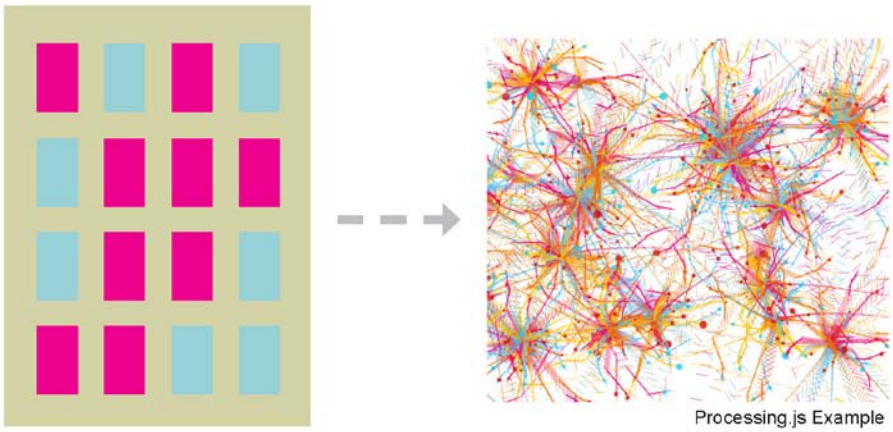
MAS. 963 New textile
Final project proposal

Painting Blanket

interactive body shape painting blanket with pressure sensors
by Maria Stangel and Judy Jia

Vision:

We got the inspiration from interactive art projects. In this final project we will explore the relationship between textile sensors and the visual art. We want to create a blanket with a matrix of textile pressure sensors linked to a computer. So once people press the blanket, the pressed positions will create signal inputs for the Lilypad, and visualized in the screen through processing. The visualization does not tell the accurate pressure positions (like movement recorder), but shows the movements as abstract art.



We have two ideas of how the blanket may work:

Version 1. Interactive game:

The computer is linked to a projector. So once you press the blanket, you will see the results your body creates on the big screen. It can be placed in public space and you can play with your family or friends.

Version 2. Long distance connecting blanket

The blanket is connected to the computer through wireless connection, which can be used for new parents or long distance lovers. When person A goes to bed (lies on the blanket), a window will jump out to person B's computer screen. As a result, the parent can see the baby's movement on bed while cooking in the kitchen, or a person can see his/her lover's movement at the other end of the earth.

We assume that each of the sensors will talk to the Lilypad as a separate input. If we use 16 pieces of textile sensors, we will have 16 inputs for the Arduino. The other way is to add diodes to each of the

sensors to allow a bigger matrix. In this project we may just use the direct connection.

For the long distance dialogue with the computer, we will start from Bluetooth. Although Bluetooth cannot be used for distance longer than 10 meters, we will use it for our first step experiment.

Electronics:
18-input Lilypad;
FTDI board;
Bluetooth Mate with Lilypad;

Equipments:
Laser cutter

Materials:
Conductive fabrics;
Conductive yarns;
Isolation fabrics;
Sewing adhesive;
Normal fabrics for blanket, yarns…

Software:
Arduino, Processing

Plan and schedule:
Apr 1 - Apr 10: proposal and experiment with 4-sensor matrix
Apr 11 – Apr 17: detailed design, pattern design and processing experiments
Apr 18 – Apr 30: make the project and write the processing
May 1 – May 10: adjusting the processing, documentation and final presentation

Discussion:
1. What kind of pressure sensors can we make?
2. How can each of the sensors talk to the Arduino?
3. How can we visualize the activities on the blanket (by timing or the pressure force)?