

BCI's Impact on User Agency: Mapping the Terrain

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- Neuroethical literature is replete with examples of concerns expressed by end users about their agentic capacities [1], [2], [3], [4]

- We developed a conceptual framework [5] that shows how those dimensions of agency are integrated in a single user experience of neurotechnology



- To supplement and inform that model, we conducted interviews with end users participating in BCI research

- Here, we want to share some of those gathered experiences on the effects of neural devices

Authenticity and Continuity

Novel experiences after increase of stimulation

“...after three months he turned it up a lot. ... and I said the best way I could describe it as I felt like an angel was ripping out... not ripping out. Was taking my soul out. And I didn't know if I was going somewhere good or bad. That's the... It was the weirdest experience I've ever felt.”

Adjusting to the stimulation

“You don't feel euphoric all the time. When you first tune it up, when you make that tuning, you feel really good sometimes. [...] But then you adjust to it and want to get to a place where you feel content. [...] And believe it or not, we're still even in the process.”

Feeling human again

“I felt light. It's like, I don't know how to describe it. It's just crazy. I feel like a human, before I wasn't... I didn't feel like a human before.”

Trust and Sensory Feedback

Sensory experiences during stimulation

“Sometimes my hand just tingles and I'd be like, I didn't know if that was something they did or if it was just a random tingle on my hand.”

Getting accustomed to the sensory feedback

“...both parts have just completely become second nature at this point ...but like for the sensory, the first time I felt something it was wow, did that really just happen? ...I knew how it would work but actually feeling it was a different realization in my mind...”

Human Machine Interaction

“...you get into this Zen mindstate zone thing where I'm not really even consciously thinking about making the movements with my right arm. I'm thinking about moving the robot arm, which is kind of the same but not the same.”

Privacy and Negotiated Access

Who has access to data

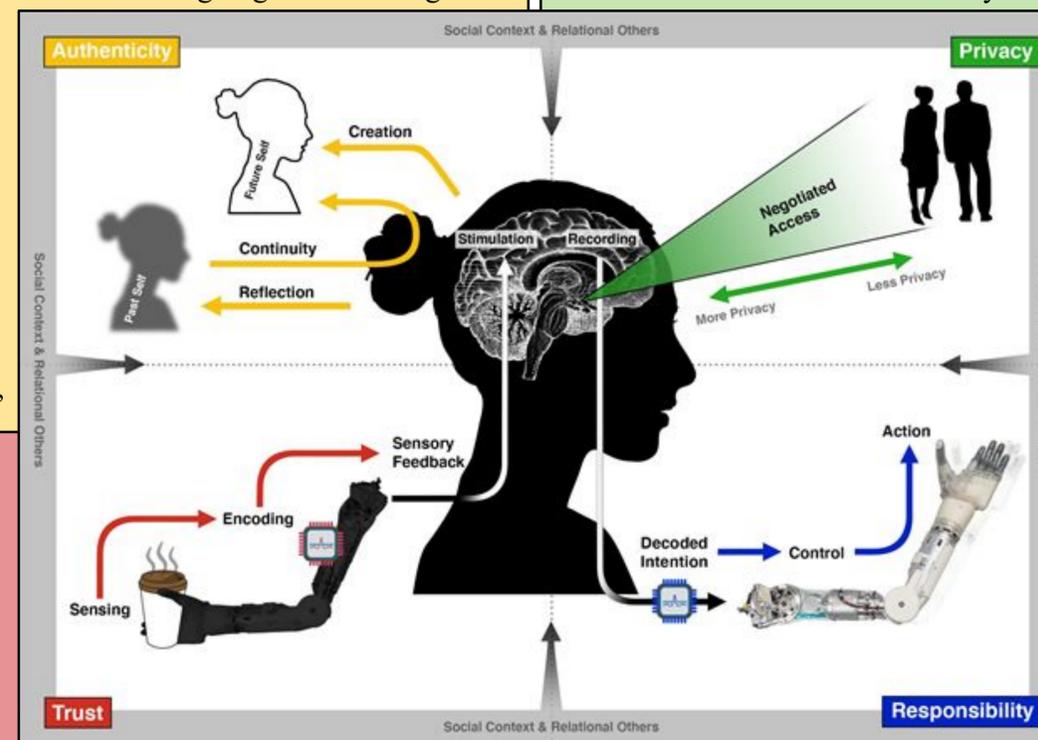
“It's been very nice to be able to actually see the objective data. It would be amazing if we could have access to that ... here at home instead of every three months when we go see the neurologist to change the setting.”

Recording/sharing sensitive information with others

“I wouldn't want anyone to know my feeling when I see my husband, or go to bed with him or see my doctor, or any of those things”

Having control over collected data

“I would want the ability, just like my Google search history or my browsing history to delete it [stored information] at my own choosing”



Responsibility and Control

Successful control of the device

“When they hooked up the computer to my brain, it was actually rather intuitive.... Everybody was excited because the level of control that I had.”

Unsuccessful control of the device

“Other times, the computer is not in sync with me and we have to retrain in order to get it as close to being in sync as possible. When it's not in sync with me, that's why I feel like I'm struggling, it's frustrating. I just want to move.”

Uncertainty of control over the device

“There is a force that I feel that I'm wrestling against. Sometimes it's not as strong. Other times it's overwhelming to where I can't push against it. In fact, it pushes me.”

References

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