

A Dead Man's Nose: The Moesgård Museum Prehistoric Smell Trail

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The Paradata

Why smell and why now?

During the interpretation and discussion of a site, archaeologists often attempt to evoke an atmosphere by vividly describing the possible sounds or smells, and yet it is harder for the reader to summon up the smell of something, than it is to close their eyes and see the picture of the landscape being described by the words. But smell, when directly experienced, has the ability to invoke intense feelings, memories and emotions.

While unleashing smells in museums is not new (e.g. the famously smelly Jorvik centre), it is unique to have a personal device that can emit smells depending on the user's location. The Dead Man's Nose (DMN) is my attempt to enable archaeologists to start experimenting with smell in the field, it can be used either by professional archaeologists to aid in phenomenological fieldwork or by museum/heritage managers to augment their sites or galleries for tourists and visitors.

Where does the idea for a smell walk come from?

During my PhD I used a number of different techniques to explore archaeological sites, including augmented visual and audio guides to the prehistoric landscape of Bodmin Moor. I also built a prototype DMN, using only one computer fan (so only one smell) held in a cardboard box. I have long been meaning to develop this simple prototype further and the Heritage Jam seemed the perfect opportunity!

How does Moesgård Museum fit in?

I now live in Aarhus, in Denmark, very close to the newly built Moesgård Museum. The museum has both an ethnographic and archaeological collection, which concentrates on the Prehistoric and Viking periods in Denmark. Along with the very impressive new museum galleries, there is a prehistoric trail that leads through the surrounding woods, past a number of reconstructed or rebuilt structures, including various types of barrows, monuments and Viking buildings. Due to the combination of outside archaeological sites and indoor galleries Moesgård is the perfect place to experiment with the DMN.

How does it work?

As can be seen in the accompanying video, the DMN consists of an Arduino board connected to four small computer blowers (fans). These fans are mounted within specially constructed wooden boxes (built out of real wood by my Father – who needs 3D printing?!), each of which has a small drawer that contains a piece of cotton wool saturated in a liquid smell (see below).

I have written a small Arduino 'sketch' in Processing that accepts a BluetoothLE connection and listens for a coded signal on the serial port. Depending on the signal received, it will either turn on or off one of the fans (by sending power to it).

Alongside the Arduino sketch I have also written a relatively simple iOS application. The app presents the user with four switches (one for each fan) and a connect button. When the 'connect' button is pressed, the app connects via Bluetooth to the DMN hardware, which then enables the switches. At this point the user can turn any or all of the fans on by simply switching the switches. When one is switched the appropriate signal is sent via the Bluetooth serial connection, which starts the desired fan. In order to create the geo- aspect of the DMN, the app reads the user's physical location, via the phone GPS. Using the inbuilt iOS CoreLocation CircularRegion methods, it creates a number of 'geofences' (or smellzones) with a specified radius around a pre-supplied list of coordinates. Each one of these smellzones is configured with the id of one or more of the fans, depending on the smells that the user wants to smell. Once the user physically walks into one of these smellzones, the crossing of the geofence is detected, the serial signal sent, and the relevant fans begins to spin. Although not yet implemented, where there is no GPS coverage (i.e. inside a gallery) either iBeacons or NFC could be used to trigger the smells.

Where do the smells come from, and how do you choose the right one?

All of the smells I use come from a supplier called Dale Air (<http://www.daleair.com>). Dale Air have created over 300 different types of smells from 'Bluebell' to 'Dragon Breath'. It is very hard to choose the 'right' smell for each of the smellzones, as far as I have found no-one has yet created the 'smell of a cist grave after a ritual'. However, it is important to remember that by recreating the smells of the past we are not necessarily experiencing them or interpreting them as past people would have done, instead we are using them as an aid to challenge the way we think about a site or landscape.

What happens next?

The DMN is still very much a prototype. The field testing for the Heritage Jam showed that the fans sometimes weren't quite powerful enough to waft the smells when outside, and some of the smells were confusing, some too subtle and some overpowering. However, now that the prototype is up and running, there are great possibilities for it to be tweaked and adapted. It is expandable (up to nine different fans), and the complexities of smells that can be created by mixing and matching is virtually unlimited.

Smell is a very personal sense, it affects different people in different ways. In some cases, such as those suffering from Post Traumatic Stress Disorder, the exposure to certain smells may be highly inappropriate and can cause extreme reactions or panic attacks. The use of a smell device, rather than a 'global' smell such as at Jorvik, enables museums to enhance their collections and sites on a personal level without having to create a one-smell-fits-all solution. For archaeologists, the DMN opens up a vast number of possibilities for playing with and exploring past sensory landscapes, and may provide insights and chances to explore hypotheses that are simply not possible using sight alone.