The Reflection Chair: A therapeutic tool that "has your back" when revisiting the trauma-journey in mental healthcare

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In the built environment in mental healthcare, a therapeutic intervention will typically involve a discussion between participant and therapist, in a traditional room or inpatient ward, containing some form of seating and a table. After the session, the person leaves. Data gathered from a previous study with experts who had lived experience of trauma, suggested that people attending 1-1 therapy sessions would value space to reflect on their journey, in a safe and trusted setting. In response, we offer The Reflection Chair as an explorative concept, where participants leave therapy with an understanding that the space they have visited "has their back". We are proposing this novel item as an interactive device where the itself becomes part of the therapeutic process.

I. Introduction / Background

A typical therapeutic intervention in mental healthcare will involve a 1-1 discussion in a room containing seating and a table. This restricts any involvement of the body during the session where, from a viewpoint of engaging with people who have experienced trauma, this is essential. Evidence from our previous research highlights that trauma can become physically locked and where individuals with lived experience might already sense a distrust or hypervigilance, reassurance and calm is required as support. Adding to this, where the person attending therapy typically leaves the room following their session, The Reflection Chair has potential in offering a way to interactively engage with a process of sense-making, as an interface with component ability to connect to the room itself.

As the current project has journeyed through iterative design stages, this involved sourcing an Industrial Designer to create CAD-style drawings; also exploring ways to fund the project and purchase items to create the chair. This led to receiving basic funding buying a gaming chair and approaching a local college's Engineering Department who will work in future on a skeletal frame as a lo-fi prototype. The intention for the end product is an engineered chair formed initially from moulded plastic or steel bar. As an innovative therapeutic tool the aim is to offer a safe and comforting space for individuals to process their experiences. We want to integrate advanced technology to offer a blend of electronic components, where guided-meditations, nature sounds or personalized messages could work in synergy to create a healing setting. We also consider leveraging artificial intelligence (AI) hardwiring the chair to communicate directly with the room it is situated in, to shift ambiance as stress levels of the user are detected.

II. Related Work

Personal space prioritizing privacy and control of the environment are vital to mental healthcare facilities, yet more evidence based designs are required in this under-researched domain (Rodriguez-Labajoset al, 2024 [3]). A number of literature reviews describe how additions to physical spaces can affect health, with a main focus on in-patient settings (Weber et al., 2022 [4]) where the impact of the built environment on mental health is a neglected area (Liddicoat et al., 2020 [2]). This indicates a shortage of studies exploring how space might appear visually to an end-user; also how they might interact and become involved with the environment as an addition to their therapeutic journey.

III. Existing Prototype Sketches/Drawings/Photos

Preliminary concept artwork

We used Dall-e AI to generate initial ideas.

Figure 1: The Reflection Chair as imagined using Dall-e

Early stage drawings and bio-inspiration

We sourced and worked with an Industrial Designer, talking a lot about the therapeutic journey through trauma and the way it impacts. We discussed the influences of nature as part of the healing process. This led to a series of sketches using software including: Fusion 360; Shap3r; Procreate.

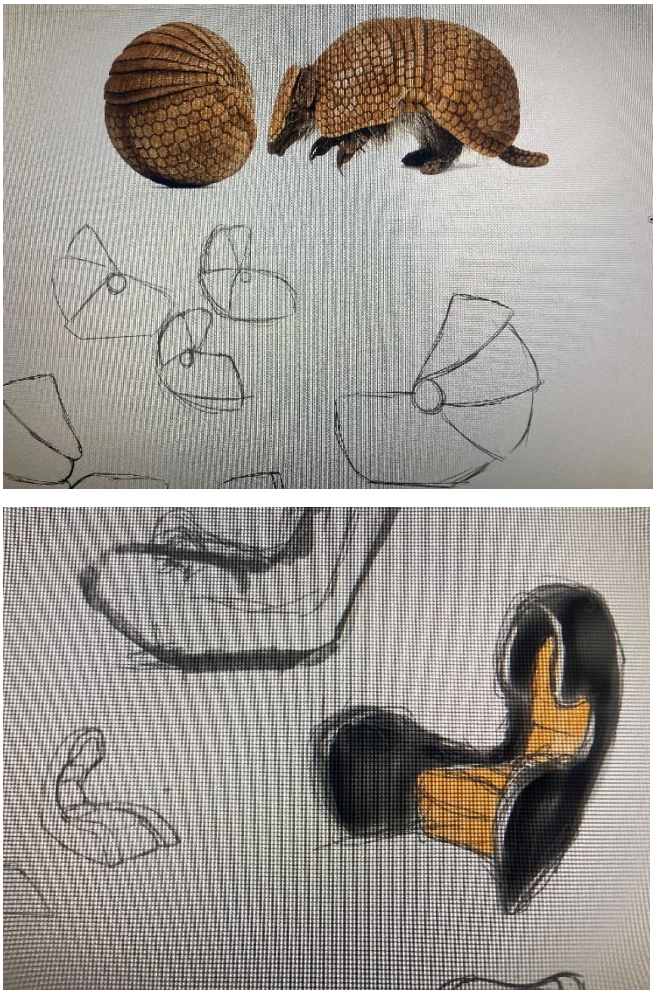

Figure 2-3: Biomimicry influence on the design

Responsible Materials

We visited charity furniture outlets and found a gaming chair. It's solid frame and pre-inbuilt speakers were a perfect start.

Figure 4: Charity shop gaming chair

Experimental electronics

The gaming chair was already fitted with speakers, so we have taken a look to see what we can add to the chair as an interactive, embedded and potentially an immersive experience.

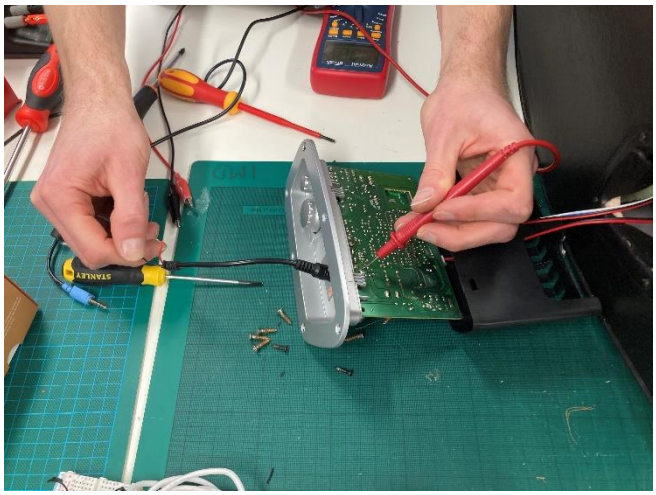

Figure 5-6: Exploring experimental electronic potential

Sourcing Engineering

The task of creating an engineered structure around the gaming chair led to talking to specialist factories and a college.

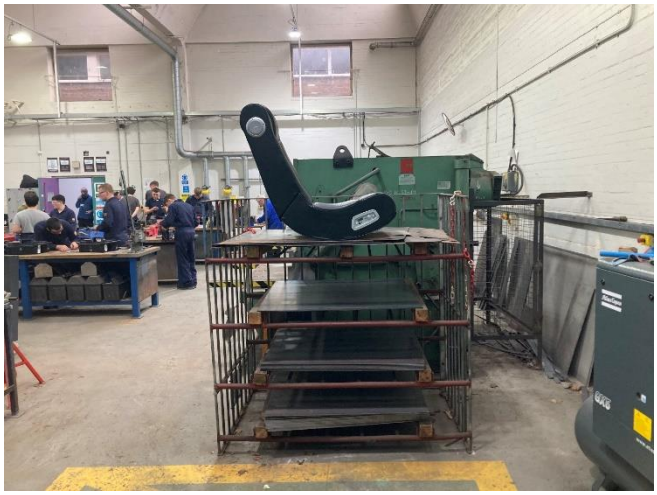

Figure 7: Engineering option

CAD drawings

The work with an industrial designer has led to creating industrial-type CAD imagery. We are now refining these to consider how a more hi-fidelity end product might look.

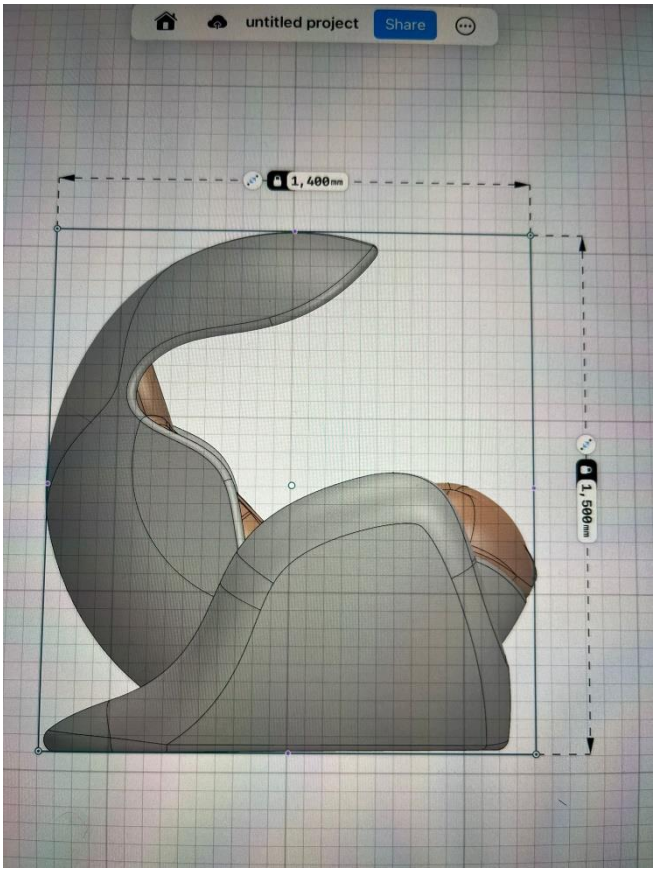

Figure 8-9: CAD imagery

IV. Responsible Innovation

At this early stage, the prototype materials for The Reflection Chair have been responsibly sourced via a charity furniture store. Additional components were purchased through a university supplier that was recommended. As the project develops, we have begun exploring ways the chair itself could be formed of recycled materials and parts. It is anticipated that early stage prototypes will feature responsibly sourced materials. We are also questioning the purpose of the chair and its intended setting, in a context of digital responsibility, eco-design and life-cycle of the product.

The current bought items include: Charity Store Gaming Chair – (£10); Stereo Audio Power Amplifier Board (£3.90); Bluetooth 5.0 Stereo Audio Receiver Module Board (£3.90); 12V 2A AC DC Adapter Power Supply UK Plug Charger (£6.90); 300W 9A Step Down Buck Converter 5-40V To 1.2-35V Power Supply Module (£5.65); Bose SoundLink Flex Water-resistant Portable Bluetooth Speaker with Built in Speakerphone. (£119.95). We want to now consider how technology can be embedded both within the chair and in ways where the chair itself, or in conjunction with a digital space, could become its own immersive interactive experience. A question we are asking is: Do we require a room at all if we can situate everything within the space of the chair?

V. Author Bio(s) / Experiences

Tor Alexander Bruce

In previous employment I founded a registered charity dedicated to provide opportunities for marginalised young people through arts and environmental-based programmes. My interest in trauma stemmed from this and formed the basis for doctoral research where I received industrial sponsorship to conduct a three year study. In the past five years I have developed four concepts, each intended to engage with trauma. They are: The Timeline; The Intuitive Jacket; The WISE Room; The Reflection Chair - see: Bruce et al. 2022 [1]. During the data collection stage of the main study (The Timeline) which took place in an NHS hospital, participants with lived experience of trauma voiced that some form of seating would be beneficial at the reflection stage of their therapeutic journey. From this point I began developing The Reflection Chair.

VI. Acknowledgements

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VII. References

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