

Australasian Journal of ArtsHealth

Volume 1 2009 pp61 – 77

This article can be accessed online at

<http://www.newcastle.edu.au/research-centre/artshealth/journal/>

<http://www.nova.newcastle.edu.au>

ISSN 978-0-9805035-8-6

Making devices

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Abstract

The word 'prosthetics' is often used as a metaphor in the arts. It is used by artists interested in extensions of the body or in fusions of technology and the body. Prosthetics and the experience of limb loss are less visible in the art world. As a non-disabled artist, my initial interest in photographing prosthetics was to introduce different visualisations and metaphors into our understanding of the body. I am also interested in how images can draw out stories of personal experiences. They can initiate a conversation about what is seen, or become a catalyst for memory and awareness. The crossover of arts and health for me rests in the following; that a certain kind of creativity, faith, negotiation and discovery are necessary to heal, especially from a traumatic injury.

Keywords

photography; prosthetic construction ; trauma; biomedical art.



1. Introduction

My photographs look at the making of prosthetics and orthotics. Taken in different labs and clinics, they capture and isolate moments of the process. The images are not meant to be documents; they examine the traces of personal histories involved in this activity.

The word 'prosthetics' is often used as a metaphor in the arts. It is used by artists interested in extensions of the body or in fusions of technology and the body. Looking directly at prosthetics and the experience of limb loss is less common in the art world. As a non-disabled artist, my initial interest in photographing prosthetics was to introduce different visualisations and metaphors into our understanding of the body. I arrived at this work as an extension of a previous project where I combined medical and domestic tools with photographs to create three-dimensional hybrid sculptures (see figure 1, entitled *Moth*) This current project continues to investigate ideas of vulnerability, the body and medicine, but through unaltered photographs.

I visited the University of Washington, School of Medicine, Prosthetic/Orthotic lab in 2003. I was immediately drawn to the devices partially finished (See figure 2, entitled *Index*). They show the evidence of making, and marks of notation and change. I photographed the devices in the lab, but isolated from its busyness. The body is implied in the photographs but not depicted. The specific history that resulted in these devices is left to the imagination (See figure 3 entitled *White*).

This initial series started near the beginning of the Iraq war. I then began to think about how the need for prosthetics is exacerbated by war, and about the ongoing



Opposite: Figure 1, *Moth # 3*, 1999. L-R Figure 2. *Index*, 2003. Figure 3 *White*, 2003.
Both University of Washington School of Medicine, Prosthetic Orthotic Lab

consequence of our previous war in Southeast Asia. I went to photograph at a prosthetic/orthotic school and several other clinics in Southeast Asia in 2005 and again in 2007 as a way to understand the ramifications of war and to share what I found with a broader audience (See figure 4, entitled *Crutches CSPO*) Photographing with a slow and cumbersome 4x5 camera, I moved conspicuously around each of these places for three or four days of shooting. I photographed the interiors empty, interested in how the spaces could tell a story.

I then sent a book of 20 photographs, taken from the US and Southeast Asian facilities I had visited, to Handicap International Belgium (HIB), Physical Rehabilitation Centre in Siem Reap, Cambodia. They agreed to help me with this project by showing the images to a selection of patients, prosthetists and administrator volunteers. I wanted to share the photographs and to encourage a response. I had intentionally kept the human body absent in the images. I was interested in filling that absence with their voices.

I am interested in how images can draw out stories of personal experiences. They can initiate a conversation about what is seen, or become a catalyst for memory and awareness. A greater understanding of what takes place in prosthetic clinics, as well as greater global awareness of the need for PO clinics is valuable at a time when my own country is at war and veterans are returning home with amputations at twice the rate of other conflicts (Scoville, 2004).

In my past work, photographs are seen as objects. They are folded, bent and held away from the wall. The viewer is allowed to walk around the image/sculptures and look at them from the back. In a philosophical way this current project is also about seeing the space around and behind my photographs. What was there before the images were taken? What remains after they disappear? What is beneath the surface of my photographs and what is just outside their boundaries? Introducing narratives and histories that these images evoke adds a dimension to the reading of the photographs; one that brings experiences from different perspectives, cultures, and backgrounds in closer contact.

Eng Saloth of HIB in Siem Reap, Cambodia interviewed the volunteers on my behalf. She showed my images and sent back comments made by the volunteer. The responses came in several forms. Comments about individual images, general comments about the images as a whole, and personal stories were shared. Patient stories were about families, hardships, accidents, and successes. The prosthetists spoke of learning experiences, interactions with the patients, reflecting on how others see their discipline, and their successes.

I have considered these stories alongside my own memories, (what I remember thinking about when taking the images or when reflecting on them afterwards). Reading the research of Seth Messinger, an anthropologist doing research at the US Armed Forces Amputee Patient Care Program at Walter Reed Army Medical Center in Washington DC,



Figure 4 *Crutches CSPO, 2005*. Cambodian School for Prosthetics Orthotics, Phnom Penh, Cambodia

enlightened me about the experience of having a prosthetic, and of being disabled. His research with the soldiers returning from the war in Afghanistan and in Iraq affected my own viewing of the images. I have included quotes from his research in this project.

Themes began to emerge from the different voices. The themes relate literally, as well as metaphorically to the process of making the devices, to the experiences of the patients, and to my own making of the images. I used these themes as a framework to organise the quotes, images and stories in a web book. The book, though still in progress, is found at www.ellengarvens.com/MakingDevices/. In the following part of this article I share a selection of themes, images and quotes from the larger ongoing book project.

2. Images and responses

2a Beginnings

Figure 5, entitled *Drawing*, was taken at the Cambodian School for Prosthetics Orthotics, (CSPO) in Phnom Penh, Cambodia. Together there was a class of students working on translating each of their drawings into metal. When the students went to lunch I set one brace on the ground to get back far enough to capture the complete shape. I realised I could work with less self-consciousness when the students were gone.

This is the first image of the 20 shown to the volunteers. The prosthetists and the patients responded to this image with stories about apprehension and the challenges of learning something new, not unlike my own experience taking the images at the CSPO.

The first photo is of a side bar that was drawn when I first studied. I think this is really fascinating because it first was traced on a piece of paper and then the metal was curved accordingly. Finally it can help disabled people walk. Therefore, I think that this photo is very invaluable for new student groups. I mean that I thought I could not do it when I first saw it, but after my involvement I thought I could make it. It is really amazing for disabled people especially those who have a problem with skin and plastic and it is also good that it allows air to get through. It is also good for the disabled whose legs swell or are numb.
Kim Davy, prosthetist

Reminds me of a time when I was at school working on this task that required students to be critical and thoughtful and of course to spend more time. I also had some difficulties during that time. Keo Ratha, prosthetist

I wanted to get an orthotic leg made. It is my first time. I feel that it will help stop my pain. I feel my leg is really light before I wear the orthotic. When I came here, I felt good when I was given movement. After wearing the orthotic for two days, I can walk on a surface with larger stones without any pain. It is much better than before when my leg seemed really weak and I feel like it could break easily. I took a taxi here and got off at the back. I was so worried that my legs might be cut. When I got here Lok Krou (male teacher/technician) told me that I needed an orthotic only. I stop worrying now to become very happy. Sa Chea, patient, age 14

2b Privacy

Figure 6, entitled *Bed*, is taken at The Prosthesis Foundation of Her Royal Highness the Princess Mother in Chiang Mai, Thailand. The sparseness of this image, as well as the subject elicited comments about trust and privacy. These were issues that I was very conscious of while photographing. I was aware that my presence could make others

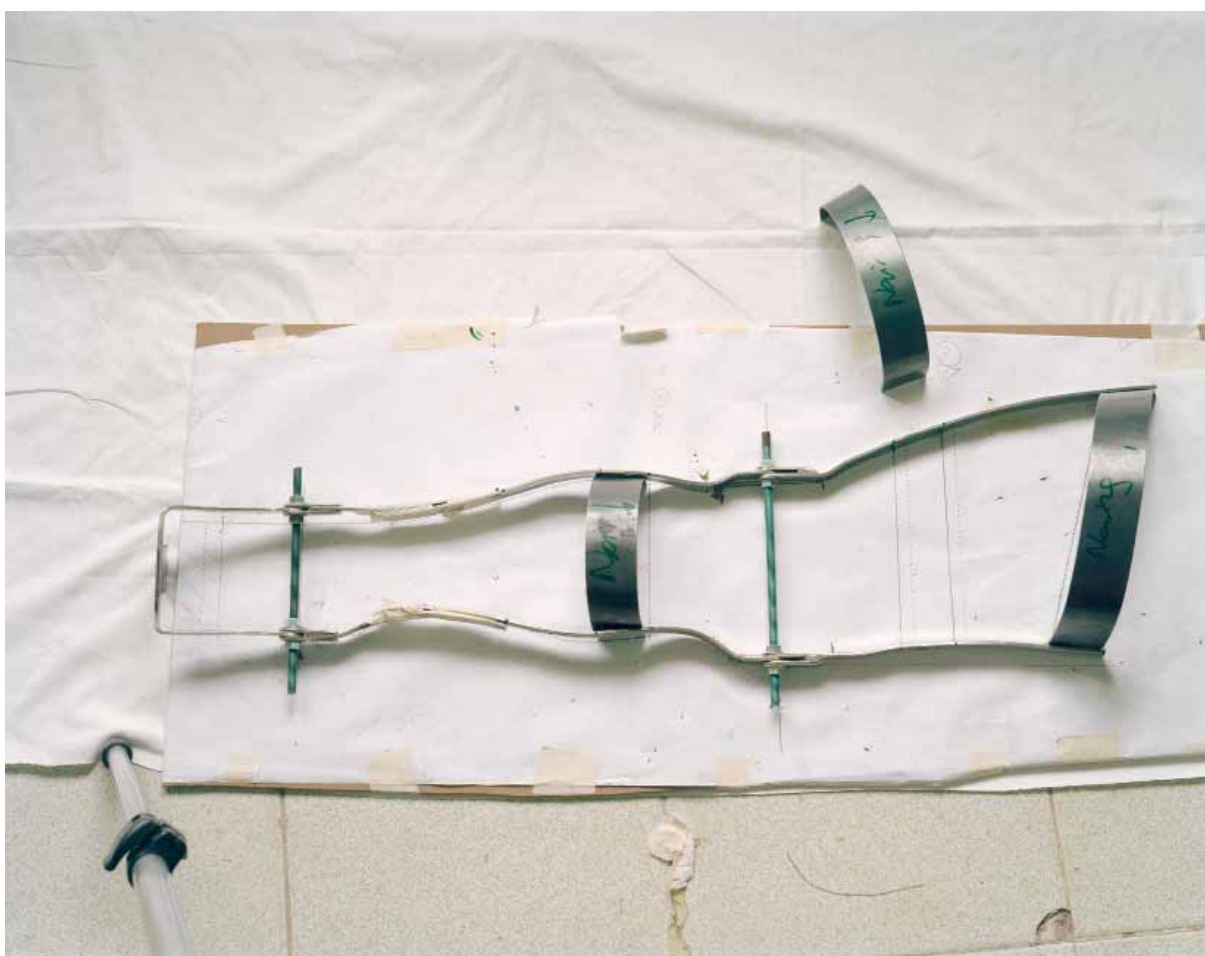


Figure 5 *Drawing*, 2005. Cambodian School for Prosthetics Orthotics, Phnom Penh, Cambodia

uncomfortable, even if I was interested in portraying the activity of the clinics without showing the participants directly. After being in a clinic for a day, the patients, students, and professionals were less aware of my movements around the spaces.

Photo #3 I have never seen it but I can assume that it is a patient consulting room. It is quiet and makes patients feel confident that their personal issues or secret can be protected. Kao Ratha, prosthetist

Working as Physio Therapy Helper I found that female handicaps face many difficulties because they are very shy when working with male PO (prosthetist or orthotist) in producing the model of their prosthesis or orthotic. Therefore, I decided to go to CSPO in Phnom Penh and have become a PO until now. Chan Bopha, (female) prosthetist

It looks like a practicing and inspecting area where the teacher asked me to lie down and check my arms and legs. San Chanthlai, patient age 11



Figure 6 *Bed*, 2007. The Prosthesis Foundation of H. R. H. The Princess Mother, Chiang Mai, Thailand

2c Looking

Figure 7, entitled *PF Plaster Room*, was also taken at The Prosthesis Foundation of HRH The Princess Mother. Though it appears empty, there was a constant stream of people that used this room. It was kept impeccably clean. When taking this picture I focused on the subtle water stain on the floor to show some evidence of the room's use. Of the several shots I took I was pleased with this one, which had a tiny view of the adjacent patient examination room. It captured my experience of being on the outside looking in.

I have placed these quotes and photograph together because they suggest the interrelatedness of looking at the unfamiliar and fear. Being looked at is a large part of the experience of wearing a prosthetic. It is a theme that continues in many of the comments by the patients.

Interviewing a patient. He started to look at the photos at 9:40 in the morning and he cried out that things in these photos were artificial. He could not read. I read him the text on the back. Eng Saloth (Later in the interview Luk Rith, said) When I look at these photos, I feel happy because the prosthetic leg could help me walk.

When I wear it; it is a bit hot and uncomfortable unlike a real arm. But whenever I wear it, I wear a long sleeve blouse to cover it so that it cannot be seen and I won't feel embarrassed. I wear it when I go to school. But my teacher told me not to hit any people with my prosthetic arm when I get angry with mockery because it hurts them badly. Smaller children than me are very scared of this arm and they always cry crazily when they see it." San Chanthlai, patient, age 11



Figure 7 *PF Plaster Room*, 2007. The Prosthesis Foundation of H. R. H. The Princess Mother, Chiang Mai, Thailand

He wore a long sleeve shirt and had the sleeve cuff pulled down. I asked him questions about going to the beach or wearing t-shirts and at the time he was skeptical that he would ever allow anyone to see his arm or leg.

*"Well, not everyone's comfortable with it, I recognize that, I don't want to do anything that uh, would make people feel, deliberately make people feel more conscious of it, and people try to, you know, walk by and not stare, to actively not stare, they try to do that out of some type of respect and I don't want to do anything that's gonna draw attention to it." Seth Messinger, anthropologist, from "Getting Past the Accident: IEDs, Limb-Loss, and Refashioning a Life in a Military Medical Center," under review at *Culture, Medicine and Psychiatry*.*

2d Unseen

Figure 8, entitled *Lao Plaster Room*, was made at the National Rehabilitation Center in Vientiane, Lao. The foot, hidden in the shadow of the cast, is an important part of the picture. It represents something I had been told; patients are often hesitant to share their own experiences with each other.

There are hidden aspects to patient experience on many levels. 30% of the 2.2 million tons of bombs dropped during the Vietnam War never exploded and remain in the countryside of Lao and Cambodia. The majority of patients using this clinic are landmine survivors. The response to this image by a prosthetist shared some complexities of the spinal orthotic process. This photograph has become about the many private and unseen experiences of the patients.

Photo #5 is also interesting. It is a spinal orthotic. This photo, if we just look at it from outside, I think it seems very simple. However, after getting involved in this work, we find that it is not easy, it is difficult from the start to finish. The reason that it is difficult is that the patient's backbone was broken. We therefore cannot let him stand or sit when we are working on a model of his corset cast. It makes him hurt a lot unlike a regular patient whose backbone is good. When we work on his corset cast, he needs more people to hold him so that his backbone won't change the position. But while we are working on this, he is crying because he is very hurt. Besides this, the modification of his corset cast is also difficult because the adjustment is made according to the size that we measured on the patient and this size is not always accurate and the cast MAY not fit him well when he tries it. It is also difficult because it MAY hurt him when he tries it out. Nevertheless, he is very happy when his cast fit him well after he tries it because without this cast he will not be able to sit or stand. So, it can help him with his daily work. This photo explains my work experience and whenever I see it I am happy. ... Kim Davy, prosthetist



Figure 8 Lao Plaster Room, 2005. Cooperative Orthotic Prosthetic Enterprise (COPE), The National Rehabilitation Centre, Vientiane, Lao P.D.R.

(Drew) "Leder (Absent Body, University of Chicago Press, 1990) makes the point that in the day-to-day life world that most of us inhabit our bodies are usually our silent companions, In contrast Robert's new post-blast injury body is a cacophony of signals. He has to maintain strict vigilance of the distal ends of his residual limbs on the right side to guard against "skin breakdown." He has to consider the distance he wants to traverse so as to don the correct prosthetic leg each morning. He also has to be cautious about issues of gait, balance, and the proximity of furniture and obstacles as he navigates familiar and unfamiliar objects. He also has to navigate the stares of strangers as he moves through his daily routine of shopping, walking, doing the laundry, and running errands. Much of his work on his self is focused on developing a feeling of normality in terms of his body." Seth Messinger, anthropologist.

2e Remembering

In figure 9, entitled *Gloves*, these latex casts are placed over a device that helps patients grip. Lines and fingerprints from a model hand are embedded in the latex. I placed the gloves, one after the other, on a stainless cart in the lab, photographing one with the device inside it and one without.

The image has become about repetition and bodily remembering. The following response, from a different cultural perspective, maintains that memory and history are stored and accessed in our bodies.

I have five siblings — I am the fifth. My parents are farmers. I was born with no toes, fingers and have only one arm. I remember that in the previous life, I was a soldier's wife and I was executed by cutting my arms, legs, and my body was up and dumped into the water. Now sometimes I miss my concrete house in Phnom Penh from my previous life. Everyday, I like to study and want to study further. I see people with their arms and legs, I feel embarrassed. I have no arms and legs like them. It is a mockery that I hear all the time. And when I took a taxi here (rehabilitation center), I was mocked again that I had no arms and legs like others and had no money to pay a taxi like other people.' San Chanthlai, patient, age 11

'In Cambodia, it is a true case that some children remember their past lives up to about three or five years old. As we age we no longer remember. It is believed that children will forget their past lives if they are given eggs to eat.' Wanna Net, translator of the Cambodian interviews.



Figure 9 *Gloves*, 2005. University of Washington School of Medicine, Prosthetic Orthotic Lab

2f Change

This image (figure 10, entitled *Recycled*) shows some partially melted pieces of plastic from worn out prosthetics, to be recycled into new legs. I placed these plastic parts on the ground to get a better perspective. They were much heavier than they looked. I noticed three different skin tones merged together.

Thinking about prosthetics over the last few years has changed how I see disability. Bodies come in many forms. We all age and change. Cultures create the context for disability by deciding what kind of change or difference is normal and what is not.

There are changes that occur on many different levels in the prosthetic process. Physically, patient limbs are cast, inserts are made to form around the casts, and external plastic structures are formed around the inserts. Each stage is intimately built around the previous one. Hands alter each layer, and history eventually changes the results. These two stories by prosthetists allude to the idea that change or healing also takes place on spiritual levels involving the patient and his or her family.

The experience that I feel very proud of is to work with children who have a brain injury when they first recover. The development of these children is not the same as the normal children. Family and those who take care of these disabled children need to spend a lot time which leaves less time for them to make a living. As a result, their family incomes drop off. But with the support and treatment of the experts, the children improve a lot and the family workload is reduced. Therefore, the family has enough time to work and also is happy to see that the children become competent in performing their daily work such as taking care of themselves and communicating with other people. And I feel happy that I and other technicians become part of the assistance in rehabilitating the competency of these people. Um Sokun, prosthetist



Figure 10 *Recycled*, 2005. Cooperative Orthotic Prosthetic Enterprise (COPE), The National Rehabilitation Centre, Vientiane, Lao P.D.R.

When looking at these photos, I understand that the photographer must be very skillful. It reminds me of the time that I created an assistant device for a young boy whose leg was short from birth and it was about 20 cm long. That boy was 15 years old living in Kralanh District, Siem Reap Province. Therefore, we had to create for him a special orthotic, which was different from the standard. After producing this device, the physiotherapist spent a lot of time and efforts spiritually and physically in order to teach that boy to be able to walk. I am very proud of this because the boy could wear it to school and he often comes to the Rehabilitation Center in order to make some adjustment to this orthotic. Now he becomes an adult. Keo Ratha, prosthetist

2g Shifting Viewpoints

Figure 11, entitled *Bent* is one of the first images I took at the University of Washington PO student lab. The device is photographed upside down to alter how it is understood. I spent time setting up my point of view for each device. The objects, standing up this way and centered in the frame, looked directly back at me. They evoked an awareness of my own body.

By changing the orientation one can look at these devices in a new way. This simple act is a metaphor for the point of the project: to alter our perception of these clinics, of disability, and of our own bodies and how they relate to this activity.

For me as a person who has experience in this field, I think the photos are easy to understand and they are so meaningful to me too. But if my brother who has no experience in this field, he might not understand them, and he might think that these photos are meaningless to him. He might even ask if those photos were of ghost's legs. Kim Davy, prosthetist

The Amputee Patient Care Program at Walter Reed has captured the imagination of the American public through its presentation in the media of catastrophically injured service members who jog with the President, who ski, who return to military service, and in one or two instances, who return to combat. But the emphasis on physical functioning has a silencing effect on other ways of knowing and other modes of recovery. Robert ambulates on his prosthetic leg and is a daily wearer and user of his prosthetic arm. He also snowboards and bicycles and is becoming increasingly interested in mastering the skills of running. But he identifies the greatest successes in his recovery, his experience healing, has come in the margins of physical functioning: in the fashioning of a new sense of identity and self out of the experience of surviving. Seth Messinger, anthropologist.

I have one experience related to a disabled person who came to get his prosthetic leg made. He was very impatient and so was I. Later on, I realized that this feeling took place because the person lost one part of the body. Then I followed him; did not mind all even if he spoke harshly. Seng Nha, technician

I am happy to see these photos. I don't feel ashamed. Wearing a prosthetic leg, I can carry firewood, water, and grind rice more easily than using a crutch. I used to make a crutch by myself from a bamboo stick but it could be used for a short walk only. Nuon Nauy, patient



Figure 11 *Bent*

3. Conclusion

The taking and sharing of these images has been an ongoing learning process. I have learned from the insights of Seth Messinger and from the participants and their stories. They have contributed to an understanding of the body by sharing their experiences. Apprehension and beginnings, the need for privacy and trust, hidden experiences, fear and the unknown, memory and our bodies, growth and change, are explored from different points of view. The stories and images make connections to universal experiences of vulnerability and loss, but also highlight transformation and healing.

The crossover of arts and health for me rests in the following; that a certain kind of creativity, faith, negotiation and discovery are necessary to heal especially from a traumatic injury. Art is about discovery and considering a different point of view. It can help to bring about new interactions.

The work is an attempt to listen across the divide between the disabled and the non-disabled, between different cultures, and between the private and public spheres of human experience. The photographic subject matter reflects on the process of prosthetics with the desire to find new visualisations. But more importantly, the images become a way to listen, promoting new understandings, which ultimately have the capacity to connect the work to healing.

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