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CART 360 - Assignment “Then”

Nov. 2nd, 2018

Jennifer’s GitHub

GitHub Project

PROJECT PROPOSAL

Our project idea can be described as such:

An umbrella that responds to user data that alludes to their emotional/mental state, meteorological conditions and that also enables indirect interaction (using wifi and GPS connected to both umbrellas that could calculate velocity at which individuals are moving and also both their latitude+longitude; which would allow for calculation of distance between two points) via their umbrellas.

Visually the umbrella has embedded LED's on the inside (and potentially a few on the outside to allow people to identify like umbrellas and this could consequently constitute a new form of social interaction. The lights embedded inside the umbrella would respond to different sensed sets of values, and establish specific light patterns (at certain rhythms and certain paths) in concordance with those values. No two patterns can be the same - as they would depend on meteorological conditions, human data (eg. pressure sensor and velocity calculated using GPS location change of the individual), and lastly the social interaction component that would synchronize patterns with someone else's umbrella/ or to create light patterns that complement each other (between the two umbrella's).

Our project idea is an umbrella that lights up during rainy weather. It is intended to be used in a dark and rainy weather-based context. Ideally the project would be presented outside on a rainy end of day. However, depending on meteorological conditions, that might not be possible - so we might have to replicate these conditions using lighting and a rainlike set up showering over the umbrella in question. This might also implicate renting out a project space in the basement to execute this. It primarily intended for urban/city based users, who commute to work, and have to walk to and from work on a daily basis thereby making them vulnerable to uncontrollable and sometimes unpredictable weather conditions. However, ultimately the object should be used by anyone (ages, location, sex, gender). We will attempt to design it to make it the most intuitive possible for the user, so as to make the experience as positive and straightforward as possible.

This artifact would enable us to shed light on the effects of weather and other external conditions on our mental, emotional state. It would demonstrate the importance of taking steps towards improving our mental health, in stress driven environments that are 9-5 jobs. By temporally shifting focus towards this slightly more entertaining and soothing experience, we might be able to achieve this. It is also an opportunity to augment a usually dull, or unimaginatively designed object, that often gets left behind and/or doesn't bring much joy, delight or enchantments to one's daily life and routine.

In a wider context, these umbrellas might be able to connect with other umbrella's and created different LED combinations accordingly and thereby allowing people to connect with other people in an indirect manner. Since, when it rains, people usually try to escape the rain as soon as possible, and become extremely isolate and asocial, feeling temporarily and somewhat protected by their umbrella. This second idea (although maybe less possible in the timeframe available) would give a new social dimension to these otherwise anti-social behavior enabling items.

This umbrella would allow users them to alleviate burdening stress, and turn rain and darkness that usually trigger someone to go into a darker state of mind into a enjoyable experience with the help of this umbrella. Ideally we would hope people would wish for rain because they would wish to make use of this umbrella. Consequently it would allow people to improve their mental health and also harness energy expenditure (eg, accelerometer), reward someone for being environmentally friendly by walking with a complex luminescent light show within someone's umbrella. The luminescence and level of warmth would be determined on the individual's pulse rate being sensed in the handle. In addition a third variable might be determined by actual meteorological conditions (eg, pressure sensor/FSR based on rainfall intensity and/or photocell detecting levels of light). All these variables would determine the "light show" and therefore no too of these would be a like (as all these variables would determine, speed of pattern, intensity, warmth) .

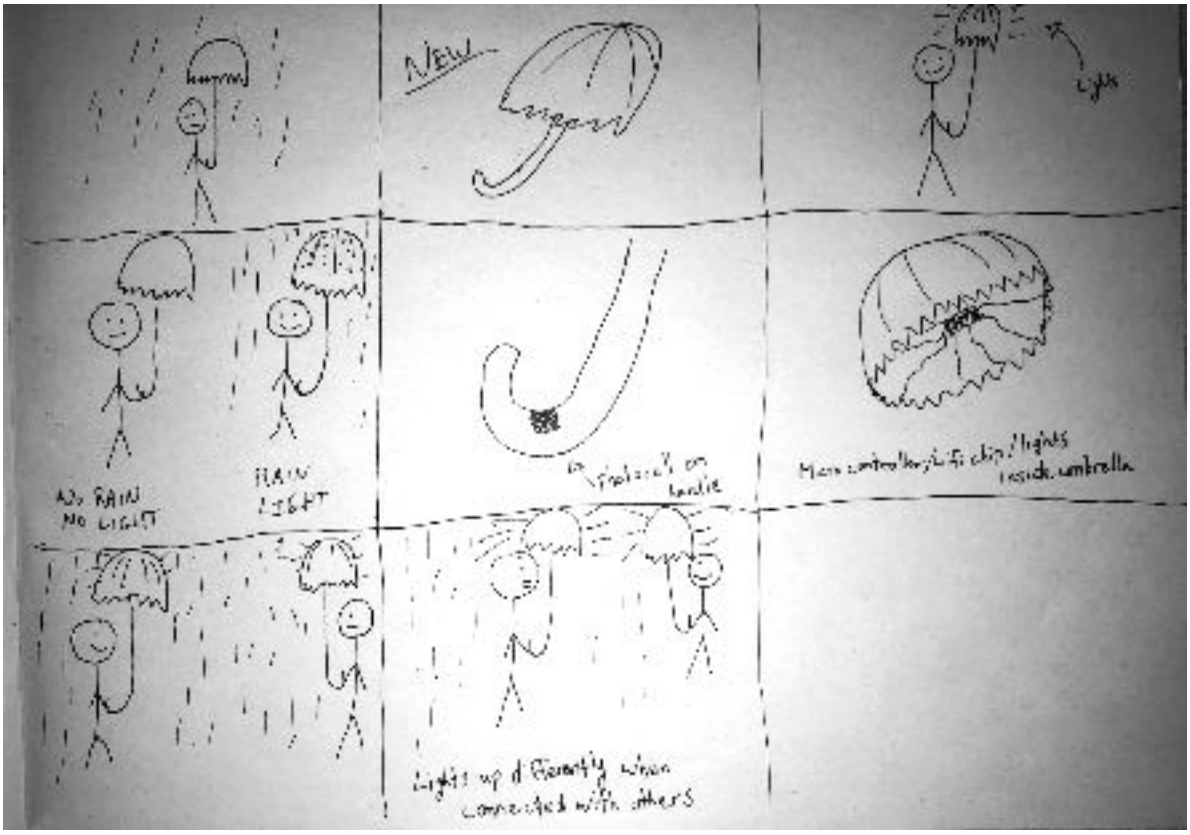
We want to turn these simple yet functional umbrella's, into objects of value and meaning to the user by 'augmenting' them to a certain extent. We want to create also a level intimacy with

one's object, that reads both the user's own generated data (making it somewhat of a detached wearable) and those of the weather.

As mentioned an extension for this object might also be to turn it into an indirect social interaction "enabler". This would be coordinate light patterns with somebody else's umbrella's in someway. This would remind user's the need to escape an individualistic attitude and that ultimately everybody is part of a common community/society functioning as a unit. And, consequently, the importance of connecting with others.

Another consideration is implementing a switch that would allow someone to switch off these functions in case someone doesn't feel like always having those lights on.

SCENARIO



PSYCHOLOGICAL IMPACT	LIGHTING EFFECT	LIGHT DISTRIBUTION
Tense	Intense direct light from above.	Non-uniform
Relaxed	Lower overhead lighting with some lighting at room perimeter, warm color tones.	Non-uniform
Work/Visual Clarity	Bright light on workplane with less light at the perimeter, wall lighting, cooler color tones.	Uniform
Spaciousness	Bright light with lighting on walls and possibly ceiling.	Uniform
Privacy/Intimacy	Low light level at activity space with a little perimeter lighting and dark areas in rest of space.	Non-uniform

Content retrived from IES Light Logic (www.ieslightlogic.com)

Fig 1. How lighting effects can impact a space, Illuminating Engineering Society (IES)

Research / Summary

Colors and Lighting affect humans' emotions and psychological state in different ways, and we wish to explore this by redesigning an umbrella, or creating a new version of what we conventionally know as an umbrella. Warm colors can make people feel welcomed, and comfortable while cooler colors can cause one to feel soothed, calm or even sad. Lights in combination are also attractive to look at, and can provide a pleasing distraction (** CONSIDERATION to think about whilst designing: we wouldn't want it to replicate the effects texting has on people = Distraction from outside world and people around them). Consequently we would live to utilize light patterns driven by a range of sensors (both using weather conditions and user based-based data) inside the umbrella which could shift users mood in a positive way. We are also thinking or trying to make an umbrella from scratch rather than using a pre-existing one, so we can allow it to really be driven by user needs, and make it a very personal object

"Color is light and light is energy. Scientists have found that actual physiological changes take place in human beings when they are exposed to certain colors. Colors can stimulate, excite, depress, tranquilize, increase appetite and create a feeling of warmth or coolness. This is known as chromodynamics." (PANTONE)

Compared and Related to Other Existing Projects

Fig 2. Rafael Lozano-Hemmer - Project "Pulse Spiral"

Fig 3. Colour Changing Umbrella - Dot Motif

There have been projects executed by others that come close to want we want to achieve, however, ultimately the way we design it will be different - LED's, how we used sensors to read data and drive these. And also the conceptual framework explained and described before will determine many design decisions that will distinguish it from other projects. Those on instructables for instance demonstrate technical directions we might consider, however Lorenzo Raphael "Pulse Spiral" and even this color changing umbrella are slightly more evocative of the concept we would like to explore, despite being different in form.

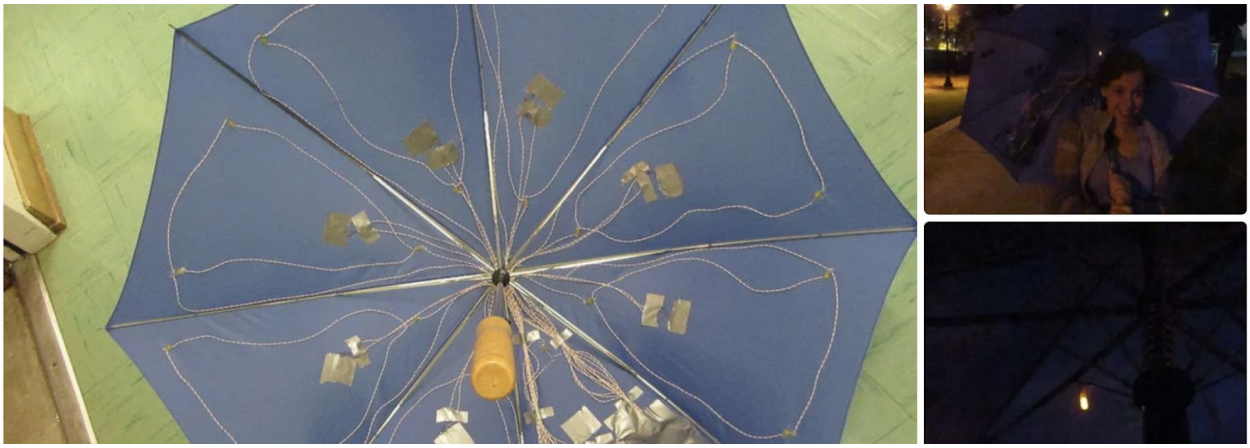


Fig 4. PRESSURE ACTIVATED LIGHT-UP UMBRELLA, Instructables

Fig 5. LED UMBRELLA WITH ARDUINO, Instructables

BIBLIOGRAPHY

Images

Fig 1. “Various Lighting Effects and How They Can Impact a Space (Illuminating Engineering Society).” *The Psychological Impact of Light and Color* , TCP International Holdings Ltd., 2017, www.tcpi.com/wp-content/uploads/2017/12/Psychological-Impact-of-Light-and-Color.pdf.

Fig 2. L'Heureux, Guy. “Rafael Lozano-Hemmer, Pulse Spiral [Pulsations En Spirale], 2008.” *MAC Montréal*, Musée d’Art Contemporain De Montréal, macm.org/expositions/rafael-lozano-hemmer-presence-instable/.

Fig 3. “Colour Changing Umbrella - Dot Motif.” *Dream Weaver*, Dream Weaver Boutique , shopdreamweaver.ca/collections/colour-changing-umbrellas/products/colour-changing-umbrella-dot-motif.

Fig 4. Instructables, matthewpoage. “LED Umbrella With Arduino.” Instructables.com, Instructables, 6 Nov. 2017, www.instructables.com/id/LED-Umbrella-with-Arduino/.

Fig 5. Instructables. “Pressure Activated Light-Up Umbrella.” Instructables.com, Instructables, 29 Oct. 2017, www.instructables.com/id/Pressure-Activated-Light-Up-Umbrella/.

References

“7 Ways Lighting Can Make Your Home Happier.” *Mental Floss*, 25 Nov. 2016, mentalfloss.com/article/89053/7-ways-lighting-can-make-your-home-happier.

Gremillion, Allison S. “How Color Impacts Emotions and Behaviors.” *99designs*, 99designs, 28 Aug. 2018, 99designs.ca/blog/tips/how-color-impacts-emotions-and-behaviors/.

“Light and Health.” *Fagerhult*, www.fagerhult.com/knowledge-hub/Light-and-health/.

PANTONE. “Color Think Tank - the Psychology of Color.” *PANTONE*, www.pantone.com/color-psychology-how-does-color-affect-us.