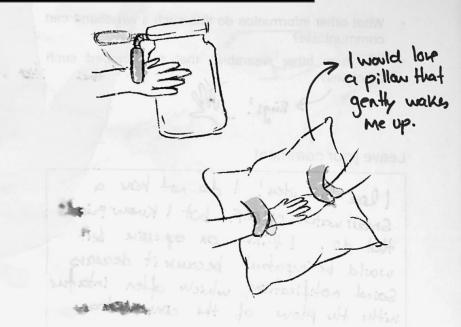
Selected Co-speculation Ideas with TactorBots Booklets

Patricia Alves-oliveira, HRI Researcher University of Washington

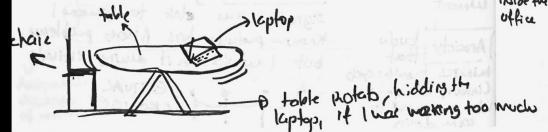


Emotional Everyday Objects

With emotive haptic technology, we may be able to make our everyday objects expressive.

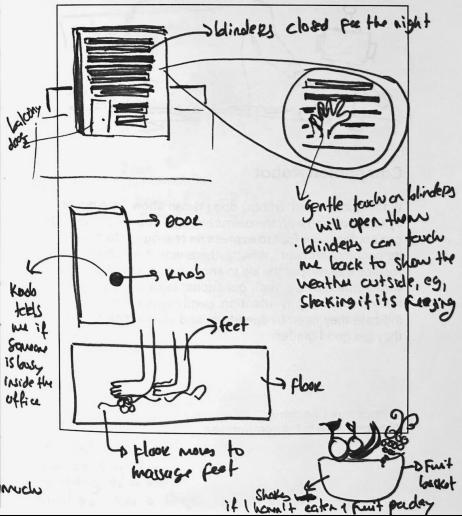
- For example, when you are watching a horror movie, a cushion that you're hugging may grab your hand nervously, or comfort you by patting based on your situations.

- Your mom doesn't want you to take too many cookies at a time. So she bought a "strict bottle lid", which will tap your hand if you open the jar too many times.

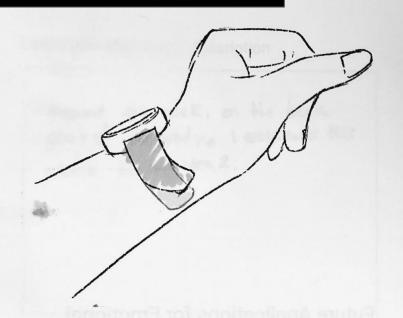


- What other daily objects that you touch/hold/use around you could be expressive through the haptics?
- Can you create some scenarios for the emotional everyday objects in the future life?
 Iou this quistion

Leave your comment



Patricia Alves-oliveira, HRI Researcher University of Washington



Emotional Watch Belt

The belt will not only be a tool for mounting your smartwatch, it is also an output channel that can be expressive. Imagine your smartwatch belt can provide different kinds of notifications to you, gentle tapping for a <u>non-urgent message</u>, strong squeeze for important information, hit or shake anxiously when the <u>deadline</u> is approaching. It may also hold with trembling to show afraid and weak when your watch is running out of power. Also, the emotional watch belt can indicate the content or tone of the information and even the sender with customized hapticons.

Hugg chain Send "touchable hugge" between Fawily Firends. they can be Chonymous about us, but we know in other completely someone in oue crecke is thinking of US.

- What other information do this such a wristband can communicate?
- Are there other wearables that may embed such functions?

> Rings !

Leave your comment

| love this idea! I do not how a Smalt watch myself, but I know price I think on ogeneric bert that do. would be impataul because it dealers Sound notifications, which often interfue the conv with the plow of officer inel I use timoss all the Timer! Nature time communicate A gentlek way is the worst. SUNKIEL SUNET to exist a work flow, using have to connect fauch, would be great. with Notice and take a mindpollness connection gentle stokes Mument signal pivory problems, has Know - public Anxie use it during pertivals but reath sych ESTIVAL (inhale, exchance) For LKONDS when we need to can down

Title <u>Haptic Puem</u>

Leave your sketch and description

Art comes in all forms - writing, music, film, paintings, dance, but what about a povery haptive form of art that is experienced purely through touch. What would that he like?

For example, one could down on t a very special afternoon in their lives Howeigh in haptics, through different haptic emotions (i.e. joy), haptics they experienced (i.e. keenings grass on skin), and can even use haptics to express concepts that do not have words.

What would it mean to feel a porm? How would one approach "miting" it I going from words -> haptic space us. just working in haptics space)? what are the meque opportunities can you **Tip:** Does emotional robot touch have any potential connection to your research or design focus?

do with this form that you can't do of any other? I'm unious about haptics by itself since this seems really inderexplored, but also how can happic poems be augmented u/ adio-visuals Crather than primarily thinking about augmenting audio visuals w haptics?)

Ruojia Sun, Researcher in Textile, HRI, well-being University of Colorado, Boulder

Title Listening Robot

Leave your sketch and description

Sometimes you just need some one (or something) to listen ... You talk to the robot for example, ranting about the days fustrations, and the robot will listen empathetically, responding in real time through haptic wes such as hodding, shalling head, sympathy, and laughter. A related application is augmented journaling. Instead of talking to the robot, you write in a (digital)

journal, and the robot responds haptically. This application is inspired by

my journaling experience - I vied to address my diary like it was a person/ friend. I talked to it even **Tip:** Can TactorBots be applied to any of your current or previous projects?

though it couldn't talk back, but it was comforting just feeling like some one / some thing was there for me. This can also be extended to therapy.

Ruojia Sun, Researcher in Textile, HRI, well-being University of Colorado, Boulder

Title Emotional Robot for children's Learning

Leave your sketch and description

or can be attached with stick y material @ uband in drifting " pet" evho-support learning body when feel transvatid during learning new things, Com support the children with "calmeis + " rupport " * when learn about Greography, can project neal rendering of land form terrain ... *

Tip: Does emotional robot touch have any potential connection to your research or design focus?

when pravice design as a freelower, can use some compart assistance during daily work: appointments, reference which to share, budget documenting The I HARDING THE TO TIME TO and there introduced the second in the

Yutong Xie, Artist, Designer, Film producer Parsons School of Design

Your Application Idea 2 Diary Robot friend Title

Leave your sketch and description

Sometimes I would talk when I'm by myset - talking toonesert can be very helptul tor one to contemplate, to targive, to torget , to digest hardship in life ... This inspired we to that of tautorbots as some potential triend, like a dony book we have to conversations, or just keep some andro tores, touching your and when cirtenry ". at you palm

bank of your hand, maybe ... changery culous...

Yutong Xie, Artist, Designer, Film producer Parsons School of Design

> extended haptic and earphones. Front Back → Haptie Belt. # W > UR walking haptices

Where would you try to put the TactorBots on body parts other than the forearm? Where do you think can be appropriate for receiving a robotic affective touch? Please mark the body part and briefly describe a related scenario.

Xuanyu Fang, Researcher in Psychology and VR Cornell Tech

Title Jactor Guide for visual impaired.

Leave your sketch and description

l have seer a project developing a system for visually impaired people to navigate, communicate and comprehend. There are museums designing largible demonstrations for arturorks. if the tailor bots are aiming at converging information and emotions, one approach could be to translate visuals or sounds to better help people with impairment to comprehend. real life information obtained from numerous sources.

Xuanyu Fang, Researcher in Psychology and VR Cornell Tech

Title _ Safe Bot.

Leave your sketch and description



Tip: Can TactorBots be applied to any of your current or previous projects?

10,000 EMS is great at preventing user to harm themselves by moving their links duray from danger. However, the actuation from the System latks the sense of agency. To justify the movement, the factor Bot ads like a grandian apagel that moved your Unb. It can also provide haptic cues, like Islap on the Wrist" to indicate it was not a good idea to get too close to danger after actuality Umb.

Romain Nith, Haptics Researcher The University of Chicago

Title Annoying Alarm Bot

Leave your sketch and description



Tip: Does emotional robot touch have any potential connection to your research or design focus?

Alarm bot helps user wake either gently if they went to sleep early OR angily if they did not respect their bedtime hour. The Plarmbot may even spool water to the user if they stay in the bed too long in the mornons

Romain Nith, Haptics Researcher The University of Chicago

Title Multimodel Tacior Bots

Leave your sketch and description

Pad Ð Hit, Pat, pash, etc. are all pressure hapting. But, we teal so much more IDEA: actuator on tactor hot 7: PELTIER ELEMENT -> hot/cold touch Squeeze + warmth Shake + cold = Shivering

Tip: Can TactorBots be applied to any of your current or previous projects?

2: Electro tactile -> Pain the electrode hit + tingle = pain, anger -> intervention/ behavior 3: Vibro -> urgency high Squeeze + Horigh Freq Vibro = urgent, Shake, trem ble

Alex Mazursky, Haptics Researcher The University of Chicago

Title Well-being Warables

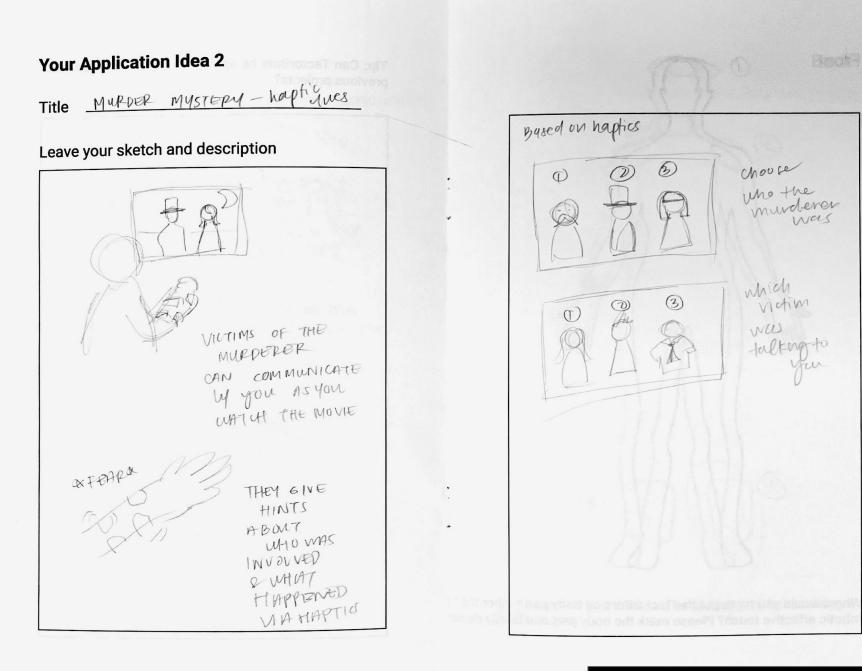
Leave your sketch and description

Existing health trackers are not companions. But, mybe you'd feel more accountable to an emotional agent than an app or smartmatch Physic monitoring IF HR / branthing too high, gives soothing stroke or a gqueeze for you to sync w/ and slow down

* from factor can be personalized / discret

I.T Instrument sensors on all consumables Percokies 20 + fruit HERCITEM had 7 today already! Habits 899 - Pill bottle As walk by, watch neminds with a tap, rewards habit w/ put.

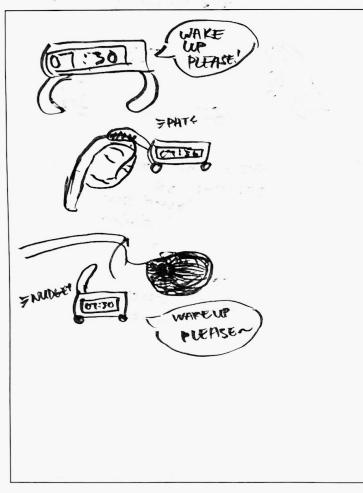
Alex Mazursky, Haptics Researcher The University of Chicago



Jasmine Lu, Haptics Researcher The University of Chicago

Title ALARM CLOCK-ENOTIONAL TOUCH

Leave your sketch and description





Jasmine Lu, Haptics Researcher The University of Chicago

Title: Emotional touch from people in the past

Leave your sketch and description:

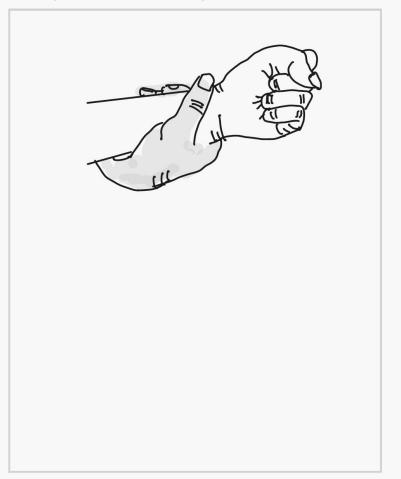


I am tuying to church if when is emotional -couch is most nearlal. when a porson is possed, there is no alternative way to re-experience environal interaction with that person. Using tarctor bot to deliver emotionf touch from people in the past could help them remember.

Yujie Tao, Haptics Researcher The University of Chicago

Human-robot integration Title:

Leave your sketch and description:



affective vobot integrated with one's body + with a humanoid appearance.

wonder how the emotional touch would be perceived different from touch of an external entity

> **Yujie Tao**, Haptics Researcher The University of Chicago

Title Provas Nadge Tacta Bats

Leave your sketch and description

Mony modge is one of the most winder-adopt pring & secondy beating actoss patile and web ripp trations. His even, the effectivess of its communication has somained a long standing publing. So, I ated myself what of Trido Bits and modye a user with huptics.

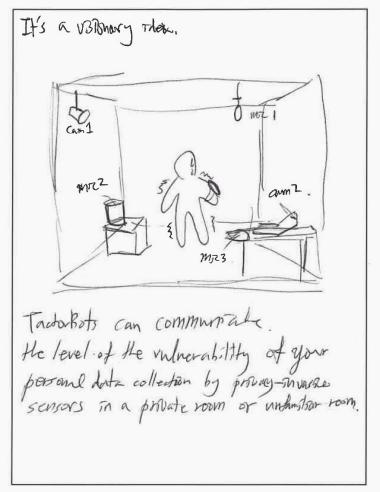
Tip: Can TactorBots be applied to any of your current or previous projects?

Webcan cove Webcam cover users forget to cover their webcan often after their video calls. The Tactor Bots Leadback provides mudge to remaind a user of coversy their whear smost Similarly. if a user boyets to press a mute better Prestar Bots can provide nudge to communicate that a smart speaker is not mutical when anser is portical if a sympat graker is listenily to them.

Youngwook Do, Cybersecurity Researcher Georgia Institute of Technology

Title Vulnerability Communication

Leave your sketch and description



So. If there are non proving-onvaran sensors mother a room, Tudor Boto communicate how may sorsois are deployed around thereon. It could provide a creep hyper fieldout a that a user can feel how vulnable that data is made the room. the room. However, how to defect where sensors are placed os and of this schois scope.

Youngwook Do, Cybersecurity Researcher Georgia Institute of Technology

Title <u>Choreography</u> Tactilizer

Leave your sketch and description

N J J J J (tow) f & Chold/rolid) A JA JA Cpulse).

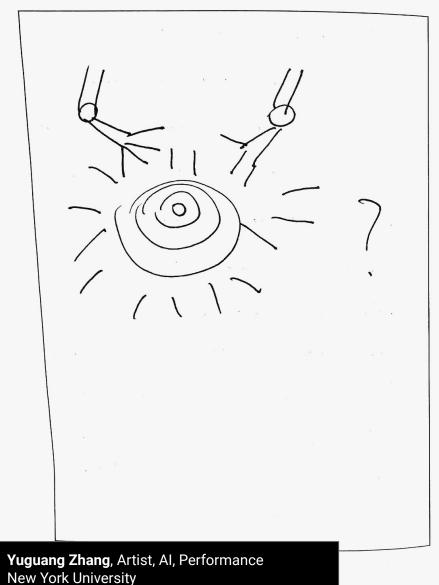
Tip: Can TactorBots be applied to any of your current or previous projects?

In a previous collaborative project I worked on, I was try to visualize the quality of a dance piece in terms of the quality of morements using different visual ones / patterns /textures lete. But for some movements, it's very hard to visualize because the drawings are "flat" and fack "mass". Tactor Bots nould be a wonderful tool to tactilize specific textures, le.g. imagine your arms are flow-ey silk), status (hold your body (ike a rock), and momentum (more like a lightering / pulsing hearn).

Yuguang Zhang, Artist, Al, Performance New York University

Traditions Remake Title

Leave your sketch and description



that summon an ancient spinit, we use nour two hands, draw patterns on sth. like sand, and me cast spells. But for emotional robots, with with their own haptic language, what is their equivalent of that? If they are more sensitive to another physical property, will they do sty else? I am super socurious about this.

Another tantasy project that

I've been thinking of, is to recreate

some of our traditional practice via

emotional robots. It's based on an

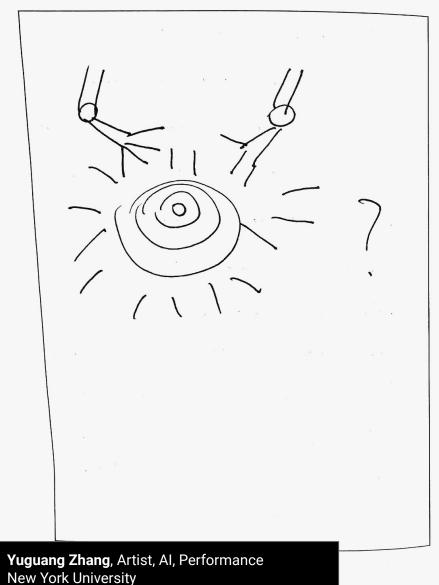
assumption that a lot of design ne

make are derived for from our physical

structure, so, to carry out a ceremony

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