ENTANGLEMENT OF MOVEMENT AND MEMORIES

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INTRODUCTION

My thesis exhibition *Entanglement of Movement and Memories* documents seventy nine days of walking as I recovered from hip replacement surgery. I have utilized the act of walking as a thread to tie together my personal experience regarding mobility, the politics of disability, and how this experience has turned my attention to the Everyday.

When I was four months old a septic infection in my right hip manifested as degenerative osteoarthritis. Unnamed and undetected for many years, arthritis actively degenerated my hip. In my twenties the arthritis in my hip became a striking presence in my life and the act of walking became increasingly challenging. My impairment made itself visible to others in a noticeable limp. Since my mobility affected both my lifestyle and how others perceived me, it caused me to reflect on how the body's movements function in society. Questions relevant to this inquiry include asking what forms of motion and movement are considered normal and how might a person’s movements mark them as Other.

At the age of twenty-nine the degeneration of my joint had become so severe I opted to undergo total hip replacement surgery. Physically my body was going to be opened, explored and changed. I wanted to create a similar process for myself artistically, focusing on the act of walking pre and post operatively. Reflecting on my process of walking I was able to come to a different understanding about myself, and my place in the world. I know what it is like to walk while being active and mobile. I know what it is like to walk with a physical impairment and loss of mobility, how it is to walk while recovering from surgery, and the feeling of walking in new ways as I healed and regained mobility lost to me for years. Stephen Johnstone, editor of *Documents in Contemporary Art: Everyday*, writes:

> Drawing on the vast reservoir of normally unnoticed, trivial and repetitive actions comprising the common ground of daily life, as well as finding impetus in the popular and the demotic, the rise of the everyday in contemporary art is usually understood in terms of a desire to bring these uneventful and overlooked aspects of lived experience into visibility.¹

My transient gait has made me understand that normalcy does not exist. Instead the concept of the Everyday replaces normalcy.

The medium of photography has been used to record the everyday activities of its users, and the photograph is often thought of as evidence and therefore as being truthful in its representations. I learned through my own experiences of observing and documenting myself how complicated and fragile this idea is. After a traumatic brain injury in my teens, which affected my memory recall, I first sought to record events through photographs. I gravitated to photography because everything felt so fleeting. Roland Barthes states that photography opens up a new space-time category he calls “having been there”.\(^2\) Losing some of my own cognitive ability to recall past memories, I became obsessed with this space. Barthes also argues that every image is a confrontation with death.\(^3\) I believe that this compulsion of image making helped me to face “what could have been” by replacing it with the “having been there”.

As I increased my own accumulation of images and technical understanding of photography I began to recognize that the very medium that I thought would help me remember was actually highly malleable. Experiencing first hand the extent to which the photographer brings her/his perceptions into image making I began to question the reality of truth in representation.

Because photography was invented by scientists and first used to gather “scientific facts” the photograph has been perceived as objective and accurate. The use of photography to find the “truth” was dictated by the positivist attitudes of nineteenth century scientists. I became fascinated by how science has influenced photography and the representation of normalcy. The 20th century theories of quantum mechanics and general relativity bring into question positivist attitudes of earlier scientific photographers. In *Entanglement of Movement and Memories* I reference dominant 19\(^{th}\) century positive scientific theories that created the Other and a few examples of 20\(^{th}\) century science that refute these same claims.


I also use my personal experience of being viewed as Other to help me understand that the structures that make up linked oppressions: racism, sexism, heterosexism, and ableism are made up of many complex small actions, thoughts, and beliefs. Philosopher Louis Althusser identified Ideological State Apparatuses [ISA] as a nexus of systems within the private sectors of our lives that shape our beliefs. Ideologies trickle down from large State Apparatuses into smaller interwoven nexuses of social structures such as school, family, church, art and media, influencing a person’s beliefs. The power of ISA’s, are the subtle ways in which they dominate our thinking as we believe we are formulating individual and unique perspectives rather than following the scripts that have been calculated for us.\(^4\) I am interested in how media like cinema and photography work in the service of ISA’s to perpetuate the idea of the normal and the Other. In my paper I will bring visibility to how these mediums influence mainstream dialogue concerning these binaries.

In the social context, I often found the parameters to share my experience were pre-determined. Conversations about my disability and recovery were clearly expected to be limited to reassuring people that I felt good. If I ever strayed from this reductionist script\(^5\) to speak about the complexities of my experience, the conversation became uncomfortable. Through this reduction I was unable to fully assert and own meaningful experiences that informed my sense of self. Having access to a whole gallery for my thesis exhibition, I saw the potential to create a space where I could express my experience in all of its complexities. I also sought to change the conversation by allowing the viewer to occupy a space where they could spend time with experiences, which might be unfamiliar. In Beholding, Rosemarie Garland Thomson speaks of visual activism, which asks the viewer to look instead of look away. This process has three steps:

1. Use the human urge to look to have people view you
2. Use the way the public looks at you, the way you look at them, and what they say about it to inspire them to think differently


3. Create a sense of obligation that motivates people to act in a new way.\(^6\)

SECTION 1. MAPPING THE EVERYDAY

My MFA thesis exhibition, *Entanglement of Movement and Memories* maps 14 days before and 65 days after I underwent total hip replacement surgery. Small monitors interspersed in the gallery show looped videos made from a camera attached to my body or the adaptive walking device I used post-operatively. The footage is of my movements as I retrained my body to walk, repeating various paths, incrementally moving farther away from my bed. These paths are also made visible in the lines that envelop the walls, floor, and windows of the gallery. [Figure 1]

Collapsing all 79 days of walking into a single space, the gallery is transformed and awakened. As the viewer steps in the door two black lines on the floor lead him/her in. One line moves straight forward and joins a major intersection of lines that traverse up the middle wall of the gallery. The second black line at the entrance turns and goes up the first wall into the “house”. [Figure 2] This line represents coming home from the hospital.
and the beginning of the map of my recovery. In the “house” section the lines are more dense and layered than anywhere else on the map, connoting movements more constricted. [Figure 3] As the viewer moves further along to the back of the gallery the lines have more movement and become longer, mapping the times when I was able to move farther away from the house. The lines also become less dense as I took long walks towards the end of my recovery.

As the viewer walks through the exhibition she/he encounters eight 10” x 10” square shelves coming off the wall. These shelves are spaced throughout the exhibition. On each shelf is an iPad inlaid into a frame, playing looped videos from different walks I took during the seventy-nine days. [Figure 4] While the videos are placed to correspond with their locale on the line map, they do not follow a progression of linear time. The videos also document all forms of walking I used during the seventy-nine day period, from walker, two canes, one cane to unassisted. By personally experiencing so many variations of walking, I began to understand that change is informative and a part of life. The concept of the Everyday is malleable and allows room for variation and transition. In Everyday Speech, Maurice Blanchot writes that “In a first approximation, the everyday is what we are first of all, and most often: at work, at leisure, awake, asleep, in the street, in private existence. The everyday, then is ourselves, ordinarily.” In this quote Blanchot illustrates that the concept of the Everyday rejects the idea of binary opposites, emphasizing variation. It is the Everyday we carry with us always, and it is the Everyday that became highlighted through my experience.

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Figure 2. *Entanglement of Movement and Memories*, Installation detail, 2012

Figure 3. *Entanglement of Movement and Memories*, Installation detail, 2012
The concepts of normal and abnormal [Other] entered the European lexicon for the first time in the late nineteenth century, coinciding with the boom of the Industrial Revolution. French statistician Aldophe Quetlet looked to the field of astronomical physics for inspiration for how to apply statistical analysis to populations. When mapping the stars in the night sky, astronomers would plot all sightings of the star; averaging these sightings to reduce the errors. This was called the “law of errors” and Quetlet took this astronomical principle and applied it to human characteristics like height and weight,

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creating the concept of the average person.9 Theodore M. Porter writes of Quetlet’s analogy to science:

The average man was the social correlate to the center of gravity. Just as the astronomer can, at least on first approximation neglect the infinitude of particles that make up any celestial body, and instead carry out calculations as if all its matter were located at the center, so the social physicist can resolve the trajectory of the “social body” simply by charting the progress of the average man.10

Quetlet’s idea of *l’homme moyen*, or the average man, was the catalyst for Sir Francis Galton, the founder of eugenics. Like Quetlet, Galton’s first experiences of observation were more atmospheric. A nineteenth century meteorologist, Galton created a “weather mapping” system that still proves useful to the field today.11 Additionally like Quetlet Galton sought to use his techniques for observing weather patterns as a way to observe people. Galton, who was Charles Darwin’s cousin, became obsessed with the elimination of ‘defectives’ a category which included the “‘feebleminded’, the deaf, the blind, the physically defective, and so on”12 Galton believed that gathering “visual data” would help him to see common physiognomies in people he labeled defective. Because photography was mechanical, Darwin, Galton, and many of their contemporaries saw the camera as a medium of truth, with virtually no human intervention.13 Art historian Martin Kemp writes that for Galton photography “Not only could help him gather eugenic records on a previously unimagined scale, but also envisaged how the very process of the medium itself could be turned to his advantage as an experimental procedure”.14 Hypothesizing that he could classify individuals into groups based on their physiognomy, Galton made multiple exposures onto a single plate, hoping a “synthesis of characteristic types would emerge”.15 In his composite of criminals we can see four, five, then nine different faces overlapped until finally we see eighteen faces overlapped on a

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9 Ibid., 5.
15 Ibid., 135.
single plate. This composite of a blurry male face is what a Victorian citizen would come to identify as what a criminal looks like. [Figure 5] Galton did this not only with criminals but also with “...types prone to disease and insanity, and so on.”\textsuperscript{16} These photographic representations of “defective” persons are some of the first instances in which physical appearance is visually linked with immorality, and physical disability is linked with inner moral deviation. The work of Galton and Quetlet enshrined the idea of the normal and the Other.

Figure 5. Sir Francis Galton, \textit{Composite Photograph of Criminals [4, 9, and 5, and all at the center]}, n.d.

The photographic devices used to link physical appearance with personality were later applied to movement of the body. By the late eighteenth century walking became associated with the lower class and met with suspicion among the wealthy and elite. The wealthy traveled by horse, coach, and carriage, and they feared pedestrians were “footpads” or highwaymen on foot.\textsuperscript{17} Walking became even more removed from mainstream experience in areas influenced by the Industrial Revolution. The year 1830 marked the inauguration of the world’s first steam powered railways in England.\textsuperscript{18} At this

\textsuperscript{16} Ibid., 135.
\textsuperscript{18} Ibid., 256.
juncture walking “stood out when its pace was out of keeping with time…walking ceased to be a part of a continuum of experience and instead became something consciously chosen.” To go for a walk became an activity of choice rather than a necessity. These historic examples highlight that where and how a person moves informs perceptions of who they are. Again the medium of photography was present to visually make people Other based on how they walked.

Edward Muybridge’s famous monograph, *Animal Locomotion*, is broken up into three sections: Movement, Abnormal Movement, and Animal Movement. Muybridge photographed different activities of the body in motion showing the body as a machine, movements calculated, repeatable and performed before a measuring grid. The University of Pennsylvania funded Muybridge’s photographic work, and in return the University expected Muybridge to create images that had “scientific results”. Working in collaboration with Francis Decrum, an instructor of nervous disease, Muybridge photographed the irregular gaits of people with disabilities. His plate *Study of an Irregular Gait of Spastic Walking, 1887* [Figure 6] shows a woman walking. The plate has three rows and eleven columns. The first row shows her walking from the side; the second from the front and the third from the back. The woman is unclothed and is being led by another woman whom is clothed. They walk in front of a grid background, a reference to the “scientific” nature of the images. The “spastic walker” is always looking down, gazed at, and led by another person. Her body is on display; subordinated in the name of science. Selected images from this study were published as twenty plates in his famous work *Animal Locomotion*. Muybridge went on to expand his interest in observing motion by creating the zoopraxiscope. This is a projector that showed still

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19 Ibid., 267.
23 Ibid., 304.
frames of movement rapidly, in sequential order, creating the impression of movement.²⁴ Through this invention Muybridge is considered the father of motion pictures.

Figure 6. Eadward Muybridge, *Study of an Irregular Gait of a Spastic Walker*, 1887

In *Staring: How We Look*, Rosemarie Garland Thomson argues, “What you look like, rather than who you are, often determines how people respond to you”.²⁵ I have experienced this statement to be true. When I returned to Hawai’i three months after surgery I noticed very quickly that people did not notice me when I walked down the street. Walking with a limp for years I had become accustomed to stares, the occasional inquiry “What’s wrong with your leg?”, and unfortunately, sometimes, being mocked or called crippled. I was at once relieved and disturbed by my ability to blend in post recovery. It strengthened my understanding that a walk can hold social value, and reinforced the decision to publicly exhibit the videos as a way of claiming an aspect of my identity.

To visually tell my story I referenced the nineteenth century positivistic use of mapping, attaining inspiration from the celestial sky, and using that plotting system to

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chart people. I wanted to create a map charting my own progress that would refute their systematic categorization of movements and people as normal or Other. Denis Wood and John Fels write that a map creates a reality that is beyond “our vision, our reach, the span of our daily lives…we are always mapping the invisible or the unattainable or the erasable, the future or the past, the whatever-is-not-here-present-to-our-senses-now…”

To address the idea of observing and being observed I decided to have the line map wind to the top of the ceiling, come off the wall, and wind across the floor. [Figure 7] By asking the viewer to look at the places in gallery we do not examine [above or below the 58 – 60” midline for hanging work] I raise the questions: “What parts of society do we not look at?” “What kinds of bodily existence are not a part of mainstream dialogue?” “What is overlooked…. and why?” In Entanglement of Movement and Memories, every line is a specific moment of my recovery. The viewer is immediately confronted with this complex nexus when they step into the gallery. To move through the exhibition they must step on and over the map. The complexities of experience cannot be ignored through this interaction.

The juxtaposition of viewing all the walks as a whole through the map creates a statement that all the movements in the exhibition are interconnected. There is no place on the map where walking is performed in an ideal fashion that ignores all the other walks. Every step adds up to create the sum of the exhibition. All specific moments: the gross, boring, exciting, glorious, painful, tiring, hilarious are all wrapped up together.

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In observing myself I used a Go Pro Camera, a small HD video camera that is worn on the body, to record the act of walking. Not very long into the process of documenting, I realized there was a failure of the medium; there was a gap between what it felt like to step and what the video portrayed. I felt disappointed that my limp, which awakened me to every other step I took, was not as pronounced in the videos. That gap between what is experienced and what is documented interested me, so I kept recording, intrigued by what this failure meant. Failure does not equate with nothing happening or nothing being learned. Through this “failure” I was able to explore the exposed space between expectation and reality. The videos could not share my experience; the medium did not have the capability to articulate all the subtleties and internalized feelings. The failure of the medium I encountered made me question again the nineteenth century scientist’s use of photography and their understanding of the world and people as absolute in measurement and predictability. Nineteenth century French scientist Marquis de Laplace argued that the universe was absolutely deterministic and measurable. His positivist stance led him to state that set scientific laws meant that anything could be
predicted. Laplace’s belief did not just apply to science but “went further to assume that there were similar laws governing everything else, including human behavior.” 27 Laplace’s beliefs aligned with those of Quetlet and Galton. However our understanding of the laws of the universe have changed quite drastically since then.

The Heisenberg Uncertainty Principle of quantum mechanics demonstrates that observation does not provide a complete understanding of the observed. While the principles of quantum mechanics are paradoxical and puzzling, they are widely accepted today. In 1926 Werner Heisenberg was able to show that neither the position nor velocity of a particle could be determined exactly. There is always uncertainty in one or the other. When measuring a particle’s position the energy of light shone onto the particle for observation inadvertently changed its velocity. Also the more precisely one tried to measure the velocity of a particle the more the effects of observation changed the particle’s position.28

Those who judged who I was based upon my body’s movement had perceptions that often fell into stereotypes. I was assumed to be less capable, both intellectually and physically, than I am. They would speak to me in a patronizing manner, or want to physically do things for me that I could, with adjustments, do for myself. Conversely because the cause of my limp was not obvious, other people assumed it was a non-problem; I was just not taking care of myself properly; assuming that if I did certain exercises, drank special ionized water, or took certain pills I would feel better. Sometimes I was not disabled enough to have my experience legitimized. Comparing me to their elderly arthritic relatives, they thought I was exaggerating my condition. The message in these various conversations was that I needed to change. I could not simply be a person with arthritis expressing my reality.

The above assumptions regarding disability are paralleled today in popular culture. In the chapter Screening Stereotypes from his book, Why I Burned My Book and Other Essays on Disability, Paul K. Longmore observes that disability is heavily prevalent in movies and television but is paradoxically often overlooked and

28 Ibid., 57.
unexamined. Longmore identifies three prevalent stereotypes portrayed in mainstream media. The first and most pervasive is the villain or criminal. A character’s disability is a signifier of their deviance. The second stereotype, the monster, is shown through extreme disfigurement of the body. The monster is a person who has lost control over their actions. The third stereotype is the story of the person who heroically overcomes their disability. All three of these prevalent portrayals show that disability is a personal problem and never examine the Ideological State Apparatuses that determine the way disability is understood.

Learning that photography and cinema had a history of being used to visually make people “Other” reinforced my decision to use the same media differently. I decided to control how people would see disability through my body. In the videos the camera is always pointed towards the ground, showing my body from the hips down. By never seeing my face, it is ambiguous at first if the subject is the same in every video. Attention to small details of repetition, black and purple sneakers or clothing that keeps reappearing, reveal that the subject being observed is the same. The monitors in the exhibition are physically positioned at the same height as the camera. In the viewer’s act of watching my legs become their legs. [Figure 8] Through this mechanism the boundary between observer and observed becomes blurred.

I used a fish eye lens for all the videos resulting in more of the environment being shown as well as a large distortion of my body. My hips are expanded covering the whole width of the frame and my legs are elongated so that my feet appear to be miles away. The ambiguity, the blurring of the line between observer and subject, and the bodily distortion create a disorienting effect. [Figure 9]

30 Ibid., 133.
31 Ibid., 135.
32 Ibid., 139.
I wanted to create a feeling of ambiguity because I am still processing my experiences. Losing my mobility changed me, and regaining my mobility has changed me again. Disability rights activist Aimee Mullins explains in her TED talk *The Opportunity*...
of Adversity that adversity is an experience, which everyone will encounter at some point in his or her life:

Implicit in this phrase of overcoming adversity, is the idea that success, or happiness, is about emerging on the other side of a challenging experience unscathed or unmarked by the experience… But, in fact, we are changed. We are marked, of course, by a challenge, whether physically, emotionally or both. And I am going to suggest that this is a good thing. Adversity isn't an obstacle that we need to get around in order to resume living our life. Its part of our life… the question isn't whether or not you're going to meet adversity, but how you're going to meet it.

The adversity in my life transformed my Everyday experiences of movement.

What is important is the accumulation of experiences I have with walking. My Everyday of today is completely different than it was six months ago, and is continually changing. I am deeply troubled by the weight and prominence of the idea of the normal as though as people we are somehow static beings. That among all our numerous variations, there is somehow an epitomized standard, static variant we should all strive to attain. It is the Everyday that became highlighted through my experience. I was awakened to the nuances of how a body moves, and how it feels to move again in ways lost to me for years.

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http://www.ted.com/talks/aimeemullinstheopportunityofadversity.html
SECTION 2. ENTANGLEMENT OF MOVEMENT AND MEMORIES

Quantum Entanglement is when “two or more particles separated in space can have physical properties that are correlated.” In quantum physics this literally means that a measurement taken of one entangled particle can also give us a measurement of its entangled partner no matter the distance that separates them. Two entangled particles spin in different directions, one spinning up the other spinning down. If the particle with a spin up changes its spin to down, its entangled partner automatically switches to up. I see this entanglement as an analogy applying to the interconnectedness of lived experience.

Moving from a space of disability into a space of no longer feeling disabled was jarring. After I recovered from having my hip replaced, I was excited to no longer be in chronic pain. However I felt that my excitement reinforced the social view of disability as a completely negative experience. Being opposed to divisive binary understanding, I felt hypocritical. It appeared as though my life experiences were reflecting binary opposites such as normal and Other.

After time passed I realized that my experiences were only divisive if I divided them. The more I recovered the more I had experiences in which I found joy in the Everyday and mundane movements of life. I realized that this amazement was fed from the past. For example a month ago I bent down to tie my right shoe. While I was tying my laces it was as if time stopped. In that moment I realized this motion of reaching down to my foot to tie my shoe, effortlessly, is something I had not been able to do for 6 years. The excitement I felt could not be contained; the amazement I felt at this fluid action was a triumph and celebration for me. If I had never had arthritis and lost aspects of my mobility I imagine so many things would be different, but one of them would be a loss of the amazement of my Everyday movements. I am now able to see how the action of tying my shoe was in dialogue with my memories of arthritis and that the two work together. Having experiences of being able bodied and of being disabled, I see myself

35 Ibid.
comprised of both experiences. These two seemingly diametrically opposed experiences are entangled in my movement and memories, similar to the way atomic particles are entangled. I also interpret this principle as showing that even on the quantum level binary opposition cannot exist. The entangled particles with opposite spins are connected and inform each other.

The sequencing of the videos in *Entanglement and Movement and Memories* is a combination of what could be considered normal and the Other. The dated order of the videos is: June 18, 2011, June 15, 2011, May 29, 2011, June 27, 2011, July 30 2011 Part II, May 20, 2011, July 2, 2011, July 30, 2011 Part I. [Figures 10 -17] At first inspection the videos seem to take a progressive order. The first video in the exhibition June 18, 2011 shows walking indoors with a walker. The last video in the exhibition July 30, 2011 Part I depicts walking unassisted outdoors. At first a binary reading could be interpreted: inside/outside, disabled/abled, dark/light, etc. Upon closer inspection the videos progress and digress as I move from a walker to being arthritic before surgery, then flash forward to using two canes and to being recovered. Then the narrative moves back to pre-surgery, then forward to one cane, and recovered again. Creating a seemingly progressive but non-progressive sequence does not give a resolution or a cohesive narrative. I created this non-narrative because all of the aforementioned binaries. I do not exist on one side or the other, but in both places. The boundary is blurred. The sequencing of the videos was inspired by Felix Gonzalez Torres’ series of “date pieces”.36

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Figure 10. Still from *June 18, 2011*, video 3’51”, 2011

Figure 11. Still from *June 15, 2011*, video 1’11”, 2011
Figure 12. Still from *May 24, 2011, video 3’01”*, 2011

Figure 13. Still from *June 27, 2011, video 1’01”*, 2011
Figure 14. Still from July 30, 2011 Part II, video 1’52”, 2011

Figure 15. Still from May 20, 2011, video 5’01”, 2011
Figure 16. Still from *July 2, 2011*, video 2'40", 2011

Figure 17. Still from *July 30, 2011 Part I*, video 1'33", 2011
Torres uses minimalism and everyday objects to create spaces to open up dialogue about political ideology and to question binary opposition. *Untitled [1989]*, one of his most famous “date pieces”, is a commemoration of the 20th anniversary of the Stonewall Rebellion at the event site, Sheridan Square. [Figure 18] His billboard at this site reads “People with AIDS Coalition 1985, Police Harassment 1969, Oscar Wilde 1895, Supreme Court 1986, Harvey Milk 1977, March on Washington 1987, Stonewall Rebellion 1969”. The public historic events highlight a struggle to end oppression from a hetero-normative culture. The events in this piece are not listed in a chronological timeline. This ordering questions the history of a linear timeline and parceling events into different compartments.

![Figure 18. Felix Gonzalez Torres, *Untitled [1989]*)](image)

Art critic Nancy Spector writes about his “date pieces”: “An abstract mapping of such conceptual zones can be glimpsed in his early series of date pieces…Presented in arbitrary order the events listed refuse narrative resolution, and thereby coexists.”

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37 Ibid.
was interested in creating a similar coexistence with the videos and map in *Entanglement of Movement and Memories*.

Felix Gonzalez Torres’ work was influenced by poet, Rainer Maria Rilke’s notion of “Blood Remembering”.⁴⁸ In Rilke’s poem *For the Sake of a Single Verse* he writes:

> Poems are not . . . simply emotions . . . they are experiences. For the sake of a single poem, you must see many cities, many people and things . . . and know the gestures, which small flowers make when they open in the morning. You must be able to think back to streets in unknown neighborhoods, to unexpected encounters, and to partings you have long seen coming; to days of childhood whose mystery is still unexplained . . . to childhood illnesses . . . to mornings by the sea, to the sea itself, to seas, to nights of travel . . . and it is still not enough.

- The Notebooks of Malte Laurids Brigge³⁹

Rilke’s poem suggests that memory is a powerful and informative process for artists. My memory is not linear and when I think back to my recovery I do not start with waking up from anesthesia and follow the events sequentially until the present. I float back and forth through different periods of time sometimes randomly triggered by events occurring in the present. The videos and the act of mapping served as a personal anchor to the experience of disability and recovery. I do not remember specifically what the chronic pain of arthritis felt like except I remember it was difficult; I do not remember how it felt to limp the way I did or move at the pace I used to, although I know it was much slower. As in Rilke’s poem, I see myself trying to burn the experience into my being, so it will stay with me as a part of myself I do not need to even think about or try to remember.

The map also implies a cohesion and entanglement of experience. The map does signify a progression towards recovery but there is constant overlap of all the various forms of walking that occurred. In the beginning of the map where the lines are denser, all forms of my walking have occurred. The tape in this area is thick and comes off the wall like a raised scar that has not yet healed.

A scar: A meeting place between inside and outside, a locus of memory, of bodily change. Like skin, a scar mediates between outside and inside, but it also

⁴⁸ Ibid., 42.
http://www.washingtonpost.com/wpsrv/style/longterm/books/chap1/lifeofapoet.htm
materially produces, changes, and overwrites its site. If skin renews itself constantly, producing the same repetition, the scar is the place of the changed script: mountains are thrown up, the copy isn’t quite right, the crooked lines sneak over smooth surface…In these moments of strangeness, the core of phenomenological experience comes into the foreground of perception: that you are oriented toward the world, pressing and surging toward it from a place, a body, an origin. When this place becomes unfamiliar, sense, perception, and meaning making become experiential as spatial and temporal phenomenon. There is a location to knowledge and sensation, and the scar can mark this insight.\(^\text{40}\)

The area where the tape is protruding from the wall like a scar also represents when I could not leave the house for two and a half to three weeks. The lines in this area of the map represent the repetition of this period. Moving from the bed to the bathroom, to the fridge, to the bed, over and over. One reason for not leaving the house was my physical strength during this period. Another reason was inaccessible environments. As I was invited out to friend’s houses, restaurants, or coffee shops, I had to ask: Would I be able to get inside? Would I be able to sit down? During this period I realized that the way space is designed can be exclusionary. In designing *Entanglement of Movement and Memories* I left the gallery completely open. This open space was unrestrictive with lots of room to move around in. In the center of the gallery I placed a bench so that if people wished to sit and rest their legs, as I often had to, they could. The shelves for the iPads were placed at the height of 32” to be accessible for people who use wheelchairs.\(^\text{41}\) My statement, which was placed on the floor, was printed in large type so it would be easier to read. [Figure 19] It was important for me to try and create an environment that was as accessible as possible, so that my exhibition had a sense of inclusion.

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I used materials that promoted inclusion and accessibility as well. That is why I chose iPads as the monitors for displaying the videos. In researching materials I learned that iPads were a break through tool in special education classrooms, especially among students with Autism Spectrum Disorder and Down Syndrome.42 Inspired to use my materials to give back, I wrote a proposal to receive funding to purchase iPads for my thesis exhibition and then donate them after the exhibition. Thanks to the John Young Scholarship in the Arts I was able to do this. The iPads, have been given away and are being used by educators and people with disabilities for communication, education, inclusion and accessibility.

SECTION 3. SPACE, TIME, AND RELATIVITY

Newton believed that space and time were absolute. Einstein’s Theory of Relativity ended this notion and proposed that “each observer would have his own measure of time.” Einstein also showed that space and time are not flat and static properties but are linked into a space-time continuum that is curved by mass and energy. “In the theory of relativity there is no unique absolute time, but instead each individual has his own personal measure of time that depends on where he is and how he is moving”. The theory of general relativity also showed that a person’s position would change how they observed time, showing that if someone is at a higher position looking down, time will appear to move more slowly. This was tested in 1962 with two precisely synchronized clocks mounted to the top and bottom of a water tower. The clock closer to the ground was found to be keeping a slower time in alignment with the predictions of the theory of relativity.

One of the biggest changes I experienced was in time and observation. Before arthritis was a loud force in my life I rushed from place to place, on the go. Due to chronic pain and stiffness my ability to rush around ended. As I got used to my new slow pace I started to realize I was spending more time looking at my surroundings. Based on my position and rate of speed my observations looked completely different than observations from when I was moving from a faster position at a different speed. The more time I spent looking the more I saw. I connected to my surroundings in a deeper way. It made me desire to slow my pace and observe even more.

This change in my observation made me question my own perceptions. Photographers Doug and Mike Starn filmed moths in flight for their body of work Attracted to Light. [Figure 20] The Starn twins explain that in their research they discovered that human brains which run on high resolution are only capable of processing 30 separate events a second. Moth brains, which run on low-resolution, are capable of processing 300 separate events a second. A moth’s experience of space and time is

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44 Ibid., 30.
45 Ibid., 34.
46 Ibid., 33.
completely different than a person’s, and highlights that the way we experience the world is relative; vision and perceptions are completely variable and not absolute. To articulate this phenomenon the Starn twins slowed the timing of the videos that were recorded in low resolution. “When you see them flying at their speed they do not seem so frantic and choppy. Their movements are much more fluid when you see them bank their turns while orbiting around a light bulb.”

Figure 20. Doug and Mike Starn, Attracted To Light, 1996 -2007

In the above video still, parallels can be drawn to Muybridge’s work in *Animal Locomotion*. However the ways in which science is used and interpreted is different. Muybridge aimed to study and categorize movement through his sequenced images. Doug and Mike Starn use scientific knowledge as inspiration for their photographic and video work, but they use this knowledge to question ideas about perception and perfection. “Our work has always tried to find some way of talking about

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http://www.starnstudio.com/
the individual nature of perception. The earliest scotch taped photographs were a rejection of photography as anything like vision...there is no raw perception like there is in a camera. We all experience the world through our senses but then the experiences are processed through our minds. Our minds are each unique.”

In editing the videos for Entanglement of Movement and Memories I realized that there was a gap not only in what I felt and what the video portrayed but also in the pace of time I observed and what the video recorded. During recovery it felt like everything in my life went into extreme slow motion. In contrast watching the videos I felt I was looking at a sped up, time-lapsed video. Therefore I slowed down all the videos by 25% to more accurately portray what the experience felt like. This artistic decision illustrates how different observers experience time. Through the slowed pace of the videos the interconnected dialogue between my movements and the environment becomes emphasized. States Stephen Hawking, “When a body moves, or a force acts, it affects the curvature of space and time- and in turn the structure of space-time affects the way in which bodies move and forces act”

In the first video, June 18, 2011, the camera was placed in the basket of my walker looking towards my legs and the ground. With the late afternoon sunlight basking against my legs I move the walker through narrow passages of the house. The shadows of my legs are cast onto the wooden floorboards, most of the scene enveloped in darkness. At one point in the video I approach the front door of the house and pause to look outside, with the inaction it appears as though the video has malfunctioned, become paused, until the viewer notices unsettled dust particles floating through the air illuminated by the sunlight. The beautiful simplicity of pausing and stillness only interrupted by illuminated dust particles is an example of the Everyday observation I grew to covet. [Figure 21]

In the fifth video, July 30, 2011 Part II, I am walking though a riverbed. The video contains approximately 10 paces. In “normal” time it is a quick video of getting out of the water. Slowed down to 25% it becomes a more quiet and poetic piece; it picks up my timid steps as I walk, unassisted but cautiously, still acquiring my footing.

48 Ibid., 5.
As I move you can see the water ripple outward affecting the reflections in the water. This interconnected dialogue between me, my actions, and the land becomes pronounced and feels more authentic to my lived experience. [Figure 22] In the sixth video May 20, 2011, I am walking through a muddy and flooded field when I still had arthritis. Again my steps are slow and tentative as I move through the slick ground, the sky and clouds are reflected into the puddles. The sun dances around the reflections interacting with my movement. [Figure 23]
Figure 22. Still from *July 30, 2011 Part II*, video 1'52", 2011

Figure 23. Still from *May 20, 2011*, video 5'01", 2011
A previous body of work, *Turning Arrows into Flowers* was the catalyst for the line map in *Entanglement of Movement and Memories*. In this project I explored how my Everyday movements interacted with sunlight. Created in 2010 while I still had arthritis, it was a celebration of regaining the ability to ride a bicycle after months of intense physical therapy. I placed an 8” x 10” pinhole camera inside a backpack. A hole was cut in the backpack for the camera lens/aperture to stick out of. I wore the camera while going for bike rides making a long exposure during each ride. The resultant images were of my movement traced by the sunlight through the pinhole, set against blue sky. [Figure 24] Most exposures were 45 minutes to half an hour; large expanses of time are elapsed into a single frame, creating a beautiful formal depiction of my energy and mass moving through space and time.

Figure 24. September 30, 2010, from *Turning Arrows into Flowers*, 2010

The method of visually mapping in *Turning Arrows into Flowers* is employed similarly in *Entanglement of Movement and Memories* to map my walking.
From the outside of the gallery the viewer is drawn in by the line map which moves throughout the space. The drawing as a whole is representational of the seventy-nine days of walking. Upon entering the space the viewer’s proximity to being inside the map changes their relationship to the lines. As they move through the space different aspects of the map are anchored with different videos of movement, setting up a range of relationships for the viewer. While intentionality and specificity are translated through the placing of the lines and their quality, the map is guideless. The specificity of each line is known only to the artist or is only divulged through conversation. Through this ambivalence between specificity and ambiguity the viewer is left without a complete understanding of what they are seeing; their own narrative will start to form. Through phenomenological action the viewer will automatically and unconsciously connect what they are seeing to their own memories and perceptions.

Our speed affects our perceptions. In *Wanderlust A History of Walking*, Rebecca Solnit quotes Wolfgang Schivelbusch’s exploration of how the train changed passenger’s perceptions. Schivelbusch articulates in his book, *The Railway Journey: The Industrialization of Time and Space in the Nineteenth Century*, that passengers on trains found the experience to be disembodying. As opposed to walking through the landscape, the experience of train travel transcended time and space. It seemed to the passengers that they transcended the material world that grounded them, leaving them feeling disembodied. Through this disconnection passengers felt less like passengers, and more like “parcels” and found train travel dull.50

Solnit concludes “In the century and a half since the railroad seemed to go too fast to be interesting, perceptions and expectations have sped up, so that many now identified with the speed of the machine and look with alienation and frustration at the speed and ability of the body.”51 Time is not absolute, it is relative, yet society constructs a standardization of how quickly things must be done, and this pace is only quickening. The slow motion videos counteract this pace, and suggest there is potential in slowing down.

51 Ibid., 258.
CONCLUSION

It has almost been a year since I underwent hip replacement surgery. The changes I have gone through in the last 8 years have been drastic and have monumentally changed my perceptions of who I am and how I see the world. When I was first diagnosed with arthritis I was upset and afraid of the uncertainty that lay before me. The theories of quantum physics and relativity provided me with reassurance and comfort. It helped me see that while socially we have an idealized body, the nature of reality is uncertain. In my exhibition I used this thought process to create an exhibition of a dualistic nature. The map acts as a macrocosm of my experience while the small monitors act as a microcosm providing the viewer an intimate look into my experience.

My Everyday act of walking, which has been in constant fluctuation, is the lens through which all the ideas in my paper and exhibition were been examined. The Everyday is also in constant fluctuation and transcends the binary opposites of the normal and the Other. By embracing the uncertainty in my life and examining it, I was able to have new experiences with Everyday movements I otherwise would have taken for granted. I am not special for getting a new hip, millions of people do every year; however I am grateful that I took the time to fully examine the process my body and mind went through. By examining this process and being able to exhibit it publicly, I was able to claim an important life marker of how I have come to self identify. Now that I have done so, I feel that I have been able to heal some of the social scars acquired while I was seen as Other.

While I have healed and feel ready to move on personally and artistically it is important for me to still advocate. My next project I will be working on is a return to the bicycle. In the fall of 2012 I will be riding in the California Coast Classic, a 525-mile ride down the coast of California to raise money and awareness for the Arthritis Foundation. I believe that this experience will also be another powerful life marker, and I am excited to be a part of larger community experience and to meet people who have had similar experiences. I am not sure what the artistic work coming out of this experience will look like, but I am sure that I will continue to use my body as means of expression.
Bibliography


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