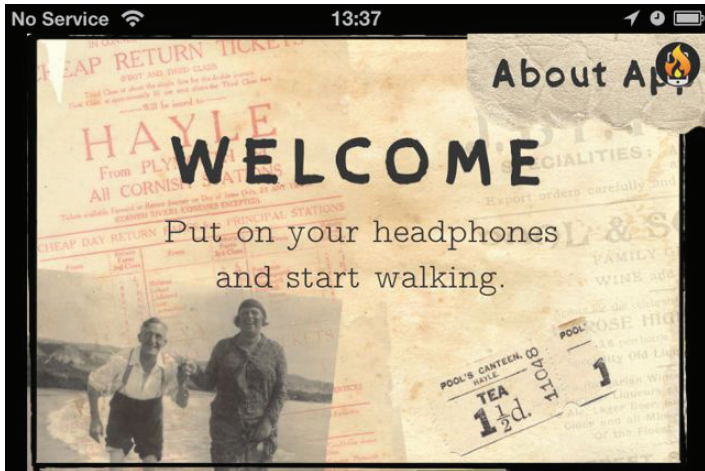


Reference tool for making *deep map* apps

by Lucy Frears



This reference tool guides the reader through the thought, planning and decisions faced by artists, practitioners, producers and commissioners of deep map apps – GPS-triggerred smartphone apps that connect the user to the location.



A good locative media app mixes the media (audio stories and sounds for example) with the location, the everyday environment to make something different and more interesting than when just media or just the place are experienced without the other (S.P. Stenton 2016).

Fieldwork

Know the area	Walk the site.
	Go in all weathers and all seasons and observe changes.
	Attend local events, meetings, pubs and cafes to broaden the type of people you meet. Pick up leaflets. Be open to chat. Pick up gossip.
Recording people on site	Interview local people and experts while walking around the site. Ask them to lead you to a place of special significance and describe it. You can suggest what kind of significance (a place they like, a place they don't like for example) or see what they come up with (the work of Misha Myers and Natalia Ernstman offer good examples of this).
	Encourage interviewees to use the present tense and to describe what they see around them.
	Make sure you have a 'pop screen' to protect your microphone from wind and during speech from words containing 'ps' etc...
	Use headphones to hear what is being recorded. Be aware that headphone volume is different from the volume or level the interview is recorded at. Some recorders can be set to an automatic recording level while others need to be adjusted. Record too loud and the distorted sound will be unusable. Recordings that are too quiet can often be saved.

Recording environmental sound	Record wild tracks – sound on walks, in different weather, seasons, times, to capture different birds plus natural and human activity.
	Recording the site using binaural sound will recreate the sound in a 360 sphere around the listener wearing headphones, creating a ‘hyper-real’ immersive effect. Other recording techniques will create texture and will also be interesting aurally.

Planning: Questions to ask

What do the funders want?	Funders might have a very clear idea of what they want and are paying for. Discuss and listen.
What skills are needed?	Some people involved in making the app will be able to take on numerous roles but many need specific skills, which will affect the project timeline and budget. These include:
	A period as artist in residence or someone as a community liaison. A closer knowledge of site and community will aid app content (by identifying people to record, for example) and how the app is received and used. A friendly sociable and observant person that uses social media is a good choice.
	Research of content – interviewees, images, history using archives, local networks etc.
	Sound recording and editing skills are needed to record interviews record atmospheric sound and to edit and mix recordings. Sound editing software is needed.
	Commissioning or making original music and or soundscapes.

	<p>Coding – without coding skills a programmer needs to be found or an app-making toolkit such as AppFurnace by Calvium used, but discuss what you plan to make in case further coding and therefore budget is needed.</p>
	<p>Graphic design – used for phone interface (what is seen on the screen) and the style of the app. The design needs to be consistent across the app and promotional material. App-making toolkits such as AppFurnace have some graphic design integrated into the system to assist the maker.</p>
	<p>Marketing and promotion including press releases and design of promotional material (such as posters, banners, postcards, stickers) and its distribution plus effective use of traditional and social media.</p>
	<p>Assistance with publishing apps – app-making toolkit companies such as Calvium provide the liaison and licence needed by, for example, Apple. Discuss the publishing cost and the amount of app changes possible after publishing before starting.</p>
	<p>Writing funding applications such as arts, heritage, community and research grants, budget management and writing reports for funders, steering groups and stakeholders.</p>
	<p>Proofreading and information check: make sure all people who helped with the app are mentioned on a credits page with names correctly spelt. All speakers need to have signed a copyright agreement.</p>

	Publicity needs to be clear about what the app does: what participants do and experience, what they need (headphones, app downloaded over Wi-Fi before coming to the site etc), the walk's distance and length of time required, and whether it can be done in smaller chunks.
Check connectivity	Is there Wi-Fi and/or good mobile network connectivity? If not, the app needs to be downloaded before coming to site and interactivity will be more challenging or even impossible.
Who is the app for?	Research the target audience. It is hard to intrigue and entertain all age groups at once.
	Who has access to a smartphone in this area? Don't presume.
What type of experience is it?	Be clear about what type of experience is being made: a historical walk? An artistic experience? A mixture of both? A game? An interactive experience?
How will the app be experienced?	Is there going to be a marked route on a map? Some participants like to work through and 'tick off' the content as they come across it. Others like to move where they want to 'drift' around the site without a map or set direction. Can you please them all?
	People could come with adults, children, dogs, in wheelchairs, alone – or it could be downloaded and listened to from a distant location. Will the app suit all of these? Find a way of making that clear to potential users or design alternative/ shorter routes or modes for them.

How do I make it accessible?	Make the app work on all platforms – iOS (Apple), Android etc...
	Try to make the walk route physically accessible for everyone.
	Try to secure funding for smartphones or tablets with GPS and headphones so that those who don't own them can still participate.
	Have an 'armchair' mode to use at home as well as a live version that only works with GPS on site. Armchair mode supports those with mobility issues, who live elsewhere and those who want to review pictures and stories again at home.
How long should the app be?	The app length is dependent on site (small or large area) and amount and type of content (memory used); what device it will be played on, which media is used, how media is recorded and so on. Apps (at the moment) have a memory size limit. If an app-making toolkit is being used, discuss how 'large' your app can be to publish on Android, iPhone etc...
What media to include?	Will it be sound only, or sound and still image such as photos and paintings, and/or film? All use different amounts of memory and so affect the app size and how possible it is to download over a phone network on location or via Wi-Fi before the experience. Stereo sound uses less memory than binaural sound. Film uses a lot of memory, photos less. Using film needs careful consideration as it involves standing and looking down at a small smartphone screen rather than engaging with the place.

<p>How will people listen to the work?</p>	<p>Which headphones? People can have strong opinions about which headphones they feel comfortable wearing. Whatever the decision make sure that the person mixing the audio listens with the headphones participants will use rather than only studio quality headphones. Headphone choices include:</p>
	<p>Open-ear/open-back headphones allow in some environmental sound, which works well in some sites for a more realistic or immersive app experience. Open-ear headphones can be more comfortable as they allow more air flow and don't entirely cover the ear. The sound of the app content escapes through them and is audible to others nearby. They are large and conspicuous and ownership is low so they need to be provided.</p>
	<p>Closed-cup headphones keep out most environmental sounds so are useful in busy, noisy locations. The audio feels personal and close – inside the head. They are large and conspicuous, not everyone owns them so some need to be provided.</p>
	<p>Noise-cancelling headphones cut out environmental sounds. They are large and conspicuous and ownership is low so they need to be provided.</p>

	In-ear or earbud headphones fit snugly into different parts of the ear depending on the model. More inconspicuous, more commonly owned and often more affordable, but sound quality, external sound leakage and comfort differ. If provided they cannot be reused by others so multiple pairs are needed.
How do I future-proof the app?	<p>Plan for future changes, for example:</p> <p>a. in the location - for example building work. Talk to the Town Council and check whether there are any building or other projects that will change views, routes or make excessive noise.</p> <p>b. new phone versions and innovations that will affect interface layout. The size of images can be made to adapt to future models.</p>
Deskwork	
Research the area	Search archives, online and in local heritage centres for films, books, archaeological mapping, newspaper cuttings, songs, memories, local history, for stories, images, facts and mythology about the place. Search out local librarians, historians (arts and heritage), geologists, botanists, geographers, specialist groups, local cultural champions and enthusiasts. Look beyond the obvious: where are the stories of women, children, outsiders and the poor?

Copyright	Make up copyright forms for interviewees and those giving permission to use their images/ work in the app/broadcast. Permission needs to cover use on local radio or television, the Internet and in presentations, academic thesis, by schools etc.
	Check if any costs are associated with using images/footage or other archive material.
Storing data	What is the protocol on storing personal data of interviewees, copyright owners, volunteers? Check recent data law.
Safety	Wearing headphones can make users less aware of environmental noise such as traffic, so choose routes carefully and remind users (in the audio track early on and again a little later) about traffic and the way that headphones might affect them.
	Make sure there is a pause button that can be used when crossing roads, reading a sign or speaking to people who interrupt for safety and to avoid missing content.
Making	
Using the magic of locative media	Make use of automatic playing of material by GPS if possible and 360-degree binaural sound that can be used to great effect to surprise, delight or scare the participant.

<p>Music & background sound</p>	<p>A background loop creates an immersive atmosphere, reassures the participant that everything is working and prepares the ears for narrative clips. The Hayle Churks app (available free on iTunes) used both a musical loop and one using layered sound effects at different moments within the experience to keep the experience varied (although only the musical loop can be heard in ‘armchair mode’).</p>
	<p>The loop needs to pause when interrupted and play from the stopped place in the music rather than from the beginning. This is done in coding.</p>
	<p>Gentle fade-ins and fade-outs smooth the transition between loop and narrative. This is done in coding. The stories/ memories need to have some space before and after the speaking starts and stops to accommodate for this which is done during sound editing.</p>
	<p>The loop needs to be long enough not to irritate the listener by repetition when it starts again and again. Both Hayle Churks loops were 15 minutes.</p>
	<p>Music style is a matter of taste and can repel or delight different participants. Test your choice on a mixture of people first and get feedback on how it affects their mood.</p>
	<p>Prominent sounds can be an indication for the listener that the loop has restarted and can disrupt their experience. Makers of Riot! 1831 removed the sound of a dog barking after complaints.</p>

Take me somewhere new	Users enjoy a different experience of place than they would experience otherwise. Find different routes against the usual flow of pedestrians or encourage them to explore new parts of the site.
Creative freedom	Gossip, imagination, myths and new tales could be mixed in with researched facts.
	The app listener tends to think that the general public they come across are part of the story (the old man they can see might be the old man talking on the audio for example). How can you use this?
	Is there a local occupation, such as the fishing industry, or a local custom that can be traced through the app to give it a structure?
	How can the themes of the app be expressed through the technology? In <i>Linked</i> (2003) by Graeme Miller, efforts to find audio clips and then hear them gave greater impact to the story about the destruction and removal of a community and its replacement by a noisy motorway.
What stories work?	A range of types of story (happy, sad, about personal or public events etc..) should be included as stories affect people differently and a mixture offers a variety of moods.
Can global concerns be linked to this local setting?	Be sensitive to how this area is affected by global challenges such as climate change, sustainability and migration as well as local initiatives such as regeneration. While hearing about the past and present some people will reflect on their and the area's future.

Leave in some space	Leave space in the work for thought, the background sound loop will play in the gaps.
Recording interviews inside	Record interviews in good quality – with a good microphone.
	After the interview record a wild track (just general sound) from that space. It might be needed during sound editing.
Recording oral histories	Interviewees need to be physically comfortable.
	Keep eye contact with interviewees to reduce anxiety about the microphone in front of them and being recorded.
	Nod encouragement so that the interviewee knows they are doing well. This also keeps the recordings free of unnecessary comments or ‘uh-huh’ noises.
	Record people of different ages, genders, backgrounds for a more interesting mix of voices, vocabulary and story perspectives.
	Some of the most interesting content, the stories many people want to hear (racy, political, sordid), can be libellous if names are used or people are identified through description. Try to get a version without names to keep the first-hand account. If using the voice is problematic, perhaps sections could be re-recorded using another voice or written into a narrative.
Choose the right narrator if one is being used	Audition narrators by listening to them rather than looking at them. Listen for a natural rather than read delivery – do they sound like they are chatting? In radio broadcasting lower voices are considered more pleasurable to listen to.

	Record the narrator close to the microphone so that they will sound close to the ear/s when played which creates a friendly one-to-one relationship with the listener.
	The way that the narrator speaks and their script needs to be considered as the listener needs to 'follow' them. They can inform the listener or can relax and immerse the listener by speaking quietly and gently, sounding friendly, as though they know them well already. The type of microphone used, the way of recording and way of speaking can effect whether the narrator is talking to, talking with or talking as the subconscious voice within the participant - see Lucy Frears' PhD thesis for more detail.
Take the walker deep into the story and location	An immersive experience can take the participant deep into a story. These are ideas of how to increase immersion.
	Make the app easy to use. Test on different age groups. The Pervasive Studio Cookbook mantra is 'test early and often'. See number 1 in the further reading section below for the link.
	Make sure that the phone doesn't hibernate and stop the app. This is done in coding.
	Make sure sound files, such as memories or stories, activate a few paces inside the GPS zone rather than on the edge so that they don't 'glitch'. This is done in coding.
	Use sound to lead people rather than words or text on screen, for example a voice speaking in the left ear saying, 'come with me,' to encourage them to walk towards the left.

	Use recordings from the site (such as seabirds, or passing trains) in the app so that recorded sound mixes seamlessly with everyday sound.
	Keep the app as hands off as possible and try to use physical gestures to control the content if needed (such as shaking the phone) rather than requiring participants to have their heads down tapping and swiping. Keeping faces up is a better way to connect users to the location (see number 2 in the further reading section below).
	Use archive photos or paintings to help users imagine the place as it once was.
	Lots of text on the screen is unnecessary and hard for many people to read (many of whom do not wear reading glasses when going out for a walk). The sun reflects off smartphone screens making them hard to view so audio is always better.
	Unknown stories about a place are intriguing.
	Feeling anxious about personal safety disrupts immersion. Be particularly sensitive to how women or 'outsiders' may feel walking around wearing headphones that diminish environmental sound, especially in an isolated or unfamiliar place.
	Consider how much an expensive gadget, such as a smartphone, should be on view in certain environments to avoid worrying about or being mugged.

	Participants will take a few minutes to settle in. Ensure that all the important information isn't packed into that initial few minutes as they will miss some of it. To start by standing and listening might help as will a 'replay introduction' button.
	Weather will affect enjoyment and speed at which the walk is done. Plan the launch of the app during the best weather conditions.
	If a tablet with GPS is used be aware that the larger the device the more disruptive, 'visible' and heavy it will be.
	Make it possible for the participant to keep walking while listening to a story until its end (this is done in coding). A participant will feel warmer, more comfortable and less conspicuous if able to keep walking at her own pace. Some people will always stop to listen.
Suggestions on how to draw attention to the location.	If connection to the location is needed, then deep engagement or immersion in stories needs to be disrupted periodically. Here are some suggestions:

	Record sounds in different weather and conditions. The sound of rain or buzzing bees, when played back in different weather, draws the ears and eyes back to the environment and feels odd. Likewise hearing rain on a pavement while walking along it on a sunny day, or walking through a crowded market place and hearing it empty can increase observation in the present location.
	You can ask the user to choose to do something (or not) during the app experience such as sit somewhere or to perform an action. Some participants enjoy feeling part of a shared but secret experience, especially if others are participating in the experience at the same time (look up Duncan Speakman/ circumstance's work for examples) and the behaviour helps identify them.
	A location that is spooky, odd or isolated or rarely granted access to will disrupt immersion as people will be unnerved/ intrigued.
	Mention aspects of the environment that can be sensed – felt, seen, heard, smelt. The participant will search for them and remember them.
	Mention objects that may or may not be in the environment when played, prompting the listener to look around.
	Mention visible landmarks and reveal unknown ones.

	A landscape with some noticeable features will make it easier to pin stories. Whether or not there are landmarks, don't ignore features that others will notice: the nuclear power plant in the distance, the rubbish heap, the empty building, that infrequently used path. If visible landmarks are lacking, use what you have and recreate the landscape as it was, through rich description of sound and image or create a story about it for example.
Uncontrollable interruption of the app experience	If you know there will be building work or there is a busy road, try to write in some sections that can work with those sounds.
Further research	
Artists work to review (most available online)	Janet Cardiff and George Bures Miller, Graeme Miller, Teri Rueb, Duncan Speakman/ circumstance, Blast Theory, Platform, Mike Pearson, Jeremy Hight, Jen Southern, Sam Thulin, Alex Butterworth, Lavinia Greenlaw, Geraint Francon, Proboscis, artists and academics in the Walking Artists Network and many more.
	Other site-specific performance methods are useful to learn from, such as those by Louise Ann Wilson, Pearson/Brookes, Wildworks and immersive theatre, for example by Punchdrunk.
Further reading for practical tips	1. The Pervasive Media Cookbook http://pervasivemediacookbook.com/ offers invaluable advice for locative work. The Pervasive Media Studio/ Watershed website has info on upcoming artist's talks and older documented ones: http://www.watershed.co.uk/studio/

	2. There's Not An App For That (2015) by Simon Robinson, Gary Marsden and Matt Jones. They describe the 'face on' approach to app design rather than 'heads down'
	3. Janet Cardiff: The Walk Book (2005) by artist Janet Cardiff and Mirjam Schaub.
	4. Site-Specific Performance by Mike Pearson (2010) who has also worked with MP3 walks as remote performance.
	5. The project Ambient Literature at the Pervasive Media Studio (2016 -18) (run by Tom Abba and Jon Dovey) is researching and making locative media narratives with smartphones.
	6. Remembering Oral History Performance (2005) edited by Della Pollock.
	7. Websites of many artists mentioned above for examples of work and explanations on what they do – e.g. Janet Cardiff and George Bures Miller, Teri Rueb, circumstance, Blast Theory and Platform. The app-making toolkit websites such as Calvium/AppFurnace and layar include examples of work and tap into the deep knowledge of their creators. Look for articles/ talks/ chapters by Jo Reid from Calvium.
	8. Work is best tried in situ to understand the effect – the fusion of the everyday and the app content. Look out for work to try, usually on arts and culture networks, and follow the artists mentioned to find out when and where their new work can be experienced. Commissioners include: Artsadmin, Artangel, Heritage Lottery Fund, National Trust, Arts Council.



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