



Politecnico di Milano
Case Studies
Camilo Bonilla
Design & Engineering
a.a. 2013-2014

DUO

Comunicare Emozioni a Distanza Attraverso i Sensi
con Prodotti Dinamici

Mood Ring

Marvin Wernick



A mood ring is a ring which contains a thermochromic element, such as liquid crystal. The ring changes color in response to the body temperature of its wearer. The color is said, by some proponents, to indicate the emotional state of the wearer.

http://en.wikipedia.org/wiki/Mood_ring

Communication

- In presence
- long distance

Communication

- Voluntary
- Involuntary

Content

- Emotion
- Presence
- Sensations

Sense

- Sight
- Touch
- Auditory
- Smell

Medium

- Light
- Movement
- Color
- Pressure
- Temperature
- Smell
- Sound

Emotion

Mutsugoto è il progetto

Joanne Montgomery



Description

Relax and think about your partner far away

-Move your hand around your body, The movements are traced by a light beam on both your own body and that of your partner.

-If you follow your partner's movements and your strokes happen to cross, the lines will react with each other, reflecting your synchrony.

<http://culturaldevelopmentconsulting.com/2013/06/26/8136/>

Communication



In presence



long distance

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Temperature



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Sound

Presence

Old greek for star constellation

Tamara hoogeweegen



Description

Through a network of Semeion lamps loved ones can connect through light. By touching the lamp a couple of lights in the lamp start to twinkle through out the the whole network. Through this one can illuminate each others room.

-For variety of occasions, but was developed for family to connect in times of mourning or terminal illnesses.

<http://tamarahoogeweegen.com/portfolio.html>

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Wired Interactive Pillow

Karahalios & Donath



Description

A pair of interactive pillows designed to enhance long-distance communication

-Wired with electroluminescent wire that enables the pillows to connect to a communication service (wirelessly) -interact with other wired pillows. When a pillow is touched, hugged or leaned against, it will activate the pattern on the other pillow to glow and will change with various movements.

<http://www.geeksugar.com/Interactive-Wired-Pillows-Perfect-Long-Distance-Lovers-1750411>

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long distance

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Presence

Aabhaas - means shadow

Dhyan Suman



Description

A pair of interactive pillows designed to enhance long-distance communication

- The person send a request via internet
- The cell phones are connected wirelessly to the pillow for talk while you are on the bed
- luminescent fibers shows the silhouette of the body

<http://dhyansuman.blogspot.it/>

Communication



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Sound

Presence

Smart Second Skin

Jennifer Tillotson



Description

The dress interacts with its wearer's changing moods by releasing atomized bursts of fragrance or more precisely, a "rainbow symphony of aromas" in response to different emotional triggers.

-The dress itself comprises a fabric membrane (in effect a second skin) that acts as an invisible carrier of liquids, much like the body's circulatory system.

<http://www.ecouterre.com/emotion-sensing-dress-emits-mood-enhancing-aromas/>

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 Sound

One

SmallConnection



Description

One is a communication tool that let us feel the sense of touch of each other by pushing and pulling the rod.

-when one rod is pushed down the another rod is pushed up.

<http://www.kri.sfc.keio.ac.jp/report/mori/2005/b-14/exhibition/art157e-ogawa.pdf>

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Hug to glow pillow

Aditya Bandi



Description

The pillow transmit the presence to the loved ones

- The harder you press the pillow, it would change colours

- You can have personalized covers to hug to your beautiful memories of loved ones while you talk with them

http://www.sapdesignguild.org/community/design/print_sust_swf_am_1.asp

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Lover's Cups

Hyemin Chung - Chia-Hsun Jackie Lee - Ted Selker



Description

Using cups as a medium for people to communicate and feel with each other

- If a person is sipping on one cup, the LED illumination of the paired cup is at its maximum.

-When both of them take a sip at the same time, this pair of Lover's Cups is glowing at its maximum illumination to celebrate the shared intimacy.

Paer: Lover's Cups: Drinking Interfaces as New Communication Channels

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Lover's Cups

Hyemin Chung - Chia-Hsun Jackie Lee - Ted Selker



Description

Using cups as a medium for people to communicate and feel with each other

-If a person shakes one of the Lover's Cups, the other cup will vibrate to generate the remote hand-shaking feeling to the other person.

Paoer: Lover's Cups: Drinking Interfaces as New Communication Channels

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Pillow Talk

Joanne Montgomery



Description

Due cuscini customizzati a dovere e due "cardio-frequenzimetri"

-When one of the two lovers go to sleep, the pillow begins to emit faint light

<http://interactivedesign.it/blog/interactive-design/2010/07/27/pillow-talk/>

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Pillow Talk

Joanne Montgomery



Description

Due cuscini customizzati a dovere e due "cardio-frequenzimetri"

-Places the head on the pillow allows your partner heartbeat to be heard

<http://interactivedesign.it/blog/interactive-design/2010/07/27/pillow-talk/>

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Sensations

Somnia Necklace

Tomaso Scherini, Paulo Melo, Toon Van Craenendonck, Wenzhu Zou, Maurits Kaptein



Description

-The necklace that indicates when the partner goes to bed by lighting up.

http://www.sapdesignguild.org/community/design/print_sust_swf_am_1.asp

- | | | |
|---------------|----------------------------------|---------------|
| Communication | <input type="radio"/> | In presence |
| | <input checked="" type="radio"/> | long distance |
| Communication | <input checked="" type="radio"/> | Voluntary |
| | <input type="radio"/> | Involuntary |
| Content | <input type="radio"/> | Emotion |
| | <input checked="" type="radio"/> | Presence |
| | <input type="radio"/> | Sensations |
| Sense | <input checked="" type="radio"/> | Sight |
| | <input type="radio"/> | Touch |
| | <input type="radio"/> | Auditory |
| | <input type="radio"/> | Smell |
| Medium | <input checked="" type="radio"/> | Light |
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| | <input type="radio"/> | Color |
| | <input type="radio"/> | Pressure |
| | <input type="radio"/> | Temperature |
| | <input type="radio"/> | Smell |
| | <input type="radio"/> | Sound |

Presence

Somnia Necklace

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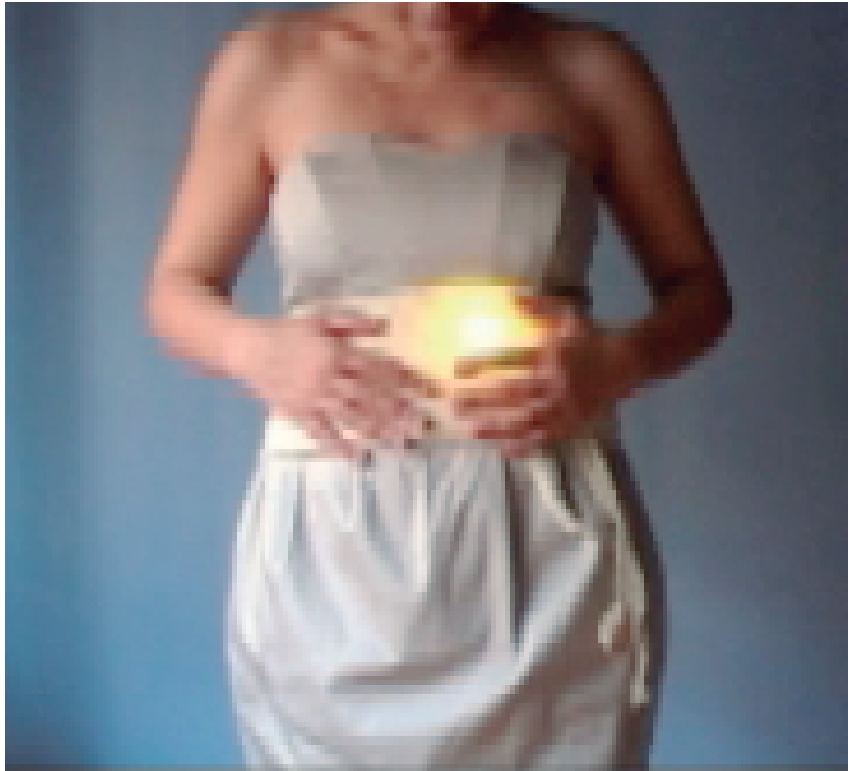


Sound

Sensations

Butterflies in the stomach

Secil Ugur



Description

Is a belt that works with accelerometer. When the wearer shakes it with a happy emotion, the lights start blinking as if there are butterflies on the stomach area.

Thesis Phd: Embodiment of Emotions Through Wearable Technology

Communication



In presence



long distance

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Emotion

The Huggy Pajama

Mixed Reality Lab at the National University of Singapore



Description

Concept design exploring different technological options to transmit emotional affections like hugging, warmth and mood color sequences to children

Display fabric color changes according to distance of separation between parent and child, and display physical emoticons, giving the emotion data.

<http://www.talk2myshirt.com/blog/archives/3971>

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- Sensations

Sense

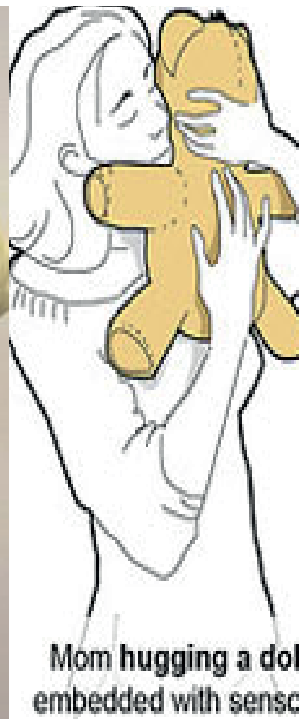
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The Huggy Pajama

Mixed Reality Lab at the National University of Singapore



Description

Concept design exploring different technological options to transmit emotional affections like hugging, warmth and mood color sequences to children

Reproduce hug sensation and warmth on wearer.

<http://www.talk2myshirt.com/blog/archives/3971>

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hug sensation is produced in a calm and relaxing way through air.

<http://www.talk2myshirt.com/blog/archives/3971>

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Sensations

Hug shirt

Francesca Rosella and Ryan Genz



Description

Is a shirt that enables its users to hug each other without close physical proximity.

-The skin warmth and the heartbeat rate of the sender and actuators that recreate the sensation of touch, warmth and emotion of the hug to the shirt of the distant loved one.

<http://www.realityaugmentedblog.com/2012/03/remote-hugging-and-tele-kissing/>

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Hug Over a Distance

Florian Mueller



Description

Hug Over a Distance is an air-inflatable vest that can be remotely triggered to create a sensation resembling a hug.

-Takes the koala and rubs its belly. While thinking about his partner, he sends a hug. His partner is wearing a vest, it contains a wireless receiver, which receives the hug request. Inside the vest are small air compartments which inflate quickly all around her body torso, giving a sensation similar to a real hug.

Paper: Hug over a distance

Communication



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long distance

Communication



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Presence



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Sensations



Description

SnowGlobe is a system that aims to increase people's experience of social connectedness with their relatives.

-Comprises a presence lamp that displays light and snow and two sensors: one for light and one for motion. Whenever a close relative with a globe

-A user can cover the globe with a cloth to stop communication. Relatives do not receive any feedback about whether the globe is covered or uncovered.

http://www.sapdesignguild.org/community/design/print_sust_swf_am_1.asp

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Description

SnowGlobe is a system that aims to increase people's experience of social connectedness with their relatives.

-A relative by shaking his or her own globe to trigger snow and a short burst (about 10 seconds) of intense light in the relative's globe.

<http://tamarahoogeweegen.com/portfolio.html>

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Anemo

SmallConnection



Description

Whit anemo you feel a breeze in your room, the communicatiion convey presence with wind

-You see a propeller spinning when your partner arrives at home.

-The propeller react to noises in the room.

<http://www.kri.sfc.keio.ac.jp/report/mori/2005/b-14/exhibition/art157e-ogawa.pdf>

Communication In presence
 long distance

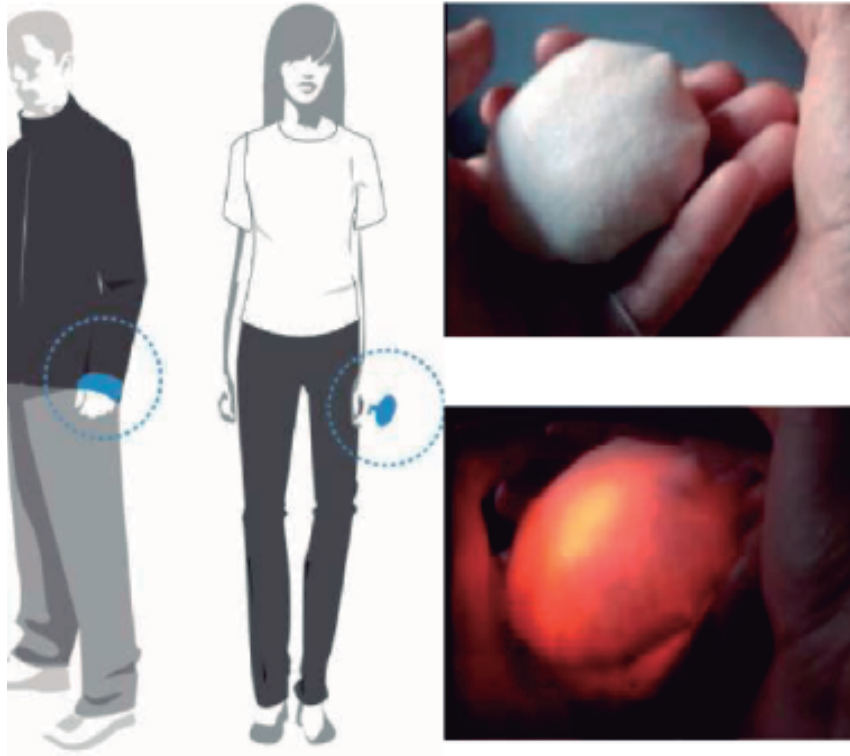
Communication Voluntary
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Firefly Secil Ugur



Description

Is a set of wearables, a ring and a bracelet. When one is touched, the other one lights up with a frequency of the current heart rate.

-The metal ring can close the circuit that can send his\her heart beats as a lighting animation to the other person.

-Emotion: Love

Thesis Phd: Embodiment of Emotions Through Wearable Technology

Communication In presence
 long distance

Communication Voluntary
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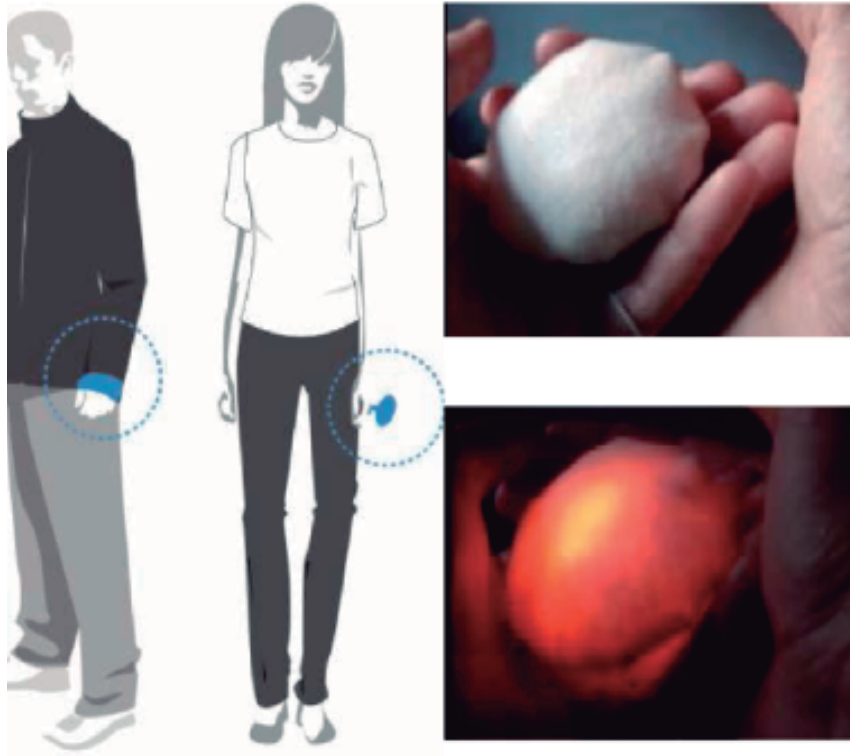
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Like-A-Hug

Melissa kit chow



Description

Like-A-Hug is a wearable social media vest that allows for hugs to be given via Facebook, bringing us closer despite physical distance.

-Hugs can also be sent back to the original sender by squeezing the vest and deflating it.

<http://www.melissakitchow.com/Like-A-Hug>

Communication



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Sensations

Sense



Sight



Touch



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Sensations



Description

Giant, person-shaped pillow that also doubles as a cell phone and vibrates based on the frequency of the voice of the person you're talking to. (CNN)

-Within the large cushion, there is a pocket that's designed to house a smartphone during a call.

-Uses a micro-controller and two vibrating discs to "translate" the emotions of the caller's voice into physical form.

-The two vibrators act in conjunction to replicate a human heartbeat.

<http://www.digitaltrends.com/mobile/smartphone-enabled-hug-vie-adds-physical-sensation-to-phone-calls/#!FZAFr>

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Hand Muffs

Secil Ugur



Description

When the wearer activates the touch sensor placed inside the muff with rapid hand movements, the other person receives a playful light touch. On the other hand, when the wearer activates the touch sensor with a constant pressure, then this is transmitted as a firm affective touch to the other person's muff. (Secil Ugur)

Thesis Phd: Embodiment of Emotions Through Wearable Technology

Communication



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Emotion

Love Jackets

studio 5050



Description

The jackets came and worked as a pair, each pair would have their own infrared programming which would only recognise and interact with its corresponding unit. When the two garments were in close proximity (10ft or closer) they would light up and create clicking noises as a form of communication and recognition of their counterpart.

<http://joannehodge.co.uk/2010/10/11/love-jackets-by-studio-5050/>

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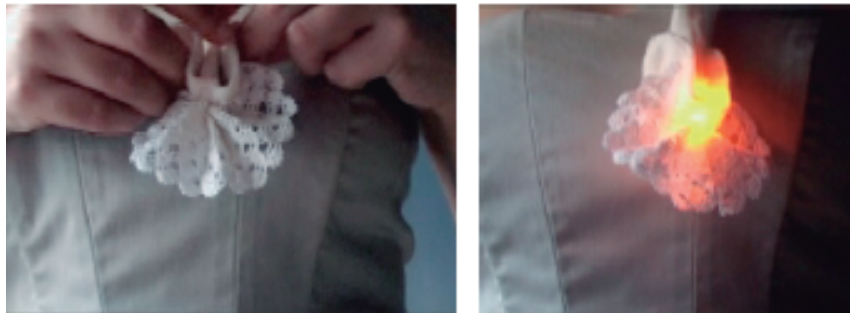
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Presence

Happy Blossom

Secil Ugur



Description

The wearer decided whether he or she wants to express her emotion by activating the garment.

-In this case the garment is a flower shape . When the wearer opens it apart, a lace appears and creates a flower shape with a light blinking.

(Secil Ugur)

Thesis Phd: Embodiment of Emotions Through Wearable Technology

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Emotion

Philips Buble dress

Royal Philips Electronics of the Netherlands - Lucy Mcrae



Description

The Buble Dress is made up of two layers, the inner layer contains biometric sensors that pick up a person's emotions and projects them in colors onto the second layer, the outer textile.

-The Buble Dress changes the look instantaneously according to our emotional state and our personality.

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Heart Sync

Kristin Neidlinger



Description

Heart Sync is a heart illuminating fashion that translates empathy to light.

-The speed of our heartbeat communicates our mood in subtle vibrations. In this way our hearts can also speak to each other and in close proximity our heartbeats even begin to synchronize with sound.

<http://sensoree.com/artifacts/heartsync/>

<http://ripley.za.net/2013/07/news/wearable-gadgets-of-the-future>

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Heart Sync

Kristin Neidlinger



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-This is a heart synchronizing game to listen to each other and find when our hearts beat as one.

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Description

Heart Sync is a heart illuminating fashion that translates empathy to light.

-listens to heart rates and translates to a colorful mood palette. In close proximity, hears the other's beat.

-When two Heart Sync player's hearts have completely synchronized, the hoods swirl white and the game is won.

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Social Skin (skin-bone, Fight and Flight,)

Secil Ugur



Description

Is a product to help the communication of emotions. The aim to embody the wearer's emotions on a dynamic display that is worn on the body.

-The display becomes a tool for communicating inner states that may be restrained, such as stress, depress or excitement. (Secil Ugur)

Thesis Phd: Embodiment of Emotions Through Wearable Technology
<http://www.fashioningtech.com/profiles/blogs/social-skin-emotional>

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- Sensations

Sense

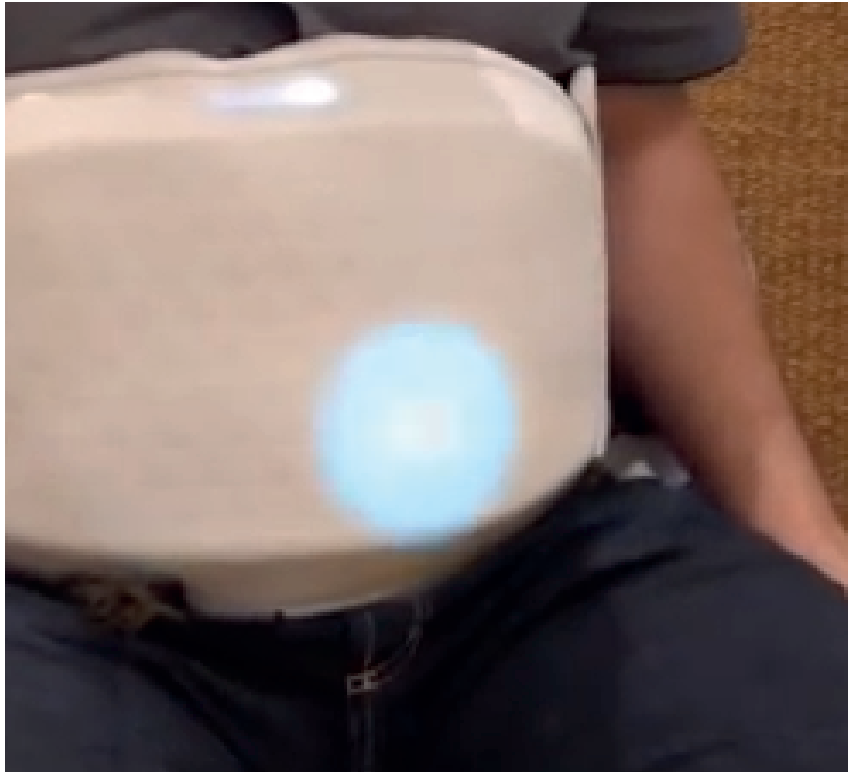
- Sight
- Touch
- Auditory
- Smell

Medium

- Light
- Movement
- Color
- Pressure
- Temperature
- Smell
- Sound
-

Dads feeling pregnancy

Huggies



Description

Technology allows fathers to feel the joys of pregnancy as well. Huggies developed a set of belts for both parents, that captured the movements of the fetus in inside the mom and transmitted these kicks to the belt placed onto the dad's belly

<http://popsop.com/2014/03/new-era-of-parenting-raising-kids-with-tech-as-part-of-their-selves/>

Communication



In presence



long distance

Communication



Voluntary



Involuntary

Content



Emotion



Presence



Sensations

Sense



Sight



Touch



Auditory



Smell

Medium



Light



Movement



Color



Pressure



Temperature



Smell

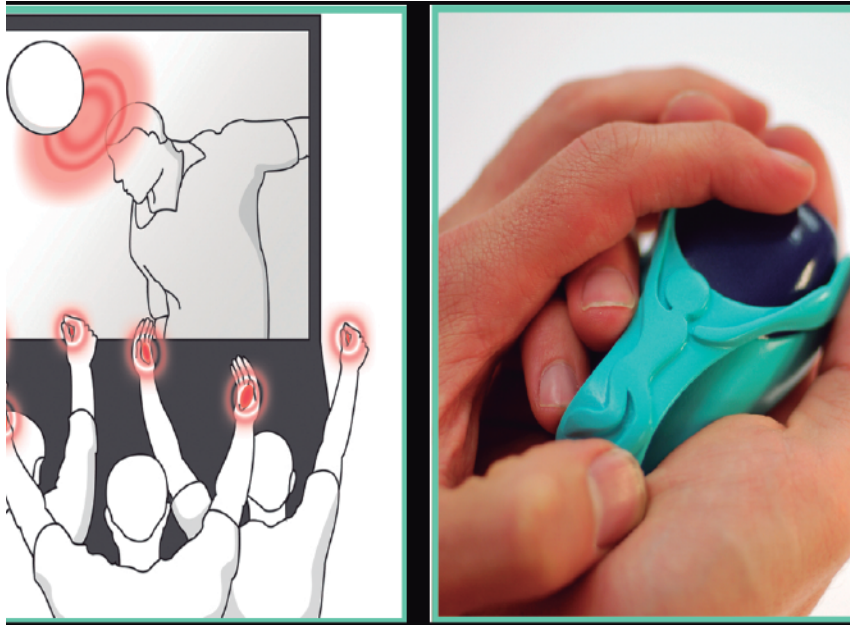


Sound

Sensations

Spectate

Philippa Mothersill - Master Design Thesis



The broadcasted event is connected to a hand held device, which uses emotive tactile sensations and the user's own physiological reactions to reconnect the wearer more directly to the physicality of the actions being viewed in the event.

-Data about the action in the match are transformed into an emotional answers right through the bracelet used for the player

-The emotion of the action is communicated to the viewers through a tactil hearbeat created by the handheld device

Thesis: Spectate

Communication In presence
 long distance

Communication Voluntary
 Involuntary

Content Emotion
 Presence
 Sensations

Sense Sight
 Touch
 Auditory
 Smell

Medium Light
 Movement
 Color
 Pressure
 Temperature
 Smell
 Sound

Sensations



Description

Is a modular design object that senses pulse and allows users to wirelessly transmit their heartbeat rhythms to companion imPulse units. Use light first for communicate the one of the lovers is there.

-When a device is powered on, its lights fade in and out with a default pulse, inviting potential interaction.

<http://giladlotan.com/impulse/>

Communication In presence
 long distance

Communication Voluntary
 Involuntary

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 Presence
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Sense Sight
 Touch
 Auditory
 Smell

Medium Light
 Movement
 Color
 Pressure
 Temperature
 Smell
 Sound



Description

Is a modular design object that senses pulse and allows users to wirelessly transmit their heartbeat rhythms to companion imPulse units. By synchronizing light and vibrations with users' personal heartbeats, these devices create intimacy across distance.

-When a device is powered on, its lights fade in and out with a default pulse, inviting potential interaction.

Communication In presence
 long distance

Communication Voluntary
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Embrace-Me hoodie

Studio 5050



Description

This hoodie has a large conductive version of their logo printed on front. When two Embrace-Me hoodies combine in a hug, lighted version of the big dipper appears on the back and a heartbeat sound is emitted.

<http://www.crunchwear.com/studio-5050-embrace-me-hoodie/>

Communication

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Emotion

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Emotion

Fusakul's Aliform

Sompit Moi



Description

Is a neck piece that utilizes heart beats to trigger a change of shape

-It is designed to deliver heat to each shape after groups of five heartbeats are detected, triggering the forms to open and close in sequence.

-The main material is Nitinol.

Thesis: Lisa Jane Stead "The Emotional Wardrobe"

Communication



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long distance

Communication



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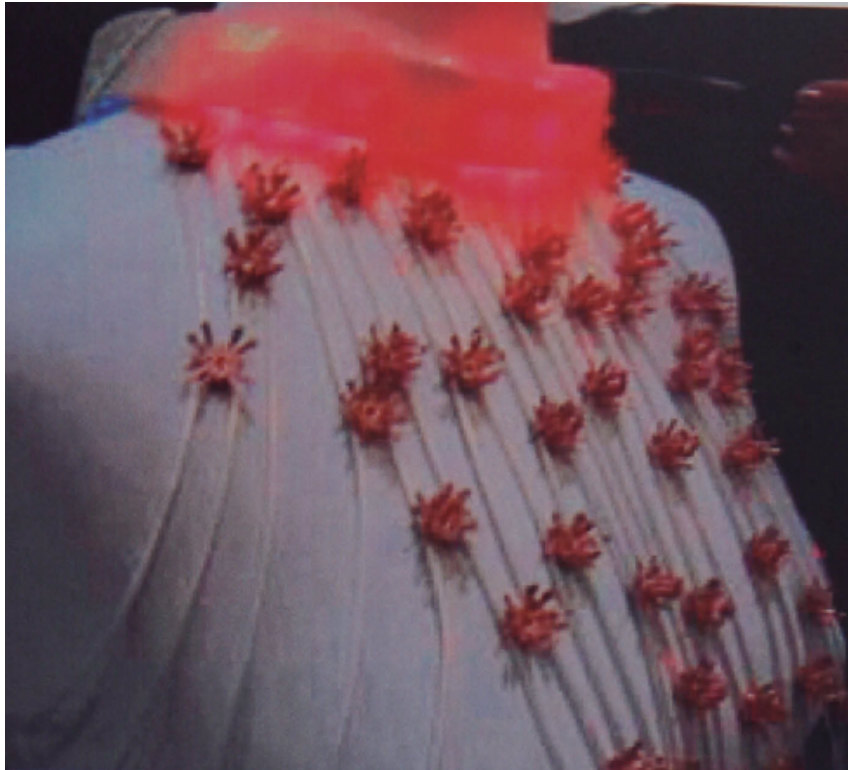


Sound

Emotion

Fusakul's Vein

Sompit Moi



Description

Is a fibre optic necklace that changes colour to reflect changes in the wearer's emotional state. Fusakul presumed that a rise in temper would result in a rise in blood pressure and that this alteration could be shown by a change in colour from blue, for calm, to red for excitement. A heart rate monitor, strapped to the chest of the wearer, measures beats per minute and sends the data to the necklace to trigger the colour change. Sixty beats per minute equals blue and a rise is reflected in both blue and red fibre optics glowing until a heart rate of a hundred and ten beats per minute triggers an all red display. (Lisa Jane Stead)

Thesis: Lisa Jane Stead "The Emotional Wardrobe"

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Emotion

Shippo

Japanese electronics company Neurowear



Description

Shippo uses a headset, a clip-on heart monitor, and a neural smart phone app to read the wearer's brain waves and sense his or her mood.

- Once that fluffy tail is wagging, the device shows wearer's mood

<http://curioushistory1.blogspot.it/2012/10/curious-history-newest-japanese-fashion.html>

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Cat Ears

Japanese electronics company Neurowear



Description

Cat ears headband is brain-controlled. One can visually express emotions by just wearing the pair of fluffy cat ears on head.

-The fluffy cat ears, which come laced with sensors that respond to one's emotions.

<http://www.dailymail.co.uk/sciencetech/article-1385173/Neoco-mimi-The-fluffy-cat-ears-wiggle-emotion.html>

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GER Mood Sweater

Studio Roosegaarde



Description

interprets emotion and displays excitement levels instantly with an illuminated collar.

-The sensors are located on the hands and reads excitement levels and then, translates the data into a palette of affective colors.

-Located around the larynx, the visual interface replaces speaking, as the wearer's truths are instantly expressed with color.

<http://sensoree.com/artifacts/ger-mood-sweater/>

<http://iq.intel.com/wearables-that-create-a-window-into-ourselves/>

Communication



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Sound

Emotion

Jodo (Means Connect)

Ram Brijesh, Rashmin Raj, Anupama Kamath



Description

Jodo transmit the emotional needs and the presence of the people far away

- Transmits 'touch' through light and graphic patterns.
- Sends vibrations from the 'ticklish'.

<http://www.dsource.in/case-study/jodo/pdf/jodo-case-study.pdf>

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Presence



Description

Two lamps for the partners at the distance.

-When you come home, a pink light is on.

<http://www.kri.sfc.keio.ac.jp/report/mori/2005/b-14/exhibition/art157e-ogawa.pdf>

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|---------------|----------------------------------|---------------|
| Communication | <input type="radio"/> | In presence |
| | <input checked="" type="radio"/> | long distance |
| Communication | <input type="radio"/> | Voluntary |
| | <input checked="" type="radio"/> | Involuntary |
| Content | <input type="radio"/> | Emotion |
| | <input checked="" type="radio"/> | Presence |
| | <input type="radio"/> | Sensations |
| Sense | <input checked="" type="radio"/> | Sight |
| | <input type="radio"/> | Touch |
| | <input type="radio"/> | Auditory |
| | <input type="radio"/> | Smell |
| Medium | <input checked="" type="radio"/> | Light |
| | <input type="radio"/> | Movement |
| | <input type="radio"/> | Color |
| | <input type="radio"/> | Pressure |
| | <input type="radio"/> | Temperature |
| | <input type="radio"/> | Smell |
| | <input type="radio"/> | Sound |



Description

Two lamps for the partners at the distance.

-You touch the blue lamp touching it convey the presence of each other

<http://www.kri.sfc.keio.ac.jp/report/mori/2005/b-14/exhibition/art157e-ogawa.pdf>

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inTouch

Scott Brave, Andrew Dahley, and Professor Hiroshi Ishii / 1998



Description

inTouch system which provides a physical link between users separated by distance. First, rollers can be rotated in either a clockwise or counterclockwise direction indefinitely. The roller affords more fluid and continuous strokes. Although the roller has the potential to be manipulated aggressively, but is felt that the motion of the roller was more appropriate for the expression of subtle emotional states than a bounded motion.
Paper: inTouch: A Medium for Haptic Interpersonal Communication

- | | | |
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| Communication | <input type="radio"/> | In presence |
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