CART360 Tangibile Media
Proposal (This = Then = That)
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CONTEXT, ENVIRONMENT & USERS

The coronavirus pandemic has become a life changer for all of us around the world. Quarantine, isolation, lock-down are keywords that we have all become familiar with this year and we have all experienced it to some extent. The first category of people are those who got the coronavirus and are isolated in the hospital. The second category is the people who got the less severe case of coronavirus and only need to isolate themselves at home. The third category is the rest of the people who are forced to work and attend classes from home, not be able to travel and comply with the lockdown rules of their respective city. In these three categories, not being able to see our loved ones as much as we used to and not being able to travel are the common problems that we all share during this pandemic situation. We would like to consider this project through the lens of the second and third category of people who are isolated at home.

As we (Aniesha & Zahra) ourselves are stuck within this isolated environment, we would like to use this project as an opportunity to explore and exploit our current circumstances. By understanding what it truly means to feel disconnected through our personal experiences and research backing, we would like to create a device that will enable us to break the barriers of isolation through a new form of communication which will allow us to embrace the presence of our loved ones and connect with them while we are in our own homes.

We envision our project to be an experimentation and prototype that we could use to further determine the different spaces of isolation (example: hospitals, nursing homes, orphanages, etc.) in which the device could possibly be useful and effective.

PROJECT AFFORDANCE & EXPERIENCE

Considering the fact that our artifact idea and concept is stemming from the type of situation we are currently experiencing, it is supposed to break down the isolation halo and let people have that sensational and tactile connection again. Unlike other communication technologies that provide the user with a multidimensional communication that lets the user have both verbal and visual interaction with other people, their surrounding environment or their society, our artifact will bring an exceptional opportunity for the user to connect with their loved ones only through sensorial experiences primarily of touch and visual. At first glance, communicating without having verbal conversation might seem to be the disadvantage of this device but the

uniqueness of this device is that it is going to allow the user to explore the world of communication through the senses that do not use words to convey their message. This can bring privacy to the user's communication and more importantly can detach the users from the auditory world during the time they are talking to each other. It lets them focus all their attention, feelings and thoughts on what they are doing at that moment without being distracted with what is happening in the outside world. Moreover, our device is not going to eliminate the world of isolation as it's not what it's made for, but letting the users make this experience of isolation more enjoyable, intimate and positive. To do so, we would like to explore materials, specifically in the soft materials category, that would reinforce the sensitiveness and delicacy of the communication as it demands for extra care and effort from the user.

EMPOWERMENT OR CHALLENGE?

Today, we have tons of means of communication to talk to one another such as through social media, email, phone calls and video calls. What is problematic is that the devices (phone, tablet, computer) that we use to communicate come with many other disturbances and distractions. They come in the form of apps and notifications which lowers the quality of the conversations that we have with our loved ones because we are more prone to multitask.

The pandemic, in consequence, has caused a lot of anxiety, feelings of hopelessness and yearning for the closeness with our loved ones. On the other side, we have all been working towards adapting to the new normal lifestyle. As humans, we have the ability to quickly grasp and adjust our lifestyles. In the past few months, we have found methods to work and attend classes from home but what remains is the hollowness of spending time with our loved ones that do not live with us.

We definitely feel that our project will bring along a feeling of empowerment and hope. At the same time, it will also challenge the users. By having a device that's only purpose is to reinforce being present and establish a link between two users who are isolated, it will enable the users to be in control of the moment because there is no exterior distractions that can hinder the quality of the communication.

We would like our device to consider both the empowering and challenging factors. While the device will attempt to provide comfort and closeness, at the same time, the device's nature is a representation of our adaptation to the new normal lifestyle because of the way in which the users will be interacting with the device. Therefore, we will be experimenting to see if this adaptation of communicating through only sensorial experiences would be a practical and effective solution to this new condition.

INTERACTION DESIGN STRATEGIES

We would like our creation to be a new sensorial user interface and experience.
Instead of using words and images to express our emotions, we would like the interaction between the users to be focused on using sensors that will enable tangible sensations and visual cues to communicate messages between the users.

Through our device, we will reinforce the use of our tactile and visual senses which has not been used to their full potential when engaging in a virtual conversation. The users will experience three types of interaction.

1. User to user (psychologically through their feelings & thoughts)
2. User interaction with their device to send a message
3. User 1 device to User 2 device

User to User
We see the communication between the users as a Balancing System because both users will be sharing their senses which will balance each other's feelings as well as balance the isolated space between each other. So, the users will not feel like they are completely in their home nor will they feel like they are completely in the sender's home. Instead, they will both be in a shared place that is the outcome of both their presence and emotions.

User interaction with the device
The user will need to interact with their device in order to choose which sense will be able to effectively convey their message/feeling. This type of interaction can be seen as a Linear System because the device on its own does not produce any output from what the user has sent, instead it reflects on the received message. In other words, it works similar to a Blutooth device.

User 1 device to user 2 device
Both devices will be sending signals/data to each other so that the users will be able to feel each other's input through a sensorial experience. It is based on the output of the devices, that will trigger the conversation between the two users. Therefore, it is similar to the Entertaining System but the difference is that it is the input of the partner device that is making the device work.

EVALUATION OF SENSORS & AFFORDANCES

We would like our sensors to each represent a feeling/emotions or be used to convey meaningful messages. These are the sensors and sensor interactions that we would like to experiment with to see if they are effective enough to break the barrier between two people who are isolated.

Vibration Sensor

The vibration sensor can be used to convey a sense of anxiety, stress, discomfort etc. Comfort, love and happiness are not the only emotions that we as humans would like to share with our loved ones. Sometimes we need to share our negative feelings and in return, receive our loved ones' support, attention and sense of empathy. Therefore, we are thinking of having the vibration sensor as a representative of negative emotions such as anxiety and stress which is a common feeling that we all share in regards to the uncertainty caused by the pandemic. For example, by changing the value of vibration, the sender can show to what extent they are stressed to the receiver.

Heartbeat (Pulsation) Sensor

While the vibration sensor conveys a sense of anxiety, the pulsation sensor conveys the contrary. The heartbeat sensor will be able to take the pulsation rate of the sender and translate it by the bump pulsing in and out of the device and glow in red colour. By seeing the pulsation rate of the sender, the receiver will feel relaxed that they have someone with them. For example, our assumption is that when one receives a vibration and they send their heartbeat (which is in a calm state) to the other person, the other person might feel more relaxed. This is a case that we are looking to test.

Temperature & Humidity Sensor

The temperature and humidity sensor can be used to detect the temperature of the home/ space of the sender and receiver. Therefore, they can both know what is the room temperature of their sender's home. By being able to sense the room temperature of the other person's home, this makes the user feel as though they are present in the same room as their sender.

Sound Sensor to LED

The sound sensor can be used for the users to send messages using their voice which will then be converted to LED light for the message receiver. Through the use of a multicolour LED light, if the user says a specific preset sentence, the LED light of the receiver's device will reflect the color that is associate with the expression. The preset sentences are:
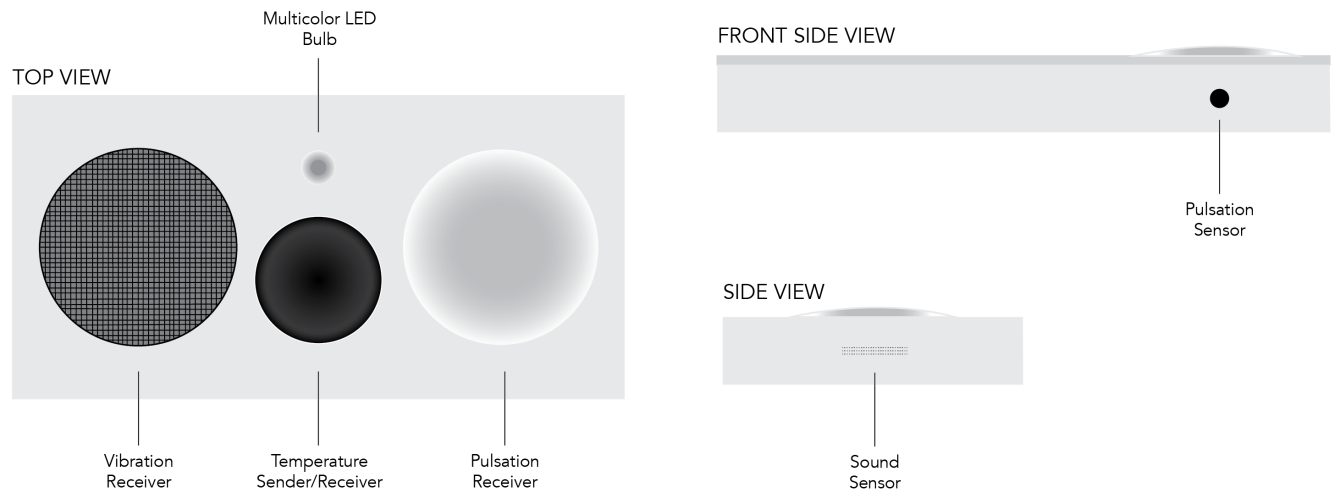I miss you = Blue
I love you = Red
I empathize with you = Yellow
Get well soon = Orange
I am feeling depressed = Purple
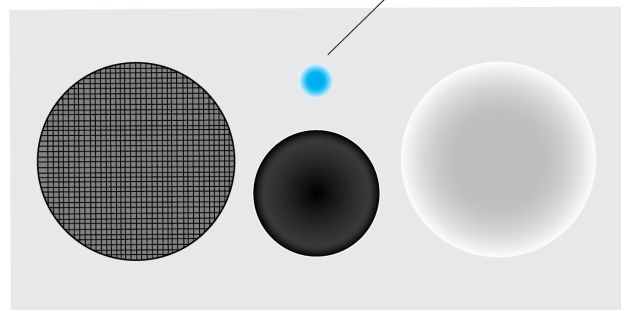I feel lonely = Green

STORYBOARD

TOP VIEW

Multicolor LED Bulb

Vibration Receiver

Temperature Sender/Receiver

Pulsation Receiver

FRONT SIDE VIEW

Pulsation Sensor

SIDE VIEW

Sound Sensor

This is an example of an interaction between two users:

1. SEND EMOTION VIA SOUND

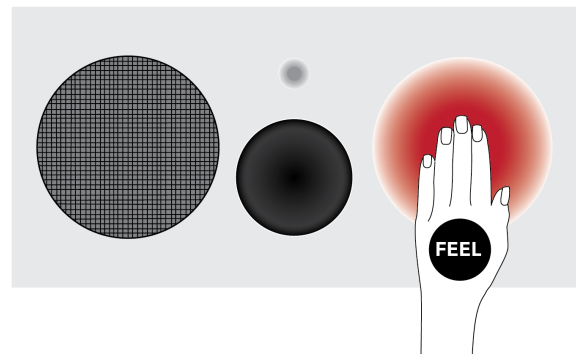User says the preset sentence: "I miss you"

2. VIEWING SENDER EMOTION

LED reflects the emotion

3. SENDING PULSATION

By sending our pulsation, the user who is feeling sad can feel our presence.
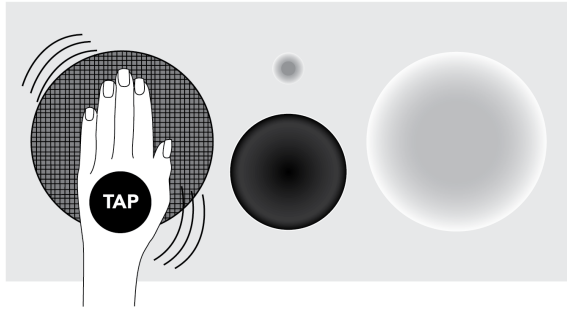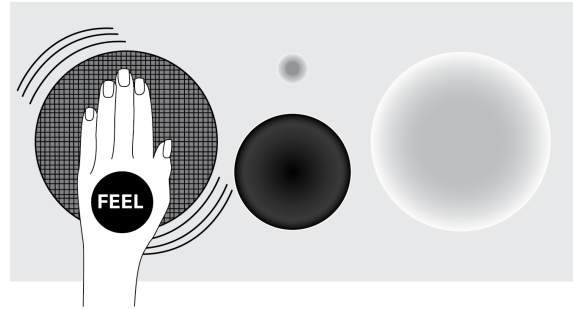
4. RECEIVING PULSATION

FEEL

5. SENDING A VIBRATION
The sender still feels anxious so sends a
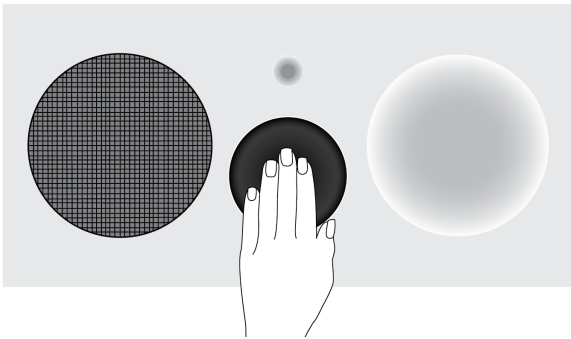vibration to convey their feeling

6. RECEIVING A VIBRATION
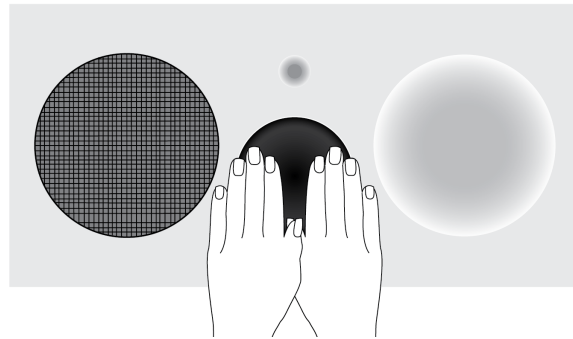The receiver feels the anxiousness of the sender

7. SENDING THEIR TEMPURATURE
The user sends their tempurature to show to sender that they
are with them and to not worry

8. RECEIVING A VIBRATION
The receiver puts their hands together over the tempurature hole
to feel the sender's tempurature and this calms them down.

INSPIRATION - SIMILAR PROJECTS

Fulu by Studio Tada is a device in which users from different places can connect to each other, feel both the real & virtual textures at the same time and also send them in real-time. It works by using haptic technology to create augmented touch. It is made with soft material silicon and is just the size of a fingernail. The fact that the device is so small provides an affordance for it to be handled with extra care and be careful not to lose it. This affordance is translated in the nature of the communication because the connection is very intimate and special because the usual actions of touch find value because of the fact that it is being shared with another. "The wearable technology can connect to mobile devices via Bluetooth, and recreates sensations that range from stroking the fur of your dog, to touching the hand of a loved one from anywhere in the world" (Crook). What we like about Fulu is that it considers other forms of communication between users other than words, images and sounds which we are normally used to using in our everyday devices to communicate. Fulu is able to create a sense of magic, fantasy and connection while using only the tactile sense as a tool for communication. What we also like is that Fulu is a device that requires the users to be present at the moment to experience the connection. This is also a drawback because one cannot expect to be always wearing the Fulu device. So if one sends a touch, the other person who may not be wearing the device will not be able to experience it.

Speak Out by Andreea Chelaru in collaboration with Tristam Sparks is a concept that Andreea came up with in 2005 along with other concepts for her thesis exploration. She says, "My thesis responds to this fundamental shift in family dynamics. With the aid of new technologies, my thesis project aims to bridge distance gaps and help remote families reconnect" (Chelaru 6). Speak Out is a concept where the user has speaker-like boxes where the user can tune-in to different family members' homes and invite them into their personal space by listening to the soundscape and have conversations. They can talk to one specific family member or leave it on for everyone to hear what's happening in their homes. This way, although the family members are apart, communication is common as they are intervening in each other's space. Andreea's main focus on her thesis was about finding a solution to connect family members who travel away from home and live in different places. "Not only do people communicate less with their families, but they also forget about them in the everyday succession of events" (19). Although it has been 15 years since Speak Out was conceptualized, today, especially in the context of the pandemic and our isolated circumstances we find Speak Out to be a great device that can be used by everyone today. While family members used to travel to different places away from family, there was always a hope of return. Today, we are all pushed into a situation where it is extremely uncertain of when we will get to see each other as we cannot travel much and this pushes us to REMIND ourselves of our families and loved ones. Due to our isolation, day by day our desire to reunite is growing much stronger. Andreea did not further develop Speak Out as she thought that "it did not provide a significantly different communication experience from a telephone" (60). We also think the same in terms of our project idea as we would like to create a new experience of communicating and intervening the isolated spaces between the users.

Long Distance Friendship Lamps by John Harrison and Vanessa Whalen was conceived in 2014 by the married couple. According to John, his main inspiration to create this artifact has been his personal experience with his family. Two main factors motivated him to think of a creative way of communication that can easily happen without saying a single word. First, having his family members displaced all over the world has taken the chance from them to have a strong continuous relationship with each other. Second, verbal communication in his family has always led to confusion and caused problems. He asked himself, "How can we keep the feeling of family without the words that seem to confuse or cause problems?" (Touch, Technology, and Giving Back).

Bearing this in mind, he decided to create a device that fosters a unique connection with his faraway family members. A connection that is not provided by conventional ways of communication, like, phone calls or text messages, but the one that sends their message of love through an illuminating lamp.

The lamp works through the use of wifi-connection and configuration that links the lamps together regardless of how far the family members are from each other. The family member just needs to touch the lamp and another family member's lamp will emit the same color to let them know that they are in their thoughts. What is really cool about the lamp is that it permits the user of the affordance to personalize the lamp through some simple configurations. "With every touch, the lamp cycles through a rainbow of colors, one at a time. You can also assign each loved one a color so that when they tap their lamp, yours lights up with their special hue" (Long Distance Friendship Lamp).

What this product has in common with our project is that they both tend to enable the user to share their feelings and thoughts with their loved ones through a new form of communication. The communication might last only a few minutes but will bring them a sense of comfort, relief and most importantly, reinforce the family member's presence despite being distant from each other.

WHY IS OUR PROJECT NEEDED?

We think that our project is needed because we are in a situation where the current devices that allow us to keep in contact will our distant loved ones such as phone/social media, is not enough to fulfill the desire for intimacy and closeness that we are looking for today, especially because of this pandemic situation. We think that our device, unlike other devices, permits users to be more close with their loved ones despite the isolation due to the exchange of sensorial experiences as a form of communication that our device is able to afford our users. While the distractions of the current devices (phones, social media, games) take away from us being able to value our time with our loved ones, our device looks into doing the opposite. We would like our device to make us value our time with our loved ones while reminding us of this necessity during this uncertain time of our life. While our project is an experimentation and exploitation of our current circumstance, we would like to test the sensorial interactions of our device to see which sensors are effective to make us feel connected to each other. As a result, we will be able to decide which sensors are more reliable than others for this type of communication. We would also ike to think about how our device can help break the barrier of isolation effectively and practically in other places where people are separated from their loved ones such as the hospital, old age home, orphanage etc.

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