

Kristina Fiedrich - TRAINING EXPECTATIONS

The Fashionable Prosthetic: Investigating the Visible and New Fashion of Prosthetic Research

The timeline for this research is ongoing as part of my Master of Applied Arts thesis. Research includes peer-reviewed journal articles, interviews and surveys from various sources within the prosthetic community, material studies and prototyping, and cultural studies via films, fiction and historical references. These methods will take place over a period of nine months, beginning September, 2011. The dissemination of the research will begin in January 2012 with a blog available to the online community, and will include all aspects of the research from literary sources, images of work in progress, personal anecdotes and interim findings and results. Further dissemination will include a published book, workshops and studio visits, lectures and exhibitions. The research will conclude with a published, peer-reviewed thesis paper, finalized in April of 2012.

For the purpose of this research, I intend to collect anecdotal information from patients with prosthetic limbs, occupational therapists and prosthetic engineers via interviews and surveys. I also intend to request interviews from well-known amputees such as Paralympian Oscar Pistorius, director of the Biomechatronics Group at the MIT Media Lab, Hugh Herr, and Aron Ralston, who amputated his own arm after a climbing accident and has since been fitted with a prosthetic that allows him to return to his outdoor, active lifestyle. Throughout the research and in gathering anecdotal information from amputees, I will ensure an equal number of male and female amputees will be interviewed, and wherever possible include aboriginal amputees. The information collected in these interviews will be compiled anonymously on the blog and used in the development of materials and artistic research.

Interviews with orthopedic and prosthetic development companies such as Otto Bock, Touch Bionics and HANGAR Orthotic would provide insight and information regarding the technological advancements of prostheses, the aesthetics of new research in prosthetic development, current materials and the physical potential of new prostheses. Prostheses have been mentioned throughout history with early pioneers in Egypt, ancient Greek and Roman times. Functional prostheses began to make an appearance in the 1500s, and at the end of World War II, the National Academy of Sciences began advocating for better research and development. Responsible for the development of new technology for use by the military, The Defense Advanced Research Projects Agency (DARPA) funds tens of millions of dollars annually to advance cutting-edge prosthetic limb technology that will approach the function of the limbs being replaced. These and other historical and materials references are the foundation of a larger investigation into materials research I will perform using resources available at Emily Carr University.

The Intersection Digital Studio, a dedicated research space at the University, allows access to the Wearables and Interactive Products Studio (WIP), and the Prototyping, Media and Programming Studios (PMP), specifically available for project development and experimentation with electronics, textiles, sensors, and other digital media tools. Using resources available through the Research Institute, including the 3D scanner and printer, the CNC machine and the mould-making and casting studios, the intention of the research is to create prostheses that reflect the anecdotal information gathered from the various listed sources. Using drawing, sculpture and digital media, I will create prostheses out of a variety of materials that will comment on functionality, aesthetics and material research. By creating a dialogue within the creative community, which includes industrial design and prototyping, the premise of the dissemination is to create awareness for amputees and current prosthetic research within the

public realm. By generating interest in the potential and necessity for further prosthetic research and development, it is my goal to change the public's perception of amputees and prostheses. The work that I am proposing to create will be critiqued by interviewees, amputees, therapists and faculty at Emily Carr University, who will be invited to visit the studio in order to maintain authenticity and a close working relationship to the members of the study.

TED talk with athlete and activist Aimee Mullins (1998, 2009), provides insight into the progress of prosthetic technology and aesthetic development. After a decade of research, Mullins' challenge to imagine a new approach to prostheses generated prostheses with various purposes and of diverse aesthetic and artistic qualities. Mullins says: "Poetry matters; poetry is what elevates the banal and neglected object to a realm of art. It can transform the thing that might have made people fearful into something that invites them to look, and look a little longer, and maybe even understand." Within the context of my artistic practice, I am investigating the works of Matthew Barney and Rebecca Horn. Both artists have worked with prostheses as subject matter, and the dissemination of their research have disparate aesthetic approaches. I plan to interview Bruce Grenville, curator of *The Uncanny: Cyborg* at the Vancouver Art Gallery, on the topic of prosthetic art and to request access to relevant resources in the gallery library. By contextualizing this research within an art-based practice the proposed prototyping, materials, medium, philosophical and artistic objectives enter an established discussion of prosthetic aesthetics started by these two major artists.

Popular culture reveals many images of amputees, ranging from super heroes with cybernetic prostheses (Aquaman, DC Comics) to the images of tragedy and loss (Ahab, *Moby Dick*). With the advancements of prosthetic research and the application of new technologies to prostheses, images of fiction and loss are replaced with potential, power and agility. In 2008, athlete and double amputee Oscar Pistorius, known as "the fastest man with no legs" was ruled ineligible for competition against able-bodied runners due the perception of an unfair advantage. While this ruling was later over-turned, the opinion that prostheses are a disadvantage and amputees are disabled is shifting. This aspect of the research intends to explore the image of prostheses as disabling/ enabling, functional/ aesthetic and includes the subject of the cyborg, the posthuman and the technologically enhanced body. By investigating the philosophical and psychological aspects of new prostheses from an artistic perspective, I intend to prove that technological advancements and new materials research are altering the figuration of the body.

Further research into the increasingly popular aesthetic approach to prostheses includes cosmesis, the creation of life-like limbs from silicone or PVC. Capable of reproducing details such as freckles, wrinkles, veins and hair, cosmesis allows amputees to adapt their prostheses to body and identity, similar to the premise of cosmetic surgery. Conversely, the low-tech, \$28 prosthetic known as the "Jaipur foot", made of only of rubber, wood and aluminum, has revolutionized life for millions of land-mine amputees. This is only one example of the comparison between aesthetics and functionality and is central to the dissemination of this research.

The support received from the Canadian Institute of Health Research will allow this research to fulfill an important educational, informational and innovative role within the health and creative communities in Canada. It is my belief that the artistic and aesthetic representation of the information gathered for the purpose of this research will have a significant impact on the individuals, organizations and communities dealing with prosthetic research and health issues relating to amputations.