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# Walking off the garden path: a design journey

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**Abstract:** This paper illustrates various digital-nature artefacts, which emerged from a reflective design journey to enhance and support novel connections to nature in a garden.

The research imperative is to explore possibilities for the design of digital technologies for changing people's interpretation of a National Trust

garden, encouraging encounters through the artefacts that take visitors off the garden path and reawaken them to the “presence” of the garden. The process began with an exploration of the criticisms and possibilities of technologies suggested within the writings of Heidegger, Borgmann and Feenberg, which were complemented by insights from natural history writers such as Deakin. These writings guided the design sensibilities for the creation of a collection of interpretation artefacts including Audio Apples, Rhubaphones and a Nature Meditation Egg. Much of the work was situated in a Walled Kitchen Garden managed by National Trust.

Research through design complements the research philosophy because it demands space for reflection and conversation, and enables inclusion of different voices within the design journey. The methodology has helped address the question of whether a design lens that begins with criticism of technology can change the way we design, and the artefacts produced.

**Keywords:** Interpretation; Design process; Research through design; Engagement with nature; Values.



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## Introduction

This paper illustrates various digital-nature artefacts and discusses their place within a research through design process, towards the design of interpretation to support visitor engagement with nature, in a garden environment.

In recent years reports and articles from organisations including National Trust (NT) (Moss, 2012; NT, 2012), and RSPB (2013) have expressed concern about lack of engagement or superficial engagement with the natural world. Some have framed digital technology as problematic, because of the captivating hold of the screen. The perceived tension between nature and digital technology provided the starting point for this research. We explore the possibilities of embracing criticisms of technologies in order to design digital interpretation that supports people's connection to nature. The setting for the research is the Walled Kitchen Garden, Clumber Park in Nottinghamshire, UK, managed by National Trust.

This research begins with a rejection of technological determinism, but an acceptance that power systems can set the cultural horizon and mould digital technology (Feenberg, 2010). In this frame the digital interpretation we design is influenced by values. Therefore it allows for the possibility of designing differently if another set of values is prioritised. By accepting

some of the criticisms of digital technology arising in selected writings by Heidegger, Borgmann, and Feenberg, we created a set of design principles that address those issues relating to digital technology and disconnection with the natural world. These principles are discussed in relation to individual artefacts. We reviewed philosophical literature in relation to natural history writings to identify qualities of 'engaged' experiences in natural environments.

Research through design (RTD), as described by Gaver (2012), emerged as an appropriate methodological approach because the shared commonalities he identifies articulate the important epistemological commitments of the project. These include valuing making as a "route to discovery" (p.242); understanding RTD as a generative way of producing knowledge and recognising the benefits of audience involvement in the design process. The individual methods used within the project were guided by this strategic position. Other researchers describe and use RTD differently but a discussion is beyond the scope of this paper.

## Process

We are approximately two years into a three-year programme of study involving literature review and design of artefacts. Visits to the garden began 18 months ago but a more intense collaboration has developed over the past 12 months.

We set the design criteria using a literature review, which embraced criticism in order to create a manifesto for the design of digital artefacts to support connection to nature. For example Edwards (2005), referencing Heidegger, notes that devices do not interrupt us or cause reflection. Hence we adopted ‘interruption’ and ‘reflection’ as design criteria.

The next phase involved making as a way of exploring the design space. We sought to discover whether the criteria that emerged from criticism could be embodied within a digital-nature artefact. Although this initial artefact was developed outside the NT garden it provided a point for reflection, and also helped demonstrate the approach in conversations with the National Trust team.

Our on-going dialogue through artefacts has continued involving visitors, designers, NT gardeners, volunteers and representatives from other part of the Trust. Although some versions of the artefacts have been installed in the garden they are all perpetual beta objects. They mark points in the conversation, and embody design decisions and grounding philosophy, but just as other garden artefacts, such as plant supports, are re-purposed and recycled to suit changing needs in different seasons, these artefacts will grow and evolve in their environment. This in itself is a manifestation of a philosophy that argues for all people to determine the meaning of technologies, rather than the just creators (Feenberg, 2010). Our time in the garden, trailing gardeners, talking to people and observing

practices has been key to the process. We have documented these experiences and our iterative development of artefacts in digital diaries and reflective documents. The cluster of designs enables our reflection on the overarching research questions, though each artefact in its own right is an example of ‘materials research’, ‘action research’ and ‘development work’ (Frayling, 1993).

### **i) Nature Meditation Egg**

The Nature Meditation Egg, influenced by the work of Borgmann was the first of the digital-nature artefacts and the only one not grounded in the NT garden.

Borgmann (2000) criticises technology arguing that it provides instant gratification with little effort, thus supporting “paradigmatic consumption.” He states that technological devices are divorced from their context, which emphasises commodity over intrinsic value.

By contrast ‘focal things’ and practices are grounded in context and so give our lives meaning. The kind of intimate engagement with a ‘thing’ that characterises a focal relationship requires skill and effort, which is experienced as both “burden” and “delight”. In the digital age focal practices have been eroded, as devices are dislocated from context.



However Borgmann (2000) sees a potential future where focal practices might be asserted within technology. If technologies leave space for these engagements focal practices may “break the spell of paradigmatic consumption” (Ibid. p.422). Deakin’s writings about stoking stoves, whittling wood and living in a rhythm set by the environment also allude to engagement, awakened senses and skills that Borgmann might deem focal practices.

Hence the aim of this design was to stimulate the focal practice of regularly walking one’s ‘home patch’ and attentively listening to the natural world, through the auditory act of recording. These recordings were used a part of a meditation practice, with the wooden egg as a focal object. Holding the egg for a sustained period of time causes a recording of sounds gathered on walks to playback, while letting go causes the audio to fade. The interaction uses capacitance and emphasizes slowing down and giving time to the process, enabling reflection at times when one cannot be outside.

We made the egg from wood because of its sensory qualities; the way it warms in the hand, its smell, texture and weight, and (if partly seasoned), the way it ‘lives’ and changes over time. Its resonant qualities are also attractive. The shape is designed to fit well in hands. Critically wood is a poor conductor of electricity and focus is needed to hold the object so that a capacitive connection can be made with the metal contacts

Figure 1. Meditation Egg. Photo: Joe Lindley



inside. There are similarities between the egg and Thieme et al's (2013) meditation globes that also use object-focused engagements for reflection, albeit in a different context.

The act of designing caused reflection on what is elemental to focal practice. Using the egg prompted a more focused attention on the auditory landscape. Beyond that it acted as an exemplar of a design shaped by values, and stimulated conversations with NT gardeners about the design of interpretation for garden spaces.

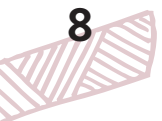
## ii) The Rhubaphone

The Walled Kitchen Garden holds over 130 varieties of rhubarb, and has a mission to preserve diversity, especially of heritage varieties. However many people are unaware of the existence of different types, as rhubarb it is often sold without reference to name. Even walking in the garden it can be hard to notice individual varieties because the broad leaves grow to flop over covering both stems and plant labels. This prompted the idea for interpretation that might 'interrupt' (Edwards, 2005) in order to encourage 'noticing' and 'attention' to particularity in order that the rhubarb might be seen in a new light. This kind of 'presencing' (Heidegger, 1971) reoccurs in nature writing and seems indicative a deeper quality of engagement. The aim of showing the individuality of the rhubarb varieties led to the design of the rhubaphone. Each iteration is a manifestation of moments in a reflective and collaborative process. The first 'xylophone'

design emerged because visual proximity aids differentiation between, for example, trunk-like Irish Apple and thin, delicate, Greengage, but the dominance of the structure overshadowed the rhubarb, and prompted a redesign to give greater prominence to the rhubarb itself. Our observation of the rhubaphone's use prompted a change in scale and interaction and the glasshouse context informed changes to the stand and rhubarb labels. The aim has been to allow the rhubaphone grow within its garden setting.

The rhubaphone has evolved in two directions; the first, called 'Talking Rhubarb' focuses on the rhubarb itself and information about selected varieties; the second transformed the rhubaphone into a wind-chime-like instrument to mix sounds from the garden, and 'make present' the birdlife, insect life and human interactions in the garden. In the most recent version of the mixer, the rhubarb has been supplanted by cut-out shapes that reinforce attention to the sounds.

By contrast rhubarb itself is at the fore in 'Talking Rhubarb'. Holding a stem of rhubarb causes the rhubarb to 'talk' as the Head Gardener tells its story. Letting go of the rhubarb causes the story to end, so sustained contact is required. This builds on the technologies used in the Nature Meditation Egg using a capacitive touch sensor in combination with Arduino and Raspberry Pi.



Talking Rhubarb has been installed in the garden for several months and is the most ‘finished’ of the provisional designs. However it is about to begin another phase of transformation. The seasonality of rhubarb has raised questions amongst the gardeners about how it will be adapted and used through the winter months. There are also questions about the appropriateness of its indoor location leading to plans to move it outside to the rhubarb beds next season. Conceptually, this would go some way to addressing the current dislocation from context, which is a concern because it exacerbates the tendency to see the rhubarb purely as a standing reserve (Edwards, 2005). This installation has been embedded for several months providing the greatest opportunity to garner feedback and reflect on it as an individual piece of interpretation, and as an element within a collection of artefacts to support engagement with the natural world.

The installation has been overwhelmingly popular with gardeners and visitors, variously described as ‘fun’ and ‘innovative’. It has satisfied some aims in terms of encouraging people to notice rhubarb and its particularities. Touch has been especially important in foregrounding the rhubarb. One visitor remarked “It was great fun and it was actually using the raw produce...and incorporating that into technology, which I thought was really interesting.... I thought that was really different because you can actually feel and touch the produce.” Another, when asked to compare to a screen-based alternative said, “I think that (‘Talking Rhubarb’) is a better



Figure 2. *Rhubaphone*, Photo: Alex Johnson

vehicle for that sort of information. That brings it to life more. You’ve got the actual rhubarb; you’ve got the stems there. You know its more real.” It also succeeded in bringing to prominence the diversity of rhubarb with many surprised by the number of varieties. Most people listened to short clips from several stems; a few listened to all the recordings. Feedback from gardeners and volunteers has been positive, particularly in relation to engagement. One gardener commented “its just a really, really good alternative way of engaging with different groups of visitors”, while a ranger commented “...it engages people. They come in; they see this rhubarb hanging there. They put their hand round it, and there’s like this, ‘Oh my God! Rhubarb’s talking to me’”. Another talked about the “positive vibe” engendered amongst groups. It seems to stimulate people to tell



their own stories about successes and failures growing rhubarb to tales of hiding beneath the rhubarb leaves as children. 'Talking Rhubarb' acts as a catalyst for discussing memories and experiences in the garden, which themselves are a kind of re-connection. Gardeners commented on "care over the materials" and "the fact that so much...is rooted in Clumber". However there are also tensions about whether the installation presents a message about life-sustaining or paradigmatic consumption. (Borgmann, 2000). Rhubarb is presented in a way that has the potential to show its individuality and particularity, but when removed from its bed it may be perceived as 'standing reserve' (Edwards, 2005).

### iii) Audio Apples

The idea of dwelling and presencing (Heidegger, 1971) inspired the design of the Audio Apples.

Dwelling is almost integral for the NT gardeners and volunteers who nurture and cultivate the garden, through the changing weather and seasons. The garden is revealed and made present as they work. The garden could even be understood as an example of a 'thing thinging' (Ibid.) through the social practice of gardening.

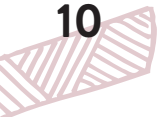
The continuity in the garden was reinforced at a team meeting when a gardener read from the 1888 diary of a former gardener. Though separated

by more than a century the sense of time compression was remarkable. As part of a lineage of gardeners who have dug the same ground and walked the same paths they are able to act as conduits, disclosing the world of the garden. The apple trees were chosen as the focus because of their power to draw people off the gravel paths onto the grass. It was hoped that the enveloping canopy of the trees, would create a space where senses would be awakened, through touching bark and smelling blossom.

In the installation 'mortality' and 'divinity' (Ibid.) are brought to the fore through recollections shared by gardeners and volunteers. These are stored on mp3 players enclosed within wooden apples hanging on the trees. Plucking the apple starts the story that plays through a speaker in the base of the apple. The individual, personal stories have a 'presencing quality' that unlocks unseen aspects of the garden. This is echoed in one of the gardener's comments:

"..when you started showing what you could use it for then we were really engaged with the technology and then the realisation that the stories matter, that that could actually help us unlock the garden, and not just unlock the garden for visitors but share what we love about the garden."

The story-telling process is key to the design. The initial stories, gathered on walks around the garden, had an engaging immediacy, but they were



spoiled by auditory disruptions. However it was felt that recording in a studio, would create a sense of dislocation. Eventually a quiet fruit store, inside the garden became an ad hoc studio, so gardeners and volunteers could walk straight from harvesting, pruning or weeding into a recording space, connected to the garden.

A sound technologist, new to the site, recorded conversations to keep the stories fresh. Then ambient recordings from the garden were layered with the voices. A volunteer with experience of amateur dramatics took the role of 1880's gardener Noah Shore, and read extracts from his diary. These were interspersed with entries from a contemporary diary.

The first prototypes were made with wooden apples purchased online. Since then an Estate Team member has begun to turn apples from wood from the park and this has added to a communal sense of ownership. One gardener reported an emotional response to the fact that the “beautifully turned object” was turned by one of their team. These apples are still prototypes and have not yet been tested in the orchard but there have been opportunities to talk about the stories.

It is hoped that bringing forward hidden facets of the garden will cause ‘presencing’ and support the emotional and sensory connections that contribute to place making. At this stage the design raises questions: Do the audio apples get in the way of experiencing the garden directly?

*Figure 3. Audio  
Apple. Photo: Alex  
Johnson*



Is design is too “smooth” (Edwards, 2005), requiring too little effort (Borgmann, 2000) from the listener? Answers to these questions should arise once the apples are ‘planted’.

## Discussion

Knowledge has emerged through a process of observing - conversing & reflecting - making - observing - conversing & reflecting - altering and making afresh. The embedded nature of these experiences has stimulated some of our key insights.

The rhubaphone has proved an engaging and appealing artefact and the meditation egg has supported mindful daily walks. Further development is needed to gauge the impact of the Audio Apples. At this stage is unclear whether these designs, driven by a critical philosophy of technology, have had an impact on connection to the natural world. However, paying attention to a set of values has clearly influenced the design process and design choices resulting in artefacts that embody a design manifesto. ‘Presence’ and sensory engagement are recurrent themes.

The ‘spirit of the garden’ has been at the forefront when decision-making. This principle is directly drawn from Feenberg’s (2010) Secondary Instrumentalization, which reinforces importance of context and values. Other contributions from Feenberg’s work have been; the conscious effort

towards an inclusive way of making that is informed by a range of voices; and the creation of artefacts that can be redefined through use. This has caused the most substantial impacts in the project to date. The artefacts and process have catalysed internal discussion and reflection about interpretation in the garden including debate about the appropriateness of materials and the stories to be told. “Whenever we’ve had a conversation about interpretation its now really, really different. Its different in tone and it is different in content as well.” The artefacts have also stimulated reminiscence, discussion, inter-generational storytelling and knowledge sharing amongst visitors and the garden’s team which could be powerful in seeding further engagement, perhaps through artefacts that gather and share contributions from the community of Clumber visitors. Inclusion of these voices may be part of future iterations as the artefacts ‘grow’ in the garden.

The process has caused reflection on seasonality and the rhythms of the garden, and over time it has become clear that interpretation must grow with the garden. The space for this growth is provided in flexible, ambiguous artefacts that allow gardeners and volunteers to change content and function through the seasons. Through use the team will determine the evolution of these artefacts. Research through design has given the space for a ‘way of knowing’ to emerge from people and context. The generative approach partnered the philosophical stance well,



facilitating understanding of the organisation and context. It provided opportunities for reflection upon designs that support and detract from engagement with nature. The artefacts embody the guiding philosophy, but more importantly stimulate an on-going conversation.

The next stage in this research is to work with the team to find ways to support the creation of future interpretation in the garden. Open toolkits, 'spirit of place' exemplars, workshops and a rolling programme of visiting creators are other possibilities that have been suggested. It is hoped that the most appropriate direction will emerge through the next phase of RTD.

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