Innovative Forms of Healing: New media art as a catalyst for lasting change in therapeutic settings

Leah Heiss, RMIT University, Melbourne, Australia.

Email: leah.heiss@rmit.edu.au

Abstract

Through this paper I suggest that new media art has the potential to become a catalyst for real and lasting change in therapeutic environments. New media art practice is intrinsically focused on human experience and user engagement. It is this focus that so positively predisposes artists working in this realm to the development of works promoting health and wellbeing. New media artists are well versed in managing the indeterminate boundary between art and other disciplines and can take this experience into the therapeutic context [1] to effectively collaborate with doctors, specialists, patients, scientists and the public to generate powerful artworks.

Keywords: Trans-disciplinary collaboration, empathy, new media art practice, therapeutic environments.

Trans-Disciplinary Collaboration In Therapeutic Environments

New media art practice is trans-disciplinary by nature. It requires the coordination of experts from a variety of fields to bring to life projects that span disciplines and sectors. Thus new media artists are well versed in managing the indeterminate boundary between art and other disciplines. At the core of trans-disciplinary practice is the necessity to speak a range of technical, scientific, medical or design languages. Within the therapeutic context this flexibility has the potential to facilitate powerful work as artists effectively collaborate with doctors, specialists, patients, scientists and the public.

In their article "Mapping the Domains of Media Art Practice" Jacobsen and Søndergaard introduce the idea of transformative creativity and suggest that "art…is practice, the facilitator of movements across domains and the dialogue between different fields of competencies" [2]. The trans-disciplinary experience also has the effect of transforming traditional roles and behaviours, or as Jacobsen and Søndergaard suggest: "The trans-disciplinary paradigm not only transforms the roles and competencies of old domains, but, more importantly, it also challenges the players on the field with new ways of arranging knowledge and creating interfaces with reality" [3].

Within the therapeutic context it is the capacity to move seamlessly across traditional boundaries that enables the new media artist to create powerful works in collaboration with doctors, specialists, patients, scientists and the public. As with any project that moves across disciplinary domains and fields of expertise there is a danger of ending up with a cluster of results, rather than a cohesive outcome. I propose that the role of artist within this context is to provide and coalesce some form of creative vision to drive the project towards a cohesive outcome. As Lindberg et al. suggest "Some form of overarching communication is needed that helps team members in multi-professional projects to develop a mutual understanding in order to integrate what would otherwise remain splinters of knowledge" [4].

Empathy as a fundamental factor in therapeutic art projects

Artists working within therapeutic contexts need to have the ability to communicate across traditional roles in order to bring a project to life. Though, more than just a capacity to effectively communicate the new media artist working within a therapeutic context requires the ability to empathise with a wide range of people. Arguably at the core of any new media art project is the experience of a person (or user) who is interacting with the work. The artist working within a therapeutic context requires the ability to speak a variety of languages and embody the viewpoints of a community of others. This assists when thinking about the human at the end of the making process and allows us to ask questions such as:

- What is the impact of the work on the patient in the emergency waiting room, or who is trying to manage pain – physical or psychological?
- How can this project positively impact on the psychological experience of the patient?

This ability to take on the world-view of the final audience for the artwork is key to new media projects in therapeutic contexts. This empathy enables the artist to understand the project from a range of viewpoints – from the medical, scientific, administrative angles in addition to the embodying the experience of the final user and their family. Lynn Hogard, Denise Kratz and Rainer Schultze suggest that the digital revolution has necessitated new qualities of mind including "a capacity for empathic understanding of the other and the ability to collaborate and communicate across barriers of language and culture" [5].

Empathy is defined as "the ability to imagine oneself in another's place and understand the other's feelings, desires, ideas, and actions" [6], or "mental entering into the feeling or spirit of a person or thing; appreciative perception or understanding" [7]. Natalie Depraz [8] proposes that there are four stages of empathy: firstly, the passive association of my lived body with the lived body of another; secondly, the imaginative transposal of myself to the place of another; thirdly, the interpretation or understanding of myself as another for you; and finally, ethical responsibility for the Other. While working in therapeutic settings the new media artist needs to experience and embody these four stages of empathy.

The first stage refers to the intersubjective recognition of another person as being like us – an embodied subject of experience open to empathy. This first stage has been termed 'coupling' or 'pairing' and serves as a support for other types of empathy. Within Depraz' second stage of empathy (imaginative transposal of oneself to the place of another) we imagine that we are in the place of the other person, experiencing their emotions. This stage suggests a shift from non-conscious bodily recognition to conscious experience in which we imagine ourselves in the others' situation. It is during this second stage that the individual attributes mental and emotional states to the other person and tries to understand their behaviour in light of this knowledge. The third stage of empathy: the interpretation or understanding of myself as an Other for you, allows for the swapping of viewpoints. That is, one does not just imagine oneself in the position of the other but the exchange becomes bi-directional. The final type of empathy deals with the ethics that arise through the experience of empathetically connecting with another. It is during this stage that the individual recognizes the other as deserving respect and concern.

Within the context of working in therapeutic settings these four stages translate to:

1. Subconsciously recognising the existence of the user/patient.
2. Understanding from their point of view what the issue is – for example dealing with anxiety while waiting in A&E; or managing pain during medical procedures.
3. Changing places with the patient and experiencing their pain or discomfort.
4. Acknowledging the patient's need for and right to a solution to this pain/discomfort.

Evan Thompson points out that empathy is an 'intentional' process: "As an intentional capacity, empathy is the basic ability to comprehend another individual's experience, a capacity that underlies all the particular feelings and emotions one can have for another. To exercise this capacity is to engage empathy as an intentional act and an intentional process. As a unique kind of intentional act, empathy is directed toward, and thereby has as its intentional correlate, the experience of another person" [9].

This idea of intentionality connects strongly with the motivation for making works within healthcare settings. New media projects within healthcare settings are almost universally focused on providing a positive experience for users. They are arguably less focused on challenging or shocking users, as the target audience are people who are already in a vulnerable state. This may be attributed in part to organisational ethics processes but also may reflect a perception of what is considered the 'appropriate' thing to do. While new media art projects may seek to stir debate around medical issues or shortages of resources, few, if any, have the motivation to shock or disturb patients within therapeutic settings. The work of Peta Clancy and Helen Pynor is an exemplar of a new media project which, through working with the Heart and Lung transplant unit at St Vincent's Hospital, seeks to explore and reveal truths around the complex relationships between mind and body while maintaining the dignity and privacy of the families involved [10].

Case Studies: New media Art projects in Therapeutic settings

There are many examples of new media art projects being developed in therapeutic environments. Within the frame of this paper I will look at two key projects that embody a sense of empathy for the user and are completely contingent on

Fig. 1. George Poonkhin Khut, Distillery: *Waveforming*, **prototype heart rate controlled iPad app for** *BrightHearts* **research project. Still image from heart rate controlled visualisation. Visual Effects software by Jason McDermott (left); George Poonkhin Khut, BrightHearts app (heart rate controlled prototype iPad app), photo by Julia Charles (right). (© George Khut)**

trans-disciplinary collaboration. The first of these projects is 'Designing Sound for Health and Wellbeing' undertaken by George Samartzis' and David Brown in collaboration with the St. Vincent's Hospital Emergency Medicine Department and the RMIT School of Art. In this project the sound artists developed original sound compositions to determine whether sound and music compositions may reduce the anxiety of patients and their families who were waiting in the emergency department at St Vincent's Hospital in Melbourne. The project involved a research team of composers, art producers and historians, writers, emergency medicine practitioners and health psychology researchers. It ran over the course of several years and has culminated in a series of music and sound recordings that have been clinically tested. The process of testing the recordings has enabled the researchers to demonstrate scientifically that the use of the sound recordings did indeed reduce patient anxiety within the waiting room context.

As the researchers write: "The results of this particular study lend themselves well to daily use in busy Emergency Departments. Anxiety is a common feature of Emergency attendance, not least because many of us sense a lack of control over our own health when we are faced with an acute medical emergency. Any measure that helps alleviate that anxiety may have a positive effect on the whole patient experience" [11].

This is a strong example of a new media art project that is intrinsically trans-

disciplinary and has at its core a sense of empathy with the final user. In a similar vein is George Khut's work with *BrightHearts* in which he has developed biofeedback enabled 'relaxation-training games' to help young children manage pain and anxiety. These visualisations of heart rate help young people undergoing painful procedures to focus their attention on controlling the circular visualisation. This in turn may have the effect of reducing anxiety.

Emergency Jewellery – creating devices for health and wellbeing

Within my own practice I am engaged in developing projects that aim to improve or even save life. These projects include jewellery to administer insulin through the skin for diabetics, vessels to remove arsenic from drinking water, a swallowable 'seed' which unfurls like a flower in the digestive tract to detect disease, a programmer which helps you to adapt the experience of your hearing aid, and emergency jewellery to identify allergies and identity in times of medical crisis. In the context of this paper I will discuss the SOS Emergency Jewellery project – being developed in collaboration with Keely Macarow from the RMIT School of Art and a large Melbourne Hospital; and the Hearing Pod, a programmer being developed in collaboration with Blamey and Saunders Hearing.

We are developing SOS Emergency Jewellery to address the need for well-designed jewellery for times of medical emergency. In addition to telling ambulance drivers and healthcare workers

about your allergies and personal information the jewellery may also operate as a drug delivery or diagnostic device. Through using micro-technology the jewellery has the capacity to sense critical biosignals (ECG, EEG, respiration) and also to administer drugs when required. We are also investigating the use of micro-projection devices to beam your medical information on the wall of the ambulance, or on the road – at the site of the emergency.

This project is also investigating the development of a neckpiece to replace the traditional cardiac holter monitor that serves the triple purpose of (1) collecting and storing cardiac wave forms for analysis by medical professionals; (2) storing the patients' emergency contact information and medical history, and (3) being a small, visually appealing piece of jewellery that is less intrusive than traditional cardiac Holter monitors, allowing the wearer to wear the device for an extended period of time. The neckpiece would be aimed at patients who had recently suffered a heart attack or who were experiencing heart rhythm problems. As the neckpiece would have the capacity to collect data over an extended period of time, it may be worn on a permanent basis.

Hearing Programmer

In collaboration with Blamey and Saunders Hearing I am engaged in developing a programmer, or 'hearing pod', which enables the user of a hearing aid to tailor their hearing experience on-the-go. This allows the wearer to discreetly change their hearing program – for instance, from one designed for bike riding to one designed for a church environment – to ensure they have full hearing in all acoustic conditions. The programmer sits between the hearing aid and a mobile device (phone, computer).

Central to the project is the idea of de-

Fig. 3. Diabetes Jewellery – Applicator Neckpiece and Reloader. (Project © Leah Heiss and Nanotechnology Victoria. Photograph by Narelle Sheean); Hearing Programmer - Additive manufactured prototypes (Project © Leah Heiss and Blamey and Saunders Hearing. Photograph by Narelle Sheean)

stigmatising therapeutic technologies. As Elaine Saunders writes: "There are three and a half million people in Australia who would find life easier with a hearing aid - but about two and a half million of those people do nothing about it, partly because of the cost. And more - hearing loss is associated with feelings of isolation, loneliness, insecurity, mental health issues, depression - it has even been associated with triggering early onset of dementia..." [12].

The Hearing Pods actively address the issue of stigma in hearing loss. Through a process of low-tech sculpting and high-tech additive manufacturing I developed three approaches to the technology. Each of these was premised on four ideas:

1. The pod should be desirable – resembling smooth river stones or jewels – and not be identified with existing languages of hearing impairment technologies.

2. The pod should fit the body – slipping easily into a pocket or in a handbag – allowing for maximum mobility and in-situ reprogramming.
3. The pod should look toward a future in which hearing technologies are aesthetically designed personal technologies – as normal as glasses are now.
4. The pod should have an indeterminate function – through disregarding the existing aesthetic languages of disability this would allow the user the power of disclosure – to decide whether or not to disclose the function of the technology.

At the very core of the project is transdisciplinary collaboration – working across audiology, electronics and art practice; and empathy – developing a deep understanding of the emotional condition of the user who in this case is someone dealing with the stigma attached to hearing loss.

Negotiating the ethical and regulatory landscape of healthcare environments

There is undoubtedly significant innovation that may occur when artists and therapeutic practitioners collaborate to create projects, particularly when these projects have at their core a strong sense of 'intentional' empathy and a strong focus on the health and wellbeing of the final user. However, there are significant

Fig. 2. *SOS Emergency Jewellery* project showing projection bracelet. (Project © Leah Heiss and Keely Macarow. Render by Tom Frauenfelder, Photographs by Narelle Sheean)

challenges to working as an artist in therapeutic settings. I will attempt to address some of the issues around: ethics, privacy, intellectual property and organisational uptake.

1. Ethics

There are significant ethical considerations when working in a therapeutic environment, such as a hospital or healthcare facility. These may be informal – for instance, determining the 'right' thing to do within the environment that will have maximal impact with minimal distress or discomfort to those involved. At this juncture a strong sense of empathy is key to establishing the right ethical framework for the project. The ethical considerations may also be formal – requiring ethics approval from the regulatory authorities within the healthcare environment. Ethics approval can be a lengthy and rigorous process that has the core motivation of ensuring the artist has thought through the complexities of their research [13]. While the acquisition of ethics approval can seem like a long and complex process, Judy Redman [14] summarises the key reasons that it is a necessary step for projects that have some an impact on human health:

1. Responsibility towards research participants: to ensure they can give free and informed consent to their participation and ensure their safety, particularly vulnerable groups.

2. To provide fair access to the benefits of research to all participants.

3. To comply with the regulatory requirements of large scale funding bodies such as the ARC who can withdraw funding if the project is found to be in breach of the *National Statement on Ethical Conduct in Human Research* [15].

2. Privacy Issues

Working within therapeutic settings is complex as it encompasses issues of privacy, particularly when you are working with children or people with illness. This may also include access to patient data that can be an essential part of the artwork. This could be in the form of bio-data, for instance ECG waves or EEG waves. While working on the *Emergency Jewellery* necklace we need to be careful with patient's ECG data as this can disclose private information about the user's state of heart health.

3. Intellectual Property

When developing projects within therapeutic contexts artists need to be conscious of the issues surrounding intellectual property. This becomes particularly critical when the artist develops technology or devices that embody scientific or medical innovation. At this point some knowledge of the processes of intellectual property is critical to protect the role of the artist during the development framework. In 2007 I developed the *Diabetes Jewellery* project whilst artist in residence with Nanotechnology Victoria. Through the *Diabetes Jewellery* project I created jewellery-based wearables to utilise Nanotechnology Victoria's transdermal patches that replace syringes for drug delivery. The patches enable pain-free and continuous delivery of therapeutic drugs - for example, insulin - in a convenient format [16]. The project demonstrated a level of design and technological innovation and so could not be published in the public realm until patent and design registration searches were undertaken. Ultimately it was decided to register the designs to ensure they were protected and to develop a contract that ensured my on-going participation should the product be commercialised.

4. Uptake

The final area of potential complexity new media artists face is entrenched organisational resistance to project uptake. In this instance a collaborative project may be 'proven' to have impact but long term organisational change needs to occur to facilitate uptake.

Conclusion

There is a great richness for new media artists looking to develop works within therapeutic environments. New media art practice is so focused on human experience and user engagement and it is this focus that so positively predisposes artists working in this realm to the development of works promoting health and wellbeing. By virtue of the trans-disciplinary nature of new media art practice, artists are well versed in managing the indeterminate boundary between art and other disciplines. So, in a therapeutic context this can facilitate real innovation as artists effectively work with myriad specialists to generate powerful and engaging artworks.

When artists are effectively engaged in trans-disciplinary groups and work with intentional empathy the possibilities for developing innovative and profound works are increased. Through looking towards successful trans-disciplinary projects working within healthcare settings such as Designing Sound for Health and Wellbeing and George Khut's *BrightHearts* I have sought to explore issues and key strategies within my own practice which seeks to destigmatise therapeutic technologies.

These precedents provide a landscape in which empathy and emotional engagement with users and their families is critical to the success of works as is the ability to effectively navigate the ethical and regulatory landscape of therapeutic environments.

References and Notes

1. Within the context of this research 'therapeutic context' refers to any environment in which the individual is engaged in diagnostic or therapeutic treatment. This may be in a health care setting or a personal environment.

2. Jacobsen, Mogens, and Sondergaard, Morten, "MAPPING the domains of media art practice, A trans-disciplinary enquiry into collaboratoive creative processes." *Technoetic Arts: A Journal of Speculative Research*, Vol 8, Number 1. Pp 77-84. (2010).

3. Jacobsen [2] pp 95.

4. Tilmann Lindberg, Christine Noweski and Christoph Meinel, "Evolving Discourses on design thinking: how design cognition inspires meta-disciplinary creative collaboration", *Technoetic Arts: A Journal of Speculative Research*, Volume 8 Number 1, pp 31-37. (2010).

5. Lynn Hogard, Dennis Kratz and Rainer Schultze, *Translation Studies as a Transforming Model for the Humanities*. http://translation.utdallas.edu/docs/FIT.html, accessed July 2013.

6. Encyclopedia Brittanica, http://www.britannica.com/EBchecked/topic/186011/empathy, accessed July 2012.

7. Macquarie Dictionary online edition, accessed June 2013.

8. Natalie Depraz, "The Husserlian Theory of Inter-subjectivity as Alterology", in Evan Thompson (Ed.) *Between Ourselves – Second-person issues in the study of consciousness.* (Charlottesville, VA: Imprint Academic, 2001).

9. Evan Thompson [8].

10. http://petaclancy.com/articles/PC_ARTERY.pdf accessed June 2013.

11. David brown, Keely Macarow, Elizabeth Grierson, Philip Samartzis, George Jelinek, Tracey Weiland, Craig Winter, Designing Sound for Health and Wellbeing. Australian Scholarly Publishing, Melbourne, 2012.

12. Dr Elaine Saunders' Acceptance Speech, The 2011 Victorian Pearcey Entrepreneur Award. http://www.pearcey.org.au/2011_Vic_Award, accessed July 2013.

13. Jerry Booth, http://thesiswhisperer.com/2013/05/01/ethical-approval-an-opportunity-for-development/, accessed July 2013.

14. Julie Redman, http://thesiswhisperer.com/2012/06/26/human-ethics-applications-with-a-minimum-of-pain-part-one/, accessed July 2013.

15. http://www.nhmrc.gov.au/guidelines/publications/e72, accessed July 2013.

16. http://www.materialthinking.org/sites/default/files/papers/SMT_V8_P05_Heiss.pdf.