

Tablet Tumbler and Tablet Tumbler Movie Kristin Lucas and Joe McKay



ABSTRACT

Tablet Tumblers are a hybrid media objects that are outfitted with mobile computing tablets mounted around its core. The object can be used as a multiple-camera recording device by flipping the tablet faces inward (the high resolution camera is on the backside of the tablets), or as an interactive display with multiple screens by flipping the tablet faces outward. We can take this object out on the street to record video and we can prepare the tablets to run a custom app or webpage that viewers can interact with by rolling it around an exhibition space.

TABLET AS ALL-IN-ONE

We were initially attracted to the idea of working with tablets because we recognized their potential as an all-in-one tool that was designed for mobility, network communication, and wireless. We saw that we could use the tablets to collect images, we could program interactivity utilizing the tablet's built-in sensors, and we could use the tablets as display screens.

DESIGN

The design of the object has many human-engineered technological references, including the wheel which allowed for mechanized systems, the cable drum which is used to lay communication wires across land and sea, and the Google Street View car. Cyclical and cinematic references include the pre-cinema zoetrope, film loop, animated GIF, and the computer routine. Considering that interaction with the object requires human will and physical power, there is a playful connection to the story of Sisyphus who is compelled to push a rock up a hill over and over again. There is also a mythical connection to the recent Japanese video game Katamari Damacy in which users participate in a narrative by pushing a magical adhesive ball around the city and its surroundings, collecting increasingly larger objects from thumb tacks to people to airplanes to mountains until the ball is large enough to form a star. From yet another point of view in our fast-changing world of technological innovation, we see the object as tumbleweed of aging technology.

FABRICATION

Each tumbler object has been made with a slight different design and we have explored a range of materials from plywood, lightweight MDF, and used conference tablet tops. Sizes range from 4-feet to 3-feet in diameter and 18 to 28 inches in width. We have developed a particular interest in working with materials that can be cut with a CnC router, such as wood and aluminum, so that tumblers can be cut in different cities avoiding expensive transportation costs. A material we are considering for specific applications is foam. In order to protect the material's edges and the objects that it may come into contact with, we have been using rubber bumper tape. Their size and scale in relationship to the human body makes them a good fit for experimental mapping and documentation projects, though we have many other applications and ideas in mind for their use.

PROGRAMMING: APPS AND WEBSITES

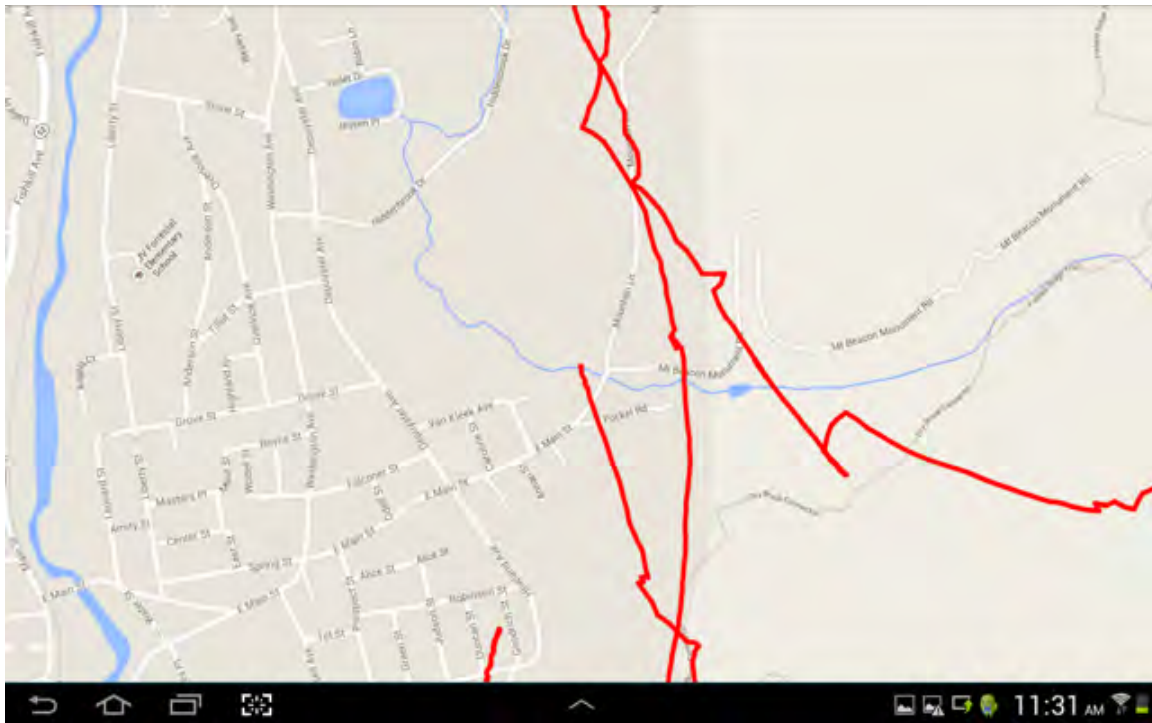
In the interactive tumbler series, we are programming a familiar tool, the mobile computing tablet, in ways that differ from its common use. Viewers approach the tumblers with apps and websites already running on the tablet screens, divorcing the user from their familiarity with the tool and as a practical tool with a preconceived use value. Viewers interact with the tumblers in order to discover their function. The experience is both familiar and unfamiliar.

The audio-visual content we are programming into apps and websites is responsive to the sensors within the tablets. When a tumbler object is rolled around an exhibition space the screen content changes, responding to the tilt, direction, and speed that the object is moving. We have made several beta test apps and websites to explore a range of potential interactivity. Each of our beta-tested apps utilizes a

different combination of the tablet's built-in features, including the accelerometer, compass, clock, and camera as a motion detector. Apps and websites are currently programmed with the open source software Processing and HTML5.

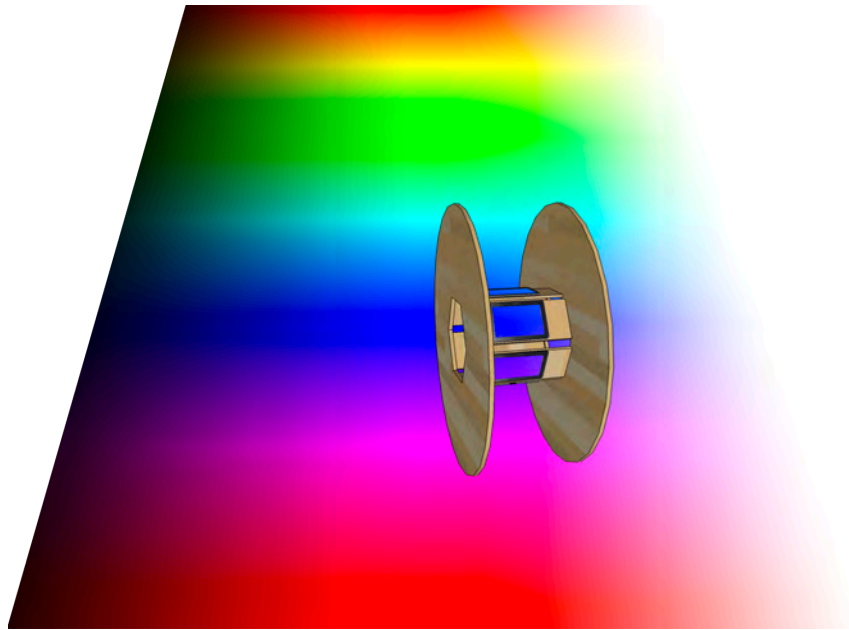
MAPPING VIRTUAL REALITIES ONTO PHYSICAL SPACES

Virtual realities are commonly understood to be representations of real life. In the series of four tumblers detailed below, we are mapping virtual realities, schematics such as: a web safe color palette, a 24-hour clock, a counter, and a live map, onto physical spaces. We are interested in creating an experience for the user that is mental and physical, in which the viewer must shift scales of reference from one tumbler to the next within the series. The goal is to add obfuscation, and to add the body to the obfuscation.



Compass Map, website programmed with HTML5 and Google Maps API

The map uses the tumbler's current location. You roll through a virtual map space that is tethered to the center of the room that the tumbler is resting in. Any movement from this position moves across the map at a greater than 1:1 scale, and leaves a red squiggly line tracking the viewer's path on the map. Small movements have larger than life implications and it is difficult to draw a very straight line. It is possible to navigate through nearby neighborhoods within the space of the gallery. The app utilizes the tablet's built-in compass.



Color Space Map, app programmed with Processing

This app can be set to the size of a room. It consists of a full HSB color palette that is spatialized over the dimensions of the room. Roll east and west to change the saturation on the screens (lightness to darkness), and roll north to south to change the hue.



24-Hour Clock, app programmed with Processing

24-Hour Clock, cont.

Both the Tracking Map and the Color Space Map roll through a spatial plane, while the Clock consists of graphics that march around its circumference. The magic in rolling this tumbler is noticing that interactions do not change the image. The “image” appears to stay in places, marching incrementally around the tumbler’s circumference throughout the day, barely perceptible by the eye. In this tumbler the circumference of the tumbler’s core, where the tablets are mounted, represents both the circumference of the Earth and the increments of a 24-hour clock. Local time always points straight up at the upright position.



Rotation Counter, app programmed with Processing

The rotation counter is dead simple and the most Sisyphean of the apps. There are two tablets positioned on opposite sides of one another. One with white text and a black background; the other with black text and a white background. One tablet keeps track of the number of full rotations the tumbler undergoes in one direction, and the other tablet keeps track of the number of full rotations the tumbler undergoes in the other direction. Each time a full rotation occurs, a chime is heard and the rotation counter advances by one. There is irony in how the app functions as a metaphor for the human desire for progress. In a Pavlovian way, we are compelled to advance the counter forward although there is no end to this task and no prize other than the small reward of the bell’s chime each time the counter advances. There is also no way to have the numbers count backward.



MOVIE AND INSTALLATION

Using a slimmed down tumbler design, we transported a tumbler around New York City and used it to record a movie shot with six tablets simultaneously. The tumbler operates in somewhat of an opposite way from Google StreetView. We are recording private interior living and office spaces that the public does not usually have access to. Participants navigate the tumbler through their own spaces and are given latitude for personal expression. The recordings are presented in an installation form, as a continuous six-channel rolling point of view video that jump cuts through living and office spaces. The production takes no stock in logical pathways, practical outcomes, or completeness of the task of mapping these spaces. Unlike with traditional mapping services, the tumbler records its surroundings through a method of chance operation. You never really know what you are going to get, and the multiplicity of views has the effect of defamiliarizing spaces through the process of recording.

WHAT WE ARE DOING AND WHY

Apple, Sprint, and Google are constantly patenting swipes and other gestures that we use to navigate screens. The more we rely on technology to interface with the world, the more we adopt behaviors tied to codes that are written for us and that we conform to. These codes may make our lives easier, but they also have troubling implications, as if someone were "writing" the body. - Lucas, interview, Art in America, September 2013.

We are reprogramming the tablet, using it differently than its common use. There is something magical, fun, and stupid about rolling this thing around. There is a playful connection to the story of Sisyphus who is compelled to push the rock up the hill over and over. It is uncommon and common, smart and not smart.

It's a mental and physical exercise to shift frames of reference between tumblers. There is something about the experience of shifting between these frames and its inconvenience that works for us in a good way. Our goal is to add obfuscation, and to add the body into that obfuscation. We are divorcing the user from their familiarity with the tool and its uses.

SUPPORT

Tablet Tumbler developments have been made possible through the support of an artist residency at Eyebeam Art + Technology Center in New York and through grants from SUNY Purchase College in New York and The University of Texas in Austin.

ROLES IN PRODUCTION

The seeds of Tablet Tumbler project came to Kristin while teaching Video Installation at Bard College. Her class was open to students working in moving image media, ranging from video, to animated GIFs, to sensors and coded media in Processing. Kristin's role in this production has primarily been concept, design, direction, and video editing. She brings to the project experience teaching physical computing and writing Processing sketches, and an interest in interactivity, location and media.

Joe has been teaching physical computing, Processing, and web development for the past five years in the New Media program at SUNY Purchase. Joe's role in production is as main programmer informed by his interest in interactivity and experimental game design.

After a year of beta testing a variety of apps based on sensor data and interactivity, we have expanded to working with HTML5 and we have begun to collaborate more fully on the development of apps and websites such as those that appear in this document, and we plan to share in the development of code. We are in the process of planning an exhibition featuring Tablet Tumblers and the Tablet Tumbler Movie at Postmasters in New York in 2015.



Tablet Tumbler Movie, 2014, six channel synchronized video installation