CHANGING POSITIONS

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A Project

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by

Joshua Mullaney Torbick

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ABSTRACT OF THE THESIS

Changing Positions
by
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Master of Fine Arts in Art
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As a consequence of a motorcycle accident on an interstate a number of years ago, which resulted in the amputation of a leg, my relationship to the built environment was forever changed. The landscape around me now presents a different level of challenge, not just to navigate but to also simply exist in with a reasonable expectation of comfort and utility. As a designer and maker with a strong awareness of the physical and emotional challenges living in a world built for the able bodied, it became an increasingly imperative topic for me to study. *Changing Positions* is the result of these explorations.

I am investigating the relationship between our bodies and common furniture objects, and how their differences affect our ability to fully utilize these objects. Architectural forms and furniture are designed to allow typically shaped and typically equipped people to be comfortable and functional in their homes and places of business. Not everybody meets these standard specifications and, as a result, whole groups of people have been marginalized and designed out of active participation in society. A different kind of design paradigm is required to include all people in all of life's activities.

I am currently drawing on my own personal history, losing a leg due to trauma, and building works relevant to my experience of adapting to my changed abilities. Some of the pieces in *Changing Positions* explore the fragile emotions I experienced after this life altering event and others embrace the positive outcomes of acceptance and sharing through performance. At the core of Changing Positions is furniture based work about being functional and comfortable over the course of a regular day. The works speak to the common actions of walking, sitting, and dealing with stairs. In this investigation, the aesthetic languages of furniture, tools, architecture, and prosthetics are combined to create hybrid objects that suggest solutions to better allow for these common actions.

Changing Positions was installed in the University Gallery at San Diego State University from April 20-30 2015.

Images of the installation are on file with the School of Art and Design.

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I am lucky to have many wonderful people in my life who have helped me to become the man I am and to achieve all that I have. Truly; I do not think I would have survived all of the twists I have encountered along the way were it not for my family. I have learned a lot about how to live a rich and happy life from my mother, who has never given up the pursuit of her dreams and has given me the courage to dedicate my energies to the pursuit of mine. From my father I have learned the value of hard work and rolling with the punches. I want to thank my brother Nathan for demonstrating such steadiness and support for me when I needed it most. And my two wonderful sisters, Katie and Kristin, who have both shared so much with me about the value of family bonds. There have been good times and bad, and all of you have been a reliable source of love and support through it all.

Almost as valuable as family are friends and I have some of the best around. From the coolest people in the world I met back in the 4th grade and still talk to all the time to my studio mates at SDSU and everyone in between. I have laughed and cried and fought with almost all of you and the fact we are still close is frankly amazing. To Nick and Dan and Mike: there is nothing I can say that would mean anything you don't already know. To Austin, Olivia, Sophie, Nate, Pete and Phil: thank you for adding so much value to my studies at SDSU and making studio life so entertaining.

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CHAPTER 1

INTRODUCTION

CHANGING POSITIONS

Most able bodied people go about their day unconcerned with the relative ease of moving through and utilizing their physical environments. This is no surprise; standard furniture and architectural forms are designed to allow typically shaped and typically equipped people to be comfortable and productive in their homes and places of business. However, not everybody meets these standard specifications. After a motorcycle accident resulted in the loss of a leg, my awareness of this reality was sharpened considerably. I draw on my own personal history, and build works relevant to my experience of adaptation and acceptance.

Due in part to my personal circumstance as an amputee, I developed a strong interest in how physical differences preclude some individuals from fully engaging in functional and joyful activities. In pursuit of this objective I am exploring the potential of furniture design to restore an individual's physical utility and sense of independence and inclusion. Furniture has both function and purpose, and it serves to make our bodies and lives more comfortable in our homes, places of employment, or in public settings. Aesthetics and purpose aside, in order for furniture to be functional it must fit, in the most general way[1], our human bodies. However, not all human bodies match the proportions, sizes, and shapes of mass-produced furniture forms.

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[1] Most furniture sold in stores, whether high end or low, is designed according to a standard set of sizes and proportions. This standardization is a commercial function; furniture designed for an average body should "fit" most average people.

My current body of work includes objects which communicate a sense of my original physical trauma and subsequent loss of function, as well as share my process of emotional and physical healing. The work is about being functional and comfortable over the course of a regular day and addresses the common physical actions of walking, sitting, and confronting stairs. These pieces show various means of adaptation to obstacles by using familiar furniture types morphed by circumstance and necessity. They also present the psychological effects of personal injury, limited mobility and physical and emotional stability.

Traditional furniture is made from a very wide range of materials. It provides structure and surfaces that support our bodies and help us maintain the body position best suited to whatever activity we may be engaged in. In the forms I create the aesthetic languages of furniture, tools, architecture, and prosthetics are combined to create hybrid objects that suggest furniture oriented solutions to better allow for these common actions. I utilize the anthropomorphic qualities inherent in furniture to abstract the destruction some people have sustained to their bodies. It is my hope that by addressing physical differences and appreciating the needs of those people with less physical ability, that the landscape of objects and architecture can be made more accommodating, thereby raising people's awareness.

In an effort to better understand the role of furniture in creating environments more conducive to the comfortable inclusion of marginalized populations, I have studied ergonomics and drawn from a range of material languages. I have also researched other works by artists and designers that deal with similar issues. Concepts from social scientists, such as anthropologists studying the interpersonal relationships found in liminal populations, have influenced the way I view relationships with the disabled community. Specialists in rehabilitation have also been influential in the development of my work. Physical therapists and prosthetists have played a critical role in providing me with the instruments and techniques I use for maintaining a functioning body. The positive result of the efforts of these

specialists has encouraged me to become more involved with others in need by embracing my own difficulties and sharing my strategies for recovery.

There have been many studies done to create furniture designs that are more physically appropriate to the mechanics of the human body.[2] Most standard furniture is designed to fit our bodies but places common (traditional) furniture shapes above more innovative compositions of form and material that might actually be better for our health and comfort over the long term. The clear communication of purpose through form is incorporated into many of the pieces in *Changing Positions* to help communicate use and meaning. Through the combination of tool language and the direct construction methods of prosthetic devices I have been able to blend these concepts into the furniture and sculpture of the exhibition.

[2] Studies in ergonomics have generated many strategies employed by manufactures of office furniture to create designs that build in adjustability allowing the user to customize the fit of chairs and modify the height of tables. Beyond efficiency and workplace mechanics there is considerable medical evidence to support the assertion that the act sitting may be detrimental to the long term comfort and biological function of the human body.

CHAPTER 2

DISCOVERING DISABILITY

HISTORY OF A PERSONAL TRAUMA

When I was younger, I never gave a second thought about the lives of people with disabilities. It never occurred to me to wonder if their life was really somehow all that different from mine. Today I am extremely aware of how difficult even simple tasks can be for these individuals and the realities of living with a physical disability is something to which I pay more than a little attention. This transition in my awareness did not happen overnight. It took one exceptionally violent moment and then the next eighteen years of investigation, introspection, and accumulated experience, to arrive at the level of understanding I now have today. As this understanding is critical to the themes of *Changing Positions* I hope I can succinctly articulate how my awareness evolved.

There was a time when no one ever asked a thing about my disability. People would pretend not to notice or give some kind of innocently embarrassed smile. The young man with one leg walking down the street wasn't a suitable topic of public conversation. If a child pointed or asked a question their parent would quickly shield their eyes or attempt to distract them with more cheerful or comfortable topics. As that young man limping down the street, I was perfectly content to avoid the eyes of the concerned parent or other disturbed pedestrians. After all, it was hard enough just walking down the street without tripping on the sidewalk, and the idea of entertaining someone else's curiosity at the expense of my own pain and limitations was not high on my list of exciting opportunities. With the salve of the passage of time and increased attention in the past few years, I find myself telling the story of my personal loss much more frequently.

Things have changed gradually, both within me and throughout our culture. This has led to different feelings of comfort and appropriateness when interacting with people with missing limbs. I believe one of the primary factors is that over the last couple decades, the

United States has been involved in several military conflicts that have resulted in a great number of wounded men and women returning home to receive prosthetic care. The more improved that medical technology becomes on the battle field, the more that soldiers are able to survive serious injuries and return home. A dramatic increase of otherwise fit young men and women with missing limbs has led to rising public attention of the Paralympics and adaptive sports. In addition, there has been a greater willingness of able bodied citizens to engage with these injured young people and to reintegrate them into society. As a result, I have personally noticed a dramatic increase in the number of people on the street willing to initiate conversations about my leg and some parents who actually encourage their inquiring children to ask appropriate questions.

The physical damage to my body was not the result of a battlefield injury but caused by a motorcycle accident. I was traveling on an interstate in Virginia on a sunny August afternoon when an elderly man in a pickup truck swerved suddenly into my lane and changed my life forever. The force of the impact broke many of my ribs, puncturing and collapsing my right lung, and tearing my liver and celiac artery. It shattered my right humorous and caused significant damage to my shoulder joint; including the scapula, clavicle and brachial plexus nerve bundle. This collision also removed most of my right foot and, when combined with two compound fractures of my right femur, surgeons were left with little option but to amputate my leg above the knee. Initially, surgeons wanted to amputate my right arm at the shoulder as well, but happily for me they did not.

Dealing with this kind of subject matter can be uncomfortable for many people. I find keeping a good sense of humor goes a long way. There are many days when I barely think about this event and how my life was forever changed, and then there are other days when I can barely get out of bed. When I do have an occasional moment of acute loss, I consider that the helicopter that arrived on the accident scene found me with no heart beat at all. I acknowledge that every day since has truly been a gift. Life does go on and mostly I am a happy guy. It is in this spirt of lighthearted optimism that I pursue my own fulfillment and my work frequently reflects this. Some pieces deal directly with raw emotionality and reflect sadness and loss but other pieces have a distinct dash of humor or irony.

MY PROSTHETICS

Today my mobility is provided to me through the use of a prosthetic leg. Prosthetics come in a wide range of shapes and sizes and prosthetic technology has changed dramatically over the years. What was once a carved chunk of wood held on with a leather strap is now a high tech combination of modern industrial materials. Our cultural understanding of what can be considered a prosthetic has also broadened considerably along with an ever diversifying array of technologies augmented by our own senses and physical characteristics.

For me, what a prosthesis means is exactly what you get out of the *Merriam-Webster's Medical Dictionary* "a man-made substitute for a missing body part such as an arm or a leg" ("Prosthesis," n.d.). There is a long history of the use of manufactured replacements for missing body parts. Examples such as the "Cairo Toe" (see figure 1) date as far back as 950 BCE. This wood and leather big toe was designed to mimic the original digit in aesthetic and function. It was carved from wood -toe nail and all -and sewn together with leather. When strapped onto the foot it would help its owner walk, keep her sandals on, and perhaps allow her to feel more of a complete person.[3]

Prosthetic design and function have advanced along with advances in material technology. The German Knight Gottfried von Berlichingen famously lost a hand to a cannon ball in during the siege of Landshut in 1504 and had two iron replacements made (see figure 2). These iron hands were both cosmetic and, when worn with his suit of armor, functional. One of his two hands could be positioned passively to grasps objects ranging from a sword to a feather pen by using ratcheting mechanisms and springs.

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[3] There is debate as to whether the Cairo Toe was "functional" or not. Some researchers speculate the prosthetic was added post mortem to complete a whole body for spiritual purposes. Others point out the materials and attachment methods could have assisted in ambulation. The truth may be somewhere in between. For my purpose here "function" is used in its broadest understanding and the toe is accepted as functional regardless of its actual degree of utility.

Figure 1. "Cairo Toe" (Garber, 2013).

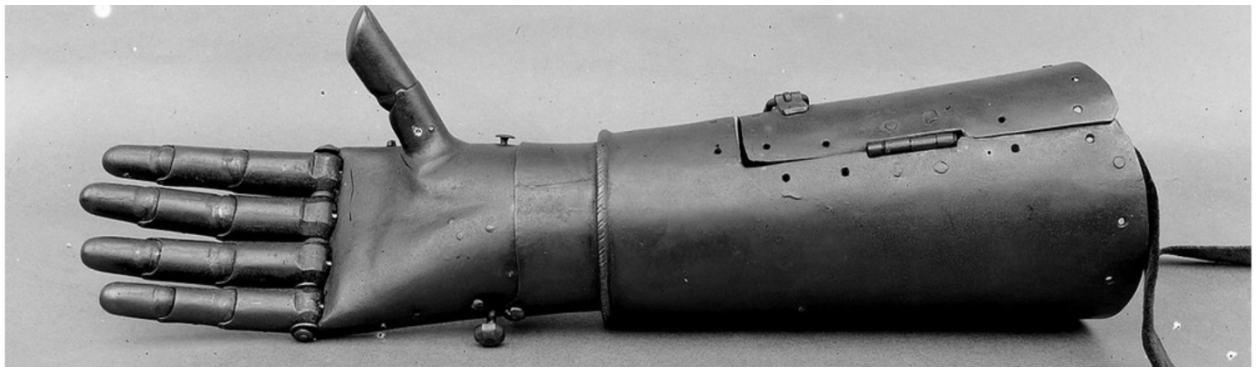

Figure 2. Prosthetic Arm for Götz Von Berlichingen (Ferreira, 2015).

Today prosthetics are made primarily from carbon fiber and aluminum (see figure 3) and may incorporate computer controlled hydraulics or even targeted muscle re-innervation neural interfacing technology[4]. If we exclude limbs that read minds (for now) or specialty devices for Olympic athletes, the construction of an above knee prosthetic leg is really quite logical. There is a foot made from a carbon fiber spring wrapped in a rubber cast sized to fit your shoes. The shin is an aluminum tube under a computer controlled hydraulic knee, programmed to sense the user's body position and to match their natural gait. At the top is a rigid carbon fiber socket made from a mold of the users stump. Typically one wears a soft rubber liner over their stump for skin protection and allowing for a suction fit into the leg. Cosmetic covers made from carved foam and leather or other fabrics are optional and becoming less popular in our tech-obsessed culture.

Arms and legs can quickly become very advanced and ludicrously expensive; to spend over a hundred thousand dollars on a leg is becoming a typical expense for an active amputee. This requires a major investment of money and technology for a device that simply returns a person to as close to normal life as one is capable. However, while maintaining an independent and active life might sound like a modest desire, once a person's ability to function independently has been taken away from them by a physical injury, there is no price too high or effort too great to feel "simply capable".

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[4] Muscle reinnervation and neural interfacing are at the cutting edge of prosthetic technology. Muscle reinnervation involves cutting a damaged nerve connection from a targeted muscle and reconnecting it to a different functioning nerve; the brain relearns how to control the muscle through the new connection. Neural interfacing is a way for electrical signals from a patient's brain or nerve bundles to be processed externally and used to control a prosthetic device. Sensory feedback can also be returned to the brain providing information on temperature or pressure.

Figure 3. Modern prosthetic leg with hydraulic knee ("Above-knee Prosthesis," 2013).

CHAPTER 3

FUNCTIONING COMFORTABLY

INTEREST IN THE BODY

My work is an exploration of our presumptions of body position, and how our physical and spatial orientation relates to function and comfort. Most people expect to be comfortable in their own homes and thus expect to be able to nurture their own domestic environment in an artful and utilitarian way. Furniture provides us with comfortable seating, but most of the tasks we perform as part of simple domestic living require a standing body position. I am interested in how physical differences between people might preclude some individuals from fully engaging in functional domestic activities. In pursuit of greater understanding of this subject I have been exploring the process by which, through my artworks, I might facilitate the restoration of an individual's sense of independence and inclusion. This can be achieved by creating furniture objects that provide the proper support needed for functional activities, while still appearing like furniture, not a medical device.

Through this investigation I have created functional furniture forms, which provide the specific shapes of containment and support needed to allow a person with an above the knee amputation the ability to stand and perform normal domestic tasks. I believe it is important for the user of furniture like this to believe that the piece of furniture is purpose built, and not an adaptation of an existing "normal" piece of furniture. Furniture can and should be designed and built from its very inception to be functional to its user.

In addition to my own experiences of difficulty living and working in environments built for people with two legs, much of the inspiration for this line of investigation also stems from readings on the subject of *home* and *domesticity*. Layered over my study of comfort and function in the domestic environment is a growing awareness of the liminal nature of the status of people with disabilities. Through ongoing academic study and creative projects the foundational depth of my works continues to increase.

Withold Rybczynski's book *Home: A Short History of an Idea* (1986)explores the concept of home as an abstract idea and examines it in a historical context. Rybczynski traces the evolution of "home", as a construct, and explores the concepts of comfort and domesticity. I was particularly interested to discover that the idea of comfort is a relatively modern invention. According to Rybczynski, if one had asked a person from just a couple hundred years back 'if they were comfortable?' they would have had no comprehension of the question. In *Home,* Rybczynski also discusses how furniture designs evolved alongside changing social standards, and how this in turn affected expectations of appropriate body position. As a body conscious designer, I was intrigued to learn that furniture design had co-developed along with the changing definitions and functional needs of a home and, thus, expectations of this environment.

STANDARDS OF COMFORT

Academic discussion of the evolution of domestic comfort has been primarily concerned with the physical characteristics of the domestic space. Certainly the pursuit of comfort and ease is an admirable one. Rybczynski (1986, p. 217) states "Domestic well-being is a fundamental human need." Certainly this is true. Humans have been working to develop a greater degree of what we now call comfort since the discovery of agriculture. There is evidence of furniture dating back to before the last ice age, as long as 40,000 years ago (Cranz, 2000, p. 42). Furniture is just one physical representation of peoples' achievement of ease. There are many other aspects that contribute collectively to the feeling successful individuals experience when they walk through the doors of their home and relax.

Because the concepts of home and comfort did not previously exist in the manner we think of them today, there is limited significant insight to be gained about how modern ideas developed by looking back past the Middle Ages. Rybczynski (1986) lays out his case for how society developed the modern ideas of home and comfort fairly clearly. He traces the different elements that have collectively come to define our notions of the concept of home.

Throughout the developing years of European society any humans lucky enough to have any shelter at all lived collectively in a hall. In this space, more indoor campsite than house, all of the total life activities of a group of people took place without any notion of individual privacy or the separation of functional activities. Everything from birth to death to

the performance of trades took place on the same straw strewn floor. Life was cold and hard and existed under a rigidly organized social structure. This state of shared communal shelter, although perhaps uncomfortable by today's standards, was not considered lacking by the inhabitants of these dwellings. Even though these structures lacked heating, lighting, sanitation, and water of any kind, only relatively well-off people were afforded even these modest accommodations. This form of shelter, rough by today's standards, would have been considered quite luxurious to the vast majority of people at that time.

After the Middle Ages, there was a dramatic shift in attitudes towards the place where people lived. The "free town" was one of the most life altering inventions to come out of this time period. The residents of these communities were the original bourgeois. This social and political condition allowed considerable freedom for local lords to pursue their own economic advancements. Rybczynski (1986, p. 25) writes that "what places the bourgeois in the center of any discussion of domestic comfort is that unlike the aristocrat, who lived in a fortified castle, or the cleric, who lived in a monastery, or the serf, who lived in a hovel; the bourgeois lived in a house."

Once people began to differentiate between the spaces they used for the performance of their trades and the spaces they used for sleeping, there was a rapid increase in the further division of space for all variety of human activities. Out of this division between work spaces and living spaces grew an expectation of greatly increased degree of privacy. This was truly a new and luxurious condition for the average person! If we consider that it took thousands of years to develop an expectation of intimacy and privacy, the technological developments of adequate heat and light and running water happened very rapidly.

By the eighteenth century all throughout Western Europe and North America the very concept of the home had changed radically. There was enough economic security and stability for people to desire and expect comfort in their own home. Along with this demand for comfort and ease there was an increase in the diversity and availability of furniture. And, for the first time in history, a common person could afford his or her own chair. Sets of furniture for the whole family were a very real source of pride for common families.

CHAIRS AND ERGONOMICS

The use of seating goes back tens of thousands of years, yet the how, who, what, and when of it is still a mystery. We can trace the use of furniture much more precisely starting with Egyptians and Greeks. Egyptian pharaohs are carved in stone sitting on thrones and in more relaxed postures. Greeks are also frequently depicted sitting in both upright postures and in positions of ease. Why are chairs shaped the way they are? According to Galen Cranz "they did not originate as a straightforward response to the bends at our ankles, knees, and hips. Biology, physiology, and anatomy have less to do with our chairs than do pharaohs, kings, and executives" (2000, p. 23).

It is worth noting that not all cultures sit on chairs. There are possibly more people globally who do not use chairs than there are people who do. It is also highly likely that a lot of back pain and other health concerns of western people are caused by the act of sitting in chairs. Many people work and relax in squatting postures. "A common posture in Africa and Australia is what anthropologists call the 'Neolithic' stance: the person stands on one leg and plants the sole of the other foot near the knee of the standing leg" (Cranz, 2000, p. 27). I will not write further on the benefits of a squatting posture in this paper. Squatting is not common in modern western culture and is also nearly impossible for the physically disabled.

The chair, in one form or another, was used by a broad cross section of society in Egyptian, Greek, and Roman societies. After the fall of Rome, western culture digressed into a condition of greater poverty and greater restriction in social interaction between classes. The chair was used less as a device of work or leisure but as a symbol of authority and power. A stool is a more democratic seating device, allowing a user to turn and face any direction equally. The addition of a back, defining a chair, provides a rest and signals that the user is someone special. Referencing the more formal throne (see figure 4), Cranz (2000) explains: "The form of the chair literally expresses high status; it separates, and elaborates the separation, providing distinction, while it legitimizes support of the occupant's whole physical and psychological being" (p. 34).

Figure 4. Bacchus Throne, 18th century copy of Roman original (Cranz, 2014).

The Greek “Klismos” (see figure 5) is the model of recumbent ease that all modern chairs trace their lineage too. Its X-shaped form places the sitter back and reclined in a position of comfort. Many famous pieces of furniture today are based of this classic position. As furniture evolved over the years to follow fashion and architectural trends the basic body position has remained largely unchanged. Whether one is a store clerk or a CEO, the basic design of the chair is very similar.

Figure 5. Klismos, Grave Stele of Hegeso, Greece, 420 BCE (Hess & Case, 2014).

THE TROUBLE WITH "DISABILITY"

The kinds of work people are expected do in their homes and places of employment can cause significant stress for those lacking the physical architecture to accomplish them. These physical losses can frequently be reflected in one's mental health. Pain and suffering that begin in the body soon affect the mind, and pain that begins in the mind can affect the body. While my work addresses body position and comfort, I also explore methods that I as a furniture artist, might help restore a disabled individual's sense of inclusion. This can be achieved by creating furniture objects that provide the proper support required for comfortably attending to domestic tasks, and while still feeling like furniture, are not a

medical device. This can be a very necessary accommodation; one that allows a return to a more active quality of life.

People with physical disabilities function in a status complicated by other people's assumptions about what "normal" physical strength and functioning entail. These expectations create a situation of permanent liminality, or a lack of status and inclusion, in modern society (Willett & Deegan, 2001). This is especially true in the architecture of our homes and businesses, where physical barriers can prevent full participation in productive society. Physical barriers can easily become mental barriers when one is powerless to overcome them. Through exploration of traditional societies' rites of passage, and comparisons of liminal status and process between traditional cultures and the disabled, lessons can be found for designers on how to further include people with disabilities in society and remove barriers to social status.

There have been many local, state, and national laws passed related to people with physical disabilities. The Americans with Disabilities Act (ADA) was passed in 1990 prohibiting discrimination against persons with disabilities in an attempt to create an atmosphere of inclusion, not exclusion. The ADA describes disability as "...a physical or mental impairment that substantially limits a major life activity." The major parts of this law relate to gaining and maintain employment, allowing full access to all public services and structures, public transportation, all commercial services and structures, and equal access to telecommunications. While there have been some additions to the original law to cover a wider range of disabilities, there have also been some exclusions allowed for private companies.

Despite the passage of this law many Americans continue to be marginalized and forced to the fringes of society. Even though there are laws to the contrary, many buildings and public streets are un-navigable by the physically disabled. Even where access is provided it is usually not equal. There are never enough handicapped parking spaces, and accessible seats in movie theaters are usually in the back. People with physical disabilities are also prevented from full incorporation into our culture because it fails to provide them with stable and socially valued roles. These population groups have significantly lower levels of employment and social opportunity. This forces them into a lesser level of societal

integration and lower status. Isolation from society creates a situation of permanent "outsiderhood", where the disabled person can become lost in a liminal state as a non-person.

As a non-person, the social status of the disabled becomes invisible. The loss of social position to the point of non-status is involuntary and traumatic, such as in the case of a homeless and unemployed person; this social status is often associated with people who have a physical disability. Living without a defined status can establish a life of permanent liminality, especially in modern society (Turner, 1969). Physically disabled people are often considered to be socially inferior, and like unemployment or underemployment, characterizes individuals in the lowest social class hierarchy. The political weakness and passivity of individuals in this liminal state of exclusion can lead to an unending period of isolation.

Other members of a modern society frequently find it difficult to interact with individuals who exist outside all social categories. Even in a highly egalitarian society, where all people are supposed to be considered equal; there are still codes of conduct between different groups. However; there are no social rules governing the way we relate to people outside the established system. There have been numerous studies on the isolation of the disabled. These groups are frequently linked to traditional populations isolated from their social group as a way to characterize their role in society, or lack thereof. I believe looking at traditional liminal groups and rites of passage offers a solution, but more on that below. The *Disability Studies Quarterly* sites a prominent author on this subject:

> Marilynn J. Phillips, for example, writes that the majority of those with a permanent disability can never be cured, restored, or normalized in a physical sense. They perceive themselves in hypermodern society, therefore, as suspended between the sick role and normality, between wrong bodies and right bodies. Certainly, those with disabilities seem to occupy an ambiguous state; they are neither sick nor well. In a number of cultures, the physically disabled are not even considered human... In other small-scale societies, disabled children and the elderly are killed during times of environmental crises, because of the nonhuman, liminal status of the disabled individuals. (Willett & Deegan, 2001, p. 141)

There are fewer disabled people today locked away in institutions then there were prior to the 1970s. However, the reality of social invisibility is subtler. People in wheelchairs are often ignored for long periods of time in social settings. Friends at dinner parties and other social or work functions will frequently avoid a disabled person despite his physical presence in the room. People do not usually exhibit this behavior out of meanness, but act out of a learned behavior. Children are often pulled away from or scolded for staring at a

disabled person by their parents. Although the child is likely merely curious, this behavior reinforces the invisibility and undesirability of the disabled.

There is an almost unending string of examples of this kind of behavior. The point I take away from these anecdotes is not "what a terrible world"; it is rather that the people in this liminal group, underserved and underrepresented, are in need of greater community strength, services, and opportunities. In recent years there has been a greater awareness of the sensitivities of individuals with disabilities. The wars fought in Iraq and Afghanistan returned a greater percentage of survivors of battlefield injuries than ever before. The large number of otherwise healthy and young men and women, who returned to society strong and proud, despite their injuries, has helped the visibility and status of other amputees.

THERAPY AND COMMUNITAS

There are very few paths to entry into the larger society for people with structural physical disabilities. Even if modern society did offer significant support for the re-inclusion of this group, it is ultimately up to the individuals themselves to make the transition. As disabled individuals fight through the physical and mental barriers they face, there is a natural readymade group to help ease the struggle. Like liminal groups in traditional societies, there are bonds that form among people who share similar experiences.

Advocacy programs and self-help groups can help build communities of people with similar experiences. Participation in these groups improves health, reduces stigma, and increases ones acceptance of their own disability. Turner (1969) describes *communitas* as "relatedness among individuals without judgementality" (p. 124). This is true of self-help group meetings; since everyone is in a similar situation they share an equal position. Due to their equal status, self-help meetings are characterized by open and empathetic communication. There is mutual aid and support that allows all group members to depend on one another for assistance. These groups help to "build self-concepts of normality as members actively discover and construct identities different from those given them by society" (Willett & Deegan, 2001, p. 143).

Another way for individuals working through physical or emotional difficulties to process their pain and recover the strength required to reenter society with a non-transitional social status is through participation in art therapy. Eileen Scarry, in her book *The Body in*

Pain (1985), writes about how art making can help people to communicate how their body affects their mind. Art therapy offers people, even those who might not consider themselves to be particularly creative, a way to share with others what they don't know how to vocalize. Art Therapy is at its core a combination of Art and Psychoanalysis and art therapists are trained at encouraging creation and communication and at interpreting the results.

Art therapists work with everyone from children to veterans and can be very effective at assisting injured people in learning how to express themselves. Art can express ideas and emotions that the artist did not even know needed to be released. Many artists who experience disabilities have an obvious interest in conducting work on the issues closest to them. Some of these artists work with their own body, or the bodies of others, to better understand their own humanity. Art about disabilities can raise issues that affect people's relationships between life and their disability.

CHAPTER 4

ART AND SOCIAL INFLUENCES

For most of my life I have been a designer and maker. From the time I was a kid in my grandfather's garage pounding nails into wood to make tables on which to play, I have used tools and materials to create functional and expressive objects. As a child my designs were limited to what was laying around and what was needed for play. As an architect I used materials to define spaces that both served the functional requirements of programming and contributed to the emotional condition of the occupants. In architectural practice I was limited to paper and CAD. Today, I work in all materials to design and build furniture and use art as a means of expressing my ideas about how the human body interacts with the physical world. It is not such a big jump from the garage to the studio. My inspirations have primarily come from simply living my life.

During the development of *Changing Positions* I drew heavily from my life experience as a maker and as an amputee. While much of the motivation that fuels my drive come from my personal desire to make my built environment more conducive to my own physical and psychological comfort, there are a number of artists whose work has influenced my creativity.

ARTISTS OF INFLUENCE

My desire to see people returned to active function in a new and different way is an echo in another language of Gord Peteran's piece *Prosthetic Chair* (see figure 6). To create the piece, Peteran took an old wood chair with a woven seat, long since collapsed and far beyond use, and breathed into it new life. He accomplished this through a complete re-imagining of how the piece might function. By the precise introduction of a secondary brass structural system, attached to the original chair frame, it was now complete with a new and different seating surface.

Figure 6. "Prosthetic Chair", (Peteran, n.d.).

I appreciate the exploration in this piece of returned function to where it had been lost. The function is also modified, as Peteran has altered the seat height from the original ladder backed chair to a higher prosthetic stool. While Peteran was creating a conceptual sculpture he has also distinctly changed the expected way a prospective occupant orients them-self to this object as a work of furniture. Much of my work is non-standard in the way it is utilized, and users must pause to question the proper way to interact with my work, or even wonder if they should.

I frequently build works that ignore the boundaries between art and function. People unaccustomed to the grey areas inherent to studio furniture often ask “is this furniture or sculpture?” Peteran’s "furnitural" work does not easily fit into the typical categories of contemporary art, design, or craft. His furniture sculptures incorporate both found objects

and examples of his technical craftiness. His pieces are conceptual, frequently non-functional, often witty, and meant to challenge pre-conceived notions of the boundaries between furniture and sculpture.

Another artist who recombines furniture objects into functional sculptures is Tom Shields. Shields uses primarily chairs in his work, recombining broken or discarded chairs rescued from the trash or forgotten barns into conceptual works recalling the culture or place within which they were found. There are a few specific qualities of Tom Shield's work that appeal to me and have influenced my own work. One of my favorite attributes of Shield's work is that all his sculptures are constructed with the intention that they will once again be functional as furniture. So many artists make "furniture sculptures" that really cannot be used the way one might want to use furniture. What good is a sculptural chair if you can't sit on it?

Another aspect of Shield's work I appreciate is that even though his furniture sculptures are built from furniture to be used as furniture again, they are almost always used quite differently from how one might have used the original objects (see figure 7). This concept appeals to me very much. It goes right to the core of my feelings about my use of a prosthesis to walk. While my body may appear to still operate the way one might expect, my ambulation and the efforts it takes are actually very different. Bodily function is returned by my prosthesis, but differently, and so too through my furniture in *Changing Positions*.

A body that has been damaged due to age or injury may find standard furniture designs poorly suited to one's needs. These same bodies may find some alternative furniture designs more functional and more comfortable to them. Thus a body rendered non-functional within the confines of standard forms may be returned to comfortable function by furniture that supports one in different ways specific to needs.

Figure 7. "Family" Tom Shields (2010).

Allan Wexler made “I want to be Architecture,” a sculptural furniture form that is built precisely to hold one person (see figure 8). Many of the furniture forms I have built over all of my academic career are seating, however, just as Wexler, many of them only work the way I intended if the user positions themselves correctly. I have made chairs and stools and lounges and nests and perches that are totally functional yet demand specific body positions. Wexler takes it to the next level with this piece built into a wall made from wall in the negative shape of a seated person, albeit a planar one.

The human form has always been in the geometry of art and Allan Wexler never explicitly depicts it. He is an expert at finding places to stash things, and in “I Want to be Architecture”, Wexler has built the perfect cubby throne to stash a man. Wexler’s piece may

be touching on issues of Architectural ego, or blurring the transition between realms of man and

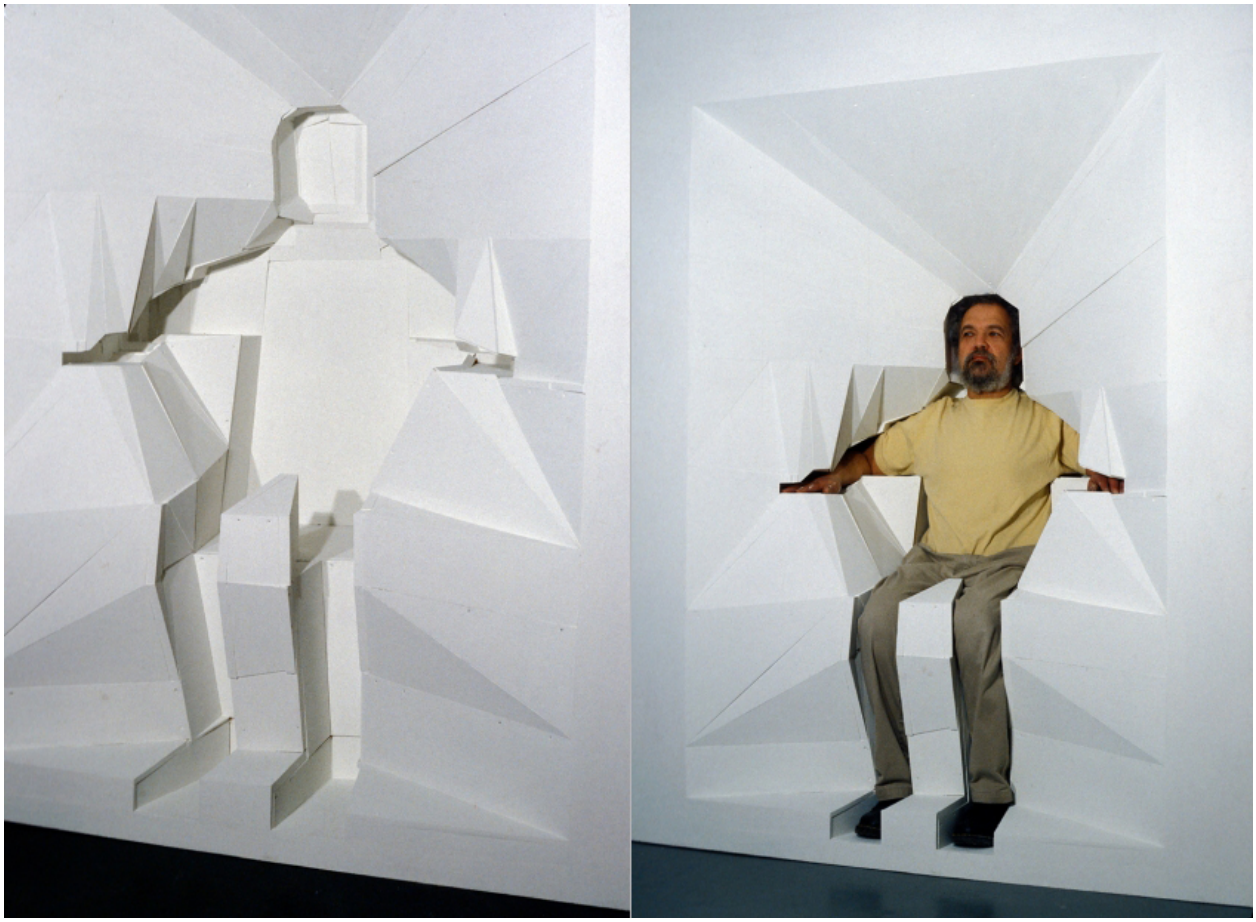

Figure 8. Allan Wexler, sitting in "I want to be Architecture" (Wexler, 2002).

building, but man and material always have to negotiate with each other in order find functional forms. As surely as the body is soft and somewhat adjustable and the drywall is hard and planar, both systems can (and must) accommodate each other. There is a place for the body, however it only works one way.

Wexler has another collection of work that inspired me to create my prosthetic furniture. The "Recycled Conference Room" is a set of furniture, complete with conference table and twelve chairs, all made from discarded broken pieces returned to function with additive prosthetic supports (see figure 9). If a chair were missing a leg, Wexler would attach a new element to make it functional again, but not attempt to imitate the original. The result

of this process is an eclectic mix of pieces held together with crutches and braces conceptually more at home in a veteran's hospital then a showroom.

Figure 9. Chair from "Recycled Conference Room", Allan Wexler (1990).

I find it intriguing to see such unabashed use of non-furniture patchwork. It would be simple enough for a craft person to reproduce the broken originals. What elevates this work to art is the structurally sound custom crafted oddness of what almost reads like the furniture equivalent of casts and Band-Aids. Seeing this work helped me to open up to the possibility of being more obvious about the prosthetic influence in my creative evolution.

SOCIAL INFLUENCE

In recent years there has been an increasing celebrity status of people open about their physical disabilities. It may be a product of the hyper-accepting politically correct times, where it has become mandatory to be openly accepting of people from every conceivable subgroup. It may also be a result of desensitization to prosthetics visible in the community due to a larger number of younger more active people who require them. There are a number of athletes and artists with prosthetics transitioning to modeling, dancing or acting. Simply being in the public eye with a hip-looking limb has had a significant influence on the perception of the capabilities of people with prosthetics. A few celebrities have embraced their disability and made it part of their image (see figure 10).

Figure 10. Pop star and model Viktoria Modesta showing off one of her legs (Nėgė, 2014).

Aimee Mullins is a perfect example of amputee athlete turned celebrity and activist. Mullins was born without fibula bones in both of her legs and was expected to never be able to walk. Her parents made the decision to amputate her legs below the knee and she was up and walking by age two. From this point forward she excelled academically and athletically, setting three world records in NCAA Division 1 track and field for Georgetown University as the first person to compete with woven carbon fiber sprinting legs modeled after the cheetah

(see figure 11). This accomplishment caused an explosion of awareness both in and out of the "disabled" community.

Figure 11. Aimee Mullins on carbon fiber racing legs (Mullins, 2009).

Mullins also found success as a runway model for top fashion designers and was soon landing on the covers of nearly every fashion magazine. She has also starred in a number of films. Her debut was in Mathew Barney's "Cremaster 3", where she played a number of different characters, wearing a variety of prosthesis and highlighting her abilities as a dancer. Had Aimee Mullins not been an amputee she may not have garnered as much celebrity. In many of her runway turns, photo spreads and acting roles, her prosthetics have been highlighted as part of her identity. Her TED talk "My 12 pairs of legs" has been viewed 2,954,074 times as of 1:49pm July 12th 2015. All of these accomplishments have contributed to the normalization of prosthetics in the media.

In addition to athletes, injured veterans have significantly advanced public perception of the disabled and of prosthetics. Most people are supportive of, or at least empathetic to, soldiers returning to US soil with grievous injuries. Today, more people survive battlefield injuries, than at any time in the history. Many of these wounded men and women have amputations and, as otherwise fit and active people, have demanded and deserve the highest

quality of prosthetics available. Through activist groups, like The Wounded Warrior Project, veterans have not only found connections within the disabled veteran community, but have also helped spread awareness throughout broader society.

CHAPTER 5

THE WORK

CHANGING POSITIONS: FEELING, BUILDING AND SHARING

The exhibition *Changing Positions* is a collection of works that offer alternative furniture forms designed to provide comfort and support in functional positions to people with specific physical disabilities. In addition, the exhibition shares the continuum of my personal experiences, both physical and emotional, following the loss of a limb that forever altered my reality.

In the early months and years after the motorcycle accident (discussed above) that radically changed my physical identity, my emotions were as fragile as my healing body. Thus a portion of the more sculptural work in *Changing Positions* is reflective of that condition and intended to communicate that visceral, nonverbal experience to viewers. Other more furniture oriented pieces present solutions for stability and increased function for those disabled people who require different structural needs. These objects rely on tectonic cues from a range of object-languages[5] to create works that reference the constructed structural aesthetic of prosthetics.

As my personal acceptance of my own altered physical reality increases, so too, does my willingness to share my experience with others. Through engagement in a concentrated period of reflection and creation leading to the exhibition, I made significant advances in this

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[5] Every object, regardless of function, is designed for some purpose and constructed with some technique. While purpose and technique may vary greatly there is generally some clue given through shape or material as to the function of the object. I refer to the ways these objects communicate their function as its "object language".

area. As a result, there is a performance aspect to some of my work that serves as communication. Thus the viewer can engage and experience what it feels like to "be me."

LOSS AND SUPPORT

The first series of works in *Changing Positions* exemplifies the relationship between my physical trauma (loss of my leg) and furniture objects designed to restore the functions lost (standing, balancing) due to this trauma. They are a group of prosthetic-like forms built to communicate both the psychological poignancy of my physical loss and to return stability and function to me within my domestic space. These works return functionality by allowing for certain body positions suitable to specific tasks. These furniture pieces provide a supportive structure and a comfortable surface designed for someone with an above the knee amputation. Each piece created to accommodate different needs, specific to rooms inside my house, or for a more active experience outdoors, i.e.: in a park or beach environment.

My mobility is generally provided by an extremely expensive, and at times, quite uncomfortable piece of medical equipment. Wearing an artificial leg is similar to wearing a poorly fitting boot; it chafes and irritates. Thus, when I am home alone, first thing in the morning or late at night, I don't wear my prosthesis. In this situation there are simple tasks that become more difficult to perform. Making a late night snack or doing a few dishes left in the sink become a treacherous balancing act. Washing up and shaving my face first thing in the morning is hazardous without two feet firmly on the ground. It is for these situations of daily domesticity that I designed and built these two furniture objects.

Perhaps the most viscerally dramatic piece of the exhibition, *Frozen Emotions* (see Appendix, Plate 1) is intended to put into physical form an emotional condition I experienced in the early months and years after my accident. Bodily pain and immobility proved to be very effective in isolating me from the active life I previously knew. To be trapped in a hospital bed and wheel chair was as much of an ongoing emotional injury as the physical ones I had sustained. I felt left behind and forgotten, just lost. Of course, I wasn't (I am lucky to have a wonderful family), but hours passed like years and the feeling of my life slowly draining away was quite real.

Frozen Emotions is constructed of cast aluminum and sized to contain my residual limb. It is set at a height and position that allows for me to actually step into it and use it as a support or "leg". The process of fabrication in this case is as important as the form. I began with a plaster cast of my stump and, once positioned in space where my leg would be, I began to splash cups of liquid wax onto the plaster cast allowing the wax to drain down and pool below. This draining of wax from the end of my plaster leg was directly representative of way I believed that my vitality was draining away. This process resulted in forming a stalactite like one might find in a forgotten cave, which I believed to be a perfect metaphor for my emotions. After the aluminum was cast I re-applied a coat of wax to suggest the continuance of this condition and process.

Less about loss and more about recovery, *Tool for Standing* (see Appendix, Plate 2) is designed to the specifications of my body and intended to be a tool for stability. It is half furniture and half high-end woodworking tool and includes details from both worlds. It was also designed and constructed using notable cues from the tectonic expression of my current prosthetic. I envisioned this object to be used in the kitchen, allowing me to perform stationary chores at the sink or stove top when not wearing my leg.

Prosthetics themselves are a hybrid object combining custom shapes, hand formed specifically to the individual user, and mechanical parts ordered from a medical supply catalogue. The socket at the top of *Tool for Standing*, is an actual component from one of my older prosthetics, slightly "beautified" for this project to more faithfully represent the brass of expensive woodworking tools. The socket is held securely but delicately, not unlike the way I am also held within my prosthesis. There are mechanical fasteners used to make connections between each component, as in the original inspiration, and off the shelf metal stock modified and used to provide a sturdy and flexible base. While *Tool for Standing* is a kind of prosthetic, it is not intended for me to use while walking, but only to stand in while performing whatever task requires support. The carved wooden handle again references tools and facilitates easy placement of this custom support structure as needed.

In addition to the kitchen, the bathroom is another environment where additional stability is required. When I shave and brush my teeth in the morning, it is usually before I am fully dressed and thus not yet wearing my leg. In that context, I need additional support in order to be able to perform these tasks with reasonable comfort and safety. *Cabinet Support*

(see Appendix, Plate 3) is designed to be a furniture-leg that aesthetically matches the bathroom vanity in my apartment. It is very much a piece of furniture and references architectural built-ins. This support stand is designed to echo the white oak frequently used in standard architectural built in cabinetry.

The lower portion of *Cabinet Support* aligns with the detailing of the existing bathroom cabinetry, while the porcelain dish on the top is set at the proper height for me to rest my leg in while using the sink. I formed the dish from a rolled slab of clay around a cast I made of my own stump, similar to the casting method used for *Frozen Emotions*, and matched the glaze finish to my existing bathroom sink at home. Similarly the finish applied to the storage cabinet below matches the finish in my apartment.

USEFULLY BUILT OR STRUCTURALLY FLAWED

Almost every home, office building, school, or public building have as part of their circulation pattern a set of stairs. Most modern public structures, also have elevators to supplement the stairs for vertical movement, but not all are equally equipped. People with physical disabilities frequently have difficulty using stairs and thus are limited in their ability to fully participate in active society. I have firsthand experience with this very difficulty.

As a youth I used to run up and down stairs full of explosive energy. Frequently, I jumped down stairs, touching as few as possible on my way, and ran up stairs as fast as humanly possible- just for the pure joy of it! *Memories of Stairs* (see Appendix, Plate 4) was designed and detailed to speak to this boyhood experience. Detailed like traditional residential construction, it recalls my memories of my New England home.

Today, these memories of the stairs in my childhood home are primarily a reminder of the uselessness of stairs to me today. Due to the initial traumas of fracture and shatter, as well as the subsequent surgical interventions to both remove and repair damage, my ability to use a set of stairs in any way remotely “normal” has been forever lost. I have chosen to represent this memory and subsequent loss of active functioning with a fractured and non-functional run of stairs that lead to nowhere.

The function of this stair has been removed (like my body’s) by fracture, shatter, and cut. Although *Memories of Stairs* was detailed like residential construction and built from alternative materials, it is not about the materials of construction, but their unsuitability for

the intended function. The stair treads and risers were cast from concrete in a way that was both thick and thin. This process deliberately created a structural condition that caused each step to partially fail under its own weight and completely remove any possibility of usefulness. The stringers and cantilevered landing were framed using typical 2x12s and 2x6s but left rough and un-decked to underscore the idea that, not only are the stairs unusable, there is nowhere to go anyway.

Some works in *Changing Positions* were built to illustrate how some common architectural realities can pose functional problems. Others were built as an exercise in restoring function. *Restructured Chair* (see Appendix, Plate 5) was designed and built as complete functional piece of furniture and then was subjected to a destructive action. In this case fire, a natural enemy to wood, was used to cause damage to the structural integrity of the chair without completely destroying the base material. Thus, I removed its functionality and also set the stage for a possible revival of purpose.

After the fire, there was significant surface damage and a portion of the chair was completely burned away. With one leg and part of the seat surface missing, there was not enough stability in the resultant form to be useful as furniture. However, the remaining chair body was sound enough to deserve repair. With the primary structure compromised, a second structural system was used to restore the piece to function. This restructuring process returns functionality to the piece as furniture, yet requires the object to be used differently than before.

It was important to me that I build the chair as a whole functioning piece of furniture and not use a found object already in need of repair. *Restructured Chair* was conceived of as a self-portrait and as such needed to be a creation of my own hands. I used the obvious anthropomorphic quality of the chair as a metaphor to represent my body. Like this chair, my body, though grievously damaged, was far from useless and, through determined effort and precise intervention was restored to reasonable functionality. The need for me to return function to an object/body of my making is a reflection of my strong desire to remain vital and purposeful in my own life.

The reason I chose to modify the way *Restructured Chair* is used as furniture is twofold. Foremost is the material duality between my flesh and blood (my organic body) and the synthetic technology of the prosthetic that helps me to walk and be functional. To simply

have replaced the missing chair leg burned away with an identical replacement would not capture this. Secondly, sitting in a low, or even standard height chair is both ergonomically inappropriate for any human body[6], and personally is quite difficult for me to get out of. By fully restructuring the way this chair meets the ground I was able to lift the seat height several inches and angle it forward, thus turning a chair into a "stool height" perch[7].

FURNITURE THAT SETS ME RIGHT

When working as a maker in a furniture shop or sculpture studio, the physical capacity to move and manipulate heavy or difficult materials is a requirement. In a creative economy, the ability of active people to perform work is highly prized. During peer critiques or group conversations about making work, everyone's perspective is valid and, thus, maintaining a sense of democratic equality between participants is important. Engaging in an eye-to-eye conversation in a position of work readiness is symbolically meaningful. In the shop environments common to studio furniture, these conversations almost always take place standing upright.

Standing for extended periods can be challenging for people with lower body injuries or back problems. It might seem simple enough for that person to sit down. However, sitting in a room of standing people can cause the seated person to feel separated from the group and of diminished social value. I frequently deal with this particular social awkwardness. There is never the perfect piece of furniture available in these moments so I am forced to choose between remaining standing with increasing pain or to sit down outside the group and be below the level of conversation. Neither of these options is desirable. As a furniture designer and maker I am in a unique position to bring a resolution to this issue of physical discomfort and social awkwardness.

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[6] Sitting in a chair at 90 degrees can cause numerous biological problems. Just to name a few: it prevents the back from maintaining its natural arch, the lungs from filling completely with air, and the intestines from functioning properly.

[7] A perch is defined by Merriam Webster's Dictionary as "to sit or rest on a raised seat or position" ("Perch," n.d.). Practically speaking, perching on an object a little higher then seat height allows ones legs to be lower, opening the hips and allowing the back to arch more naturally.

To this end I created two furniture pieces for *Changing Positions* designed to address this problem of finding rest without feeling socially diminished. *Sitting at Six Feet* (see Appendix, Plate 6) takes a chair, built to standard seat height, and elevates it with a second set of legs so that my eye level is the same height seated as it would be standing. The chair was designed to be open as to what kind of function or room or environment it would be most at home in. The specific details are partly from a dining room chair and partly from a club chair. It was constructed from red oak, finished simply with Danish oil and upholstered with a calfskin -usually used for soft work gloves -over thick but firm foam. The arms are not padded, keeping one from having their arms made inanimate by excessive comfort, but a matching ottoman reinforces the idea that comfort is possible. The overall visual design intention speaks of convenient utility, simple and basic, yet comfortable and soft, a rest chair for a worker.

The red oak chair and ottoman frame measures exactly sixteen inches off the ground, the calfskin cushion measures eighteen inches, thus putting the seat solidly at “standard seat height”. The chair and ottoman are both elevated by a second set of legs to meet the higher elevation I was looking for. The second added structure serves as a prosthetic to the first, allowing *Sitting at Six Feet* to be functional in the way it was intended. The prosthetic legs are built of steel and have adjustable self-leveling rubber feet and rubber pads to protect the wood of the chair while holding it securely. The additive design and direct construction process reinforce the prosthetic comparison as does the way the second structure interfaces with the first making reference to crutches. The introduction of a soft interfacing rubber between the organic material of the chair body and the hard steel prosthetic mimics the protective liner many amputees wear to protect their skin from the rigid carbon fiber of their prosthetic socket.

Wedged In (see Appendix, Plate 7) is an experiment in body position. I wanted to build a piece of furniture that would hold me in a standing body position, without using the muscles in my lower body. I looked to “executive furniture” and used my prosthetic leg for design cues. It was built with additive construction logic: each part does its job and is connected to the next part with custom hardware. The rich walnut and soft leather offers the suggestion of luxury. It is strong but flexible, very hard where it needs to be and very soft where it holds my body.

In addition to the challenge of finding a way to stand without using my legs, this piece was influenced by studies in ergonomics: how does squatting and sitting effect our bodies over time. While sitting for long periods can have adverse effects on our bodies, few people in western culture find squatting comfortable. I am personally incapable of squatting and have difficulty rising from low chairs. Therefore, I frequently find "perching" or leaning on a stool height surface to be a reasonable solution. The resulting form of *Wedged In* is a taller, standing perch, a play off of Peter Opsvik's Balan's chair.

Wedged In is designed to be "entered into" more than sat on. It has a base, which acts as a supplemental floor, creating a space where one is enveloped when using it. The two leather pads are set at specific angles relative to the base. This encourages the occupant to rest their shins and knees against the front while relaxing their weight against the back. Once perched inside, the rear pad's angle allows the occupant's spine to relax at the proper angle to be in a standing position without using any muscles in their lower body. Because this object supports and contains a standing person without requiring the use of their legs, it can truly be thought of as a prosthetic of position.

PUTTING IT TOGETHER AND ROLLING

Throughout the creation of this body of work, which includes emotive sculptural work and functional furniture pieces about prosthetics and body position, my desire to communicate through performance developed. *Mobile Climbing Seats* (see Appendix, Plates 8, 9) was my attempt to combine sculpture, function, and performance in one kinetic object. This project has had a long conceptual evolution, bridging a variety of emotional and functional considerations. Introspection and experimentation has led to an object that embodies much of my personality and my approach to material handling. Head and heart and hand came together.

Climbing Seats is functionally a construction for raising oneself from one level to another without the use of traditional stairs. Through a repeated process of sitting and standing, one may rise approximately five feet above the ground. The devise also has wheels and handles that allow one person to transport it by walking anywhere the functional use is needed.

Each element of the composition was built using recognizable languages from mundane devices one may encounter ranging from garden to architecture equipment. The steel wheels are typically associated with farm tools and the shoulder pads and handles also suggest manual labor. The wooden ladder form is self-explanatory as a device for vertical movement and the steel connecting structure is built to recall the 7" x 11" rhythm of typical stair construction. The carved wooden seats are intended to be suggestive of both stools and bicycle seats.

As a person with a physical disability, I have an aversion to climbing stairs. I am capable of doing it, while wearing my prosthetic, however the manner in which I use stairs differs from someone with two sound legs. After the accident that claimed part of my body and abilities, I had to ascend stairs seated, sliding upstairs backwards on my behind. With *Mobile Climbing Seats* I have created a different way of climbing up stairs that equalizes the process for people with or without two legs. There is no longer any physical or emotional excuse for avoiding runs of stairs.

This project was made mobile as an acknowledgement of the baggage all people carry around with them. Some people are burdened by physical baggage and other people deal with behavioral challenges. I will always carry with me the emotional burden of my physical trauma and the resultant daily reminders. The *Climbing Seats* are an acknowledgement of my own personal baggage, and, yet an aesthetic of light-hearted optimism is built in.

The overall aesthetic philosophy of this piece is additive and direct. There is a similarity to the manner of design and construction of prosthetic legs. Prosthetics are a hybrid between stock and custom, between comfort and utility. It was important to me that the piece be structurally clear and that each additive system be removable from the overall work. There are some elements that are meant to suggest modification of existing language and some elements that are intended to read as custom engineered. In areas where contact with the human body is made some small level of comfort has been added. Every move is deliberate and casual.

DISTILLATION OF THE IDEA

Of all the pieces in *Changing Positions*, *Prosthetic Stool* (see Appendix, Plate 10) is the most direct and distilled example of a furniture adaptation of prosthetic intention.

Prosthetic Stool is also the most concrete example of returning function to something- or someone- that has lost it. This piece is a stool built from a discarded portion of a no longer functional prosthetic leg. I took this functionless artifact and returned it to functional purpose through the introduction of another discarded object, a bicycle seat. Thus a foot, a leg, a knee and a seat were recombined, transforming them from functionless discarded parts into a well-regarded, utilitarian whole.

Prosthetics wear out over time, usually lasting from three to five years, and are replaced by newer models for the sake of safety and improved performance. An old leg of mine donated its socket to *Stand In for Function* leaving behind its damaged lower portion. This leg had served me for several years before reaching a point where its hydraulic knee was no longer safe for use. Far from being “trash”, I kept the lower half of the leg around hoping it would find use again in some other capacity. A cast off springy bicycle seat, otherwise destined for the dump, was donated by a local bike shop and made a perfect match. Through a creative connection, discarded, dysfunctional objects from two different mechanical realms were combined to make a reclaimed, functional furniture object.

CHAPTER 6

CONCLUSION

I am lucky to have the ability and opportunity to express myself. I have been motivated in part by the effects of artists and activists and by discussions with professors and my fellow students that allow me to share my experiences more openly. I have had some experiences in my life that are not common to everyone and these experiences have had a significant role in shaping the man I am. Part of my identity is my physical differentness and it has affected the way I experience the world around me. I do want people to know and understand more about the difficulties of having a disability. I am not a veteran or an athlete but an artist and a maker. As a result, my way of furthering the conversation about the inclusion in society of people with disabilities is expressed best through furniture design.

As I continue to use furniture and sculpture to explore our presumptions of body position, and how our physical and spatial orientation relates to function and comfort, I hope to discover other ways of improving the social integration of people with disabilities. While most people expect to be comfortable in their own homes, many other people have learned to accept much less from what our culture has been willing to provide for them. These individuals have as much a right to expect to nurture their own domestic environment with the same joy as an able bodied person. Hundreds of years of furniture design exploration have created thousands of seating options, yet most of the tasks we perform as part of simple domestic living still require a standing body position. Furniture can fill this role as well.

My interest in how the physical differences between people might preclude some individuals from fully engaging in functional domestic activities is still at an early stage. Through the continuous pursuit of greater understanding of this subject, I will continue to explore how I might help restore other's sense of independence and inclusion in society through my artworks. This goal will be achieved by creating furniture objects that provide the proper support and comfort disabled individuals need. It is also important for the

achievement of a non-isolating social status that these furniture objects feel like furniture and not like a medical device.

So far, through this investigation, I have created functional furniture forms, which provide the specific shapes of containment and support needed to allow a person with an above the knee amputation the ability to stand and perform normal domestic tasks. I believe it is important for the user of furniture like this to feel the piece of furniture is purpose built, and not feel like an adaptation of an existing "normal" piece of furniture. Adaptations can be useful when there is no other option; however, medical tools are rarely beautiful and can serve to further socially isolate their user.

Furniture can, and should, be designed and built from the very beginning to be functional to its user. If a piece of furniture serves a functional need, yet conversely contributes to the isolation and social contamination of a disabled person through poor design, then a better alternative needs to be found. I believe a line of ergonomically appropriate furniture designed for the specific functional needs and physical characteristics of a single individual could promote the ability of disabled individuals to live and work at an optimal level. These individuals should be included in the design process at a very early stage. The more included the client is during the creation of the furniture to help them live a full life, the more successful it will be. Not only will the physical object be well designed for the physical needs of an individual body, but the process itself will serve as a way to help the client communicate what it feels like to be them. Inclusion by the client in the design phase could be healing and empowering, a form of performance- art therapy, if you will.

I believe all people desire to be understood, and that all people need to feel that they belong. Any steps that I may take, personally or professionally, to help people with physical difficulties feel more welcome and accepted into society will also serve to benefit society as a whole. If nothing else, I will create new forms of furniture more accommodating to the disabled. Through this exploration I will continue to develop my skills as a maker and heal my spirit as a person.

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APPENDIX

PLATES

Plate 1. ***Cast Emotion*****.**

Plate 2. ***Tool for Standing*****.**

Plate 3. ***Cabinet Support.***

Plate 4. ***Memories of Stairs*****.**

Plate 5. ***Restructured Chair*****.**

Plate 6. ***Sitting at Six Feet.***

Plate 7. ***Wedged In*****.**

Plate 8. ***Mobile Climbing Stairs*****.**

Plate 9. ***Mobile Climbing Seats Details***.

Plate 10. ***Prosthetic Stool.***