Empower women by educating men

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Purpose

Sustainable Development Goal 5: Achieve gender equality and empower all women and girls

In regards to the SDG 5, we want to take the reoccurring event of sexual violence in various situations as a starting point of our research and find an approach on how to spread awareness in order to achieve change. Instead of teaching inferior/victims about how to avoid certain situations, we want to use the power of education and VR to enlighten the superior/rapist about this happening and give an insight into the other person's perspective. Addressing the topic of sexual violence requires cooperation from diverse sectors and starts by all means with the strong fundamental of masculinity. Backed up by this perception are various traditions and educations that teach children the wrong values and completely ignore the fundamental concept of gender equality.

Methods

We aim to use the power of VR to hack/manipulate the user's brain and to seek change in deep-rooted beliefs. We must communicate this hacking with the community and users, being fully transparent about our doing, as we do not aim to use it for social manipulation. If this is what we would aim for, it would mean we would agree to manipulation overall - *who has then the power to distinguish between good and evil?* In doing so, evoking empathy is a key player within the experience, whereas we need to differentiate between empathy and compassion as empathic distress can be dangerous to the user and put the user in a place where inner shock overrules action, which is precisely what we need to avoid. Instead, we want to evoke compassion and give guidance to users after taking the experience and debrief on what they saw. Currently, a lot of experiences are designed to solely shock users and leave them without any further guidance on how to cope with the material they consumed. *Could this be seen as another form of torture?*

Limitations and Remarks:

It has to be highlighted that sexual violence happens not only against women but as well against men, including children of both genders. In this paper and the accompanied VR experience, we will focus on sexual violence against girls and women as the numbers are significantly higher. Recent data from 106 countries show that 18% of ever-partnered women and girls aged between 15 and 49 have experienced physical and/or sexual partner violence in the previous 12 months. The prevalence is highest in the least developed countries, at 24%. In addition to that, measured in 51 countries, only 57% of women aged between 15 and 49 make their own decisions about sexual relations and the use of contraception. On top of that, for multiple young women, their first sexual intercourse is forced - with, for example, about 30% in rural Bangladesh ("United Nations: Gender equality and women's empowerment", 2019).

Abstract:

In recent years women's empowerment movement has gained more recognition. While in some countries, equality and acknowledgment of gender roles seem to improve, other countries' activities shock the world and question humanity. Recent happenings in India, where women have been raped and brutally set on fire in order to suppress their right of testifying against their rapists, seem to be in urgent need of change. To better understand the challenge and aim of this paper, we will define in the first abstract the words empowerment and sexual abuse followed by how we aim to reach/convince communities to take the VR experience. The second abstract concerns the user experience and lastly, we will discuss the scientific, technological and cultural aspect framing the experience.

**Keywords**: sexual violence - empowerment - compassion - virtual reality

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1. Introduction

1.1 Empowerment and Sexual Violence

When talking about empowerment, we also need to take into consideration the word power. Power is generally defined in relation to obedience, or 'power over' since some people are seen to have control or influence over others. Liz Kelly (1992) states the following: "I suspect it is 'power to' that the term 'Empowerment' refers to, and it is achieved by increasing one's ability to resist and challenge 'power over'". From a feminist perspective, interpreting 'power over' entails understanding the dynamics of oppression and internalized oppression. Empowerment is thus more than simply opening up access to decision-making; it must also include the processes that lead people to perceive themselves as able and entitled to occupy that decision-making space, and so overlaps with the other categories of 'power over' and 'power from within.' To successfully empower people, the methodology cannot be top-down or imposed by outsiders. Whereas external interventions and partners can encourage and give support to people, the real empowering has to come from within or likeminded (Rowlands, 1995).

Obedience

Power Over

Power To

Empowerment
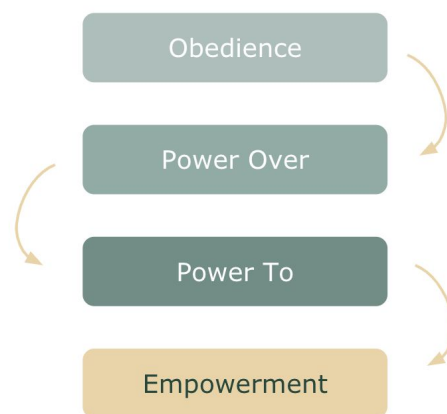
When defining sexual violence, the World Health Organization (WHO) defines it as the following: 'Any sexual act, attempt to obtain a sexual act, unwanted sexual comments or advances, or acts to traffic or otherwise directed against a person's sexuality using coercion, by any person regardless of their relationship to the victim, in any setting, including but not limited to home and work'. Sexual violence can take place anywhere and is more common in countries where society has constructed this mindset of women being worth less than men. With this conflict in place, we not only need to convey the message of the wrongdoing of sexual abuse but as well as tackle the concept of gender equality. Only if this is achieved in the mindset of the

user, chances of understanding and feel compassion with the victim are higher. ("Violence against women", 2019)

1.2 Distribution

Any change must always begin at a very young age. So we would like to suggest 2 key communities where we can introduce the VR experience, which acts as a primary learning experience.

1.2.1 Schools

Virtual Reality acts as a great learning experience platform that provides immersion and can help children to explore the environment thoroughly. It helps them to get more inspired, which can add an enormous depth to their learning curve. It can help them to develop compassion and tolerance. Through our virtual experience, we would like to bring closer to them that getting sexually abused or abusing others is not right. We want to break any misconceptions in the young minds about consent, sexual abuse and ensure that they feel safe to reach out for help if it has already happened to them.

1.2.2 Prisons- Juvenile Detention Centre

The convicts who had committed such a crime and are serving their sentences in jail should experience this installation as part of their therapy. They must undergo and relive what they had done to the victims and put themselves in the victim's body. They should understand clearly what they have been charged for and should, as part of their therapy, realize what was wrong in their doping to avoid doing it again. This is most useful at the Juvenile Detention Centre since, after reprimanding until a certain age, they are let out. By introducing this immersive VR experience to them, it would be an excellent therapy for them, which educates them better about equality and sexual abuse before they are let free again.

1.2.3 Strong Beliefs of Women being worth less than Men

- It is common for society to think that women must be submissive to the male family members in all aspects of her life
- Men are expected to exercise power and control all the time
- They always think that women are just born to give sex and provide a family
- Sexual harassment is being normalized
- Women experience violence or harassment since they dress "proactively"
- Women are treated as wives and not as individuals
- Divorced women and widows are treated with less value

1.3 Embodiment

The word embodiment is defined as the sense of having a body. Which is the result of a mental construction of perception, proprioception, interoception, motor control, etc. In virtual reality, an embodiment allows a user to replace one's body with a virtual body - to feel embodied in a virtual body. In a recent paper published in Frontiers, it was stated that "One of the main goals in the field of cognitive neuroscience is to investigate how we experience ourselves inside a body as it interacts continuously with the environment" (Matamala-Gomez, 2019). *The question that arises here is how attached are humans to their physical bodies and what role does the body play in defining oneself?*

The concept of embodiment has been integrated into various virtual installations to evoke real feelings and can transform preconceptions by informing users. In order to achieve full immersion while embodiment takes place, a user's senses should be taken into consideration. The stronger those senses can be connected in the physical and virtual world, the stronger an embodied transformation can take place. *We are raising the question of whether it is possible to experience the same sensations in a virtual body compared to the biological body? And if so, to what extent is it possible?*

1.4 Compassion

Many enthusiasts of virtual reality view the immersive technology as "the ultimate empathy machine" that can help people relate to each other better than novels, TV shows, or films can. Jeremy Bailenson, a professor of communication at Stanford University, stated: "Experiences are what define us as humans, so it's not surprising that an intense experience in VR is more impactful than imagining something". But there is little research examining how exactly this emerging technology can alter people's attitudes. "We tend to think of empathy as something you either have or don't have," said Zaki, an assistant professor of psychology. "But lots of studies have demonstrated that empathy isn't just a trait. It's something you can work on and turn up or down in different situations" ("Virtual reality can help make people more compassionate compared to other media", 2019).

Once users have taken our experience, we believe it is crucial to have a debrief session about what they have witnessed. During this debrief, we want to dive deeper into how users felt and confront them with related questions concerning the experience. E.g.
- How did you feel during the experience, and how much discomfort did you feel?
- How do you feel coming out of this immersion?
- What changes would you like to make to yourself?
- How would you react if you are in this situation?

2. Lived Experience

Who: Students / Prisoners
Where: Delhi, India
When: Present time
Duration: 12-15 min

In our installation the user will experience two key situations where sexual harassment takes place.

1. **Home** - the place where anybody should feel safe. It should provide shelter and also provide trust amongst the people one is living with. Unfortunately, there have been multiple incidents and situations where people did not feel safe anymore at home. The most dangerous aspect in this scenery is that there is no one near to witness sexual harassment and therefore a call for help can be a hopeless situation.

2. **Streets** - If a person wants to go somewhere, he/she needs to go out on the streets. In multiple countries, being out on the street alone is considered as unsafe. There have been various incidents in the past where victims have been sexually assaulted while being on the open road. These assaults affect the victim mentally, emotionally as well as physically.

2.1 Starting Scene

It seems like a perfect day. The birds are chirping. The sun is shining brightly and luckily, it's a great hair day for her. She has all the confidence and is ready to present her pitch in the company. She gets dressed in full formals, a white shirt with a grey suit to follow. Her mother calls her to come downstairs for breakfast. She is the happiest and strongest woman.

2.2 Second Scene

She goes down into the kitchen. Her stepfather sees her and greets her with open arms. But she doesn't like the way he treats her. So she tries to avoid him. But he seems like a person

who does not take no for an answer. He starts staring at her, looking at her as though he is going to kill her with his stare. She tries to turn back, avoid him slowly thinking of eating her breakfast in her room. She takes her plate and attempts to flee upstairs but no, he grabs her by her waist and makes her sit on the chair. She feels so uncomfortable and has all the anger in the world but can not express it. He still wouldn't keep quiet but keeps touching her inappropriately, making her choke into her favorite breakfast. She pushes him with a great force and sprints into the streets.
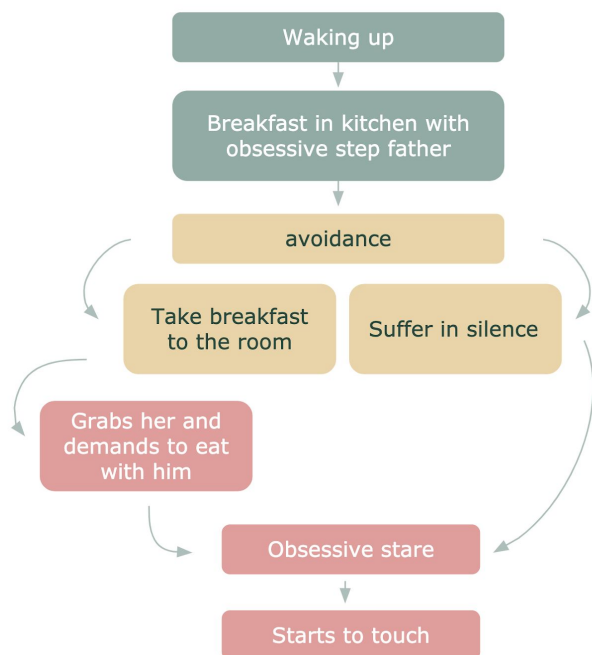

2.3 Third Scene

Finally, she is out of that hell-hole she calls home and now she can finally concentrate on her pitch that she is going to give at the company. She is walking on the street, thinking of grabbing some coffee on the way. She passes by a group of guys on the road. Two of them are smoking, and the other two have a beer in their hands. They see her. One guy just high-five's the other one and goes behind her. He is asking her what kind of a beautiful woman dares to walk alone on a deserted street like this one. He is also a man just like her stepfather who woman's

consent is written on air. He goes behind her calling dirty names after her; now, his "gang" has joined him. They torment her, they try to touch her

She wishes just to die and disappear.
She wishes not to be born as a girl.
NOT IN THIS MAN EATING MAN WORLD.
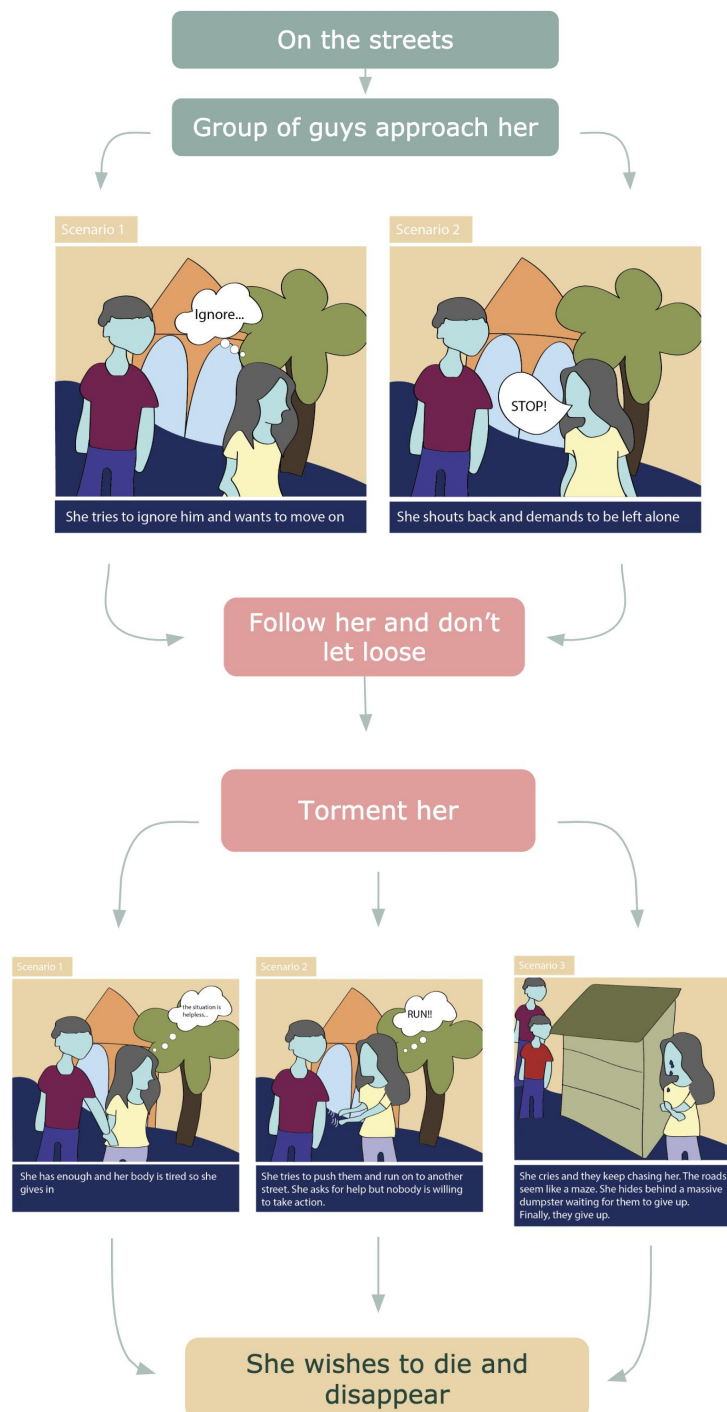
3. State of the Art

3.1 Science - Technology - Culture

3.1.1 Science

Avatars as a representation of the user

In our experience, the main character/avatar acts as a representation of oneself being inside of a virtual environment where their physical body cannot travel. For an avatar to be genuinely immersive, it needs to reflect the user's behaviors in the real world. For example, if the user lifts its right hand, then the avatar should, as well. It would be quite confusing and sickening for the user if they raised their right arm and the avatar lifted their left. Research has shown that the users might not even be aware of the influence of avatars on their subsequent decisions.

Proteus Effect in Virtual Reality

Proteus Effect has had effects on things like stereotypical behaviors inside of virtual reality. Implicit biases exist inside of people regardless of whether they show it or not. These biases and stereotypes can manifest themselves in VR via the phenomenon of the Proteus Effect. It is important to remember that not all of the research done on the Proteus Effect was done explicitly in virtual reality- it has been extended everywhere from video games to experiences like Second Life for quite some time.

An essential next step in Proteus effects research is identifying the optimal and boundary conditions for these effects — the situations in which Proteus-like effects should be more or less likely, depending on, for example, individual differences or the presentation of avatars. Some more research can reduce the negative impact of the Proteus Effects on the avatars and also on the users. ("Virtual self-modeling: The effects of vicarious reinforcement and identification on exercise behaviors", 2020)

Using Electrical Stimulation for Pseudo-Haptic Feedback

We can use the Electrical Stimulation, which stimulates the motor nerves; muscular contractions can be triggered that can be matched to a haptic event. Haptic technology, also known as kinaesthetic communication or 3D touch, refers to any technology that can create an experience of touch by applying forces, vibrations, or motions to the user. Through electrical stimulation, theoretically, every kind of nerve or nerve endings, or receptor can be triggered, depending on the sort of stimulus provided to the user. These stimuli differ in pulse length, frequency, amplitude and triggering mode.

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Prisoners: Facial Opponent

To make it even more realistic or questionable, we thought to add a secondary layer of effect only intended to be used on prisoners taking the experience. To immerse them even more and question their actions, we decided to create a photorealistic face tracked avatar on the harassment avatar. In this way, the user/prisoner would take the experience being embodied in

the women/victim's body and seeing one's face on the harassment avatar. This technology is still in the infant's phase but maybe in the coming years could be so far developed to be used in this situation (UploadVR, 2019).

3.1.2 Technology

For our experience, we decided to work with CGI, 6DOF, to fully immerse the user. We tried some VFX simulations and although the imagery was very realistic, you don't feel fully embodied as the character does not follow your movements. Therefore we choose to work with CGI for this simulation and let the user explore the scenery and decide on which actions to take. The downside of this technology is that we can't control the movements meaning we can't fully predict how the user will react in given situations. Therefore it is essential to program the harasser avatar always to be superior to the primary user.

Taking an example of our user story:
If the character feels uncomfortable sitting in the kitchen being harassed by the stepfather the character can
- give in
- move away but the stepfather avatar will catch up
- run up the stairs the stepfather avatar will follow
- start hitting the stepfather avatar which won't make him stop

The only way out in this situation is to run and flee to the door, leaving the house.

In the following we will define further the difference between CGI and 360 Video.

Computer Generated Imagery (CGI)
CGI is the application of computer graphics to create or contribute to images in art, printed media, video games, films, television programs, shorts, commercials, videos, and simulators. Using CGI animation, instead of still images, adds a whole new level of realism and wonder to a visual.

360 Video
360 and VR were created with the intention that viewers interact with and experience the content, instead of just sitting back to watch. They offer an immersive view that lets each person can choose where to look.

CGI vs 360 Video
The 360-degree videos are the ones that make everything look more real. So if a person is in a 360-degree mode, he looks down he can see himself that is his body in the video. But the position of the person cannot be viewed. So if the stereo is not quite right, the body looks far away. A 3D model based multi-sensory action similar to VR cannot be implemented. It is the same recorded video that can be seen on the stereo. Anything with the movement becomes

very difficult. If a person gets immersed in the video, after finishing that, he might feel he visited a particular place and came back. This happens in the model-based VR. When the brain sees a new avatar but doesn't look like a human, the brain will adapt to it by learning something new. So basically, CGI and the 360 videos are not competitors; they are more like different in their special way. So we need not conclude which one is better (Comparing CGI and 360 Video - The Psychology of VR: the Three Illusions | Coursera. , 2019).

3.1.3 Culture

Some key concerns related to ethics and our installation circulate around VR as torture, VR as social manipulation VR in correlation with privacy statment and the impact of VR on health.

Throughout this paper we indicated some stream of thought that come to mind when thinking about realising this concept (italic parts throughout the text), here we will list them all together:

VR as torture
Putting people through such an impactful experience without physically inflicting harm on the user can still be viewed as very immoral. It could be used as an alternative to torture, especially if the experience is forced on people. If this experience is realized, it can't be available for public use but is only intended to be used by teachers or psychologists who need to go through a process requesting license permission and be able to guide the user, especially after taking the experience. There are still possibilities of getting the installation spread beyond those users. In this case, the question occurs of who is responsible for controlling or stopping this and who will be legally accountable if the experience is misused or in the wrong way?

VR and privacy statement
As we are planning on working with schools, and therefore teenagers, we need to get consent from parents first to expose their children to such an environment. We are not planning on getting any personal information from them and the experience can stay anonymous. Only the location will be recorded.

VR as social manipulation
As indicated in the beginning of the paper, we need to be fully transparent about our doings. We must communicate our hacking/manipulation with the user and explain in detail what they are about to witness. Otherwise we could we could be held responsible for social manipulation.

Impact on health
It is still unclear what impact virtual reality technologies have in the foreseeable future. Especially if we design the experience to be used by teenagers - how can we ensure that we don't cause them any long-term damage? What if children are traumatized by what they are seeing/experiencing? Currently, there is a lack of information on the short- and long-term physiological impacts of VR (Kenwright, 2019).

3.2 Sources of Inspiration

As a backbone to our User experience we have analyzed several other installations that act as a source of inspiration due to its concept idea and way of execution which we will discuss more in depth in the following part.

3.2.1 The Machine to be Another - Gender Swap (BeAnotherLab)

This experiment allows two users to swap their bodies and change perspectives to promote mutual respect and gender violence. Gender Swap is an embodiment experience to create a brain illusion to make the users feel like they are inside another body.

How it works
In order to create this brain illusion, each participant is outfitted with an Oculus Rift headset. A first-person camera is attached to the headset to capture the users' perspective. Instead of seeing your own body and movements, the video streams from the first-person camera are connected to the other person rigs in real-time. They continuously need to agree and mimic each other's movements, wordlessly - dictating the action in tandem. Philippe Bertrand, a co-founder of the group, states, "Deep inside, you know it's not your body, but you feel like it is."
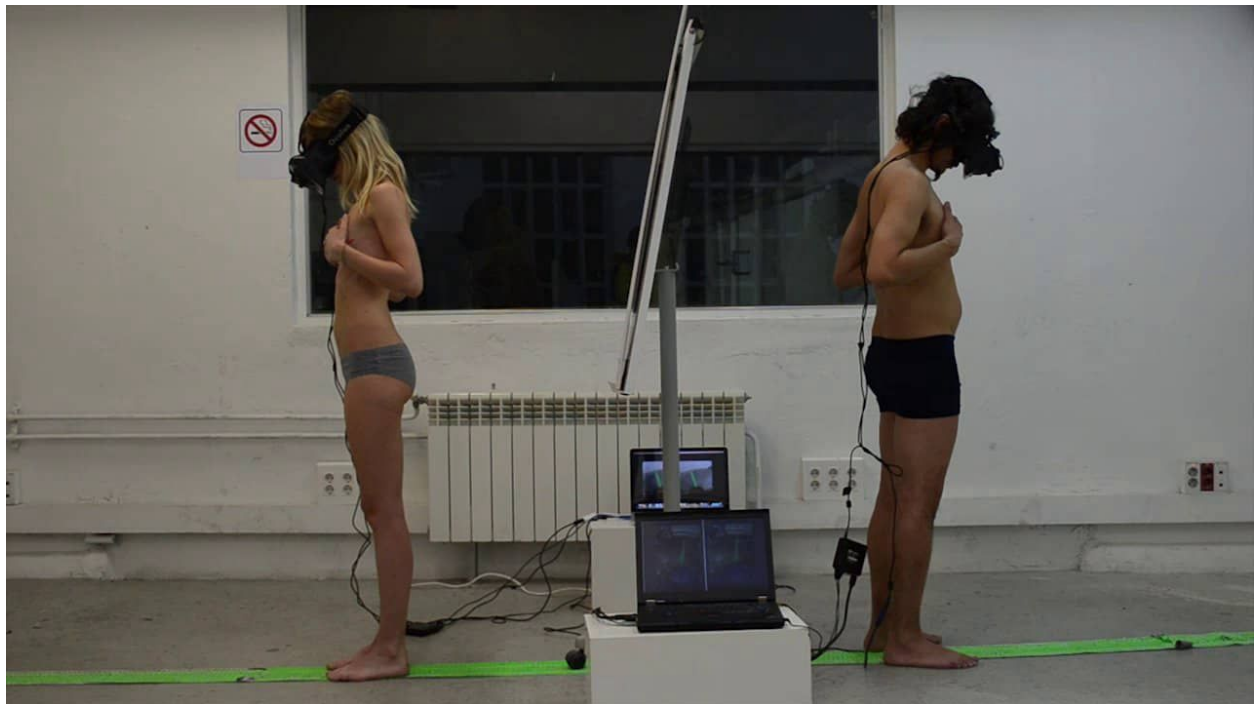
3.2.2 Mirror-touch, (Lara Maister [Michael Banissy](#) and [Manos Tsakiris](#)a)

Individuals with Mirror-Touch Synaesthesia (MTS) experience touch on their own bodies when observing another person being touched.

How it works

Lara Maister and her colleagues used the "enfacement" illusion, in which a person watches a two-minute video of a face being stroked with a cotton bud, while at the same time their own face is stroked in synchrony. People who experience this illusion tend to rate the face in the video as being more similar to their own, and, if they see the face cut, they show a physiological stress reaction as if the wound was theirs.
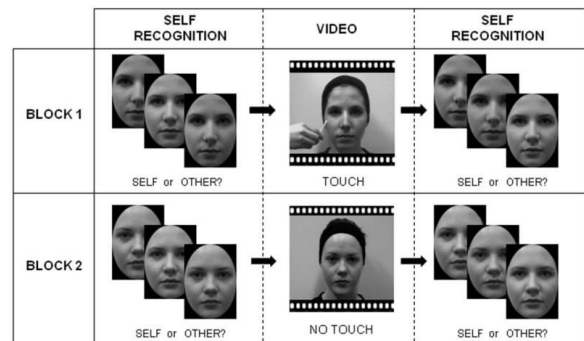
The key finding was that the participants were significantly better at recognising the facial expression of fear after they'd experienced the enfacement illusion for the face showing the fear. Simply watching a two-minute video of the person displaying fear didn't lead to this subsequent performance boost, neither did a "sham" version of the illusion in which the stroking of the model's and participant's face is out of synch. Another detail - the genuine version of the illusion led to enhancement of fear recognition only, with no effect on recognising happiness and disgust ("Embodying another person's face makes it easier to recognise their fear", 2019).

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