Citta

Paweena Prachanronarong

I: Introduction

"Citta" is a Buddhist word meaning heart and mind, with an emphasis on human emotion.[1]

My family is originally from Thailand, where nearly 95% of the population is Buddhist.[2] Naturally, this religion and Thai culture are tightly intertwined. I was born in Thailand but raised in the United States. And although I was raised in middle America, my parents were determined to raise me to be a "proper" Thai girl, following traditional Thai culture and values. Therefore, I embrace both cultures.

One major aspect of Thai culture is the concept of "saving face," because public image is especially important to Thai people. "Saving face" means going through great lengths to avoid confrontation so as not to embarrass yourself or other people, not bringing up negative topics in conversation, and not talking in an aggressive manner.[3] With my upbringing, it has always been my understanding that this also meant not outwardly showing signs or expressions of negativity. Oftentimes, that means that I will laugh or smile when I'm in a state of discomfort.

> You may notice Thai people smiling in the face of another's misfortune. This is not a sign of callousness, but an attempt to save face for the person suffering misfortune. Saving face is the major source of the famous Thai smile. It is the best possible face to ease almost any situation.[4]

However, on the other end of the spectrum, a popular Western idiom is "wearing your heart on your sleeve," which means displaying one's emotions freely and openly.[5] It is believed that this phrase may have derived from Middle Ages jousting matches, where knights wore ribbons of the women they wanted to attract on their sleeves.[6]

As a result, the concept for *Citta* stems from my complex relationship with being a part of two opposite cultures, making it a highly intimate piece. *Citta* is related to Thai culture because it allows wearers to outwardly express negative thoughts displayed on an LCD screen, while "saving face." The final project is also related to Western culture because the thoughts are displayed for all to see. Thoughts are activated by soft buttons within a wearable glove.

II: Contextualizing your Design Concept

It took a few weeks for me to fully realize the concept of *Citta*. The first idea for my final project was to make pedestrian crosswalk signs more politically correct. While waiting to cross the street with my five-year-old son, the familiar sign changed to depict an image of a white man walking. My son said to me, "Mama! The white man says we can walk now!" So I began to think about why it must be a white man who dictates when we can cross the street. I wanted to hack at least one crosswalk in New York City to depict an image of a woman or a person of color. However, upon further research, I discovered that the idea had already been done, and done well.[7] I also discovered that at Brigham Young University in Provo, Utah, a young woman took issue with the political incorrectness of the crosswalks, and the University had decided to act upon her complaints.[8]

Figure 1. Modified crosswalk in place.

Figure 2. Modified crosswalk in place.

Since that idea had already been executed, I decided to modify my concept and work in a project about stereotypes. My updated idea was to hack the crosswalks, implementing racist stereotypes. For example, display an Asian man with a rice farmer's hat, or a Mexican with a sombrero on the crosswalks. When the viewer experiences the modified crosswalk, they would see the stop hand, and then the provocative image, implying "stop racism." However, I wasn't certain whether the message would be clear and coherent, so I eventually scrapped that idea.
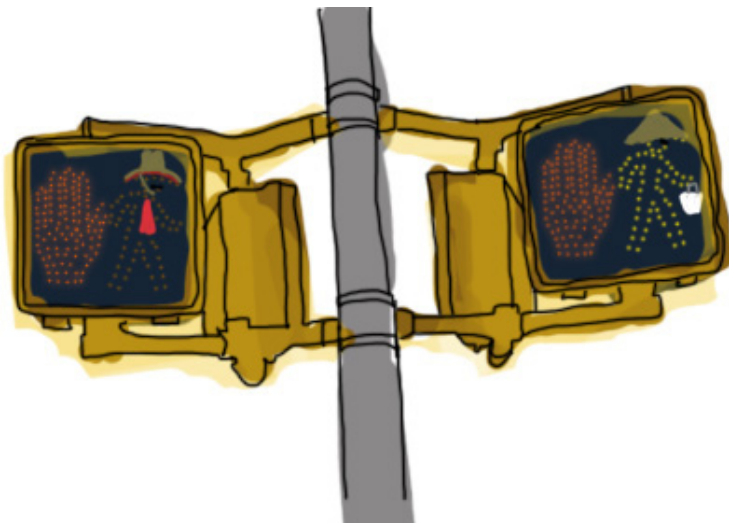

Figure 3. *Stop Sterotypes*.

Then, I attended the Collaborative Ideation workshop led by Anezka Sebek on November 11, 2011. I started thinking about other situations where I have felt oppressed, not in regards to race or gender, and I came up with the work environment. Never in my life had I ever felt as belittled as I did while working as a web designer in Corporate America. During the Collaborative Ideation workshop, I came up with an idea to create a suite of comical mobile apps to help cubicle dwellers feel empowered again – perhaps by encouraging and engaging them in little acts of rebellion where they could "fight the man," but still keep their jobs. A few of the ideas I went through included an app that would make one's voice sound hoarse, so that they could call in sick, an app that would call you to a fake emergency during meetings, or a motion sensor that would blink when someone was approaching, so that you could make it look like you were working. I understand that not everyone has the luxury of quitting their jobs or rebelling directly against their coworkers, so these tools would provide private ways in which they could make themselves feel better, or feel more compensated for their work.

I wasn't sure whether or not these apps existed yet, so I researched the subject and found that separately, some of the apps did exist, such as *spoofAPP*, a voice changing app.[9] I also discovered a Firefox add-on called *Decreased Productivity* which applies a style-sheet that changes the text on your web page to white text on black background, removes images, and hides all embedded applets such as Flash or Java.[10] However, these apps were not specifically targeted towards cubicle dwellers, and they were more prank-like applications.

After presenting my concept to my Major Studio class, I felt that the concept was too gimmicky and prank-like, which was not my intention. I wanted the apps to be more empower-ing, in a fun way, but I felt that given the nature of the concept, it was unavoidable to fall within

the gimmick trap.

I felt as if I had reached a creative block, so I started rereading some of our assigned readings and notes. In Ann Light's article, "Digital Interdependence and How to Design for It," I came across the quote, "Design to engage the powerful and protect the vulnerable."[11] Reading this quote reminded me of Kelly Dobson's project, *Blendie* (2003 –2004). Most appliances are designed by men for women, so Dobson wanted to explore how a blender would be designed from a feminist perspective. *Blendie* is activated by various growling pitches. A low growl would activate a slow spin, while a higher-pitched growl would activate a faster spin.[12]

I then started looking into other pieces based on the idea of empowerment, and came across *Amæ Apparatus*, by Jonas Loh (2010). Loh created an early warning system for stressed-out individuals in a work setting, where feelings are often suppressed. The device measures stress levels based on sensors and visually outputs smoke, proportionally based on the wearer's stress level.[13]

Figure 3. *Blendie*, by Kelly Dobson (2003 –2004)

Figure 4. *Amæ Apparatus*, by Jonas Loh (2010)

Through this research, I came up with the overall concept for *Citta*. I wanted to create a wearable device that empowered people. I started reflecting on the reasons as to why I often feel suppressed, and like all maladjusted people, I blamed it on my parents. I blamed my stereotypically Asian, strict and uncompromising childhood. I had also been reading *Battle Hymm of the Tiger Mother*, by Amy Chua, which is about one mother's personal experience in raising her daughters the traditional Asian way.[14] The book also influenced my decision to tie *Citta* back in with my culture.

After presenting my new concept to my Major Studio class, I was introduced to another precedent for *Citta*, entitled *Medulla Intimata*, by Tina Gonsalves (2004). *Medulla Intimata* is a necklace utilizing biometric sensors. The sensors monitor the wearer's emotions and outputs generative video on an LCD screen embedded in the necklace.[15]
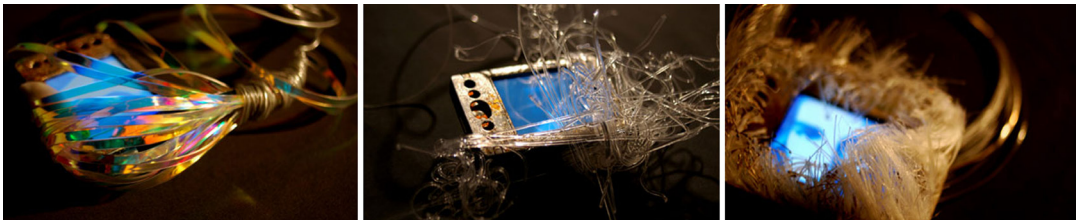

Figure 5. *Medulla Intimata*, by Tina Gonsalves (2004)

III: Research and Design Questions

As it stands now, *Citta* is more of a personal piece. It is a way of artistically expressing my negative thoughts in a manner related to my cultural duality. It is not a practical piece to be worn by users, and at this point it is not ready to be a perfomance piece, either. *Citta*, like myself, is stuck in between two worlds.

In the article, *Calm Technologies 2.0: Visualising Data as an Experience in Physical Space*, by Michael Hohl, PhD, Hohl describes a piece entitled, *WebVisitors Blinker*, designed

by Dimitrios Vlastaras. Every time someone visits Vlastaras' web site, an LED, inserted directly into an Arduino microcontroller blinks once, providing a "warm feeling of a visitor."[16] *WebVisitors Blinker* is a purely personal project, and in my opinion it's perfectly acceptable to design projects for yourself. Sometimes getting a "warm feeling" is enough.

While conceptualizing this piece I wanted to ask, "How can I feel heard and empowered while maintaining the important Thai concept of 'saving face?'" What *Citta* does that other similar projects don't do, is that it tackles suppressed feelings from a cultural standpoint.

IV: Target Audience

Citta was designed for myself, but I believe that it can be appreciated by people who can relate to its overall concept. Googling "How many people feel oppressed from being raised by Asian parents," returns a staggering number of articles regarding the issue.[17] Some titles include *Why Chinese Mothers are Not Superior*, *Parents Like (Tiger Mother) Amy Chua are the Reason why Asian-Americans Like Me are in Therapy*, and *Dealing with Manipulation, Guilt, Emotional Abuse, and Self-Pity*. Although *Citta* is not necessarily targeted towards the readers or writers of these posts, I believe they would appreciate it the most.

V: Prototyping Process

In deciding how I would build *Citta,* I went through many different iterations. My first idea was to have some sort of device embedded on the sleeve of a jacket, hence the Western concept of "wearing your heart on your sleeve." A stress ball containing a Force sensor would relay varying negative emotions to be displayed on the sleeve depending on the amount of pressure applied. I bought and built a LOL shield to display the emotions, but found that the shield was very limiting in what it could do with the animations.
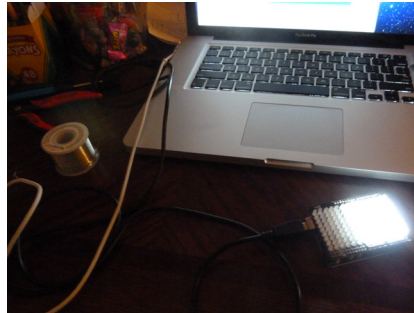
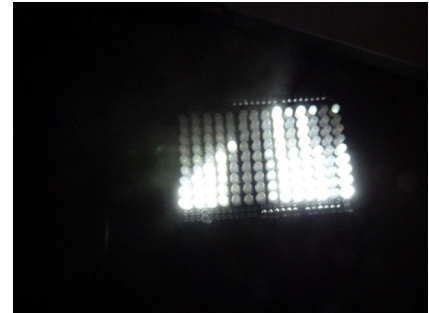Figure 6. *Citta* sketch

1. Soldering the LOL shield
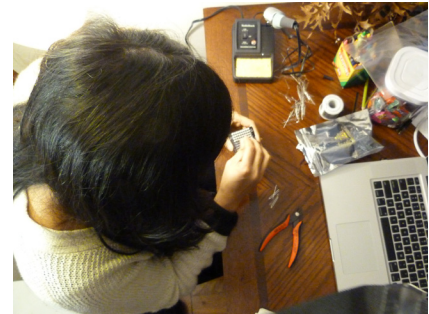
2. Putting the LOL shield together

3. Testing the LOL shield

4. Testing a LOL shield animation

Figure 7. Building and testing the LOL shield

I then thought the concept might be stronger if I used actual images of my face instead of LED animations. Upon researching, I felt that the 2.8" TFT Touch Shield for Arduino would be more suited for what I needed to do.[18] So, I purchased the Touch Shield, and tested the component with different images. I tried an abstract angry image, only to discover that it was too difficult to tell what was going on. Next, I tried a simpler image, which was also very difficult to decipher. Also, the Touch Shield loads bitmap images from a microSD card, making the loading process very slow. In the end, I decided to use text as a means to express my thoughts.

I wasn't able to test the Force sensor with the LCD Touch Shield because I found had no access to the Arduino pins. I then purchased a Proto-Screwshield (Wingshield) online.[19] While waiting for my Wingshield to arrive, I started working more on the design and form of *Citta*. I went to the Noguchi Museum in Long Island City, New York, during their Open Studios for Families. Open Studios allows gallery visitors to make art inspired by the work on display.[20]

The day I went, the theme was making objects from found materials, because Natalie

Jeremijenko's work, *Feral Robotic Dogs* (2005), was being exhibited. Jeremijenko took found

toy robotic dogs and rewired them with sensors to detect the health of the soil in the surrounding

area.[21] After being inspired by the exhibit myself, I started working on another prototype for *Citta*

while at the museum, utilizing the abundance of materials provided. The prototype was made

from a plastic food container, coffee filters, a heart-shaped button and a zipper.

Figure 9. Working on *Citta* prototype

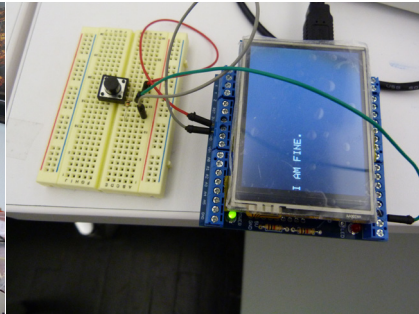Figure 8. *Feral Robotic Dogs*, by Natalie Jeremijenko (2005)
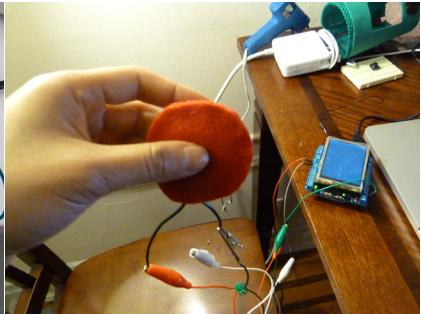

Figure 10. *Citta* prototype

I liked the direction of this prototype, so I brought it home and continued working on it.

This was a more personal prototype because it was hand-made, versus my previous idea of

using a pre-fabricated jacket. I used a traditional Thai shirt to cover the plastic container. I cut

a space for the Touch Shield and sewed on a button, zipper and some embroidery for aesthetic

purposes. My Wingshield arrived, so I started testing the functionality of *Citta*, while continuing

to work on the design. The Force sensor was giving me inconsistent values, so I opted to use

soft buttons on a wearable glove instead. The next steps were to put it all together.
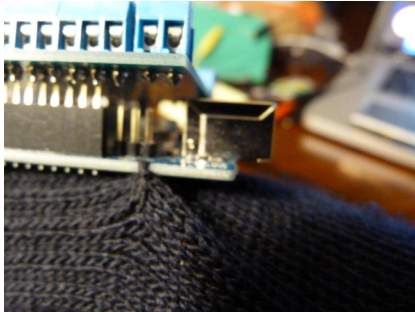
1. Working on the cuff   *2. Testing the functionality of a button*   *3. Testing button sans breadboard*

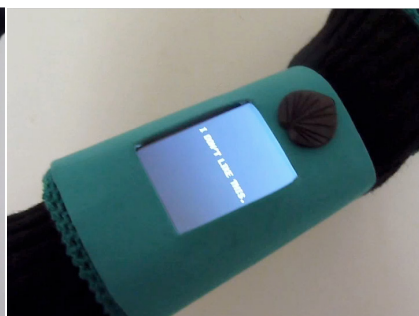*4. Sewing component onto glove*   *5. Wiring the glove*   *6. Testing* Citta *out*

Figure 11. Putting it all together

Below is the final prototype for *Citta*. As of right now, there are only three states –

neutral, uncomfortable and angry. By default, *Citta* plays the neutral state when no buttons are

activated, which displays the message, "I am fine." When the thumb and forefinger are pressed

together, the screen shows the uncomfortable state expressing the text, "I don't like this. I'm

feeling very uncomfortable right now. What should I do?" When the thumb and middle finger are

pressed together, the LCD flashes the message, "Please, please, PLEASE! Shut the fuck up!"

1. Citta *displaying neutral state*   *2.* Citta *displaying uncomfortable state*   *3.* Citta *displaying angry state*

Figure 12. Three text states

Figure 13. *Citta* – final prototype

VI: Conclusion

I believe *Citta* wields much potential for the future. Right now, *Citta* is more of a personal piece based on my culture and experience. To take the concept to the next level, and appeal to a more universal audience, it would be very interesting to utilize the Touch Shield's touchscreen capability to type and update thoughts live, allowing for a wider range of emotions. This would allude to Jaron Lanier's beliefs that "Technologies are extensions of ourselves, and...our identities can be shifted by the quirks of gadgets."[23]

People have become complacent with the idea of expressing their thoughts and emotions in 140 characters or less. As a result, human relationships are becoming more discon-nected. This pushes *Citta*'s idea of communicating thoughts digitally, but also makes a mockery of the way society communicates, and how attached to gadgets we have become.

Once wearers are able to update their thoughts live, I believe *Citta* will make a strong performance piece, with multiple participants – comparable to a live social network. It may also be interesting if all the participants' thoughts are projected onto a large space in real time, allowing for the examination of the effects of social media and gadgets on human behavior.

Endnotes

1 "Citta." Wikipedia, the Free Encyclopedia. October 27, 2011. Accessed December 17, 2011. http://en.wikipedia.org/wiki/Citta.

2 "Amazing-Thailand.com - Religion in Thailand." Amazing-Thailand.com - Thailand Travel and Tourism. Accessed December 17, 2011. http://www.amazing-thailand.com/Relig.html.

3 "Thailand Culture, Thailand People and Customs." Muay Thai Boxing Training Camp in Thailand - Learn Muay Thai Kickboxing on Koh Phangan Island. Accessed December 17, 2011. http://www.horizonmuaythai.com/Thailand/culture.html.

4 Ibid.

5 "Wear Your Heart on Your Sleeve." The Meanings and Origins of Sayings and Phrases. Accessed December 17, 2011. http://www.phrases.org.uk/meanings/403000.html.

6 Ibid.

7 "Crosswalk Art ~ Now That's Nifty." Now That's Nifty. December 28, 2009. Accessed December 17, 2011. http://www.nowthatsnifty.com/2009/12/crosswalk-art.html.

8 Tate, Larry J. "America's Crosswalks Are Racist | Traditionalright." Traditionalright | Just Another WordPress.com Site. September 15, 2011. Accessed December 17, 2011. http://traditionalright.wordpress.com/2011/09/15/americas-crosswalks-are-racist/.

9 SpoofApp: Caller ID Spoofing For Your Mobile Phone | SpoofApp.com. Accessed December 17, 2011. http://spoofapp.com/.

10 MyItchyChin. "Decreased Productivity." Add-ons for Firefox. Accessed December 17, 2011. https://addons.mozilla.org/en-US/firefox/addon/decreased-productivity/.

11 Light, Ann. "Digital Interdependence and How to Design for It." *Interactions Magazine*, March/April 2011.

12 Dobson, Kelly. "Kelly Dobson: Blendie." MIT Media Lab. Accessed December 17, 2011. http://web.media.mit.edu/~monster/blendie/.

13 Loh, Jonas. "Jonas Loh | Amæ Apparatus." JL Portfolio of Jonas Loh. Accessed December 17, 2011. http://www.jonas-loh.com/amaeapparatus.php.

14 Chua, Amy. *Battle Hymn of the Tiger Mother*. First ed. Penguin Press HC, 2011.

15 Gonsalves, Tina. "Medulla Intimata." Tina Gonsalves. Accessed December 17, 2011. http://www.tinagonsalves.com/medulla.html.

16 Hohl, PhD, Michael. "Calm Technologies 2.0: Visualising Social Data as an Experience in Physical Space." *Parsons Journal for Information Mapping*, Summer, I, no. 3 (2009): 3.

17 Google. Accessed December 17, 2011. http://www.google.com.

18 "TFT Touch Shield Tutorial." Limor. May 17, 2011. Accessed December 17, 2011. http://www.ladyada.net/product/tfttouchshield/.

19 "Proto Screw Shield for Arduino." Limor. May 17, 2011. Accessed December 17, 2011. http://ladyada.net/make/protoscrewshield/.

21 "Family Programs | The Noguchi Museum." Home | The Noguchi Museum. Accessed December 17, 2011. http://www.noguchi.org/programs/education/families.

22 Jeremijenko, Natalie. "Feral Robotic Dogs." Nyu.edu. Accessed December 17, 2011. http://www.nyu.edu/projects/xdesign/feralrobots/.

23 Lanier, Jaron. *You Are Not a Gadget: a Manifesto*. New York: Vintage Books, 2011.

Bibliography

"Amazing-Thailand.com - Religion in Thailand." Amazing-Thailand.com - Thailand Travel and Tourism. Accessed December 17, 2011. http://www.amazing-thailand.com/Relig.html.

Chua, Amy. *Battle Hymn of the Tiger Mother*. First ed. Penguin Press HC, 2011.

"Citta." Wikipedia, the Free Encyclopedia. October 27, 2011. Accessed December 17, 2011. http://en.wikipedia.org/wiki/Citta.

"Crosswalk Art ~ Now That's Nifty." Now That's Nifty. December 28, 2009. Accessed December 17, 2011. http://www.nowthatsnifty.com/2009/12/crosswalk-art.html.

Dobson, Kelly. "Kelly Dobson: Blendie." MIT Media Lab. Accessed December 17, 2011. http://web.media.mit.edu/~monster/blendie/.

"Family Programs | The Noguchi Museum." Home | The Noguchi Museum. Accessed December 17, 2011. http://www.noguchi.org/programs/education/families.

Gonsalves, Tina. "Medulla Intimata." Tina Gonsalves. Accessed December 17, 2011. http://www.tinagonsalves.com/medulla.html.

Google. Accessed December 17, 2011. http://www.google.com.

Hohl, PhD, Michael. "Calm Technologies 2.0: Visualising Social Data as an Experience in Physical Space." *Parsons Journal for Information Mapping*, Summer, I, no. 3 (2009): 3.

Jeremijenko, Natalie. "Feral Robotic Dogs." Nyu.edu. Accessed December 17, 2011. http://www.nyu.edu/projects/xdesign/feralrobots/.

Lanier, Jaron. *You Are Not a Gadget: a Manifesto*. New York: Vintage Books, 2011.

Light, Ann. "Digital Interdependence and How to Design for It." *Interactions Magazine*, March/April 2011.

Loh, Jonas. "Jonas Loh | Amæ Apparatus." JL Portfolio of Jonas Loh. Accessed December 17, 2011. http://www.jonas-loh.com/amaeapparatus.php.

MyItchyChin. "Decreased Productivity." Add-ons for Firefox. Accessed December 17, 2011. https://addons.mozilla.org/en-US/firefox/addon/decreased-productivity/.

"Proto Screw Shield for Arduino." Limor. May 17, 2011. Accessed December 17, 2011. http://ladyada.net/make/proto-screwshield/.

SpoofApp: Caller ID Spoofing For Your Mobile Phone | SpoofApp.com. Accessed December 17, 2011. http://spoofapp.com/.

Tate, Larry J. "America's Crosswalks Are Racist | Traditionalright." Traditionalright | Just Another WordPress.com Site. September 15, 2011. Accessed December 17, 2011. http://traditionalright.wordpress.com/2011/09/15/americas-crosswalks-are-racist/.

"TFT Touch Shield Tutorial." Limor. May 17, 2011. Accessed December 17, 2011. http://www.ladyada.net/products/tft-touchshield/.

"Thailand Culture, Thailand People and Customs." Muay Thai Boxing Training Camp in Thailand - Learn Muay Thai Kickboxing on Koh Phangan Island. Accessed December 17, 2011. http://www.horizonmuaythai.com/Thailand/culture.html.

"Wear Your Heart on Your Sleeve." The Meanings and Origins of Sayings and Phrases. Accessed December 17, 2011. http://www.phrases.org.uk/meanings/403000.html.