
Assignment 3

“Meaningful Ambiguity”

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NM4226 Sem 2 of 2012/2013 • National University of Singapore • 4 March, 2013

Put on your headphones



DESIGN DESCRIPTION

I defined "ambiguity" by being open to multiple interpretation. In this assignment, we had to design ambiguity at the interaction level. And interaction to me is how the audience act and react to the system, and how the system subsequently act and react to the audience. Thus, according to definition, I would have to design the interaction such that the mapping between the input by the audience and the output by the system is open to multiple interpretation. I started by first asking myself what message I would like to express through this artwork. I wanted to communicate the different dimensions of sound, such as the spatial, temporality and subtlety of sound through visual and audio stimulation. I wanted to show the spatiality of sound by allowing the audience to hear sounds in a 3D space, making use of holophonic sounds (Nicol et al, 2012) and ink strokes to communicate this, mapping the 2D world of a canvas to the 3D space. An example of holophonic sound is in this link: <http://www.youtube.com/watch?v=uzFswCpJPqg>. Through this demonstration, the artwork also demonstrates the fading of the boundaries between the visual and audio dimensions. I wanted to show the temporality of sound by allowing each sound to fade as the ink stroke fades, thus communicating to the audience that sound is a non-permanent medium. At the same time, I wanted to show the subtlety of sound such that when one slows down and deliberately listens to the world around, only then can one notice the sounds around him. This is communicated by allowing the audience to be the one deliberately creating and exploring with the ink strokes, thus "creating" and exploring the different sounds created the sound.

With this idea in mind, I wanted to make use of visuals as a channel, aiding the expression of this artwork and allowing the audience to interact with the artwork. To make the interaction ambiguous and yet still meaningful, I was inspired by the Influencing Machine. (Höök et al., 2003) I wanted to express how one's interaction would result in a sound that is not easily mapped to the audience interaction, yet influenced by the audience's interaction, much alike how one's interaction with the world. The title of my artwork is "Drawing Sound". From the name, audience would get the idea that this artwork is about drawing and sound. The audience will be presented with a blank canvas and he would be able to draw the sound on this canvas. The sounds will be produced according to the rules in the next section. In this way, the interaction is ambiguous as though it is clear how to interact with it at the lowest level, the mapping between the interaction input and the output from the system is ambiguous. How the gesture is mapped to the sound that is output is ambiguous and open to interpretation (for instance, what is considered as a messy gesture, and what is considered as neat, that is ambiguous). Thus, there is a large interpretive space for the audience to interpret both how

the audience interpret how the system maps the gesture to the meaning behind the gesture, and how the audience interpret the sound that is output to the meaning that the system interpreted the gesture, and thus a large space for interpretation the gesture input to the sound output. My target platform is on the iPad with earphones or headphones. The reason for using an iPad is that it has a large, responsive touchscreen display, great sound reproduction and gyroscopic sensors to measure tilt for the expression of this artwork.

SCREEN MOCKUPS AND RULES

Rules

The general idea of the artwork is to have an empty canvas presented to audience. The audience is prompted to put on his earphones or headphones when interacting with the artwork. As audiences draw on the screen, sounds will be played through the earphones/headphones.

The simulated location of the sound depends on the position that the audience draws from the screen with reference to the center. For instance, if the audience draws on the top of the screen, the sound would seem to be coming from the front of the person, and if the audience draws on the bottom of the screen, the sound would seem to be coming from behind the person. The closer the drawing is to the center, the closer the sound would seem to the person. Also, the height of which the sound is coming from depends on the angle of tilt of the platform, with tilting the platform up would make the sound seem to be coming from a lower altitude. The position of the sound will also move depending on the stroke. For instance, if the ink stroke is drawn from left to right, the sound will seem to be moving from left to right, according to the path of the ink stroke.

The type of the sound would depend on the drawing. The sound will only begin at the end of the drawing. If the drawing is messy, a chaotic sound would be played, like the sound of cars honking or industrial machineries. If the drawing is neat, then the sound would be more serene, like birds chipping in the air. In this way, the drawing influences the sound that is produced, but there is no direct mapping involved which allows the audience to have full control over the system, thus making the interaction ambiguous, yet with its purpose being clear to the audience.

Each drawing will fade after a few seconds to allow audiences to augment and mix sounds together. Each sound will fade independently, with the first sound that was drawn fading first. The sound will fade together with the ink stroke that draws the sound.

Screens

Put on your headphones



Prompting audience to put on his headphones

In this screen, the audience is prompted to put on his headphones. This screen will fade to the blank canvas automatically after a few seconds. The audience is expected to put on his headphones or else he will not be able to receive the full expression of this artwork.



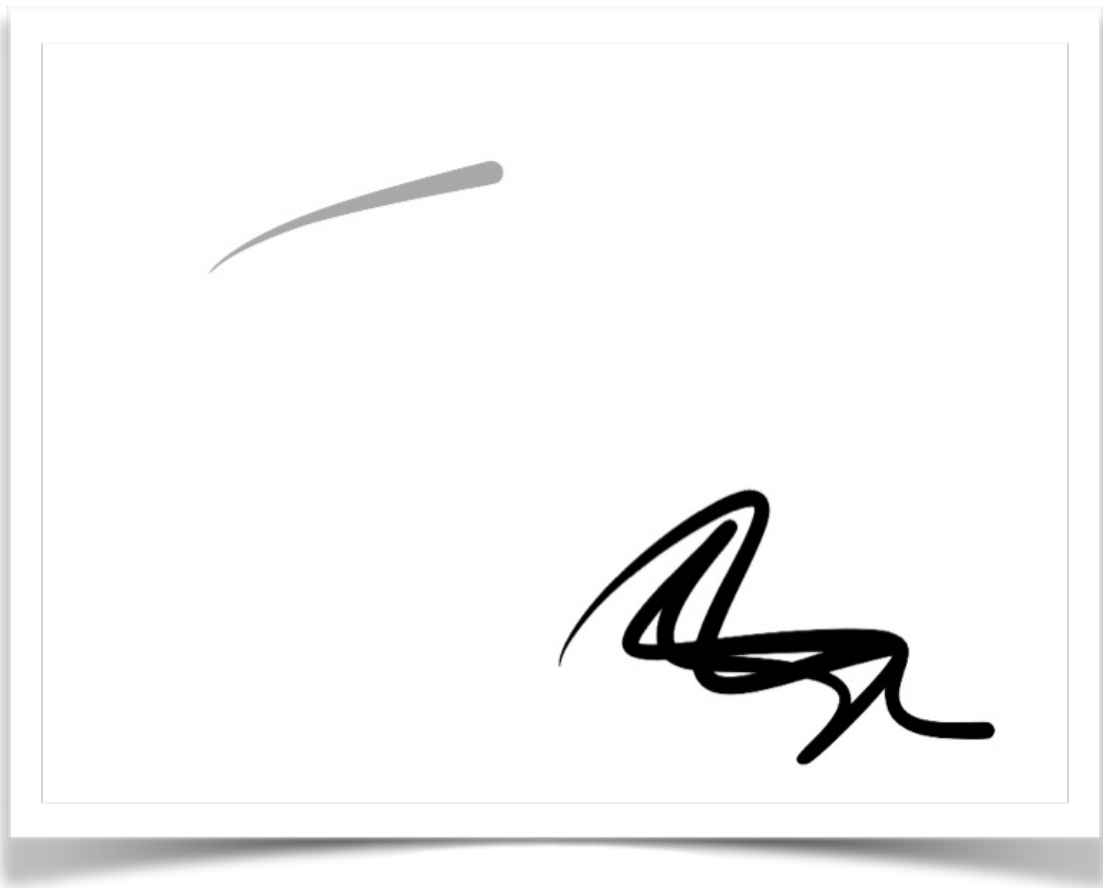
The Blank Canvas

This is the blank canvas, where all the interaction takes place. Here, audience will be presented with a blank canvas. This artwork depends on the audience's curiosity to explore the functionalities, seeing the lack in prompts and interface. The deliberate lack of tools enhances the ambiguity of how to interact with this artwork. However, the moment the audience slides his finger across the screen, or perhaps tap on the screen, there will be sound being played over the headphones. Depending on the gesture that the audience used, different sounds will be played as described in the previous section.



A Stroke/Sound on the Blank Canvas

This is an example of an audience interaction with the screen. The audience did a casual swipe from left to right on the screen as seen by the trace left on the screen and the sound is played. In this case, because the gesture is considered gentle, there will be gentle sounds such as sounds of birds chirping moving from the front left to right, following the stroke on the screen.



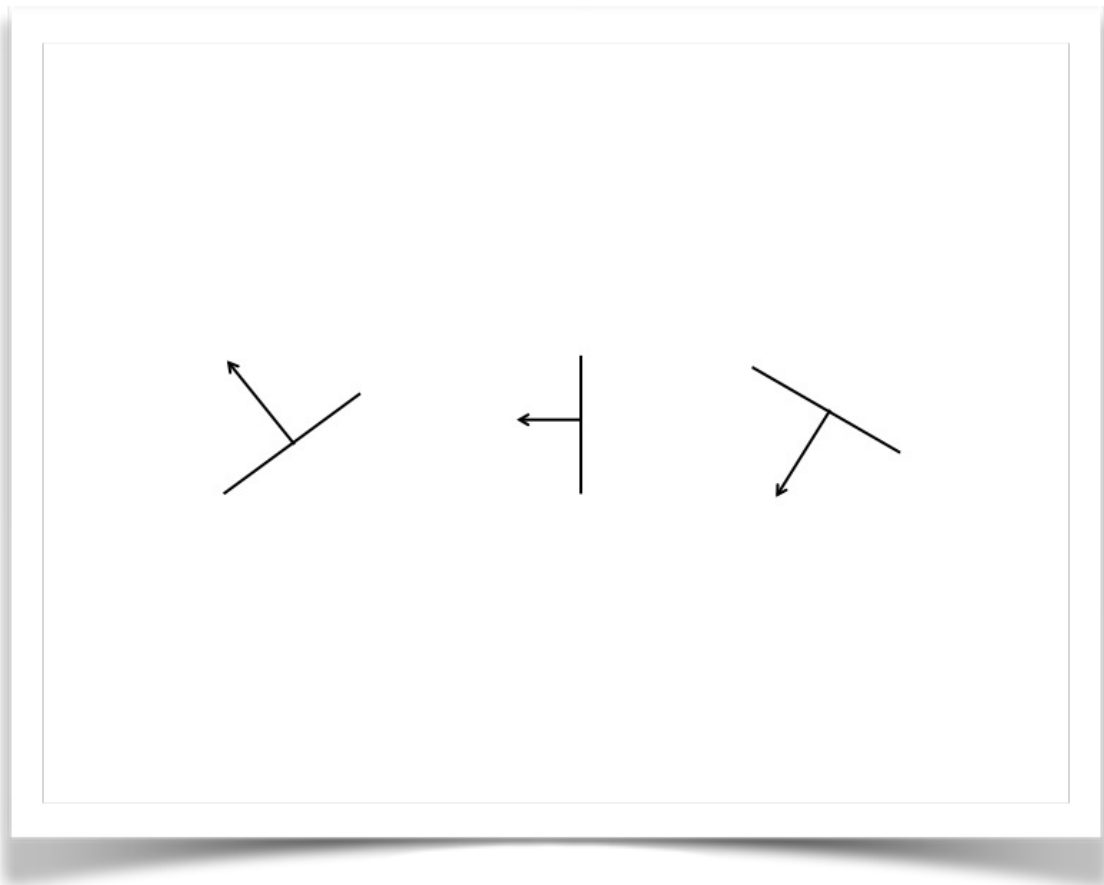
Faded Stroke/Sound with new Messy Stroke/Sound

As time passes, the initial ink stroke together with the accompanying sound will fade to the background, but as the sound is fading, it will be mixed together with the new sound. The new stroke is a messy stroke, thus will give a more messy chaotic sound, like the industrial machines or car honking sound. The position of this sound will seem to be coming from behind the person, towards the right. The new sound will move as according to the stroke being drawn.



Both Stroke/Sound fading to the Blank Canvas

Over time, both strokes will fade, and their accompanying sound will fade accordingly.



iPad in the tilted-up (Left), flat (Center) and tilted-down (Right) orientation

This is not a screen, but just as an explanation of the angle of the iPad relating to the height the sound seems to be coming from. The line represents the iPad and the arrow represents the front of the iPad. On the left, the iPad is tilted up. Thus, the sound will seem to be coming from a lower altitude. On the right, the iPad is tilted down. Thus, the sound will seem to be coming from a higher altitude. This is another mode of interaction other than the touchscreen, the angle of tilt will determine what height the sound will seem to be coming from.

REFLECTION

Design Considerations

I applied ideas in the readings to have a better understanding of pleasure model, engagement process (Edmonds, 2010) and design strategies (Sengers et al., 2006) to allow for multiple interpretation. After applying these strategies, I had a clearer understanding of designing an interactive artwork for multiple interpretations.

Pleasure Model

The pleasure model as described by Costello gives us thirteen categories. From these, I chose those that were relevant for this artwork. I wanted to give audiences the power of **creation**, to feel like they are creating something. Furthermore, to fully understand the system, audiences would have to **explore** and **discover** different aspects to figure out the controls, thus providing an ambiguous yet meaningful interface. I used high quality holophonic sound to **captivate** audiences with **sensory** audio stimulation through provoking their imagination with **fantasy** of reality through sound. Furthermore, through exploration, they may even be able to **subvert** normal rules of the world, such as having car sound to seem to be coming from above or birds from below, thus breaking norms of cars on land or birds in sky. Through methods described above, I made use of pleasure model to design my system to provide pleasure to audiences. (Edmonds, 2010)

Engagement Process

Audiences initially would have to adapt and learn about how the system function through a process of exploration and discovery. After audiences learnt what each interaction does, they are expected to try out and anticipate response from audiences. The cycle may repeat as audiences learn new things from the system. After interacting with the system for a while, audiences are expected to get a deeper understanding of the system, the message it is trying to convey and their subjective aesthetic interpretation of the system. (Edmonds, 2010)

Designing for Ambiguity

I designed according to some of the design principles suggested by Sengers et al. The design of this artwork is such that it is clear what the artwork does, while leaving the interpretation of use open. At the same time, I had to focus the artwork about a space of interpretation around the relationship between sound and vision. Also, I blocked out any tools or control one might

expect from a drawing application, and purposely leave out other information such as colour and brush size. This is to allow the audience to focus his entire attention on the sound and the strokes and thus interpreting what is the relationship between the sound and the stroke. Over the course of interaction, he may discover new things such as adjusting the tilt to change the altitude of the sound. (Sengers et al., 2006)

Evaluation Strategies

Inspired by some of the papers done on evaluating interactive art, I will be doing a long term study to see how audience would interpret how such an artwork would fit into their lives, and the metaphors they used to describe the artwork. I will also conduct direct observation to see how audience interact with the artwork and use video-cued recall to have a semi-structured interview about their experience. The audience selected will be based on their background in interaction art and their experience with sound and vision artworks. I will also conduct experience workshop, bringing in subject experts in groups to have an interaction critic of the artwork. I would also evaluate the sound designers to see how they map the gestures to the sound. (Höök et al., 2003, Bardzell, 2011)

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