

Robotics Reading Group

@ Instituto Superior Técnico

Session #10

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Destruction, Catharsis, Emotional Release in Human-Robot Interaction

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Transactions on Human-Robot Interaction (2020)

[LINK to the paper](#)

utilitarian
vs.
non-utilitarian

utilitarian
vs.
non-utilitarian

concrete goals

performance metrics

concrete tasks

associated gain (e.g.,
capital)

utilitarian

concrete goals

performance metrics

concrete tasks

associated gain (e.g.,
capital)

VS.

non-utilitarian

shape identities

establish interpersonal
relationships

values

morality

human experience

human-computer interaction

utilitarian
approach of the
computer

user *needs*

*“People use a
computer to
accomplish work.”*

Dix, 2019



human-computer interaction

**utilitarian
approach of the
computer**

user needs

*“People use a
computer to
accomplish work.”*

Dix, 2019



**NON-utilitarian
approach of the
computer**

user values

*Computer as knowledge,
culture, related with the
human experience.*

Rogers, 2012

DESTRUCTION

“Action performed on an object to transform to its useless fragments by rendering, burning, or dissolving it.”

DESTRUCTION



tearing a
Letter
(photo)
apart



smashing
ceramics

sand
mandalas



DESTRUCTION

...as relationship,

...as a space for

CREATION

destruction

*negative and destructive behaviors
that can have an impact on human
well being if engaged in a correct way.*

destruction

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well being if engaged in a correct way.*

catharsis

*act of releasing tension, with impact
on well-being, as opposed to “bottling
it all up inside”.*

destruction

negative and destructive behaviors that can have an impact on human well being if engaged in a correct way.

catharsis

act of releasing tension, with impact on well-being, as opposed to “bottling it all up inside”.

emotional support

emotional support felt during destructive actions that can assist to explore other parts of the current problem, e.g., when angry is no longer there people can finally feel sad.

***“technology as a way to
deal with
destructive behavior.”***

goal

1. explore *alternative forms of interaction* in HRI.
2. Inspire the discourse in the community about boundaries of *using robots as non-utilitarian objects*.

methods

brainstorming, sketching, ideating

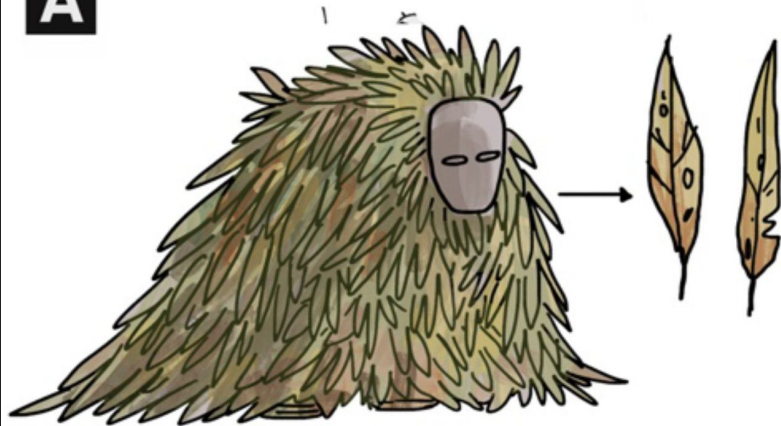
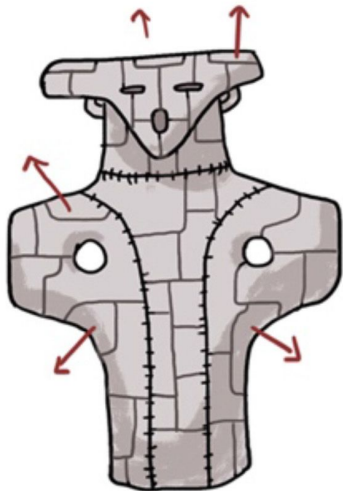
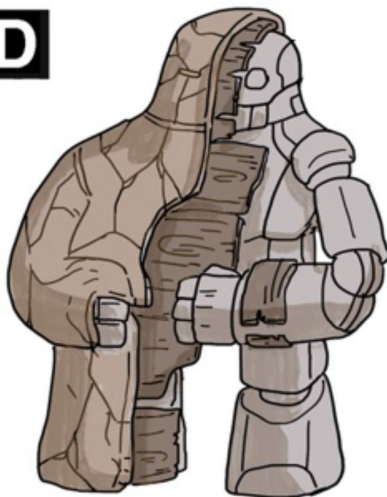
research through design

what can we learn *in the process* of designing something.

speculative design

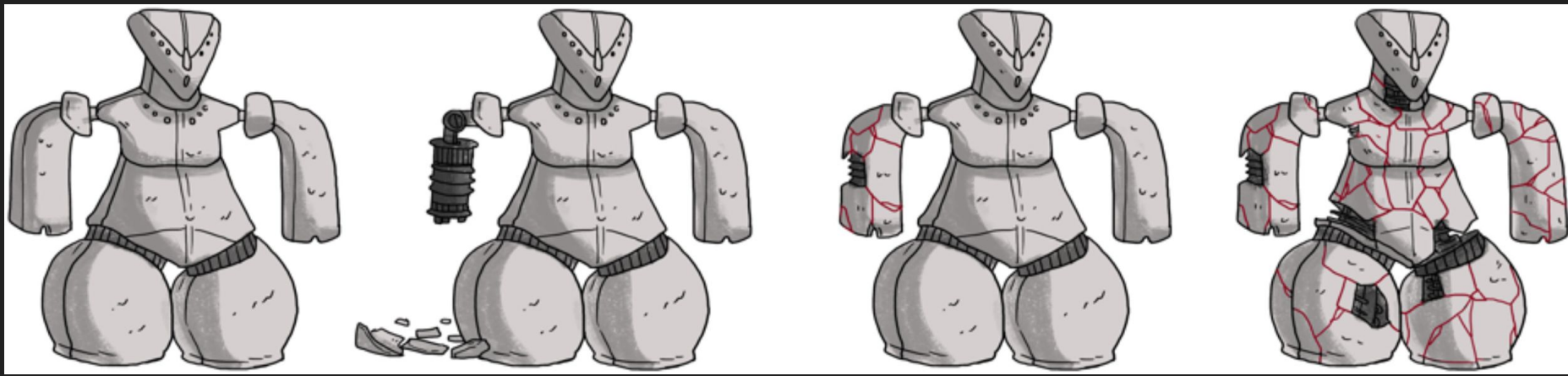
usage of provocative fictions to speculate how things could be to understand the present and discuss the desired future.

destruction

A**B****C****D**

robots that are destroyed over time but create something new: a new form, a new personality or a new functionality.

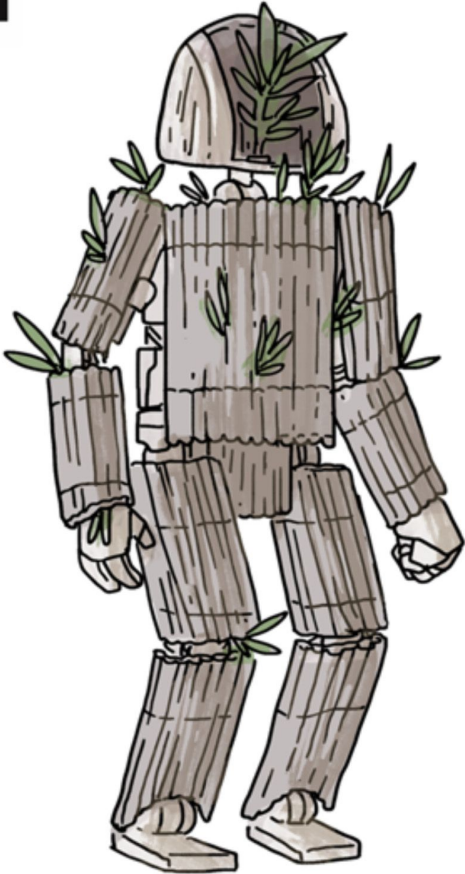
uncovering layers



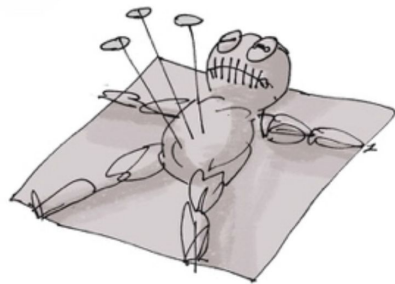
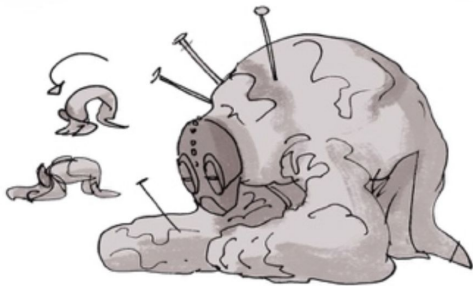
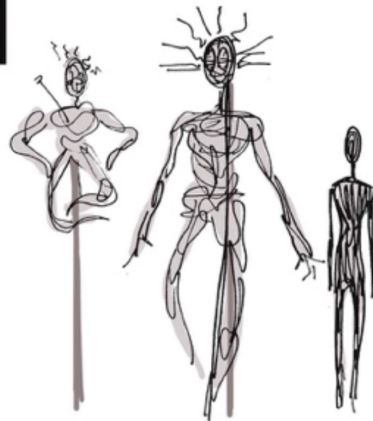
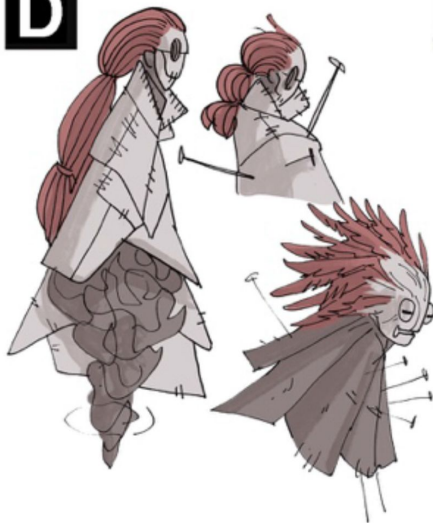
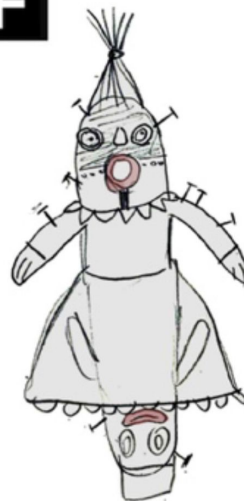
behavior change: A robot that breaks as a response to a negative behavior.

the robot breaks as a response to bullying behaviors, to incite new and more positive behaviors.

catharsis

A**B****C**

robot can grow weeds over time, in a process that symbolizes growth but also changes the function of the robot.

A**B****C****D****E****F**

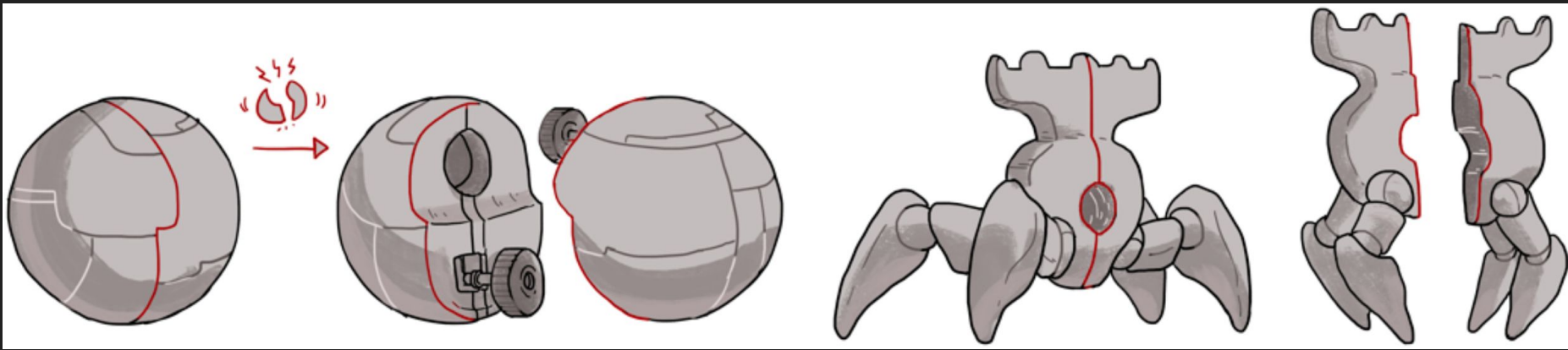
robots can be interacted with through nail insertion.

react to input by contracting their body.

moving Their garment to expose hidden layers.

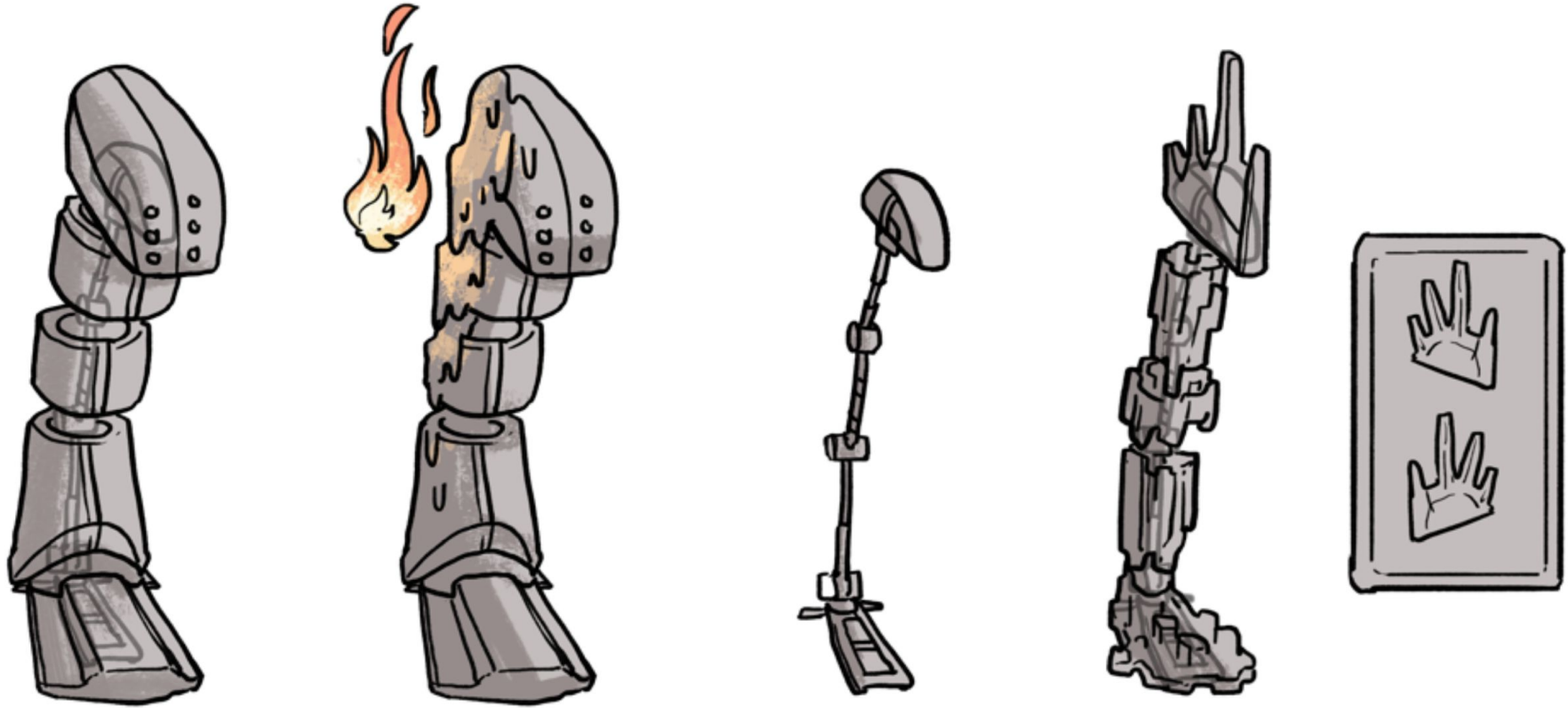
alternating between personalities.

emotional support

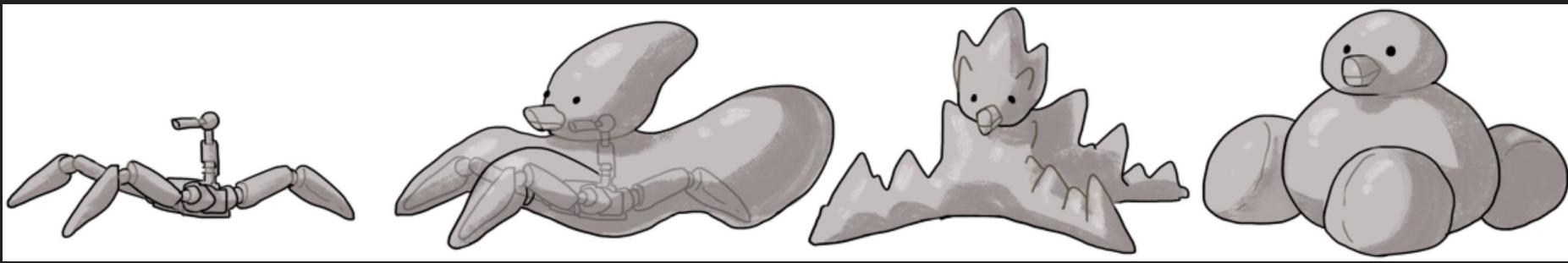


a robot could break into parts to
symbolize the longing for the other half,
but remain functional without it.

long distance relationships.



a robot designed from material that can be destroyed and reformed as something new as a way to reflect the user's emotional state.



a robotic transitional object can be designed as a soft, malleable artifact. using subtle movement reactions as feedback, it can allow children to project themselves onto the robot.

communicate warmth and support.

human-robot interaction scenarios

A

The robot is used to set a particular goal, for example, to exercise more frequently.



Every time the user exercises, the robot grows weeds.



The more the user exercises, the more weeds the robot grows.

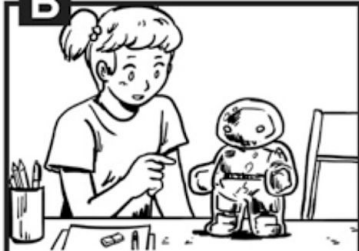


However, as it develops, it also becomes harder for the robot to move and interact with the user.

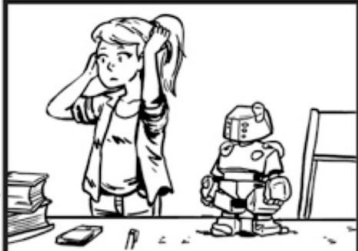


When the robot is overpowered by the weeds, it symbolizes the user's success, but also signals it is time to let go of the robot.

- Robot set with a goal of physical training
- If the user develops towards the goal, the robot grows nature
- The robot loses its function over time
- Independence of the user coupled with robot destruction

B

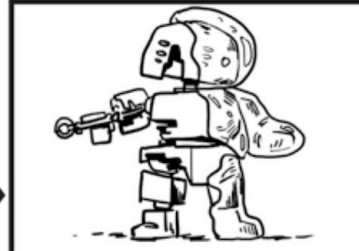
A teenager receives a social robot as a personal technological device.



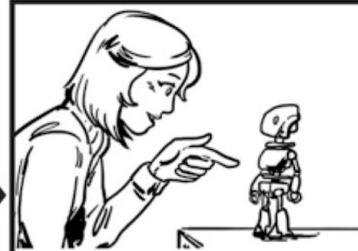
As the teenager grows and changes over the years, the robot also starts to expose hidden layers



And gradually evolves into new forms.



The robot's inner layers communicate the technology is also changing and adapting to the user



generating long-term interaction and supporting the teenager's trajectory to adulthood.

- Teenager grows over time
- Robot is made of layers that can be changeable and accompy the teenahers growth
- Long term interactions

C

The robot is located in a home, and is capable of sensing interactions.



When people interact aggressively, the robot gradually cracks.



Little by little, the robot falls apart as a result of people's aggressive behavior.



The robot's form reflects the relationships in the home, and symbolizes difficult interactions that cannot be undone.

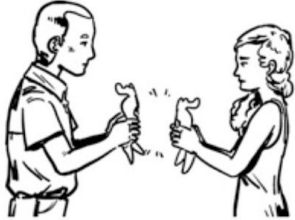


However, the robot can also encourage family members to gather and fix the robot, generating something new.

robot's physical reaction can also
symbolically reflect on relationships

D

The robot is designed to accommodate relationships.



The robot can be broken into parts when the users are away from each other



and serve the users individually, as well as symbolize the relationship using a physical object.



When the users reunite, the robot can be reconstructed.



If the relationship ends, each can have a piece of the mutual robot that will continue to work and adapt to the new situation.

supporting distance and closure

E



The robot is designed as a transitional object for children.



Like with transitional objects, the child can project their feelings onto the robot by manipulating it in various ways



without the robot limiting them to a particular interaction.



Just like other transitional objects, the robot can absorb the child's aggressive emotions



but it is also capable of supporting cuddling behavior by subtle reaction of wrapping around the child's touch.

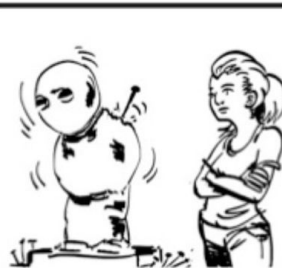
the robot is shaped according to the child's manipulations (showing their emotional state), but also support their emotional expression

F

The robot is located in a public space.



When needed, it is used as a tool for emotional release



and the robot reacts in expressive gestures.



Different nails can represent different emotions.



This process can be repeated with multiple participants to portray the collective affect.

collective display of emotional release

conclusion

- discussions about possible futures, and the current present
- what are the values behind your work (besides utilitarian values?)
- how can we design for the full human experience (including negative emotions)?

thank you.