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Prosthetic Promises : : How Bodies, Technologies, and Selves Contribute to Amputee Identity

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Prosthetic Promises:
How Bodies, Technologies, and Selves Contribute to Amputee Identity

A dissertation submitted in partial satisfaction of the
requirements for the degree Doctor of Philosophy

in

Sociology (Science Studies)

by

Cynthia Elizabeth Schairer

Committee in charge:

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2014

The Dissertation of Cynthia Elizabeth Schairer is approved, and it is acceptable in quality and form for publication on microfilm and electronically:

Chair

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2014

DEDICATION

For the respondents and my family.

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2011. "Communities of Prosthesis Users and Possibilities for Personal Innovation." *Disability and Community, Research in Social Science and Disability 6: 113-133*.

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"Formal Disparity: The Challenges of Dressing-Up Non-Standard Bodies." *Panel: Disability and Social Inequality*, Pacific Sociological Association Annual Meeting, San Diego CA, March 24, 2012.

"Human Hardware: When Artificial Legs Become Legitimate Body Parts." *Panel: Assistive Technologies and Embodied Use,* Society for the Social Studies of Science (4S) Annual Meeting, Cleveland OH, November 3, 2011.

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"The 'War on Terror' as Moral Panic" with Gershon Shafir. Lessons and Legacies of the War on Terror, UCSD Sociology Department, La Jolla CA, May 6, 2011.

"Human Hardware: When Artificial Legs Become Legitimate Body Parts." *Panel: Issues in Health and Medicine.* STGlobal Consortium Annual Conference, Washington D.C. April 16, 2011.

"Human Hardware: How Artificial Legs Become Legitimate Body Parts." UCSD Culture and Society Workshop, La Jolla CA, April 5, 2011

"New Body Construction: Body Project Yesterday, Today, and Tomorrow." *Panel: Sociology of the Body II: Body Theory and Ethnography.* American Sociological Association Annual Meeting, San Francisco CA, August 11, 2009.

"Of Bionics and Blisters: Thoughts on the Limits of Social Acceptance." *Panel: Intimate Interfaces: Constituting Technologies, Bodies, and Users through Seamless Relations* Society for the Social Studies of Science Annual Meeting, Montreal QC, October 12, 2007.

"Prescribing Prosthetics: The Social Shaping of a Personal Technology." *Science Studies Program Colloquium*, University of California, San Diego, Science Studies Program, San Diego CA, May 7, 2007.

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ABSTRACT OF THE DISSERTATION

Prosthetic Promises:
How Bodies, Technologies, and Selves Contribute to Amputee Identity

by

Cynthia Elizabeth Schairer

Doctor of Philosophy in Sociology (Science Studies)

University of California, San Diego 2014

Professor John Evans, Chair

This dissertation is about the role of objects in social life, specifically, in the social interactions that create identity. I take a close look at the experiences of people who use prosthetic legs to delve into the details of how technological objects and bodies participate in these interactions. I argue that objects and bodies contribute to human identities and take on their own kind of object-identity in the process. This analysis also

reveals changes in popular attitudes toward amputation and prosthetic technology over the last three decades. I suggest that these changes reflect wider shifts in the meaning of bodies and disability in the U.S. These changes highlight a weakness in theories of identity as a basis for inequality that is focused on stigma and deviation from cultural norms. Instead of describing norms and identities as relatively static or as arising from interactions among humans, my approach bases identity in interactions between humans and objects (including bodies), thereby accounting for the role of materiality in the construction of social identity without resorting to technological or biological determinism.

Prosthetic limbs are a particularly good case to study when sorting out the role of the body in social identity. Prosthetic legs replace lost legs aesthetically and functionally, but also require daily management. These obvious and intimate interactions between humans and devices are an occasion to see how self, technology, and body relate. By taking seriously the roles of humans and non-humans, my analysis keeps sight of the ways interacting with one’s own body takes work.

I. INTRODUCTION

This dissertation is about the role of objects in social life, specifically, in the social interactions that create identity. I take a close look at the experiences of people who use prosthetic legs to delve into the details of how technological objects and bodies participate in these interactions. I argue that objects and bodies contribute to human identities and take on their own kind of object-identity in the process. This analysis also reveals changes in popular attitudes toward amputation and prosthetic technology over the last three decades. I suggest that these changes reflect wider shifts in the meaning of bodies and disability in the U.S. These changes highlight a weakness in theories of identity as a basis for inequality that is focused on stigma and deviation from cultural norms. Instead of describing norms and identities as relatively static or as arising from interactions among humans, my approach bases identity in interactions between humans and objects (including bodies), thereby accounting for the role of materiality in the construction of social identity without resorting to technological or biological determinism.

Prosthetic limbs are a particularly good case to study when sorting out the role of the body in social identity. Prosthetic legs replace lost legs aesthetically and functionally, but also require daily management. These obvious and intimate interactions between humans and devices are an occasion to see how self, technology, and body relate. By taking seriously the roles of humans and non-humans, my analysis keeps sight of the ways interacting with one’s own body takes work.

Much speculative writing in the 1980s and 1990s looked to prostheses as a metaphor for seamless integration with technology as a way to obliterate the boundaries between nature and culture, human and machine (Gray 1995; Haraway 1991; Stone 1995). But this vision of technological objects fused to organic bodies overlooked the ways that bodies and prostheses resist one another and how they must be coaxed into integration (Jain 1999). Therefore, rather than casting prosthesis use as a test case for the possibilities of cyborgs, I focus on relationships between actual amputees and the devices they use to examine the influence these relations have on social identities.

Excitement about prosthetic technology starting in the late 1980s, reflected in the academic work cited above, was no doubt a response to the fantastic advances in prosthetic limbs around that time. But that scholarship also heralded new notions of what bodies are for and what they might be capable of when coupled with technology. Over the course of this dissertation, I describe newly available identities for people with amputation, prosthetic legs, and the bodies of amputees. In the conclusion, I offer some suggestions about what has made this possible.

Materiality in Social Life

As part of his (1999) theory of social structure, William Sewell critiqued previous theories for describing social structure as either material or symbolic. According to Sewell, this divide reflects a disciplinary tension in social theory between materialism, exemplified by Marx, and idealism, exemplified by Levi-Strauss and other French structuralists. Marxist materialism holds that all social activity grows out of material conditions of life, while structuralist idealism explains all social activity by way of the organization of culture or ideology. With his clarification of Giddens's notion of *structuration,* Sewell argued that social structures are made of both material and symbolic elements. Since its publication over twenty years ago, Sewell's work has become an important touchstone for cultural sociology and continues to be one of the clearest and most concise articulations of the problem of materiality in social analysis.

The challenge of theorizing materiality is particularly acute in the sub-disciplines of sociology most influenced by social constructionism (Berger and Luckmann 1966) and post-structuralist critique (Butler 1999; Foucault 1977). The challenge has been to take seriously the power of language and symbols to shape social reality while still accounting for the force of material objects and resources. Specifically, the constructionist approach to identity and difference has lead many critics to wonder how much physical bodies matter in the construction of gender, race, class, sexuality, or disability.

Including Bodies in Sociological Analysis

Social theorists have included physical bodies in their theories in different ways. Marx regarded bodies as a kind of natural resource that is controlled and exploited by capitalism, creating inequality (Tucker 1978). Foucault (1977)described how systematic organization and deployment of bodies as resources have created modern power structures and disparities, though he also emphasized the role of language and logic in this process. Scholars continue to grapple with how to include physical bodies in social analysis, especially with respect to topics such as gender (e.g., Butler 1999; Epstein 2007; Kimmel 2007), sexuality (e.g., Collins, Kendall, and Michael 1998; Connell 2005), medical interventions (e.g., Mol 2002; Thompson 2005), and various types of body projects (e.g., Monaghan 1999; Sweetman 1999).

The problems surrounding this question are particularly clear, for example, in debates between medical sociology and disability studies (described in detail by Thomas 2007). The "social model" of disability (Barnes 1998; Oliver 1990), a prominent approach to disability in British scholarship on disabilities, works to define disability in terms of social structure, relations of power, and oppression while minimizing or even denying the importance of the body in the definition of disability (Hughes and Paterson 1997; Thomas 2007). Other scholars have called for more serious theorizing of impairment as distinct from disability (Davis 2006; Hughes and Paterson 1997; Linton 1998; Thomas 2007). Much like the move to distinguish between sex and gender, impairment and disability were defined so as to delineate the social and leave room for the physical or biological. Impairment would refer to physical limitations of body functions or body structures, while disability would stand for the social structural components that transform impairments into a social disadvantage.

Of course, this move to separate the natural from the social has been subject to the same critique that Butler (1999) made of the sex/gender divide (McRuer 2006b; Samuels 2002; Tremain 2002). The fact of physical differences alone cannot explain how certain differences become socially salient while others are generally ignored. Aside from the obvious judgments imbedded in the term "impairment," the very existence of the category points to a social discourse that makes such differences meaningful. However, this important critique cannot overcome dissatisfaction with the social model of disability, as it does not offer constructive suggestions for how physicality might be accounted for in studies of disability. Rather, it tends to collapse the physical into the social and imply that the only legitimate way to study bodies is to study discourses about the body.

Similar tensions can be seen in the sociology of the body. When sociologists have placed the body at the center of analysis, it most often appears as a cultural topic, a subject of power, or an expressive medium. Bryan Turner has worked to show how the body is central to the major theories of Marx, Foucault, and Bourdieu (Turner 1996). These theories tend to concentrate on the ways bodies are objectified and controlled by cultural forces or those in power. Some have applied these ideas to qualitative research on numerous topics, most prominently boxers (Wacquant 2004) and ballet dancers (Wainwright and Turner 2006). Other work in sociology of the body has focused on practices such as plastic surgery, dieting and fitness, or tattooing and piercing, examining them as modes of self expression and cultural expression, or as methods of consolidating masculine power or class distinctions (Gill, Henwood, and McLean 2005; Gimlin 2010; Grabham 2009; Saltman 2003; Sweetman 1999). Such work, which relies on a reading of bodies and body practices as an index of culture, tends to describe bodies as shaped by culture and obscures the ways in which culture may be shaped by bodies. Again, scholars struggle to find ways to talk about the body that capture how physical bodies are simultaneously malleable and recalcitrant.

Deciphering the place of physical bodies in culture has been especially challenging when theorizing identity and difference. Since the 1960s, scholars of race have been especially anxious to show that the biological body cannot be legitimately described as the source of racial inequality. As the ideal of a "color blind society" became the inspiration for subsequent movements for women's rights, gay rights, and disability rights, attending to biological difference has been linked to illegitimate discrimination and bigotry (Fischer, Hout, Jankowski, Lucas, Swidler, and Voss 1996). However, physical differences between men and women and between able and disabled bodies are difficult to ignore when trying to explain the cultural categories that lead to differential treatment. As mentioned above, attempts to do so have met with critical dissatisfaction.

The most common objection to attempts to include material objects and physical bodies in cultural analysis is that these things are described as dominating or determining cultural outcomes. For example, technological deterministic narratives suggest that certain socio-technical outcomes are inevitable and independent of human will or ways of thinking. In the case of identity and difference, biological determinism can lead to the conclusion that discrimination and inequality based on categorical differences are natural, unavoidable, and perhaps even excusable. Of course, including materiality in a model of identity and difference does not require determinism. However, to avoid determinism in my work, I must be deliberate about when and how materiality matters.

Identity in Interaction

This dissertation advances a very specific notion of identity that is based on the work of Erving Goffman (Goffman 1963) and Candice West with Don Zimmerman (West and Zimmerman 1987) and Sarah Fenstermaker (Fenstermaker and West 2002). Identity, in the sense that I use it here, refers to a shared definition of a given individual –

a definition that is built up through interpersonal interactions and symbolic relationships between attributes and expectations. The expectations I have in mind include stereotypes, but also past behavior and biographical details that others use to anticipate the sorts of interactions they might have with the person in question.

I argue that objects also have this sort of identity, following the insights of Actor Network Theory (ANT) and other work in Science and Technology Studies (STS). When I write about *object-identity*, I have in mind a socially constructed, locally agreed upon set of expectations for what a given object should be, what it should do, and how to interact with it. In some ways, this parallel illuminates the point that ethnomethodologists strive to make about human identities. It is relatively easy to see that technologies are socially constructed and that their appropriate use and desirable characteristics come to be agreed upon in the course of interactions with them. However, far more sociology has taken seriously this approach to human identity than the analogous approach to object identity.

Both humans and objects participate in the interactions that create their respective identities. In other words, the meaning and expectations of objects are not only based on the linguistic exchanges between people; the objects themselves are parties to the social construction of identity. This is important as it establishes a place for material objects in the analysis of social life. I will argue that not only do objects participate in social interaction and take on a kind of identity, but bodies also act as objects in social life, taking on their own identities somewhat distinct from the conscious, intentional self.

With this, I offer a specific analytical method for locating objects *and* bodies in the dynamic process of meaning making.

My approach to accounting for objects and bodies in social life is inspired by a well-established tradition in ethnographic sociology that looks for the ways that social structure and social identity are produced and reinforced in the process of social interaction(e.g., Becker and McCall 1990; Blumer 1969; Garfinkel 1967b; Goffman 1969; West and Zimmerman 1987). These traditions in micro-sociology tend to focus on the communication of meaning among human actors and the social process of creating a shared definition of the situation among human participants.

Based on the work of Harold Garfinkel, ethnomethodology focuses on the ways that people make meaning and knowledge in everyday practices. This approach takes seriously individuals' interpretations as important products of social structure and culture (Heritage 1984). In the tradition of ethnomethodology, Candice West, Don Zimmerman, and Sarah Fenstermaker (Fenstermaker and West 2002; West and Zimmerman 1987) developed a specific theory of social identity and difference. This was first developed in an essay on "doing gender" and later expanded into the concept of "doing difference." Inspired by Garfinkel's famous work on "Agnes," a young transgender person seeking a sex change operation, they assert that gender, and other social differences such as race and class, are not in fact attributes, but accomplishments of social interaction (Fenstermaker and West 2002; Garfinkel 1967a; West and Zimmerman 1987).

This ethnomethodological understanding of social identity goes beyond Goffman's role theory (Goffman 1963; Goffman 1969) by pointing out that gender, for example, is made of more than personal presentation and “knowing one’s place” based on established and firm rules. Rather, ethnomethodology stresses how the rules themselves are continually recreated and subtly altered in each interaction. Furthermore, these rules are policed by more than the discomfort or retaliation brought out by unmet social expectations, for these responses may also be employed creatively, contingent on the given situation. In this way, ethnomethodology seeks to leave room for agency and change, even as it works to explain the durability of identity categories and the social structure they are part of.

The focus of ethnomethodology is similar to but distinct from that of symbolic interactionism. Symbolic interactionists are likewise interested in the making of meaning, but they focus on institutions and the texts generated around these institutions, leading to an emphasis on organizations, subcultures and collective work over interpersonal encounters (Becker and McCall 1990). It is worth noting that, within this tradition, the concept of *embodiment* refers to the ways that culture is inscribed on, embedded in, experienced from and reflected by the body. But the symbolic interactionist notion of embodiment positions the body as a somewhat passive medium that is shaped by and symbolizes human actions. In ethnographic scholarship that draws on this tradition, bodies tend to receive or resist culture and human will, but the ways that they exert their own forces on everyday life is less clearly captured. For example, in her dissertation on phantom limbs, Cassandra Crawford (2007) traces how the discourses and practices surrounding amputees and phantom sensations shape not only the treatment of phantom pain, but also the experience of using an artificial limb. According to Crawford’s analysis, phantom limbs are currently understood to inhabit prosthetic limbs and this embodiment is the premise upon which successful prosthesis use is predicated.

Bodies as Actants in Everyday Life

These traditions in micro-sociology tend to focus on the communication of meaning among human actors. In his essay, *Where are the Missing Masses?* (1992), Bruno Latour argued that sociology misses the crucial work done by objects in upholding the social and moral order. He called attention to the ways that objects such as speed bumps, seatbelts, and automatic door openers contribute to social order. According to Latour, it is impossible to account for the stability and recalcitrance of social life without including the actions of objects. This intervention into the sociology of everyday life is an extension of the symmetry principle in ANT – the demand that the same analytical tools be applied to humans and objects and that we cannot decide in advance that humans are more influential than objects. This principle is part of a general strategy for taking into account the role of non-humans in scientific practice, but in *Missing Masses,* Latour suggestively applies this methodological stance to the classic theoretical question of how to account for the durability of social structure. Not only should objects be included in the networks that make up science, objects must be understood as parties to the relations that create and sustain norms, morals, and ways of living.

Because ANT offers an analytical method for including physical objects in accounts of social life, some scholars have suggested it as a possible solution to theoretical divides in sociology of the body and sociology of medicine regarding the relative influence of physical bodies and objects on the one hand, and cultural norms and attitudes on the other (Galis 2011; Latour 2004; Mol 2002; Moser 2006a: 376; Place 2000; Prout 1996; Schillmeier 2010: 124; Timmermans and Haas 2008). However, there is no clear consensus on how this might be done; scholars have drawn on many disparate dimensions of ANT and Science Studies to achieve their goals. Some, including Latour himself, have suggested that such work ought to include phenomenology (Latour 2004)[1], while others look to laboratory ethnographies as practical methodological models (e.g., Mol 2002; Prout 1996).

If objects, such as artificial body parts, take on social attributes and contribute to the construction of personal identity through interaction, can the same be said of organic body parts and bodies? If so, all the tools of micro-sociology and ANT would be available for the analysis of bodies in social life. This dissertation explores such a possibility in the case of prosthetic legs.

Methodology

To investigate the relationships between amputees and their prosthetic limbs, I conducted fieldwork at support group meetings in California, New York, and Washington D.C., sporting events for athletes with disabilities, workshops designed to improve amputee walking and running, a national meeting of the Amputee Coalition, and two

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[1] Because of my interest in the experiences of amputees, many have suggested that phenomenology ought to be important to this project, but I have determined that this philosophical approach is incompatible with my interest in relationships between bodies, selves, and objects. Phenomenology is concerned with creating an ontology based on sensory experience and perception. As I understand it, such a strategy calls into question our ability to know anything about relationships among others and objects, especially when they are not immediately present (Conversation with Professor Robert Rosenberger, November 2011). I do not seek to make any claims about the ontology of objects, bodies, or selves. The approach I argue for is a methodological strategy for thinking about and describing the role of materiality in social life. It is not meant to be a definitive statement about what the world is.

prosthetics trade shows. It was at these events that I met potential interviewees, but also learned about the industry that serves those with limb loss and the technologies that are available. I listened to presentations aimed at recent amputees and presentations aimed at seasoned professionals. I asked sales representatives and model patients about the changes they have seen in the industry over the past 20 years. I collected literature and advertisements and examined sample prosthetic feet, knees, and skins. I spoke to inventors of specialized limbs and designers of new components. I asked people about the legs they were wearing and what they had worn before. I talked to prosthetists about their careers, the industry, and their businesses. I observed how amputees talked to one another and how they presented their artificial legs in these various venues. In the course of my fieldwork, I recorded meeting or observing more than 150 individual amputees and I had the opportunity to conduct formal in-depth interviews with 31 of these people.

I also recorded speaking with over sixty prosthetists, physical therapists, sales representatives, engineers, and designers. I conducted formal interviews with four prosthetists who have been working in the field of prosthetics and orthotics for over 30 years. Two of these men are prominent practitioners and educators and the other two work in private practices. These interviews focused on the history of prosthetic limb design, but also touched on issues of cosmetics and how client preferences have changed over the past generation.

Among the amputees I interviewed formally, I encountered nineteen respondents at support group meetings and events organized for amputees. Two respondents contacted me directly after seeing a flyer in their prosthetist’s office, five were referred to me through other respondents, and four I met through other contacts. Twenty-two respondents had been amputees for less than 6 years when I interviewed them. The other seven had been living with limb loss for at least 17 years. Sixteen respondents lived in California at the time of the interview and thirteen lived elsewhere in the United States. Nearly all interviews were conducted in person, except for two that were conducted over the phone. All were recorded with the consent of the respondents. All interviews were transcribed and thematically coded using Atlas.ti.

The formal interviews were in-depth, lasting between one and two hours. They were semi-structured by an interview guide (Appendix A), but I did not conduct each interview in the same order. I allowed respondents to discuss some topics at length if they were inclined to do so and attempted to follow the flow of their thoughts when choosing the next question. Therefore, some questions were answered many times in multiple ways, while other questions were not addressed. In many cases, respondents answered questions spontaneously without being asked. The interview guide focused on the process of learning to use one’s first prosthetic leg. I included questions about experiences with various prosthetic technologies over the years when interviewing long-time amputees. I also asked questions about working with prosthetists and physical therapists, responses to the amputation and prosthesis from family and friends, and interactions with strangers in public.

I interviewed a diverse set of amputees. In this dissertation, I focus on responses from twenty-nine men and women who lost legs as adults or teenagers.[2] In this group eighteen respondents were men and eleven were women. Twenty-one respondents described themselves as white and the remaining eight described themselves as African American, Native American, Mexican American, Filipino, or mixed. Seventeen respondents lost legs after traumatic accidents, nearly all involving automobiles. Within the group with traumatic amputations, ages ranged from 23 to 90 years, with an average age of about 48 years. Twelve respondents lost limbs due to illness including diabetes, cancer, and meningitis. Within this group, ages ranged from 23 to 75 years, with an average age of about 52 years.

In comparison to the current estimated population of amputees in the U.S., respondents under the age of 65 are overrepresented (72% compared to 58%). Similarly, respondents who lost limbs in traumatic accidents are overrepresented (58.6% compared to 45%). The over representation of trauma-related amputation is partly due to the inclusion of six respondents who have been amputees for more than 30 years. Ethnic minorities are underrepresented (27.5% of respondents were non-white compared to 42% of the larger population), while women are overrepresented (37.9% of respondents were women compared to 35%) (Ziegler-Graham, MacKenzie, Ephraim, Travison, and Brookmeyer 2008).

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[2] The other two interviews were with one man who had lost both hands and one man who was born with a partial foot. These interviews were illuminating, but as outliers, quite different from the others. Therefore I have put them aside for the purposes of this dissertation.

I focus on individuals with lower limb amputations for three main reasons. First, approximately 94% of people with major amputations (excluding fingers and toes) have lost lower extremities (Ziegler-Graham et al. 2008). Second, artificial legs are generally more effective in augmenting lost function than artificial hands and arms and thus are more likely to be used. Finally, the issues faced by people who have lost hands are quite different from those faced by people who have lost legs and therefore precludes meaningful comparison, especially in a study of this size.

Only two respondents lost legs in combat, but this is actually an overrepresentation of wounded veterans. Though wounded soldiers returning from Iraq and Afghanistan command much media attention and federal resources, they are a comparatively small group. While there are an estimated 2 million amputees living in the U.S., only 1,558 of them lost limbs while serving in the current conflicts (Fischer 2010; Fischer 2014).[3] In addition, soldiers wounded in Iraq and Afghanistan have access to a unique community and culture of recovery within military hospitals that sets their experience apart from civilians who lose legs (Messinger 2009; Messinger 2010; Weisskopf 2006).

Because of the relatively small sample size and the diversity within it, the comments here cannot be assumed to be representative of all or even most American amputees. Rather than document what all or even most amputees think, I aim to document the range of experiences people have with amputation and prostheses in the

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[3] Unfortunately, this figure continues to grow. This number excludes those who have lost fingers or toes only.

current moment. My contention is that the fact that any individual has reported the experiences or feelings recorded here reflects possibilities for amputees today. Furthermore, there are prevailing themes across these interviews that indicate concerns that are likely common to many who use artificial limbs. These themes suggest possibilities for future quantitative studies of amputees.

To protect the privacy of my respondents, I have assigned each an alias that I use throughout the dissertation. Appendix B provides selected demographic information for each respondent. I have worked to remove any potentially identifying information from the text, but the people represented here are actual individuals, rather than literary composites.

I am not an amputee, nor did I know any amputees personally prior to the start of this research. My entry into this world relied on networking with professionals and internet research, in fact, making it quite similar to those who face amputation in adult life. Had I been an amputee, I may have been able to participate differently in the events I attended and may have met different people. However, to my knowledge, I was not excluded from events or refused interviews because I am not an amputee.

Prostheses, Then and Now (1970-2001)

As I explore the process by which amputees, prostheses, and bodies take on social identities, I will argue that the meaning of amputation has been transformed in some surprising ways. To understand my findings, however, one must understand the design of contemporary artificial legs and how this has changed in the last 40 years. In this period, prostheses were transformed from heavy relatively static wearable sculptures made to look like organic legs to light-weight devices that mimic the movement of feet and legs but do not necessarily resemble human body parts. The current state of the technology colors what it means to be an amputee today. Therefore, contemporary prosthetic design plays a leading role in all the data I have collected.

Many people assume that contemporary high-tech prosthetic legs were developed for soldiers returning from Iraq and Afghanistan since 2001. While media coverage of these veterans have brought current prosthetic technology to the awareness of the general public, the revolutionary changes in the design of prosthetic legs were well established by 2001. Rather than a sudden improvement inspired by war, the development of contemporary prosthetic legs was a gradual process of academic research, independent invention, and international corporate competition over more than 20 years.

Since the 1970s, every aspect of lower limb prosthetic design and fabrication has been transformed. Prosthetists developed new ways to fabricate sockets (the rigid cup-like piece that fits over the residual limb) out of thermoplastic and researchers created new suspension systems that better secured a prosthesis to a residual limb. By better distributing pressure over the surface of a residual limb, these developments made it possible to wear dynamic or energy-returning feet, designed to literally add a spring in the step. During the same period, manufacturers began to offer modular systems of adapters and components based on an endoskeletal – rather than exoskeletal – frame. By the late 1980s, some companies began offering micro-processor knees.

All these changes are the basis for the incredible functionality and the particular high-tech aesthetic associated with contemporary prosthetic legs. Improved suspension coupled with energy-returning feet gave amputees unprecedented mobility, specifically the ability to jog and hop. The endoskeletal systems allowed for lighter-weight construction and continuous fine tuning of a prosthesis' alignment. Though the designers of these new systems and components originally assumed that users would always opt to cover them with foam cosmetic covers, or *cosmeses*, a new prosthetic aesthetic has emerged largely based on the structure of these new devices.

In what follows, I compare the conventional prostheses common in the early 1970s with contemporary models. There is no thorough and authoritative account of the transformation in Western prosthetic design in the late 20th century. While I touch on some of this history, doing justice to the story goes beyond the scope of this project. This comparison of prostheses then and now relies on scholarly articles and textbooks on prosthetics (Gerhardt, King, and Zettl 1986; Kegel, Carpenter, and Burgess 1978; Mital and Pierce 1971; Murdoch and Donovan 1988; Vitali, Robinson, Andrews, and Harris 1978; Wilson 1972) advertisements for lower limb prosthetic systems and components that appeared in issues of the journal *Prosthetics and Orthotics International* between 1985 and 1997, and formal and informal interviews with professionals in the field.

In the 1970s, an amputee was likely to receive a prosthesis that represented a refinement of a basic design developed after the Civil War (Guyatt 2001). These were modular prostheses, in the sense that the foot, shin, and socket were assembled separately and put together by a prosthetist. Prosthetic components such as feet, knee mechanisms, and fasteners had been manufactured in factories for at least 100 years, but assembly of these parts, fashioning the socket, and shaping the leg as a whole continued to be a local process of customization and required the attention and artistry of a prosthetist. In 1971, the cutting-edge prosthetic foot was called a Solid Ankle Cushion Heel (SACH) foot (Figure 1b) (Mital and Pierce 1971: 99). SACH feet quickly became the industry standard (Wilson 1972: 25). These feet, still in use today, are rigid from the ankle through about two-thirds of the foot, becoming more flexible toward the toes to allow for some give as the wearer walks over it. In addition, they have a softer material in the heel to absorb the impact at heel strike. For many years, prosthetic feet did not look so much like feet as a negative impression of the inside of shoes[4]. They did not have toes and were intended to always be worn with closed-toed shoes. As the name implies, SACH feet are solid to lend stability and only flexible enough to provide a minimal amount of shock absorption for cushioning.

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[44] November 26, 2011 interview with John Michael, CPO (Certified Prosthetist Orthotist), Associate Director, Prosthetic-Orthotic Center, Northwestern University Medical School.

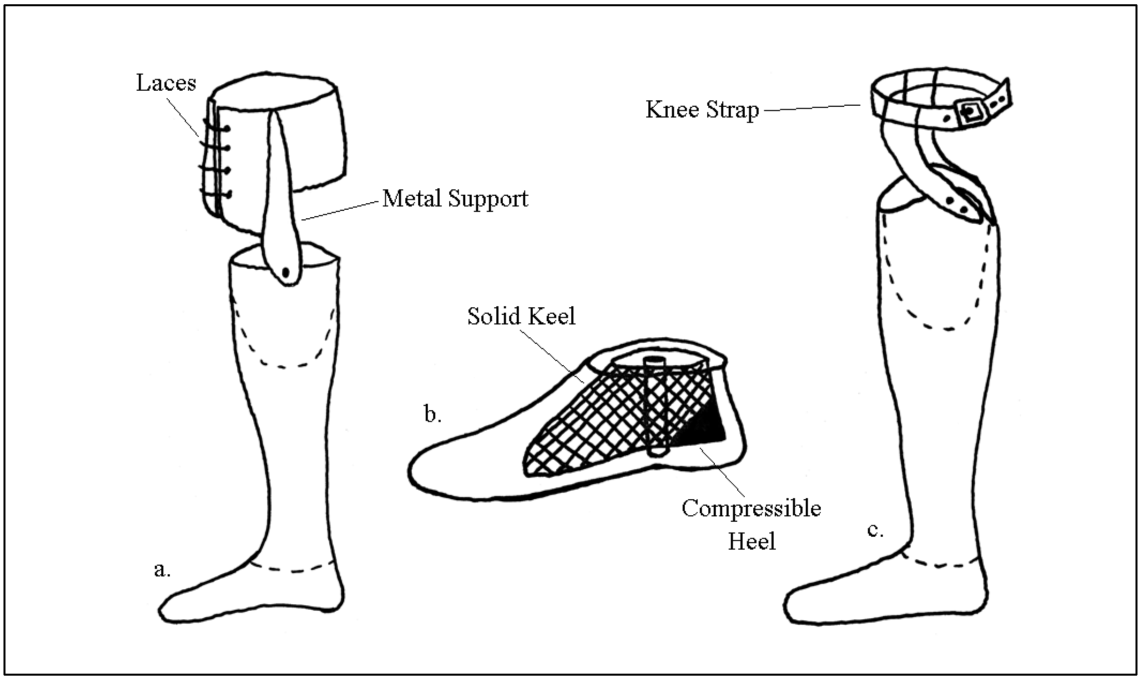

Figure 1. Sketches of some prostheses common in the 1970s and early 1980s: a. Exo-skeletal prosthesis with thigh lacer suspension; b. Solid Ankle Cushion Heel (SACH) Foot; c. Exo-skeletal prosthesis with patellar tendon baring socket and knee-strap suspension. (sketches by author, 2012)

At one time, sockets were hand-carved and lined with leather. By the 1970s, this practice had largely given way to systems for creating plastic or resin sockets out of thermoplastics from a plaster cast of the residual limb (Mital and Pierce 1971: 79). This technique allowed for a much closer fit. However, most suspension systems at that time relied on straps over the knee or lacers around the thigh for below-knee prostheses, and sometimes belts with garters for above-knee prostheses (Wilson 1972: 21). Molded sockets did allow for some lower-profile patellar tendon baring (PTB) suspension systems that used pressure around the bony contours of the knee or leg to keep the prosthesis on the residual limb.

The length of shin connecting the foot and the socket was typically a light-weight carved wooden shell coated with plastic for extra durability and water resistance. This construction, known as exo-skeletal, is labor intensive and difficult to adjust, but it is quite durable and has the contours of a leg. Zenon Wojcik, a prosthetist who has been practicing for over 30 years, described the fabrication of exo-skeletal prostheses :

> You had a socket, you had a wood block here, wood block there, ankle block and a foot… So what you do is… You cut the thing in half and then you basically have this Trautman router… It's a vertical shaft grinder… If you're hollowing one of these things out you can flip it around this way so that it's aiming down and then if you have your prosthesis, wood blocks just sort of glued together, first you have to shape it and get the general shape, but it's still all wood, then you cut it in half, you take it in with a special cutter and you hollow it out. But you have this real thin wall of wood all the way around it, and then after you've done both the lower and upper halves, you've thinned those two out, you put those two halves back together, glue them back together, you figure-eight them, smooth all that out, and then the final thing you do is put a layer of plastic over that.5

As this quote illustrates, creating this style of prosthesis took time and skill, not only to sculpt the wood into the shape of an acceptable leg, but then to hollow out this form to make it as light as possible without losing its structural integrity. The components of exoskeletal legs would be set into a basic alignment, tested out on the client, and when a satisfactory alignment was found, the socket, shin, and foot would be bonded together. If further adjustments became necessary, the prosthetist would literally saw it apart and glue it back together. If extra height was needed for a growing child, blocks of wood might be added between the foot and shin until the rest of the device warranted replacement.

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[5] March 19, 2011 interview with Zenon Wojcik, Certified Prosthetist, Winkley Orthotics and Prosthetics.

According to some of the amputees I met who had worn such a leg at one time, a talented prosthetist could sculpt an exoskeletal prosthesis to match a sound leg quite satisfactorily. There are people who continue to use this style of leg today. Sometimes they are made of a specialized polymer, rather than wood, but final effect is the same. Because of superior durability and water resistance, this is still an important option that prosthetists will use, especially when fitting children.

In contrast to this older type of leg, the contemporary prostheses noted for their high tech, futuristic, or robotic appearance are based on a set of design principles developed since the 1970s. There are three widely noted examples of such obviously artificial prosthetic legs, prominent in the media and the popular imagination (illustrated in Figure 2). The first is the j-shaped running blades used by athletes such as Oscar Pistorius and Aimee Mullins. The second type of leg has humanoid feet, but a shiny tube or pylon in place of the shin and a flashy artistic finish on the socket. This type of leg was featured in a color photograph on the cover of the New York Times Style section (Figure 3). The third familiar model is an above-the-knee prosthesis assembled with a micro-processor knee, such as C-Leg™ or Rheo Knee™ (Figure 4). These also typically have a humanoid foot and a pylon, but the C-Leg is housed in a blue or brown casing with tapered contours suggestive of a human calf.

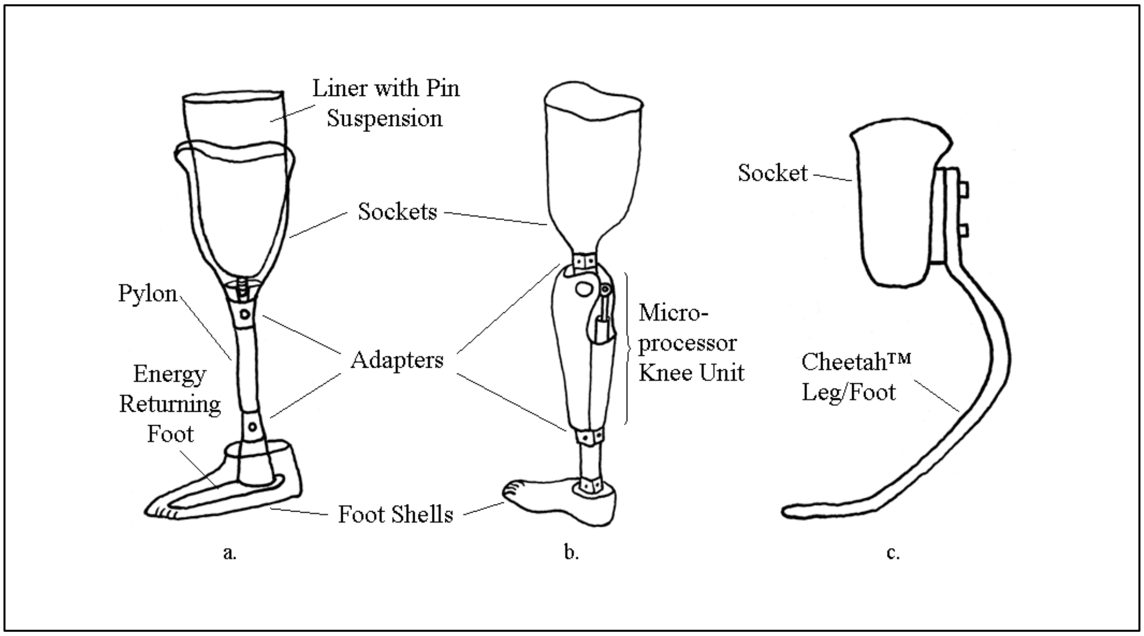

Figure 2: Sketches of three current styles of prostheses: a. Endo-skeletal prosthesis with energy returning foot and liner with pin suspension; b. Prosthesis with microprocessor knee for above-the-knee amputee; c. Cheetah™ Sprinting Leg for below-the-knee

The New York Times

Sunday, May 13, 2007

SundayStyles

Section 9

Clearly, Frankly, Unabashedly Disabled

'This is who I am. If you have a problem with it, that's your problem.'

By MIREYA NAVARRO

LOS ANGELES

WHEN Josh Blue won NBC's "Last Comic Standing" last season, he did so with riffs like this:

"My right arm does a lot of crazy stuff. Like the other day, I thought someone had stolen my wallet."

It's funny only if you know that Mr. Blue has cerebral palsy.

The public image of people with disabilities has often hinged on the heroic or the tragic. But Mr. Blue, 28, represents the broader portrait of disability now infusing television and film. This new, sometimes confrontational stance reflects the higher expectations among many members of the disabled population that they be treated as people who happen to have a disability, rather than as people defined by disability.

"What we're seeing is less 'overcoming' and more 'just being,'" said Lawrence Carter-Long, the director of advocacy for the Disabilities Network of New York City, which last year started a film series, "disTHIS: Disability Through a Whole New Lens," celebrating unconventional portrayals of the disabled.

"More people are saying, 'This is who I am. If you have a problem with it, that's your problem,'" he said.

Because the entertainment media often function as a bellwether of changing attitudes, the drive to expand beyond the stereotypes is particularly visible on television. The heart-wrenching movie of the week and fund-

Continued on Page 8

PLAIN SIGHT Baring her prosthetic leg for the world to see, Sarah Reinertsen hits the floor at Holly's in Los Angeles. Ms. Reinertsen was a contestant on "The Amazing Race."

Figure 3: Sarah Reinertsen showing off her pylon on the cover of The New York Times Styles Section (Navarro 2007)

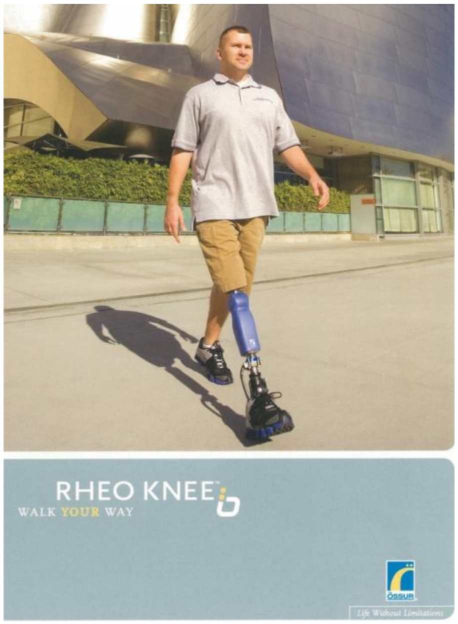

Figure 4: Advertisement for Ossur's Rheo Knee

These legs represent advances in material science as well as a shift in how designers derived inspiration from human anatomy. As the materials for pylons became lighter and stronger, so did endoskeletal designs, making them more attractive than the exoskeletal shells. As fabricators began to offer durable and flexible carbon-fiber forms, feet could be made with more spring. The design of the running legs took advantage of these materials to make the entire leg a spring. But these designs also abandoned the traditional concern with mimicking the joints, tendons, and silhouette of organic legs. Instead, designers focused on making adjustable legs that recreate the degree of energy return that human muscles provide through the use of spring-like materials. Starting with the suspension systems and working down toward the feet, I will highlight some of the major differences between old and new prosthetic designs.

Suspension is now rarely achieved with straps. There are now many different suspension techniques, but they all rely on the ability to control pressure and contact between the socket and residual limb. Some use suction, either directly between skin and socket or between a silicone liner and socket; others use a silicone liner that attaches to the socket with a pin and ratchet device. The sockets themselves continue to be made of molded reinforced plastic laminate, but now often incorporate a customized finish, usually through personally selected fabric set in the laminate.

The look of an obviously artificial limb derives mostly from a shift in technique from exoskeletal systems based on the custom shell-like construction of the shin, to the use of endoskeletal modular systems based on a pylon that would then be covered with a sculpted foam cover (Figure 2a). One of the major advantages of these modular systems is their adjustability and more subtle alignment compared with conventional prosthetic legs. Contemporary endoskeletal prostheses are held together by adapters between the socket and pylon and between the pylon and foot. These adapters allow for a prosthetist to change the angles between the components with a hex key while the client wears the leg. Because the systems are modular, any needed changes in the length of the prosthesis can be easily accomplished by revising or replacing the pylon. This has made possible much finer tuning of a prosthesis’s alignment and height. Today, it is common practice for prosthetists to send their clients home after the first alignment to try out the prosthesis before it is “finished” with a cosmetic cover. The period of adjustments can be quite prolonged, especially with a first prosthesis. Changes are often made to a prosthesis over the course of several weeks or months before the device can be declared finished.

While many above-the-knee amputees continue to use mechanical or hydraulic knees, as the most common computerized prosthetic device, microprocessor knees have become symbolic of cutting-edge prostheses (Figure 2b). Mimicking the action of a human knee is challenging; the joint has a larger range of motion than the ankle and its flexion and extension must be closely coordinated with the rest of the body to achieve a reliable gait. While mechanical knees have become increasingly sophisticated over the years, the user must learn to control the extension of the knee with gross motor movement in the hips and thighs. In contrast, knees with microprocessors are able to sense speed and weight distribution and automatically control the extension of the knee. This allows the user to walk at a range of speeds and makes the leg more stable; these knees are less likely to buckle unexpectedly and users fall less often. Microprocessor knees started to become available in the early 1990s and have been improving rapidly since then. They have become lighter, more responsive, and have longer battery lives.

Perhaps the most obvious difference between old and new styles is in the design of feet. These designs came on the market in the 1980s, beginning with the Seattle Foot and closely followed by the FlexFoot. The Seattle Foot and the FlexFoot looked very different from each other, but each incorporated a length of flexible, durable, and light-weight material into the foot that helps propel the body forward as the toe pushes into the ground. Where the Seattle foot was designed to look like and replace a conventional SACH foot, the FlexFoot was based on the j-shaped blades that have become associated with sprinting legs. Contemporaneous with the subsequent boom in energy returning feet, manufacturers also worked on “multi-axial foot” designs that focused on maximizing the flexibility of the ankle for better “ground compliance” on uneven terrain. By the 1990s, manufacturers were also offering feet with adjustable heels to accommodate shoes of different heights. Today, there are many dozens of feet for prosthetists and their clients to choose from, most of which incorporate some mechanism for energy return, and many with additional features for multi-axial movement of the foot. SACH feet are still widely manufactured and used for very basic and stable prostheses, but energy returning feet are standard for anyone who might walk outside their home.

The famous sprinting legs (Figure 2c), made by the manufacturer Össur, are based on the design of the original FlexFoot. They are made of carbon-fiber, a lightweight composite material comprising of a weave of strong and flexible fibers laminated into a plastic form. The feet that sprinters use are highly specialized prostheses for the track. Because they have no heels, they require balance and skill to use. A bilateral amputee wearing a pair of Cheetah ™ legs cannot stand still for long when wearing these legs. Unlike other types of prosthetic feet, this design takes advantage of the entire length of the shin for the energy-returning spring of the blades. Therefore, they are not used with a pylon, but are attached directly to the sockets. This design is also notable for entirely abandoning human anatomical structure in order to mimic the function of runners’ legs. This was an obvious feature of the first FlexFoot designs and has been taken up by others in the industry as license to design for function without attachment to anatomical form.

While every prosthetic leg is a unique and customized creation, these three types of legs capture the major features of contemporary artificial legs. Better suspension systems, more intimately fitted sockets, endoskeletal modular construction, and energy returning feet make current prosthetic legs highly functional for those who can wear them and contribute to their particular mechanical aesthetic. The changes in prosthetic design reflect a parallel change in standards for what amputees should be able to do, what prosthetic legs should look like, and what body parts should be. Specialized prostheses like running blades now make it possible for amputees to be competitive athletes. Endoskeletal prostheses with colorful sockets and shiny pylons have become a fashionable alternative to sculpted wooden or plastic calves. And designs that mimic the spring coefficient instead of the joint construction of organic feet celebrate the function rather than the mechanisms of human body parts.

Most of the amputees I encountered in my research wore endoskeletal systems with energy returning feet. Those with above-the-knee amputations used either mechanical knees or microprocessor knees and, as I will discuss, this represented a significant choice for some. The technological changes I have described transformed the prosthetics industry and therefore shape the possibilities for all Western amputees, whatever their personal technology.

Overview

In this dissertation, I argue that technological objects and bodies must be included in the interactions that create social identity to adequately capture the dynamics of stigma and disadvantage. I use the case of prosthetic legs to illustrate this point by demonstrating that contemporary prosthetics have raised questions about whether amputees must necessarily feel ashamed of their bodies, if artificial legs can be superior to organic legs, and if amputation is truly a disability. These possible interpretations of amputation and prostheses point to the complexities of how differences become disadvantages and demand an explanation that goes beyond prejudice and discrimination.

My approach to accounting for bodies in social life extends ANT's notion of symmetry to interactionist theories of identity. In the three substantive chapters, I unpack the implications of this strategy. In Chapter 2: *Prosthetic Aesthetics,* I illustrate how objects contribute to the interactions that create human social identities. I discuss the ways that the appearance of prostheses speak about their users and thus participate in establishing users' social identitites. In Chapter 3: *Prosthetic Panacea,* I illustrate the second implication that the identities of objects are also created and sustained in the course of social interactions. I demonstrate that users do important work to sustain the reputation of prosthetic technology as a cure-all for the problems of amputation. In chapter 4: *Walk this Way*, I extend this logic to bodies by examining one setting in which amputees are asked to change their relationship to both their bodies and their prosthetic legs.

In *Prosthetic Aesthetics*, I examine how prosthetic legs contribute to the construction of human identities through their appearance. I use Erving Goffman's ideas about social and personal identity to analyze interview quotes about the aesthetics of artificial legs. I discuss how artificial legs can be used to either pass as full- and able-bodied or cover for amputation by filling the space vacated by the amputated limb. But, whether prostheses were used to pass or cover, respondents spoke more about avoiding unwanted attention than aspiring to be normal. Therefore, I argue that Goffman's emphasis on normality is not as useful as his insights into how biography and personal moral traits become attributed to individuals based on appearance. Prostheses do not only communicate information about physical characteristics like disability, gender, or race; they also project personality characteristics like honesty, authenticity, modesty, and vanity.

In *The Prosthetic Panacea*, I show how social interactions identify and define prosthetic devices as a remedy for disability. I focus on the stories interviewees told about the reactions of others to their amputations and prostheses. Many described encountering the expectation that they should be repaired by prosthetic technology, to the point that amputation might not necessarily count as a disability. These narratives show how users are under pressure to enact the character of prosthetic technology as a panacea for the problems posed by amputation. This demonstrates how these objects take on an identity in much the same way that humans do through social interactions. These data also suggest a shift in the meaning of disability and new expectations for athleticism among prosthesis users.

In *Walk This Way*, I argue that, like artificial body parts, organic bodies also need to be considered players in social interactions. Not only do bodies contribute to social identities of people, they are also defined through their relations with selves and objects. To illustrate these points, I looked closely at one expert’s instructions for altering relationships between amputees, their prostheses and their bodies in order to move faster, be more comfortable, and walk more naturally. These technical actions were imparted through visual performance of both instructor and students. Desirable changes were reinforced by feedback from the devices and other people in the room (therapists as well as other amputees). If cultivated, these practices were intended to enhance the grace and mobility of prosthesis users, making amputees less disabled, prosthetic legs more legitimate, and amputated bodies more complete.

In the conclusion I take stock of my proposed approach for incorporating bodies into sociological analysis. I review my findings and discuss how they contribute to scholarship on identity, difference, disadvantage, and status. I offer some ideas about how amputation has been transformed from an obvious and permanent disability to a potentially benign condition in the eyes of Americans. Finally, I make some suggestions for future scholarship on prosthetics, bodies, and medicine.

II. PROSTHETIC AESTHETICS: BODY PARTS AND SOCIAL IDENTITY

How Legs Speak of the Self

I met Shirley, an African American woman in her late 60s, at a hospital support group. A decade before we met, she had lost one leg below the knee due to complications of diabetes. Seven years later, she lost her other leg above the knee, also due to vascular problems. Before her retirement, she had worked an office job, though she had never completed high school. At the time I interviewed her, she lived by herself in subsidized housing. As a unilateral amputee, Shirley had been able to walk with her prosthesis, but since losing her second leg, she made greater use of her wheelchair, often opting not to wear her legs at all when she was at home.

When I visited her small apartment, she wore only one leg. I asked her why and she told me, "Because you came, otherwise I wouldn't have it." She would wear both legs when she went to church, but when she went out to shop or see the doctor she wore only one. She explained,

> When I go out, I don't wanna go out without any prosthetic, no leg. I don't wanna, I feel funny, because they ask[ed] questions with one, specially kids, what happened to your leg? …So I'm thinking if I go out with no leg, then they would really have something to say, so I make sure I have at least one leg on.

Given the curiosity strangers had in her single amputation, Shirley figured that her double amputation would attract even more questions. She found her above-the-knee prosthesis difficult to manage in her wheelchair, so wearing only her below-the-knee prosthesis was her compromise between appearance and ease of movement in casual situations.

Though the primary function of her prostheses was cosmetic, Shirley had trouble getting them to look right with her limited resources. For instance, her two legs did not match her dark skin. She told me,

> Even though it's hot hot hot outside, I still have to wear the stockings. I wear sandals but I'll still have the stockings on…. Cause they didn't get my leg, like one or two of my [previous] legs, the color of the leg [was] dark like my skin color, but these are not, so I always have to put stockings on.

Not only did Shirley have trouble finding a cosmesis that would match her skin tone, when she lost her second leg, the prosthetist was unable to find an artificial skin that would match her first prosthesis. She dealt with this problem by relying on stockings to cover the devices. Still, she was satisfied with how they looked. She told me, "I think it looks real. People don't know unless they know. Sometimes they think I'm in the wheelchair for other reasons, but they don't know."

The difficulty of matching prostheses to dark skin tones came up a number of times in my field work as well. For example, during a summer sporting event, I met an African-American man in his early 40s I will call Paul. One evening, I saw him wearing shorts and sandals with his uncovered leg and noticed that the footshell[6] he was using was obviously intended for a white user. When I asked him about it, he told me that the

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[6] Footshells are the covers for prosthetic feet molded to look like human feet. With the exception of Cheetah Legs, every prosthesis is equipped with a humanoid footshell that accommodates shoes.

European manufacturer of that particular type of foot only made white footshells. He wanted to use the foot, so he put up with the mismatch.[7]

The difference between Shirley's and Paul's strategies for dealing with the appearance of their prostheses reflects how artificial legs express the identity and circumstances of their users in unpredictable ways. Both Paul and Shirley were black, but this fact would not be obvious looking at their prostheses alone. When donned, these devices spoke about their users in much richer detail. Paul was younger, athletic, and had the connections, leisure, and resources to travel to and participate in an amputee sporting event. If he were inclined, he likely could have found a footshell and cosmesis for his leg that matched his skin tone. But the fact that he had not – and was willing to expose the device – indicates an attitude of nonchalance that is in stark contrast to Shirley's dependence on stockings and her concerns about what kids at the market might say. Paul's display of his mismatched but high-tech prosthesis proclaimed capable and funded engagement with technology, masculine disinterest in appearance, and a self-possessed rebuke of racial assumptions. No one would expect Shirley to make such a statement. Instead, her cumbersome and stockinged legs requested that they be ignored as much as possible, murmuring of modesty and comportment expected of a woman in her 60s.

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[7] These examples illustrate the ways that prosthetic legs reflect persistent racism in Western culture perpetuated not through malicious intent, but through lack of attention. If it is true, as some sales representatives suggested to me, that African American prosthesis users are more likely to request cosmeses and that racial minorities face greater consequences for presenting themselves unconventionally, as fashion pundits advise (Ball 2013; Graves 2012), then such reported difficulties in getting prostheses to match dark skin tones are particularly ironic and troubling.

The contrast between Shirley's and Paul's legs illustrates how race, gender, and even class may be expressed by artificial legs, but not necessarily by matching the appearance of the user's body. Prosthetic aesthetics go beyond looking normal or blending in; they convey information about the character and the biography of the user. In these ways, the legs speak of the self.

Goffman on Identity and Information Management

In this chapter, I argue that prostheses help to create and express users' identities. I focus here on the appearance and presentation of artificial legs, but, as I touch on in the next chapter, they participate in user identity through their functionality as well. Not only can the appearance of prosthetic legs consolidate gender, race, or class, prosthetics can help establish personality traits such as authenticity, trustworthiness, and vanity. Others have written about how the design of technological artifacts shape or "configure" user identity (Cowan 1983; Moser 2006b; Oudshoorn and Pinch 2003; Pinch and Bijker 1987; van Oost 2003; Woolgar 1991) by targeting particular groups of users or requiring specific behaviors for successful use. My argument here is not about the ways designers anticipate user identity. Instead, I am concerned with how prosthetic technology intervenes in the interpersonal interactions that establish social expectations. To clarify my argument, I rely on Erving Goffman's conceptualization of identity and his notions of *passing* and *covering* in his book *Stigma: Notes on the Management of Spoiled Identity(1963).*

In *Stigma*, Goffman presents a theory of identity in general through his analysis of stigmatized identity. He defined stigmas as "attributes that are deeply discrediting" because they “are incongruous with our stereotype of what a given individual ought to be” (3). He defined *passing* and *covering* as two methods used to manage information about stigma to exert control over how others would respond. Passing refers to allowing others to assume that one is normal by not revealing a stigmatized trait. Covering is work done to minimize the presence of (but not actually hide) an unavoidably obvious stigma. In Goffman’s parlance, passing involves avoiding the hazard of being discovered and makes the individual potentially *discreditable*, while covering leaves the stigma visible, therefore rendering the individual already *discredited*.

Stigma is the product of relations among people responding to and policing standards for acceptable ways of being. Goffman was careful to stress that some attributes are only stigmatized when they confuse or disrupt expectations based on other aspects of identity (6). And yet, he deliberately chose to minimize this insight in the bulk of the text:

> …it should be seen that a language of relationships, not attributes, is really needed. An attribute that stigmatizes one type of possessor can confirm the usualness of another, and therefore is neither creditable nor discreditable as a thing in itself… A stigma, then, is really a special kind of relationship between attribute and stereotype, *although I don’t propose to continue to say so, in part because there are important attributes that almost everywhere in our society are discrediting*. (3-4, emphasis added)

Rather than utilizing “a language of relationships,” Goffman opted for a more common way of talking about identity where the meaning of attributes was assumed to be static. His justification for focusing on stigma as attribute and using the more common language that goes with this is rooted in his assumption of a hegemonic definition of normality.

Goffman organized his analysis of stigma around three distinct though related types of identity he called *social identity*, *personal identity*, and *ego or felt identity*.[8] This chapter is about the role of technology in the expression of *personal identity,* through passing, covering, and information management, and how this shapes *social identity* in subtle and surprising ways.

Goffman used the term *social identity* to refer to an individual's categorical status as well as personality characteristics that can be anticipated by others. As he put it,

> Appearances are likely to enable us to anticipate his category and attributes, his 'social identity' – to use a term that is better than 'social status' because personal attributes such as 'honesty' are involved, as well as structural ones, like 'occupation.' We lean on these anticipations that we have, transforming them into normative expectations, into righteously presented demands. (2)

Not only do we guess what groups a person may belong to based on appearance, we also judge their character and anticipate a set of appropriate behaviors. Whereas s*ocial identity* has to do with sorting people into groups or types, *personal identity* is made up of individual characteristics that identify a person as a unique individual with a particular and coherent biography. Goffman explains,

> By personal identity, I have in mind… positive marks or identity pegs, and the unique combination of life history items that comes to be attached to the individual with the help of these pegs for his identity. Personal identity, then, has to do with the assumption that the individual can be differentiated from all others and that around this means of differentiation a single continuous record of social facts can be attached, entangled, like candy floss, becoming then the sticky substance to which still other

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[8] *Ego or felt identity* refers to how a person thinks of themselves and is probably the most commonly used concept of identity in psychology and popular discourse. While *ego identity* may be influenced by prosthesis use, this concept does little to help me sort out the place of technology in social life.

> biographical facts can be attached. What is difficult to appreciate is that personal identity can and does play a structured, routine, standardized role in social organization just because of its one-of-a-kind quality. (57)

Personal identity has to do with identifying individuals, but still operates in relation to social structures, especially since personal identity describes how an individual has moved through and been shaped by social structural forces. The concept of *personal identity* sets off Goffman's discussion of information management, passing, and covering by explaining the importance of personal disclosures in social interaction. Whether through direct verbal explanation or through self-presentation, personal disclosures provide information about how an individual ought to be treated and what can be expected of her.

Goffman offered this instructive contrast between *personal identity* and *social identity*:

> Norms regarding personal identity… pertain not to ranges of permissible combinations of social attributes but rather to the kind of information control the individual can appropriately exert… Possession of a strange past (not strange in itself, of course, but strange for someone of the individual's current social identity) is one kind of impropriety; for the possessor to live out a life before those who are ignorant of this past and not informed about it by him can be a very different kind of impropriety, the first having to do with our rules regarding social identity, the second with those regarding personal identity. (64)

Social identity refers to the ways people are stereotyped and held to expectations based on appearance, but *personal identity* refers to a slightly different expectation that our appearance will be consistent with our individual biographies and, if not, a coherent explanation can (and will) be provided. He notes,

> Apparently, in middle class circles today, the more there is about the individual that deviates in an undesirable direction from what might have been expected to be true of him, the more he is obliged to volunteer information about himself, even though the cost to him of candor may have increased proportionately… Here, the right to reticence seems earned only by having nothing to hide. (64)

The norms regarding personal identity do not simply dictate that everyone give honest answers when asked about their past. The burden of notifying others about surprising but socially significant biographical details lies on the individual, regardless of "the great rewards in being considered normal" (74). Therefore, people with a concealable stigma must constantly choose between passing as normal (risking awkward exposure) and tactfully covering their condition (risking discrimination). Goffman described "codes of conduct" that dictated when and how to disclose and when to pass, as well as what one's attitude ought to be toward these obligations (111). Proper behavior and attitude is policed by mostly unspoken threats to one's character: "to fail to adhere to the code is to be a self-deluded, misguided person; to succeed is to be both real and worthy, two spiritual qualities that combine to produce what is called 'authenticity.'" (111)

At the time that Goffman wrote *Stigma*, amputation was considered unquestionably and universally a stigma and one that was not easily hidden. Thus, for Goffman, an amputee was not so much a "discreditable" person with secret "information to manage," but a "discredited" one "with uneasy social situations to manage" (100). In fact, his example of covering was of an amputee: "It is thus that a girl who gets around best on her wooden peg leg employs crutches or an artful but patently artificial limb when in company" (102). In this passage, he points out that although a prosthesis can always be expected to be seen, a wooden peg leg would surely be more socially disruptive than more polite alternatives like crutches or a cosmetic leg.

But today, advances in prosthetic technology have allowed many amputees to walk so well that their condition is not given away by a limp. It might be expected that prosthesis users would therefore desire a leg that blends in as much as possible, matches the rest of their body, and allows them to pass. But at the same time that prosthetic design began to offer smoother, more even gait, a trend for a mechanical prosthetic aesthetic emerged. This suggests that prostheses are expected to contribute to user identity in more complicated ways than simply hiding a disability and helping the user to appear "normal." As I will demonstrate, prosthetic legs are called upon to shore up many dimensions of both social and personal identities.

Choosing Between Organic and Mechanical Aesthetics

As I outlined in the first chapter, the aesthetic choices for modern prosthetic legs have technical underpinnings. Until the late 1990s, most prosthetists assumed that their clients would want their final prosthesis to be finished with a cosmetic cover.[9] Now, because most artificial legs are assembled from modular endoskeletal parts, users can choose either to have their leg "finished" with a skin-like cosmetic cover (or *cosmesis*) or to leave their leg "unfinished" by foregoing a permanent cosmesis for what I call an *obviously artificial* or *mechanical* aesthetic.[10] Cosmeses are typically glued directly on

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[9] November 26, 2011 interview with John Michael, CPO (Certified Prosthetist Orthotist), Associate Director, Prosthetic-Orthotic Center, Northwestern University Medical School.

[10] "Finished" and "unfinished" are standard terms in the prosthetics industry, signaling the once-dominate assumption that every artificial leg would eventually require a cosmetic cover. In this chapter, "finished"

the leg's components to prevent the foam from peeling away or wrinkling. Therefore amputees must make the decision to permanently finish their prostheses or leave the components exposed.[11] For those who choose an obviously artificial aesthetic, there are many options for customizing the look of the leg. Pylons and foot shells come in different colors and patients can select fabrics to be embedded into the plastic of their sockets.

Among my interview respondents, two of the seventeen men and eight of the eleven women preferred to use cosmeses. Of the eighteen respondents who chose not to finish their prostheses, twelve were positive about the appearance, using descriptors such as "cool," "high-tech," or "futuristic." However, not everyone was impressed with the high-tech look of modern prostheses. When I interviewed Carol she was waiting for a final fitting on her current leg before adding a cosmesis. When I asked her about how it looked, she told me, "Well, right now it doesn't look so good 'cause the metal is hanging out." Leo had stronger feelings. I asked him about his choice to wear a cosmesis over his microprocessor knee. He told me that an unfinished prosthesis "just doesn't look natural, it looks.… If you had your bone exposed it would be the same thing."

Listening to respondents talk about how they made choices about the appearance and presentation of their prosthetic legs revealed that such opinions were closely tied to individual's sense of self. Jake was an African American man in his late 20s who had lost

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and "unfinished" should be read to refer to the presence or absence of a cosmesis and not to whether or not the prosthesis is completed. I use this terminology instead of talking about "covered" or "uncovered" prosthesis to avoid confusion with Goffman's concept of covering. As I will show, one does not necessarily need a cosmesis to successfully cover an amputation in the Goffmanian sense.

[11] While I encountered personal work-arounds, I have not seen any standard methods for providing a removable cosmetic cover.

a leg below the knee while serving in the military. He was proud of his unfinished prosthesis and described a newfound taste for shorts as an expression of pride in his military service.

> Actually before I got injured, I never wore shorts. I hated shorts with a passion [because] when I was a kid, you know, boy, trees, bikes, all the stuff, I had scars on one of my legs. I got bitten by a dog too, so I was really self-conscious of my scars and my legs…. So I didn't wear shorts. I never wore shorts. I always wore pants. And then when I got my prosthesis, it was like, I like my leg; I'm proud of my scars. I wear shorts every chance I got. If it ain't snowing, if it ain't raining, I'm probably wearing shorts, except for at work. Even at work I try and slag 'em in there some times.

But Jake's pride in his unfinished prosthesis did not mean he did not care what it looked like. He articulated a very particular preference for how his leg looked when he referred to the correlation between his organic leg and his prosthetic leg.

> I'm proud of my prosthetic. Some legs I don't like because they don't to me look right, because I like them to look - [pointing to his leg] like, let's see, even with this … it's almost the same profile, same everything as the leg I have. I like that. It looks very similar…. I'm very selective in the foot I have because I want it to look almost like it's an upgrade, not something completely off the wall, like there's other foots that have the crazy bend in it … that looks funky. Well again, it's a cool foot, it walks all right but to me it just doesn't please my eye, because it looks so unnatural, so unnatural. Like this one, you can see this is my ankle, this is my foot, and all that other stuff.

Jake made a visual analogy between his ankle and the blue ball that mimics the movement of the ankle in his Össur Ceterus® foot (Figure 5). He went on to clarify that his objection to feet with a "crazy bend" is that they interrupt the "natural" silhouette of the leg.

Figure 5: Ceterus® Foot by Ossur (Sources:
http://www.extremeprosthetics.com/prosthetics/components/feet.asp;
www.360oandp.com)

He also drew a connection between masculinity, military service, and his choice to wear his leg unfinished. When discussing civilian men who choose to wear a finished prosthesis, he commented, “Well, women I can understand; image matters a lot more to ladies. But men, they’re supposed to be proud of their scars. It’s an honor.” His preference for shorts went along with his conviction that men’s bodies should attest to the life experiences that have altered them. As he put it, “We can’t wear our medals, so I wear my scars with pride.” For Jake, wearing an obviously artificial leg was a masculine choice and a way to celebrate his service in combat. However, he expected that women would feel differently.

Marie, a white woman in her 20s, expressed a similar opinion about the importance of appearance to women. While most of the women I interviewed owned legs with cosmeses, Marie was the only person I talked to who owned a truly custom cosmetic leg. Here is how she described this “Pretty Leg”:

> So it's definitely not covered by insurance. They're very expensive and so one of my really good friends set up a fund-raiser for me, and they raised all the money. They raised like $20,000, and found the best place for prosthetics, it's in Texas, so we went out there. What they basically do is they mold your sound leg and then they match it and paint it. It has veins, it looks so real, like if you saw it, you wouldn't, you'd say, "which one is fake?"… it has an adjustable heel height it can go up to two-and-a-half inches … I was so excited. I could wear sandals and everything with my other leg, but I didn't really want to, I didn't feel comfortable, so it was just so nice to show it off, wear cute shoes and get pedicures. Girls care about that, you know?

Marie described a painstaking process by which an artificial leg was crafted to match her sound leg down to details such as veins and personalized skin tone. She also noted the added effort of fund-raising and traveling to Texas for the purpose of having this leg made.[12] This leg was not as comfortable or durable as the one she used when she needed to walk a lot, but she felt it was well worth the long process of attaining it to feel comfortable wearing fashions that exposed her legs and feet. Her satisfaction with this "Pretty Leg" stemmed from her ability to express her femininity by showing her legs, wearing skirts and heels, and indulging in pedicures.

Though she frequently used another "everyday" prosthesis, Marie preferred to wear it with pants and closed-toed shoes. She also used a running prosthesis for exercising, and would wear that with shorts, but she told me, "I wouldn't necessarily want to show it off." In order for her to feel comfortable with the way her leg looked in

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[12] Marie's description underscores the expense of such a leg, and makes clear why many would simply not consider it an option. It is also worth noting that such legs are usually not considered suitable for a primary leg because the silicone they are covered with is relatively fragile and the internal components are sometimes less comfortable when compared with legs designed primarily for walking. But while Marie's fully customized "Pretty Leg" may be unusual, the reasons she gave for wanting and using one were unexceptional among female respondents.

dresses or cropped pants, she relied on this “pretty” leg. Having this leg as an option provided her with the versatility to wear more of the clothes she enjoyed wearing.

Marie and Jake might have referred to their professional environment, personal style, or in Jake’s case, the military context of his injury and rehabilitation to explain their highly developed taste for particular prosthetic aesthetics. Instead, both expressed the opinion that caring about a natural appearance is a feminine preference and both referred to this belief to account for their own choices. While Jake and Marie were most explicit about this idea, choices and commentary from other respondents also implied that finishing a prosthesis was a feminine choice. [13]

Not all the women who used a cosmesis were as satisfied with the appearance as Marie. For most respondents who wanted a cosmetic leg, a custom-painted leg was not an affordable option. Instead, they relied on the sculpting skills of their prosthetist and the quality of available mass-produced silicone skins to match the shape and color of their sound side. In some cases, the professional craftsmanship left much to be desired. Carol, a white woman in her 70s described her annoyance with the shoe size of her first prosthetic foot:

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[13] Amputees and professionals offered me other practical reasons that an unfinished leg might be preferable to a finished one. First, a foam cover must be removed to make adjustments to an endoskeletal leg. However, most cosmeses are glued directly to the structural components and are therefore not easily removable. If the prosthetist and patient anticipate the need to make many adjustments, they may decide that covering the prosthesis is a waste of time until the device is finalized. Second, some report that cosmetic covers impede the full range of motion for artificial knees. This was a major reason for foregoing a cosmesis among above-the-knee amputees. Third, the materials used to make and cover foam cosmeses are more delicate than the hard wood and plastic shells of the older exoskeletal prostheses. I heard reports of giving up on cosmetic legs because of frustrations with skins that rip, sag, or become dirty and discolored. However, these practical considerations would affect both women and men equally, so these reasons alone cannot account for the idea that uncovered prostheses are a more suitable choice for men.

> They finally got to the final prosthetic and he said, ‘You’ll get used to it, dear.’ And I wanted to punch him in the face. The foot was the wrong size; I wear a 7 shoe; he made it a 7 ½, I was going to a black tie affair shortly after that, and I had to buy two pairs of shoes, 7 and 7 ½, and I was livid. It was huge. My one good feature was my legs. My attending said, ‘I think you need Lasix[14] for that foot he gave you.’

While a half-size difference in shoe size may not have appeared to be a big deal to her prosthetist, for Carol this was embarrassing, in addition to being an inconvenience and an extra expense. Her physician’s joke about treating her swollen prosthetic foot with a diuretic confirmed for her the ugliness of that foot and the loss of one of her favorite features. Not only did she feel self-conscious about how the foot looked in comparison to her sound side, she was forced to buy two new pairs of shoes for her formal event. Her comment about her legs being her “one good feature” is an expression of acceptable feminine vanity.

Lisa, a Latina woman in her 20s, had similar frustrations with the size of an early prosthesis. She reported, “I just did not like the way it looked at all … the first ones were too big because my stump was still shrinking, so my thigh was like a barrel compared to my other side.” Though the difference in size between her two legs was temporary and due to swelling at the site of her recent amputation, she nevertheless would have to live with a large socket for months until her residual limb shrank. She was self-conscious enough about this to alter the way she dressed by avoiding pants for some time.

Shirley’s experience with her mismatched legs illustrated the challenge of finding silicone skins that match the user’s skin tone. Susan, a white respondent in her 60s, also

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[14] *Lasix* is the brand name of a diuretic drug used in hospitals to treat severe edema.

complained about this, saying, "In selecting this substantial rubbery skin, you look at a bunch of paint chips - rubber chips, and you decide what looks the most like your skin, which nothing does. It doesn't have the translucence that skin has." These concerns about the color of synthetic skin indicate Susan's desire for her artificial leg to coordinate with her sound side. The difficulty of doing so represents one way that her prosthesis can frustrate her attempts at a polished self-presentation. This artificial body part gets in the way of her attempts to control information regarding her personal identity as an amputee and her social identity as a respectable woman.

Despite these difficulties, Susan chose to wear a cosmesis over her prosthesis because it helped keep people from noticing her artificial leg. This was made clear when she described her thoughts about seeing another woman wearing an unfinished prosthesis.

> It looks very mechanical…. In the coffee shop, the gal walked in in her shorts with her prosthetic pylon on full display. If there had been a 7-year-old in the room, he'd have said, "Mommy, look at her." And that's taboo. The mother would have said, "Don't look. Don't say anything." Then she'd have had to deal with it in the car. For me, I thought, "You go, girl." Then I found out she teaches tennis. I thought, "I guess she's going." I wonder what she does when she wants to go out to dinner. Does she have some kind of cosmetic cover? I don't know. But I'd like to just go out to dinner and have a skirt on, and not have anybody say, "Oh, that's interesting."

While Susan found it exciting and inspiring to see a young woman baring her prosthesis this way, she was also quite sensitive to the attention of others. She was acutely aware of the possibility that a hypothetical mother might have to deal with awkward questions "in the car." She would prefer to be able to go out in public without drawing attention to herself and possibly creating an awkward situation.

Carol, Lisa, and Susan articulated very specific standards for the size, shape, and color of their cosmetic legs, but such a concern with aesthetics was not limited to those who opted for finished prostheses. For example, Karla, a woman of mixed race in her late 20s, wore an obviously artificial leg and regarded its appearance as unimportant. Still, her interview indicated that she had some standards for how her leg should look. When describing the first temporary prosthetic she was given shortly after losing her leg, she commented, “It looked like something from 1925. It was big, bulky, had a strap … it was just really gross.” Even if she was not otherwise preoccupied with its aesthetic features, the size of her prosthesis was clearly important to her.

Keith, too, noticed the how his prosthesis disrupts the visual symmetry of his body:

> It’s just there, it is what it is. I’m not trying to hide it. I definitely look in the mirror sometimes and go wow, I forget how weird it looks to have the skinny little robot leg next to my other one … if it was thicker, because I have a big calf, and I think just the size proportion difference looks funny. But I like it, I like showing it off.

Keith expressed a clear sense that his prosthesis would look better if it had a silhouette more similar to his other side. However the asymmetry did not deter this white twenty-something from wearing shorts, nor did it compel him to seek a cosmesis. In fact, Keith was skeptical about the possibility of a cosmesis that looks truly natural.

> I think people, it’s better to see the technology and have it work than have a covering and people look at you, going, something doesn’t look right. I know some people worry about it, but you’re never going to fool anybody.

Though Keith is quite comfortable displaying his prosthesis, this comment suggests that his choice to forego a cosmesis is based on his opinion that there is no adequate way to hide the artificialness of his prosthetic leg. Keith was not interested in minimizing the visibility of his artificial leg if the available cosmetic options would never "fool anybody." Given this opinion, he was more comfortable with a "robot leg" than a cosmesis that would never look quite natural.

A number of men expressed the same discomfort with the almost-but-not-quite organic appearance of cosmeses. Daniel, a white man in his 50s, emphatically denied the importance of the appearance of their prosthesis, telling me "I couldn't care less [how it looks]," but he was also resigned to the look of his future leg. When I asked him if he might finish his final prosthesis, he responded, "How the hell are they gonna match my leg? So it's gonna look like plastic on one side? Who am I hiding it from? And what do I care what they got to say? I don't care." With these rhetorical questions, Daniel explained his choice to forego a cosmesis by pointing out that a finished prosthesis would never satisfactorily replicate the look of the lost leg.

This attitude is further illustrated by a story I heard from a teenager I will call Brandon. Brandon's leg had been amputated when he was a toddler, so he had worn a prosthesis nearly all his life. He was quickly converted to the mechanical aesthetic after witnessing other amputees wearing unfinished prostheses. His mother told me a story about Brandon after returning home from their first Amputee Coalition event when he was four or five years old. She reported that he had noticed that people had prostheses that looked different from his and he asked about the pylon. She explained to him that he had the same components, but under a foam cover. She said, "He was real quiet on the ride home and when they got home he disappeared into his room. After a while we started to wonder, ‘Where’s Brandon?’” They found him in his room, busy cutting away the $2,000-cosmesis from his prosthesis. After his mother told me this story, I asked Brandon if he remembered what was going through his mind at the time. After thinking about it, he told me the cosmesis didn’t look real; it looked “dry.” Young Brandon’s determination to liberate his prosthesis from its dry-looking cover again suggests unhappiness with a prosthesis that looks like a poor imitation of a leg.

Doris, a long-time amputee in her 90s, recognized this logic as well, but it did not lead her to give up her cosmesis. When I asked her about the first time she noticed someone showing off an obviously artificial leg, she told me,

> I thought, ‘Well, she hasn't got it finished yet….’ I didn't realize people were living that way. It never occurred to me that you would not get it covered. I suddenly realized that in the last year…. I wondered, well, why not, you don't have to have -- it doesn't have to look like my leg. It's pretty obvious to anybody that there's something the matter there.

While the possibility of foregoing a cosmesis had never occurred to Doris until she saw others doing it, she quickly understood the reasoning behind not bothering to hide what was inevitably obvious. Nevertheless, as an older woman who had been wearing a finished prosthesis for over 40 years, she continued to feel most comfortable with downplaying her prosthesis.

Keith, Daniel, Brandon, Susan, and Doris all referred to ways that finished prosthetic legs are poor replicas of their organic counterparts, but Susan and Doris continued to choose finished legs, while Keith, Daniel, and Brandon rejected cosmeses on the grounds that they did not look real enough. The three men expressed a preference for making their amputation and artificial leg apparent in the name of personal authenticity. Their unfinished legs signaled that they had nothing to hide and therefore expressed pride and self-confidence. In contrast, Susan chose a cosmesis so that she could go out in a skirt without becoming a conversation piece. Instead of worrying, like Daniel, that people would judge the leg to be plastic, Susan worried about making a scene with an obviously artificial leg. Likewise, though Doris knew others might notice her artificial leg, this did not mean she would embrace a mechanical aesthetic for herself. Unlike Keith, Doris did not appear bothered by the possible confusion of others.

The choice to wear a cosmesis was not exclusive to the women I interviewed, but was often associated with characteristics linked with gender. For instance, Jake and Marie gestured to socially sanctioned vanity for women when they suggested that women wear cosmeses because “image matters a lot more to ladies” or because “girls care about” cute shoes and pedicures. However, Jake implied that his own vanity about the shape of his uncovered components was about having a leg that looked like an “upgrade” – signaling technological savvy rather than image consciousness. Likewise, Daniel and Keith, who rejected cosmeses because they did not look real enough to “fool anybody,” asserted that they did not care about the appearance of their legs. The choice to forego a cosmesis is also an aesthetic decision, but one expressive of calculated (and masculine) disinterest in appearance.

Comportment was similarly linked to the choice to wear a cosmesis in so far as a covered prosthesis would make formal attire look correct. Susan’s desire to go out to dinner in a skirt, Shirley’s care to wear both her legs to church on Sundays, and Doris’s comment that by the time she lost her leg, “women went to church in slacks, so I was safe" each suggest the importance of proper attire for these ladies. Of course, the ability to wear formal attire was important for some men too. David, an Asian man in his 20s, was one of the few men who chose to finish his prostheses for this reason:

> [When my prostheses] weren't covered like these are, like skin-covered like these are, they were just regular prosthetics, you could see the metal, and then there were pants that would just bulk up,… ride into the prosthetic and so it was very frustrating for me, like where you want it clean and just tailored right, and so they would always bulk up.

Here, David referred to the way that his pant legs would bunch up over the top of his footshells before his prostheses were finished. The ability to wear pants and have them look the way he wanted was a major factor in his decision to wear cosmeses. However, he was not shy about exposing his running prostheses – complete with colorful sockets – at the athletic event where I met him. He desired a clean and tailored look as an option for a specific set of situations.

Steve, a white man in his 40s showed me his personally constructed method for solving the problem of slacks bunching up into his unfinished prosthesis. He had cut a slit in the side of an old cosmesis and secured this over his pylon with a scrap of nylon stocking. While he typically prefers shorts, he does need to wear slacks when he works. "The only reason I wear a cosmesis today is just to fill out my pants," he said. "I only wear it when I wear dress pants." This common problem did not motivate many male respondents to choose a cosmesis, while looking right in formal clothing was a major consideration for women like Marie, Lisa, Susan, Carol, and Doris.

This difference in attitudes is indicative of how the appearance of legs contributes to social identity, not only reflecting gendered norms of formal attire, but expressing respect and a sense of propriety as well. Given that skirts and dresses are considered the most formal styles of clothing for women in our culture, failure to look “right” in these outfits might be read as disrespectful and inappropriate. In formal contexts, artificial legs do not have to pass for organic as much as they must support the user’s public persona and the personality traits she wishes to broadcast to others.

Allen, a white man in his 40s, also opted for an unfinished prosthesis. He commented, “They look at you more without [the prosthesis] on, guarantee it.” When I asked him what he thought the difference was, he reflected on what he might have thought before losing his leg, saying, “You don’t say that to somebody, but you’ll say in your mind you know, ‘Oh he can’t afford a leg?’” Such a thought rests on a basic awareness of the prosthetic technology that is available and the expectation that any middle class amputee can and should take advantage of these devices. Compared with Goffman’s example of a girl covering for her amputation in which he suggested that crutches or “an artful but patently artificial limb” would be more generally acceptable than a peg leg, Allen’s comments suggest that crutches are no longer considered superior to an exposed prosthesis. Wearing a contemporary unfinished prosthesis is a method of covering for amputation, but not for the artificialness of the leg.

Goffman assumed, like Keith and Daniel did, that any prosthesis would be obvious, but where Goffman thought a cosmetic leg would be preferable, Keith, Daniel, and Brandon opted for a mechanical aesthetic. They were more worried about giving the impression that they had something to hide than being known to have an amputation. Their comments suggest that these respondents are not particularly ashamed of being amputees. Wearing a prosthesis is certainly a method of covering for amputation in that keeps the absence of a limb from looming large in social interactions. While most amputees I interviewed regarded wearing a prosthesis as mandatory (see discussion of this in the next chapter), more women than men expressed interest in trying to pass as able-bodied with the help of a cosmesis. Susan, Shirley, and Marie felt that their cosmetic legs helped them to pass most of the time and did not worry that others might suspect they were hiding something. In contrast, Daniel and Keith were uneasy with the idea of trying to pass and were not concerned that their obviously artificial prostheses would signal immodest display of disability. In either case, prostheses, through their appearance, contributed to the users' identity as feminine or masculine, down-to-earth or well-dressed.

Attracting Attention

The appearance of prosthetic legs also influence social encounters and user identity in the ways they moderate the amount of attention an amputation will attract. I have already discussed how Shirley and Susan chose finished prostheses to avoid comments from others, while Keith preferred to let people see his prosthesis for what it was. Though respondents described instances of both passing and covering, many were not so concerned with appearing normal as with strategically attracting or deflecting attention to or from their prostheses and amputations. They made different demands of their legs depending on the situations they anticipated.

Even for the proudest amputees, being able to pass as un-notable was an important and sometimes thrilling option. In many situations, Jessica, a white woman in her 30s, would bear her prosthesis proudly. When I first met her, she wore a leg with a socket that was treated to look like chrome, with a shiny exposed pylon to match. But she told me,

> When I go to Europe, I wear my real leg because, honestly, in Europe, you get looked at, and I don't like - it's like, get over it; you know what, the ‘what happened to you’ question get so old so quick; you know, it's different when you were talking to patients. But when you're out, it's like, get out of my face, you know. So it's like my camouflage.

Steve was once a competitive disabled athlete, skiing on one leg with outriggers. But he told me that recently he had been skiing recreationally on two skis with his prosthesis. Despite his pride in his accomplishments in disabled competition, he described his satisfaction in looking like everyone else on the slopes.

> Cosmetically when you came down the hill one legged with outriggers at 50 miles, 60 miles an hour everybody on the hill would stop and go, “Look at that guy!” Now, I come down and I just look like a fast guy and that for me is so fulfilling. And I came from 25 years of world cup and now I can ski by guys who’ve known me racing, my coaches, and they don’t even recognize me. So that to me right there is like the coolest thing in the world because I’m not being identified and I’m just one of the other people skiing fast. But if anybody really knew what I was using they would go, whoa, okay. Let’s stop, let’s analyze this.

Both Jessica and Steve enjoy having the choice either to show off their status as capable amputees or blend in with everyone else. Going unnoticed allowed them to go about their business and enjoy other aspects of their lives by minimizing the degree to which their prostheses could dominate the situation.

William spoke about his discomfort with baring his prosthesis and how this led him to dress more carefully.

> [One of the challenges I faced,] especially early on in the first year that I was wearing the leg, if you've got shorts on and you walk around in them, there are a lot of people that are going to stare at you. And so then I had this impression that I was a freak, and then I'd feel sorry for myself about it, so that was one early psychological glitch . . . . When I was feeling down, I'd wear pants, cause there'd be times when I just couldn't deal with it. I didn't want to go in the supermarket and I couldn't stand having another kid coming up asking me or somebody else telling me some story about somebody they knew. I just wanted to shut it out, I wasn't strong enough. Now it doesn't bother me – I don't really think about it anymore. If it's hot, I wear shorts; if it's cold, I wear pants.

While coming to terms with his amputation, it was too painful to deal with the attention his prosthesis would attract in public. The well-meaning comments and inquiries served to make him feel like a "freak," and constantly reminded him that his amputation and prosthesis changed how people treated him. Covering up with pants helped him to avoid such interactions when he did not want to cope with this. His transition from carefully calculating his clothing choices based on his mood to more intuitive, weather-based decisions was a sign for him that he had come to a place of acceptance with his prosthesis. William felt less freakish when he became more comfortable with the attention his prosthesis could attract.

Prosthetic legs can also attract positive attention. Keith elaborated on the benefits of showing off the artificialness of his leg:

> I like wearing [shorts on the] first day of class – like I was in school through most of this, so the first day of school I'd wear shorts…. Make sure everybody knows… I like to kind of get that out of the way. When I go to bars, I always wear jeans cause that's kind of the setup, but I always feel weird….

In these contexts where he knew he would be meeting potential new friends, Keith found it easier to allow his prosthesis to speak for itself so he did not need to worry about when to reveal his status as an amputee. However, his preference for keeping his prosthesis hidden did not override his sense of appropriate dress in particular contexts; he felt he had to wear jeans when going out to bars because this is the *de facto* dress code for such situations. In situations where shorts are appropriate, like school, Keith found it beneficial to delegate the work of explaining himself to his prosthesis. This helped him to feel more at ease because he did not worry about managing awkward surprises.

Vincent and Peter told me that revealing their obviously artificial leg had been a social asset, apparently making it easier for people to approach them. Vincent, a white man in his early 40s, had an imposing build, many tattoos, and favored black clothing. He reported that he never changed the way he dressed after his amputation and had always preferred to wear casual t-shirts and oversized shorts. When I asked him if he thought his prosthesis made him more approachable, he replied,

> Yeah oh yeah … You would never have talked to me, not unless you like rough guys and you were drunk … see now I know what you're doing. You're doing a report on prosthetics, you would have saw me and said I need to talk to that guy. But if I was wearing pants, you would never in your life talk to me. You know it and I know it. And I'm not being mean, it's just that's just the way my life has been.

With this statement, Vincent demonstrated keen awareness of how his self presentation influenced his interactions with women. But his comment also called out what he perceived to be our class differences. (At another point in the interview he teased me about the khaki pants and collared shirt I had selected for the occasion.) He knew that women who looked like me rarely approached him because he looked "rough." However, despite his intimidating appearance, Vincent was a gregarious man and enjoyed the opportunities his artificial leg had created for meeting new people.

Peter, a white man in his 30s, described a similar boost in approachability. When I asked him if his amputation had changed the way he meets women, he told me,

> You know, that was one of the biggest things that I was concerned about after I lost my leg. What is someone going to think of me? It turns out to be a really good conversation piece. I have not had anyone ever be disgusted or turned off when they find out I'm an amputee. So has it affected it negatively? No … I don't know how it is for other guys, but in some ways, I think it almost works more for me as an advantage than a disadvantage.

Peter also spoke about wanting people to know, during his rehabilitation, that his limp was due to a prosthesis:

> I guess one of the signs that I knew I was more comfortable with my prosthetic is when I was going to wear pants, and it wasn't just because I didn't want people to see my prosthetic, it was more … if they saw that I had a bad limp, I wanted them to know why. So once I was wearing pants, it was like okay I'm comfortable with being able to walk that I just don't care.

When Peter was learning to walk with his new leg, he wanted to deflect attention away from himself and toward the prosthesis. He felt awkward wearing pants and preferred that people knew that he had lost his leg rather than have people wonder if he had some other type of injury. Once he was confident in his gait, he felt better about wearing pants, presumably because he no longer felt that people would immediately notice his disability. His attitude suggested that an amputation is in some ways more desirable than having an injured leg.

While Peter embraced his artificial leg as clearly preferable to common injured legs, Lisa seemed to have the opposite attitude. When she returned to school after her amputation and chemotherapy, she preferred to let people think her limp and crutch were due to knee surgery.

> My first year coming back to school … I had one crutch. I used it the whole year, though, and it was kind of embarrassing because everybody would ask what's going on, what happened? I had a close group of friends that I made my freshman year that I still talked to my sophomore year, like a handful too. They're the only ones I told what was going on. Everybody asked, saw me, like, "Hey, where have you been, blah blah." It was embarrassing, like I took a year off, had surgery. And at first I told everybody it was knee surgery because I tore my ACL or MCL or something, because they knew I was athletic and that I played soccer, so it was just easier for me to go in that direction.
>
> Sometimes though I have been saying it's an amputation, but then like, people don't believe me, they think that I'm lying and that's what gets me, cause it's like sometimes [I'll say,] "Oh, I don't care. It's an amputation." But then when they don't believe me, it upsets me.

Like Peter, Lisa desired to deflect attention from herself, but not toward the prosthesis. She preferred to keep private her illness and her struggle to walk and therefore found it easier to go along with the expectation of other undergraduates that her surgery was sports-related. Even when she tried to be honest about her amputation, she felt people would challenge her. However, those who did know about her illness found this strange. This had recently become an issue with one of her roommates:

> One of my roommates, Ann, I've known her since my freshman year, her friend moved in with us, Jane, … I guess she mentioned to Ann in the beginning, like when she moved in, "Why does Lisa hide the fact that she has a prosthetic?" Because Jane knows a lot of people, she's in a sorority here, and she brings a lot of people over, and some people, I haven't told any of her friends, cause you bring people over left and right, I don't know these people, I don't feel like sharing that information, and that's my decision. She told Ann that, "If I was her, I would just say it's an amputation. Who cares?" And it's easier said than done. If you were in my place and you'd gone through what I'd gone through, then you would know, but because you haven't, don't pass judgment.

Lisa felt judged by her new roommate’s opinion that her amputation was no big deal because it implied that Lisa’s choice to hide her prosthesis is inappropriate and perhaps dishonest. Lisa’s defense throughout our interview was that she did not owe this information to strangers, but her worry over this issue and her roommate’s comments suggest a tension between her desire for privacy and the amount of information demanded by others.

Peter and Lisa had different strategies for managing their personal identities through control over information about their biographies. In choosing to hide or not hide their amputation, they each responded to pressures to conform and opportunities to express themselves that were based on their gender. Peter was not a veteran, but his age and gender would allow people to assume that he had been wounded in combat. On the other hand, no such well-known and positive narrative exists for a young woman in college. It was probably true that for Lisa to show her prosthesis would not have answered anyone’s questions and would have only invited more curiosity. Being a shy and private person, Lisa avoided the extra attention an obviously artificial leg would have attracted, but this came at the risk of being perceived as oddly defensive or aloof. Meanwhile, Peter enjoyed the privilege of being interesting without being confusing.

The mechanical aesthetic offered Vincent, Peter, and Keith, obvious benefits in social interactions. It helped them feel that they were presenting themselves honestly, made them more approachable, and prevented (some) misunderstandings and false assumptions. But these benefits were less accessible for those like Susan or Lisa who were uncomfortable with the extra attention their legs could attract.[15] Few women were as positive as Keith, Peter, or Vincent about the attention their prosthetic legs drew.

Though Debbie wore an unfinished prosthesis, she described the attention she received as inevitable, sometimes amusing, but not particularly positive. She used colorful socket covers to express her playful attitude toward her prosthesis and laughed about how one elderly man responded:

> I had on a red skirt and I had a leg sock for the socket… [the one I am wearing now] happens to be my Hawaii one because it's got flamingos on it. I had one that was neon that had hot pink butterflies and bright purple butterflies. It was bright … And I walk in [to the DMV], and bless this old man, at the top of his lungs, "Oh my God, look at that leg!!" I had a big old grin, hiked up the skirt a little higher, and I go, "I know! Ain't that something!!" Turned around and I walk away. There's times when I mess with it, and there's times when it hurts. But most of the times I just play.

Debbie altered the appearance of her prostheses in order to influence the response of others, but unlike women who seek to camouflage their prostheses, she had chosen to make it a statement. However, the story she told did not suggest the sort of social rewards

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[15] Race also appears to play a role in the choice to forego a cosmesis. None of the white men I interviewed reported a desire to wear a cosmesis, while the two men who preferred cosmeses were not white. (Three out of the seven non-white respondents who were asked reported a preference for obviously artificial legs; all three were under 30 years of age.) Because my sample is so small, how respondents spoke about the mechanical aesthetic is more telling. Leo (a Latino respondent) expressed disapproval of Heather Mills showing off her leg on *Dancing with the Stars.* An African American man I met during my field work told me that his parents implored him to get a cosmesis. I have also discussed Lisa and Jake's exacting standards for how their legs should look. In contrast, even Susan, Ruth, and Doris – white women who preferred to cover their own legs – expressed acceptance and even admiration for others who chose to wear uncovered prostheses. Considered together, these data imply that being white or male makes it easier to accept a non-traditional bodily aesthetic, such as an obviously artificial leg. This would be consistent with studies that find that women and minorities face professional and social sanctions for apparel choices that are perceived as too feminine, sexually suggestive or "ethnic" (Eicher 2001; Entwistle 2000; Entwistle and Wilson 2001).

enjoyed by Peter and Vincent. The attention she received at the DMV was a fleeting acknowledgement of her unabashed choice to adorn her prosthesis.

Amputation, as a social identity, suggests vulnerability, and is read by some as an opportunity for sexual overtures. While men might be seen as more honest, open, and even heroic, the same qualities imply greater helplessness for women. Marie reported her frustration with the way some potential boyfriends "babied" her. I also heard reports of unwanted sexual attention that amputation attracted. In my field work, people told me stories about *devotees*,[16] ranging from long-term intimate relationships, to uncomfortable encounters in public, to unwanted phone calls and propositions. One woman I met told me she had found photos of herself, taken in public without her knowledge, posted on the Internet. Such practices raise the stakes for women who choose to wear obviously artificial legs and no doubt encourage some to choose inconspicuous cosmetic legs. These are examples of how the combination of femininity and amputation sets unhappy expectations for how a woman amputee may be treated.

In these examples, respondents described how they dealt with the attention attracted by their amputations and prostheses. While Jessica and Steve routinely wore and revealed unfinished prosthetics, they still liked to "camouflage" their prostheses when traveling or skiing so they would not stand out. Similarly, William chose to wear pants when he did not feel like fielding comments and questions from strangers. On the other hand, Keith, Vincent, and Peter enjoyed the positive attention they received from baring

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[16] *Devotees* refers to a subculture of people sexually attracted to amputees – mainly men interested in women amputees.

their artificial legs. However, this sort of positive attention may be more accessible to men, as female amputees did not benefit from as many positive associations and assumptions. Lisa sought to pass as an injured athlete to avoid awkward questions. Marie and others found that their amputation sometimes suggested vulnerability and sexual availability.

The presentation and appearance of prosthetic legs help to set the conditions for interpersonal encounters and contribute to the impressions of others. Whether the users intends it or not, a prosthesis's visibility can be an invitation for questions, a window into the users' medical history, and a clue about how the user ought to be regarded. In this sense, prostheses do not simply suggest the appearance of vulnerability connected with disability, but can themselves be a source of vulnerability because they are always poised to reveal – or instigate demands for – personal information.

Identity and Prosthetic Aesthetics

In these examples, the presence and appearance of artificial legs affected the kinds of expectations users were held to. Not only could prostheses speak of personal history and categorical membership, like gender, race, or class, they also spoke of moral characteristics. Although Goffman described the risks of information control, like passing and covering, as arising from expectations about *personal identity* (64, quoted above), it is *social identity* that hangs in the balance as an individual works to manage information about a stigma. Disclosed information will introduce new expectations based on related stereotypes, but the way the disclosure is handled will be indicative of character and moral standing – dimensions of social identity. Prosthetic legs, as agents of information control, assert themselves in the interactions that create both personal and social identities.

Being an amputee is part of one's social identity to the extent that others carry preconceived notions about what might be expected of someone who is missing a limb. On the other hand, amputation is part of one's personal identity because it is a recognizable and unique identifying feature and represents an important biographical fact. Amputation as personal identity looms large when considering the impact of prosthetic aesthetics. As Goffman points out, there are norms governing "the kind of information control the individual can appropriately exert" over personal identity (64) and these were reflected in comments about distaste for hiding, pride in past experiences, or desires to avoid the question of "what happened to you?" However, strategies for such information control also shape social identity when they are read as indications of honesty, authenticity, and even sanity. Therefore, people with a stigma must navigate a difficult tension between passing to be treated like a normal person and disclosure so as not to run afoul of the norms surrounding personal identity.

In the respondent's narratives, artificial legs contributed to many aspects of identity, not only living up to expectations linked to categorical identities, but creating expectations based on biography and personal attributes like honesty, vanity, and modesty. When Jake explained his choice of leg by saying men "should be proud of their scars," he not only asserted his masculinity, but claimed his prosthesis as a medal of honor – a visible symbol of his bravery and sacrifice in the armed forces. He sought an appearance consistent with his personal history and what he would have others know about him. It was equally important to him that his prosthesis did not suggest an over-interest in his appearance, as he saw that as a feminine concern.

Similarly, although he lost his leg after a car accident, Vincent’s persona could easily lead one to guess that he had lost his leg while riding a motorcycle. His appearance spoke of risk-taking and trauma that fit a stereotype he could comfortably embrace, as it was appropriately masculine and working-class. His experience of being more approachable with an obvious prosthesis derives in part from its suggestion of vulnerability that is so unexpected considering the rest of his self presentation.

Lisa drew on existing expectations about disability and injury within collegiate sports when she chose to pass off her amputation as an injury to her ACL. Of course, her bluff would have been impossible if it were not for the presence of her prosthesis and its resemblance to a more common leg brace under her pants. Though she engaged in passing, she was not striving to be taken for “normal,” but for someone with a more easily understood (and temporary) condition. Cancer was not part of her life-history that she wished to make evident in her appearance, presumably because this defied expectations for a woman of her age and brought her attention she found embarrassing. Again, this points to how gender, bodily appearance, and available biographical narratives converge to create personal and social identity. In Lisa’s case, her desire to hide a particular aspect of her personal identity (cancer and amputation) led her to project a social identity as a young (injured) athlete. Thus, she claimed a familiar stereotype that, she hoped, would allow her to avoid constantly explaining her illness.

Goffman assumed that the cost of deviating from a norm were great enough to encourage nearly everyone to strive for passing as normal. Contrary to this assumption, respondents like Keith felt most comfortable when their amputation and prosthesis were visible because they then did not have to worry about revealing their difference. Though Goffman acknowledged this as a possible strategy, he considered it a second choice – one chosen by people who have no hope of actually hiding their stigma.

Goffman observed that some individuals refused the common negative interpretation of a stigmatized trait by reinterpreting their situation or simply abandoning all efforts to pass. For instance, he suggested, "the person with a shameful differentness can break with what is called reality, and obstinately attempt to employ an unconventional interpretation of the character of his social identity" (10). He also noted that, "the stigmatized individual can come to feel that he should be above passing, that if he accepts himself and respects himself he will feel no need to conceal his failing" (101).

He was sensitive to the contradictory expectations stigmatized individuals were held to, writing about the need to strike a careful balance between passing and revealing the truth of their situation. While it might be off-putting to proclaim oneself in public, disclosure is often expected in more intimate relations. If an individual does not navigate these waters well, they risk being harshly judged. In Goffman's world, misplaced pride in abnormality was a refusal of social reality that, he assumes, almost anyone would see as "self-deluded," "misguided," and ultimately not authentic (111). He asserted that attempts to be comfortable with an obvious stigma always run the risk of demonstrating social incompetence or appearing to others as trying too hard.

But the experiences recounted by respondents in this chapter suggest that amputation is not as universally stigmatized as it once was and that amputees enjoy a wider range of socially acceptable options for managing the appearance of their prostheses in public. If it were still the case that the social reality dictated a need for inconspicuous legs in most public encounters, there would be no room for the obviously artificial aesthetics selected by Paul, Jake, Keith, Brandon, Vincent, and others. If passing for normal or “covering” were as important as Goffman suggested, there would be no questions about the desirability of using cosmetic legs to “cover” an amputation. The data I have presented suggest that covering was not such an obvious decision. Amputees like Susan and Doris chose a cosmesis to blend in more easily. Jessica and Steve chose to reveal or conceal their legs depending on the situations they anticipated. But Daniel, Keith, and Brandon rejected cosmeses altogether because they looked too phony to pass as real legs. Their reasons for abandoning cosmeses suggest a desire to be authentic and honest about their amputations, almost as if they would appear untrustworthy or suspiciously vain should their legs look like plastic.

Goffman deliberately wrote about what he thought to be universally stigmatized attributes – like amputation – as if the stigma was a direct consequence of these traits rather than arising from a relationship between attributes and expectations (Goffman 1963: 3-4). But the data I have presented here cannot be adequately analyzed without attention to these relationships. Jake’s pride in his scars can only be understood in relation to the expectations connected to his military service. The donations that made Marie’s pretty leg possible were forthcoming because her age and gender made a standard prosthesis seem like a tragedy. Lisa's choice to let her classmates think her amputation was a temporary and sports-related injury stemmed from anticipating the confusion and worry her actual situation might provoke. Conversely, Vincent enjoyed how the unexpected fact of his amputation could break the ice with people who would otherwise never approach him.

Goffman offered conceptual tools for thinking about the contextual dimension of identity; he incisively articulated the relationship between social expectations and personal traits in his explanations of personal and social identity and the dynamics of passing and covering. However, his narrative in *Stigma* was pre-occupied with the concept of deviation from norms. Because of this, he over-generalized the importance of appearing normal, underestimated the costs of and risks of doing so, and glossed over the diversity of social forces that encourage conformity.

Goffman's reluctance to commit to a language of relationships between expectations and attributes stems from his overarching concern with normality and deviance. This led him to over-generalize the impulse to appear normal. He worried that, at the time of his writing, "separate systems of honor seem to be on the decline" (6). He asserted that the only "unblushing male in America" was a composite of desirable characteristics few people possessed in their entirety (128). Normality, for Goffman, was both ubiquitous and nearly unattainable. By regarding this set of expectations as constant, he could let them fall into the background and focus his narrative on the experiences of people with stigmatized attributes. Ultimately, however, his understanding of identity (and not just stigmatized identity) was too sophisticated for this strategy to hold. He defined *personal identity* and *social identity* by the interplay between attributes and expectations. Furthermore, he could not explain passing and covering without reference to the more subtle expectations surrounding honesty, transparency, and biographical consistency.

This is all the more obvious when considering the case of contemporary prosthetic legs – a technology that can aid in passing, but is not consistently employed to do so. Among my respondents, the benefits of passing that Goffman considered to be so clear were at times outweighed by the risks of exposure or the rewards of recognition. These risks and rewards varied not only with the situation, but also with other aspects of respondents' identities – especially gender, but also age, race, and class. Furthermore, to describe passing and covering as efforts to appear "normal" glosses over the many context-specific motivations for concealing and down-playing a disability like amputation. More than approximating normalcy, passing and covering are about appearing un-notable.

Conclusion

Prosthetic devices participate in the on-going construction of users' identities. Not only do users deliberately delegate their self-expression to their prostheses, prosthetic legs can speak with a voice of their own about both categorical and personality traits.[17]

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[17] It may be objected that we should think of objects as simply mediating social relations (in the tradition of Marx's commodity fetishism (Marx 1978 [1867]: 319-329)). In this view, the force of prosthetic aesthetics would be wholly attributed to the choices made by the amputee as a way express themselves to others. But this view leaves out the ways that prosthetic technologies do not always bend to the will of their users and the ways that identity is only partly under the control of the conscious self.

Whether an individual chooses a finished prosthesis that can pass as a normal leg, or a stylized unfinished leg that covers for the disconcerting loss of limb, others will interpret his appearance in conjunction with the stereotypes he resembles and related expectations. Goffman's insights remind us that "normative expectations" become "righteously presented demands" (2) that, more often than not, coerce and create personal identities.

However, respondents spoke more about chafing at the need to constantly explain themselves more than a desire to be "normal." For those, like Jake, Keith, Vincent, and Peter, who found that a prosthesis could be sufficiently self-explanatory, an exposed unfinished artificial leg helped smooth awkward situations. But for those, like Lisa, Susan and Shirley, who found that their legs raised more questions than answers, an inconspicuous finished leg allowed them to go about their business with fewer distractions. In either case, the pressure to explain oneself and the desire to appear authentic and honest motivated the choice of leg more than a concern with normality.

These examples demonstrate that prostheses can be indicative of more than limb loss, trauma, or illness. Prostheses can broadcast rich and subtle information about personal and social identities. They speak of personality traits such as honesty, vanity, or respectful modesty. They speak of categorical group membership like gender, race, and class. And they drop hints about major life events and user attitudes toward these biographical details. All this information is interpreted according to the given context to create expectations about who a prosthesis user is and how they ought to be treated. These examples also suggest that amputation is not as universally stigmatized as it once was. Many respondents preferred to wear and reveal an obviously artificial leg to enjoy positive social attention or to gain the benefits of not worrying about being taken for someone they were not. Others who preferred to wear a “camouflaged leg” did so to maintain their anonymity and privacy in public rather than to avoid discrimination or other kinds of negative attention. To explain this in terms of normality and deviance glosses over the complexity of identity. Making sense of the respondents’ narratives about prosthetic aesthetics requires a theory of identity that accounts for both the contribution of objects and the importance of context in establishing social expectations.

III. EVERYDAY PEOPLE, EXTRAORDINARY PROSTHETICS?

Technologies with Identity

In the last chapter, I described how prosthetic legs participate in social interactions and thereby contribute to user identity. In this chapter, I argue that the devices themselves take on a kind of identity in these interactions, similarly characterized by an interplay between expectations for and attributes of the technology. I will show how interactions between prostheses, users, and others establish the reputation of prosthetic technology as a cure-all for the problems of amputation. I will demonstrate how this reputation is sustained through particular interactions between amputees and their assistive devices.

The idea that objects take on identities in much the same way that human do is inspired by work in STS on the role of objects in scientific work. As I described in the introduction, I think of this concept as an extension of the symmetry principle in ANT, and I find encouragement for this line of thought in Latour's *ARAMIS or The Love of Technology* (1996). In this book, Latour gives an account of the demise of an ambitious new system of public transportation in the form of a detective novel. As his protagonists investigate who or what "killed" the project, Latour argues that the technology comes to be possible, and then impossible, through the relations that make up its network. The life and death of ARAMIS are not merely rhetorical issues, but have to do with the specific ways that engineers, funders, and the press interacted with the technology. Thus, much as people take on attributes and come to be seen as this or that type of person in the course of social interactions, technological objects acquire their identity through a similar process.

Though not specifically aligned with ANT, Karin Knorr Cetina (1997) addressed similar themes with respect to scientific instruments. Building on Heidegger's theory of technology, she argued that the way we approach objects contributes to the identity of those objects. Heidegger and others have argued that scientific instruments should be considered stable "ready-to-hand" tools in contrast to the objects of inquiry that are constantly coming into being. Knorr Cetina argues that this distinction is increasingly hard to sustain (10). Flexible tools, such as personal computers, may be used to study something else, but their constant upgrading and reconfiguration makes their identities unstable. Knorr Cetina describes the way that scientists approach and learn from their materials as a relation of give-and-take that can constantly transform the technology and redefine what it is for.

Knorr Cetina provided a similar analysis of the particle detectors used by high-energy physicists in *Epistemic Cultures* (1999). The detectors were sufficiently unstable, unpredictable, and idiosyncratic that they never seemed to settle into the role of transparent instrument. This resulted in a set of relations between the physicists and detector in which the detector becomes a moral and social being. Detectors communicate with one another, check each other, and cooperate. She describes how detectors can behave well or badly. They are thought to "lie" and therefore may or may not be trusted. They can also assume responsibility for certain successes and failures (Knorr Cetina 1999: 120).

In these examples, Latour and Knorr Cetina treated objects as a presence in social encounters in their own right and not simply as tools wielded by humans. This strategy helps to account for the ways that objects frustrate and impede human designs and also reveal the kind of social identity objects take on as humans interact with them. The social construction of the transportation system or the particle detectors depends not only on what people wish or the way people talk. Aspects and behavior of the devices themselves influence how they are regarded and, therefore, shape the social identity of these objects.

In the case of artificial legs, the enhanced functionality of new designs has brought these devices and their users increasing notoriety, creating new and greater expectations for prostheses. I argue here that prosthetics are now thought to be a cure-all for the problems of amputation. Held to such a standard, everyday prostheses become good or bad legs as wearers strive to counter their disabilities. When describing their successes and frustrations with their own devices, many respondents judged quality of individual legs rather than questioning the promises implied by media coverage and advertising copy. In this way, the glowing reputation of prosthetic technology was preserved at the same time that stubborn devices acquired their own object identities.

The Prosthetic Panacea

When Oscar Pistorius began his quest to become the first amputee to compete in Olympic sprinting, the international governing body of track and field, the I.A.A.F., initially ruled that he could not participate on the grounds that his prostheses might give him an advantage. In the media, his case raised questions about the disadvantages and meaning of disability. The New York Times quoted George Dvorsky of the Institute for

Ethics and Emerging Technologies, wondering if this would eventually lead “athletes to do something as seemingly radical as having their healthy natural limbs replaced by artificial ones?” (Longman 2007) Though he was never thought to be a medal contender, and it took him years to achieve the necessary qualifying times (Robinson 2008; Rohan 2012a; Rohan 2012b), the idea of a prosthetic advantage was so compelling, the story of this South African Olympic hopeful made international headlines and sparked debate (Gibbs 2008; Longman 2007; Robinson 2009).

The technology behind Pistorius’s running legs had been making headlines for years. When spring-like energy returning feet debuted in the late 1980s, they were celebrated for helping amputees run and walk more capably than ever before (Colvin 1989). In 1996, amputees running in the Paralympics made headlines on the same Cheetah legs Pistorius would later compete on (Delatiner 1996; El-Bashir 1996; Hente 1996). Shortly after these games, one athlete, Aimee Mullins enjoyed notoriety as a unique fashion model for Alexander McQueen (Smith 2006). Autobiographies and profiles of amputees focus on physical achievements and the amazing technologies that made these possible (Elguindi 2006; Garrison 2005; Goldman and Cagan 2001; Maynard 2005). Stories of young soldiers wounded in Iraq and Afghanistan celebrate high-tech prostheses as the key to their rehabilitation. One young veteran told Esquire about his fantasy of becoming a stunt man to take advantage of his ability to come apart (Mockenhaupt 2007). Such media coverage presents contemporary prostheses as extraordinary technological achievements that could enable lower limb amputees, or perhaps anyone. A 2010 National Geographic cover story presented prosthetic arms, legs, eyes, and ears as exciting bionic technologies that relieve the burdens of disabilities. This technology was offered to the general reader by a box in the table of contents that suggested “replacing your parts: maybe you need an artificial retina or a ‘spring ankle with regenerative kinetics’” (Fischman 2010).

Popular interest in prosthetics is part of a more general excitement about the possibilities of medical technologies to free us from the consequences of illness, injury, and death. Artificial limbs symbolize these possibilities in a highly visible and provocative way. The image of prostheses as a panacea for the bodily perils of modern life is a cultural myth that is reflected in scientific and academic discourses such as ergonomics, cybernetics, robotics, and cyborg studies (Gray 1995; Hayles 2008; Jain 1999; Rabinbach 1992; Stone 1995) as well as in prosthetics marketing and media coverage of extraordinary amputees. In these discourses, the idea that I will call the “myth of the prosthetic panacea” suggests that technology is not distinguishable from the body, can replace the body, and may make the body obsolete.

While it may be argued that the myth of the prosthetic panacea is a prominent trope in contemporary U.S. culture, it does not follow that everyone believes it. After all, coverage of Pistorius and the ethical debates about enhancement in sports would not have been so newsworthy if his accomplishments did not challenge a common-sense classification of major amputation as a permanent disability. Even if people with no direct experience of prosthetics find the prosthetic panacea compelling, surely it would be less so for those who live with or encounter artificial parts every day. One might assume that prosthesis users would be set up for disappointment by the representation of prosthetics in the media.

Whether it is believed or not, the myth of the prosthetic panacea lurks in the background of an amputee’s everyday experiences. The burden of popular celebration of prosthetics is evident in the ways interview respondents spoke of their conditions and their retelling of comments from friends, family, and strangers. The interviews reveal how prosthetic technology is expected to repair amputation, foster athleticism, and even enhance amputees by making them *more* capable than they were prior to their limb loss. These notions cannot simply be attributed to the naiveté of acquaintances and strangers – amputees themselves expressed versions of these ideas.

Although the people I spoke to reported many difficulties and setbacks, many appeared to be more inspired than frustrated by the public image of prostheses. Even those who were not able to embrace the prosthetic panacea found that they had to answer to the expectations of others which were informed by this cultural trope. By hiding and denying the daily work and extra time required by their devices and silently enduring discomfort and pain, amputees perpetuate the reputation of prosthetics as a cure-all. All this led many respondents to question their status as disabled: if prosthetic technology can so adequately replace lost limbs, perhaps amputation is no longer a permanent disability.

Great Expectations for Technology

Predictably, great expectations for prostheses set amputees up for disappointing experiences. Actual prostheses are never perfect. Every respondent I interviewed related some sort of difficulty or challenge. Some found learning to walk extremely challenging. Many struggled to achieve a good fit between their limbs and sockets. Some complained of skin irritation and ulcers. Some had trouble accepting how their prostheses looked. Any of these experiences could challenge the image of prosthetics as a perfect or adequate replacement for an organic leg, yet many respondents interpreted these problems as personal and idiosyncratic rather than blame their devices and challenge the reputation of prosthetic technology.

Even respondents who described daily struggles or faced major setbacks with their artificial limbs nevertheless expressed faith that prosthetic technology could and should be made to solve their problems. In the last chapter, I introduced Shirley, a woman in her 60s who had trouble getting her prostheses to match her skin tone. Shirley owned prostheses for both legs, but she relied on her wheelchair to get around. She wanted to build up her strength to walk, but pain and fear of falling at home prevented her from practicing and progressing. Even though she had had long experience with prosthetics, she spoke about her recent hope that a microprocessor knee could help her get back to walking:

> Everybody’s talking [about] the C-leg. What is this? And they say the people with the leg, they walk in and walk. I say, they so expensive… you know, I never thought anything about it, but when they start talking about the leg, … that’s what made me want it now cause they was saying oh yeah you can get it. I say, so if they can get it, I can too.

It may be the case that a C-leg would work for her. (She wouldn’t have to rely as much on the strength of her hips to extend the foot in front of her as she walks.) But when she relayed the report that “people walk in and they walk,” she suggested that the C-leg is so easy to use that it requires no effort to adjust to. While some users may experience the transition this way, is unlikely to be the case for an older double amputee who has relied on a wheelchair for three years. Shirley would have to work considerably to transition to walking on a C-leg and she had already had a taste of that work. Still, she seemed optimistic about that possibility, revealing a faith in technology that had not been undermined by her struggles.

A similar faith in prosthetic technology motivated Ruth to persist through a prolonged struggle to adjust to a leg. She was generally skeptical about the promises made by the prosthetic industry, and with good reason. She had been an amputee for most of her life and at the time of the interview was in the middle of a long struggle to make a new suspension system work for her. She complained about the extra attention given to components for athletic activities that, she felt, were only available or appropriate for young amputees:

> … I think it actually gives the public a little bit of a false impression too… like one of my sisters sees all these things that are available for runners or whatever. So she has a hard time figuring out why - well, why am I having all this trouble getting adjusted to this prosthesis? Why can’t I just get - why can’t I get something that’s ideal for my life and my activities just like the ones that are advertised… it's not always as easy and a lot of times these things, they’re so expensive that they’re beyond the reach.

Her report of her sister’s attitude reflects the public expectation that contemporary prosthetics should be able to solve any amputee’s mobility needs, but Ruth knows the difficulties of getting prosthetic technology to work for an individual. The myth of the prosthetic panacea requires her to account for her troubles in a new way.

In the quote above, Ruth referred to her long struggle to adapt to a new suspension system. It had been over a year since she had a satisfactory prosthesis that would allow her to take her walks and looked the way she wanted it to. When I asked if she was ready to go back to the system she had used successfully for many years she told me:

> That is an option and I may have to do that but I really don't want to at this point. I want to pursue this longer because I'm thinking that the theory is that because you don't have pressure on any part of your limb that it's much better health-wise and walking and so forth for my residual limb. So I would like to pursue it.

Ruth explicitly questioned the validity of prosthetics as a panacea, but in her personal quest for a better fit, she was willing to devote a lot of time and effort to working with a new system that was supposed to be better "in theory." I cannot judge if pursuing the new system was a waste of her time, but her persistence in the face of such prolonged frustration displays an impressive trust in the potential of the technology. Here, the myth of the prosthetic panacea shaped Ruth's decisions, even as she questioned it.

Shirley and Ruth each held out hope that more sophisticated prostheses would solve their problems despite long-term frustrations. Sandra also described her disappointment with high-tech prostheses while reluctantly accepting the blame for their failure. She told me about her trial run with C-Leg™ microprocessor knees after successfully using mechanical knees for over twenty-five years.

> What was good about them? They were fabulous for sitting down. I'm not kidding… for me to sit down, I always kind of go like this and I just plop down because I have to break [release] this knee. Well, those legs, you could stand up and if you got up next to the chair, close to the chair, and then you stuck your butt back, it knew that you were [sitting down] and then the knees would fold gently – under a controlled environment – and you would sit down. I did that several times. I thought, 'how graceful I have become!'
>
> And then I had to start walking in them. But to walk in them, and of course this is me with two of them, so I don't have another leg to catch myself with, you really have to learn to roll over the gait and get over then ball of the toe exactly right, and if you don't, it doesn't activate, it doesn't quite understand that it's got to follow through now. So I'm sure that's do-able, I'm sure it's a fabulous thing, but… I didn't have the time like I did to learn again. I had to go back . . . I needed to be at work, and I would get up in the morning and say, okay, today I'm going to try them, and I'd get out and then I'd discover I couldn't drive my car. I would get to work and would try to . . . and then I'd have to sit in a wheelchair. After about two months I realized if I had retired and said… I'm going to be in physical therapy two times a day, maybe I could have made them work.

Here, Sandra describes in detail the charm of the microprocessor knees and the challenge of learning to walk in an entirely new way to control the new legs. With mechanical knees, she had learned to kick out the foot with each step and had done so for years. But the microprocessor knees were designed to do that work for her by reading the distribution of her weight and predicting her movements based on the model of average organic legs. Sandra had not walked with organic legs in decades, so her muscle movements were ultimately incompatible with these limbs. She realized that she would have to learn to walk all over again in order to make use of these new legs and she simply did not have time.

Sandra was disappointed and ambivalent as she reflected upon the problem. On one hand, she blamed her old habits and her schedule for her inability to incorporate the new legs. On the other hand, she dismissed the legs as not fitting into her life:

> Who in their right mind is going to add so many parts to a life that's already trying to minimize that? So when I thought about this, this is absolutely nuts. Why would I want something that has some wonderful features but totally screw up my life? I've got to plug it in and charge them. I forgot to charge them… the old-fashioned mechanical [leg] was so much more reliable . . . they don't go wrong.

The decision to give up on the high-tech solution was not easy. She reported typing up a "two page list of pros and cons" for her prosthetist when she gave them back. The difficulty of the decision and her conflicting reasons for doing so reflect the cultural pressure to embrace new technologies and make them work. In her case, as a well-educated professional, Sandra could not simply dismiss the new legs out-of-hand. She had to articulate to herself, to her prosthetist, and to me exactly why they did not work for her individual situation. In the end, by interpreting her troubles with the technology as personal, she preserved the reputation of the C-Legs™ as perfect replacement parts. The problems implicit in replacing non-standardized organic body parts with manufactured machinery are thus papered over as a failure of the individual. This avoids challenging the generally held faith in technological repair.

Mark demonstrated his assumption that his prosthesis should be a sufficient replacement for his lost leg by refusing to consider it as a source of pain. As an accident victim in his forties with a below-the-knee amputation on one side, Mark's demographics would predict great success with an artificial leg. However, he suffered intense pain at the amputation sight. He described many unsuccessful attempts to manage his pain with interventions that targeted his nervous system, from transcutaneous electrical nerve stimulation (TENS) to medicinal marijuana to implanted electrodes. Despite his difficulties wearing his prosthetic leg, Mark felt the prosthesis was doing what it was supposed to do and blamed his struggles on his body: “Everybody always comes back and says it’s the prosthetic, it’s the prosthetic causing all the problem. And I’m saying, no, *the prosthetic is perfect*. It’s my physiology” (my emphasis).

Mark expected that the artificial leg would be his ultimate solution and his determination to make it work was evident in the interview. He was willing to endure and downplay a great amount of pain and effort to use his prosthesis. After seeing him walk across the room, I asked him about the amount of concentration it took for him to walk. He told me, “It is second nature.” But he then went on:

> Balancing or equalizing on your hips, you figure that stuff out. But really if I was walking [a mile] and I was halfway there, the main part’s gone. It already hurts so much it just goes numb. Like if you had a pair of shoes that were… too small, cause you can’t take them off, so eventually it just gets numb, the pain just becomes overwhelming, and luckily your brain somehow shuts it off. When I get halfway [there], I may pull off and find blood, but I’m in a rhythm and I’m not thinking about it.
>
> Coming back [to the table] like that, I wanted to walk good so I have to consciously think about it, stepping the same way, and [it’s] very complicated … swing phase, heel strike, all this little parts of walking, and so… in trying to do it, yeah, it still takes a lot of thought to make it right.

Though he told me that walking on a prosthesis was “second nature” and that his prosthesis was “perfect,” he went on to describe significant pain and effort associated with using his artificial leg. He also spoke of choosing to use crutches when his schedule permitted it, which suggests that he was more comfortable getting around without his prosthesis.

Mark’s faith in prosthetic technology to restore two-leggedness led him to assume that his troubles were completely individual. While discussing how he would like to use his experience to help other amputees, he said he would encourage others about to undergo amputation by saying, “Don’t worry about it, man, just slap a leg on, in two months you’ll be dancing. Don’t worry about it – hack it off!” He continued, “I wouldn’t tell them about the problems I’m having, but the way it’s supposed to go is like a two and a half month thing, and really, you should be walking.” He dismissed his ongoing pain as irrelevant for others who have recently lost legs because he was convinced that prosthetics should work for anyone. He expressed such an ardent belief in prosthetics as a panacea that he was able to dismiss his own experience as a fluke.

George also dealt with significant pain in his residual limb, but took a very different approach to these problems. He too considered, and rejected, TENS and surgically implanted electrodes to ease his pain. He also explored mechanical adjustments to his prosthesis. But ultimately, George decided to get himself a power scooter and abandon his prosthesis. When I spoke to him he was enthusiastic about this solution, stating, “Life is really good without that [the prosthesis] and with this [the scooter].” Visiting George in his home, it was clear how well the scooter assisted George. He proudly showed me many impressive home improvement projects he had completed since losing his leg. At the support group where I met him, he was a great advocate of the brand of scooter he had embraced. He was thrilled to have found an assistive technology that allowed him to do the things he loved without the extra pain he experienced with an artificial leg.

But the popular expectations were nevertheless present in his account. He did struggle for a time to make the prosthesis work and the story of this struggle was an important aspect of how he presented his choice to abandon it. He knew that his choice not to use a prosthesis required explanation. When I first presented my project to his group, he was offended by my focus on users of artificial limbs and convinced me that his experience in non-use was also important and valuable. All of this points to his awareness that our culture considers prostheses to be the best option and most responsible choice for those who have lost limbs. George had to defend himself against the assumption that in his rejection of a prosthesis he was being lazy or refusing to be repaired.

At a meeting of another support group, I witnessed these very assumptions at work. There, a man spoke of his frustrated desire to make his prosthesis work for him. He described significant pain that kept him at home and off his artificial leg. His girl-friend, another support group participant, expressed her disappointment in him. “I keep telling him he has to work at it,” she said. The others in attendance also reiterated this “no pain, no gain” attitude, saying things like, “You have to get used to it” and, “It’s always uncomfortable at first.” In this instance, the man acquiesced to the group’s implicit accusation of laziness, rather than insisting on the severity of his pain. No one in the room, including a doctor and a prosthetist, raised the possibility of another mobility aid. Like Mark, these support group participants were unable to entertain the possibility that an artificial leg might not be appropriate for this individual. They regarded the use of a prosthesis as the best solution to the problem of amputation and morally superior to a wheelchair or crutches. Rather than question the prosthesis, this man's failure was assumed to be due to his own apathy.

Donald, an active amputee in his 70s, echoed the assumption that prostheses will work for all in his account of another amputee he had seen on the street:

> There's a guy here in town, above-the-knee, and he doesn't have a prosthesis - he's on crutches, and he goes for miles and miles on these damn crutches, and occasionally I've seen him downtown begging people for money. And I thought there's no reason why this guy shouldn't have a leg, and he could be doing something instead of sitting in front of the Post Office begging. So that's probably the thing that bothered me the most – people could do something if they wanted to rather than take advantage of the fact that you're an amputee and therefore they can't do anything.

Like other amputees, Donald had his own share of difficulties adjusting to his prosthesis, but this did not dispose him to sympathize with this man on "these damn crutches." This account clearly disparages crutches as an inferior method of mobility and assumes that the man was willfully resisting prosthesis use in order to more effectively pan-handle. Donald's comments serve as a stark reminder that becoming an amputee does not necessarily challenge previously held assumptions about others with disabilities and the efficacy of assistive technology.

The attitudes expressed by Donald and the support group reflect a moral imperative for amputees to embrace prosthetic technology and make it work for them. In their optimism about potential solutions, Ruth and Shirley complied with this expectation in ways that Sandra, Mark, and George could not. Mark responded by doggedly pursuing novel pain management to use his leg, reflecting a faith that a prosthesis would be his preferred mobility aid. Sandra and George ultimately decided to abandon the prostheses that were incompatible with their lives and bodies, but in doing so felt compelled to account for their decisions. Sandra typed a list. George told his story to anyone who would listen. The comments quoted above draw attention away from the possible shortcomings of prostheses as a universal solution to amputation. Rather than disappointment in an oversold technology, these comments reflect the attitude that users must take responsibility for their failures to successfully adopt and adapt to an artificial leg.

Compulsory Athleticism

High-tech prosthetic legs are not only assumed to work well for all, but they are credited with making every user a potential athlete. The myth of the prosthetic panacea has generated a popular expectation that amputees can and should use their prostheses for athletics. This is a particular and peculiar form of compulsory able-bodiedness (McRuer 2006a; McRuer 2006b). Robert McRuer argued that able-bodiedness is an assumed standard policed in many of the same ways that Adrienne Rich described heterosexuality as imposed upon women (Rich 1980). The concepts of compulsory heterosexuality and compulsory able-bodiedness describe the way that hegemonic standards become coercive as people respond to social pressure to live up to these expectations. This resonates with the concept of identity I borrow from Goffman, but better highlights why norms can be so powerful. Rather than assuming that norms are an arbitrary and inevitable response to difference, this approach points to the many ways cultural practices are devoted to maintaining the “natural” order and all the ways people become invested in this order.

In contrast to Rich's or McRuer's descriptions, the compulsory athleticism I observed did not stem from the invisibility of amputation or the implicit assumption of able-bodiedness. Instead, known prosthesis use was the basis for presumed athleticism and invited casual inquiries from friends and family, encouragement from prosthetists and physical therapists, and invitations to participate in competitive sporting events as representatives of disabled athletes. The notion that amputees ought to devote themselves to athletic pursuits compelled amputees to either take up athletic challenges or defensively explain why they were an exception to this rule. The many forces that create compulsory athleticism reflect a widespread investment in the reputation of prosthetic technology – and medical technology in general – as a panacea.

Jake's experience as a young and active amputee coming out of the military illustrates how expectations of athleticism are a key component of rehabilitation in the military. Like most wounded soldiers, he was treated in military hospitals and remained enlisted during his convalescence and recovery. (Wounded soldiers are not discharged until they have been rehabilitated so that those who desire can maintain their military careers.) He described the benefits of recovering in a military culture where superiors could "pull you out of that bubble" of self-pity and isolation by requiring participation in athletic activities.

For Jake, an important part of his recovery was being "talked into" doing charitable races soon after he received his prostheses. He proudly told me about how the organizers of one event recruited him to fill an empty spot: "[They told me] you gotta do this, we need somebody, you're a great amputee, you're a great role model... Like, what is it? It’s a bike ride from San Francisco to LA. What?! Huh?!” Though daunted by what he referred to as “that dumb crazy bike ride,” he did agree to take on this challenge and others like it, noting that doing “stupid stuff” helped him discover his abilities and limits. This ethic of participation again rests on the status of prostheses as capable replacements for lost limbs as well as minimizing the severity of other related injuries. Long after his amputation, Jake struggled with the health of his remaining leg, so it is particularly remarkable that he was able to participate in so many athletic events before he was discharged.

His account of recovering in a military hospital with other soldiers who had lost legs illustrates an atmosphere of excitement and faith in prosthetic limbs to restore young bodies to their former glory. He described how surprised he was to meet so many highly functional amputees shortly before and right after his amputation. An early physical therapy session at a military hospital left a lasting impression:

> I was there in my wheelchair, and they were helping me transfer from the bed when I seen a bunch of, all these guys here are missing legs. One guy … he’s talking to my physical therapist, and like, yeah, yeah, my leg keeps doing this when I jump, and I thought, what? Yeah, yeah, it keeps clicking and clacking when I jump. Listen to it. So he goes out in the middle of the floor and does a freaking back flip. What? And he does these freaking back flips down the gym, and I was like, wow. And then after he did that… another guy comes in and he just starts going wide open on the treadmill, full-on sprint, not with one of these crazy flex runs, no, with his regular foot, just sprinting on the treadmill. I’m like wow, I guess it ain’t that bad being an amputee.

In such company, it is hard to imagine finding fault with one's artificial limb. Combined with the high levels of physical abilities among military personnel, it is no surprise that athleticism after amputation should be considered standard.

The expectation of athleticism also implies an expectation of enhancement. Jake liked to joke that his prosthesis was an "upgrade." His choice of words suggested enhancement but, in context, the leg was only an upgrade in comparison to the injured leg it replaced:

> I felt better after they amputated my leg than I did with the leg I had before, because my limb memory was when I had the [injured] foot, so it's like, wow this is great. I put it on. There was a little bit of pain but it wasn't much. It was tolerable, and the way I felt, cause I could look down and I could actually see a foot, I could see a shoe, I could wear pants and look normal now. The first few steps was inside a parallel bar … and I took four or five steps; it was still weird but I walked better with the prosthetic than I did with the foot that I had. So my guys that know me, I always say I got an upgrade. I got an upgrade when I got mine taken off.

This choice of language amuses Jake precisely because it plays with the idea that perhaps he is better as an amputee than he was when he had two legs. He does not deny the struggles he has with his prosthesis, but they pale in comparison to the trouble he continued to have with his remaining leg. Walking on a prosthetic leg is a great improvement over his mobility before amputation, but by joking about the leg as an upgrade he is able to minimize both his previous condition and the work involved in using the prosthesis. In practice, it is this kind of suggestive language that fuels the idea that prostheses might be better than organic legs[18]

Pressure to be athletic may not be surprising in the culture of the military, but the expectation of athleticism influenced other young amputees as well. Karla, a recent amputee in her 20s, reflected on reporting new athletic aspirations shortly after her accident. She told me about participating in a documentary in which the film makers asked her about her future plans. "And I remember saying I want to climb mountains, I want to run marathons, all this stuff. And now I realize…No, I wasn't a runner, I wasn't athletic. I was fat, I liked to eat cake and candy, but never an athlete." In retrospect, these goals seemed largely disconnected from her previous sense of self. They were clearly inspired by the promises of the technology. In contrast, Sandra, Susan, and Ruth, who all lost their legs as young women over thirty years ago, described early goals such as getting back to school, climbing stairs, and simply feeling normal. Climbing mountains and running marathons were not available goals for young amputees a generation ago. Today such goals feel mandatory.

While many active respondents did not attribute their athletic interest to the availability of prosthetic technology in their interviews, I observed a number of instances where both the technology and the institutions serving amputees clearly steered them toward sports like running or triathlons and encouraged them to participate in competitions. Both Jessica and Marie told me they mostly run for exercise, but I met both

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[18] This was the main concern in the controversy over Oscar Pistorius's participation in the Olympics.

through organizations devoted to athletic competitions. Each had participated in numerous races and had been sponsored either by foundations or manufacturers. When Jessica listed a 5K, a 10K, a half marathon, and two triathlons that she had participated in, I asked her if she thought it was fun. She answered, "Is it fun? No, it's a nightmare. I think I'm drunk when I sign up for this stuff. It's almost like, 'That's a great idea;' and then here I am at a triathlon." She talked about how she did not manage to train adequately for these events, but continued to participate.

Nevertheless, she did not believe that anyone pressured her to do these things. I asked, "Do you feel like there's pressure to do things like the triathlon?" She replied, "No. And no one gives a shit about you. It's like my husband's like, 'Oh, you're going to go again.' You know, I just sign myself up for this stuff." Jessica grappled with a sense of obligation to publicly demonstrate her ability to run, but did not take seriously the external pressures she faced. Her account suggests that she was not seeking out opportunities to race, but that she received many invitations to compete that she had trouble declining. In correcting my implicit assumption that she might get extra attention for competing, she responded bitterly that "no one gives a shit about you." In another part of the interview, she expressed her resentment toward amputees who enjoy enough sponsorship to be full-time athletes, suggesting an uncomfortable tension between expectations of athleticism and the practicalities of daily life. Having the equipment and the ability does not guarantee having the time or money to train and enter events. Though she believed she had only herself to blame, the circumstances of her participation suggested that she was compelled to compete because she was a young amputee working in the prosthetics industry.

Marie did not work in the prosthetics industry, but her status as a young and active amputee also brought her many opportunities to compete. The expectation that young amputees can and should run, regardless of experience, made her a good candidate for a specialized running leg. Though she had not been a strong runner before her accident, once she acquired a running leg she found that she very much enjoyed it. Marie's perspective was more positive than Jessica's. She focused on the encouragement and inspiration she derived from running and spoke about the value of the connections she made through competition with other young women who had lost legs. She asserted that, though she got into running after her accident, she did it because she loved it. On the other hand, she spoke of testing herself:

> I always thought running was great, I thought runners were so cool before the accident. I just never knew I could. I would get something like three miles, and I didn't think I could. I couldn't even imagine doing more, so now it's almost like testing me, you know, I started very slow. I did a mile, I did a 5K, I just kind of kept going. What else can I do, how much further can I go?

This desire to test and push the limits of her physical abilities was inspired, at least in part, by her experiences with amputation and prosthetics. Perhaps her interest was piqued by the process of learning to use an artificial leg, or perhaps she found herself in proximity to others who challenged and encouraged her to use her body differently. In either case, the reputation of prosthetic technology as robust limb replacements played a role by suggesting that her body and her determination would be the limiting factors – not her prosthesis. It is possible that Marie would have taken up running had she not lost her leg, but being an amputee brought her opportunities and encouragement that she would not have had as a typical twenty-something with two organic legs. Though she was not a professional athlete, she enjoyed foundation sponsorship for her equipment and race fees. She was also recruited to compete in special events for disabled athletes.

The sporting opportunities described by Jake, Jessica, and Marie reflect a cultural emphasis on adaptive sports as a way to "overcome" physical disabilities. Compared to adaptations for other disabilities, sports adaptation for amputees now tends to rely on prostheses rather than changing other equipment or the structure of the game.[19] By fitting the body to the sport, rather than the sport to the body, the accommodations become less visible and this perpetuates the notion that prosthetic technology has created a "normal" body. Debbie's experience with bicycling illustrates this particularly well:

> I didn't want anything to do with [the hand-crank bicycle], because [I] was able to get on a regular bike, and there was a part of me in denial about being disabled. On a hand-crank bike, you can't use your legs. Well, I got two legs… Well, we had a problem with having to constantly strap the one down and it always coming off. You usually need a special foot. Because of the way the prosthetic is set up to walk, it hits when you ride a bike. But on top of it, 20 years being on the one leg, like I was, blew out the good hip. So riding a bike was really hurting, and I finally said okay, fine, and I got a hand-crank. And since then, I've done three half-marathons, the LA Marathon, and two Triathlons.

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[19] This has not always been true, but appears to have been made possible by advances in prosthetic technology. For example, there is an established circuit of adaptive skiing in which amputees ski on one leg with no prosthesis and outriggers on ski poles. Recall Steve's description of his joy at being able to now ski on two legs in the last chapter.

Debbie's initial discomfort with the non-standard bike derived from her desire to show that she "got two legs" and therefore should be able to perform adequately on a foot-pedal bike. She initially resisted an activity that would bypass the use of her artificial leg, but ultimately she found far more freedom and ability with the hand-crank bike. She remarked, "I can just get myself on the bike and take off. It's the one thing I can do, and nobody has to help me." Debbie's desire to enact repair by insisting on using prosthesis as if it were an organic leg was not simply personal denial of her disability. It was a logical extension of a common expectation that prosthetic technology can and should perfectly replace lost limbs.

Debbie was not the only one to assume the superiority of using a foot-pedaled bike with a prosthesis. At one sporting event, I watched as an exhausted and wobbly bilateral amputee was pushed across the finish line on a standard bicycle by his prosthetist so his picture could be taken. Presumably the young man consented to this to document his completion of the race and perhaps to inspire other amputees. Surely his participation was a great personal accomplishment, but staging such a photo deliberately ignored the ways in which the event may have required unnecessary pain for that man that day. Showcasing such efforts as sources of inspiration aggrandizes the technology and ignores the difficulties of prosthesis use.

Even some who had little interest in running or biking reported on the inquiries of acquaintances. Sandra laughed about the suggestions from well-meaning friends that she should get running legs like the athletes in the Paralympics: "My friends all think I need one of those blade feet so I can run, and I thought, 'What are you talking about? Why do

I want to run at 59 when I've done all these other things?'" But Sandra's dismissal of running as personally unnecessary overlooks how inappropriate such technology would be for her. If mastering the microprocessor knees would require too much of her time, then why would she invest her time in learning to balance and run on Cheetah™ legs? Sandra's response asserts her own sense of self that is distinct from her friends' expectations, but it does not challenge the assumption that the technology *could* reasonably allow her to run.

William is happy to use his C-Leg as an excuse when he gets similar questions. I asked him, "Do you get a lot of people asking why you don't get a [running] leg?" He replied, "Oh, yeah, like there's no cost involved. And I just tell them this is great because I hated to run, and now I've got an excuse." Regardless of his amputation, William was uncommonly active for a man of 58, traveling, hiking, and camping regularly, so it is hard to imagine that friends felt he needed more exercise. In any case, few men his age would experience this casual pressure to run. The fact that he had received these comments points to how much prosthesis use has come to be associated with athleticism, and running in particular. Knowing that running is out of the question helps William to deflect the expectation that he should do so, but he still finds himself compelled to explain why his personal prosthesis excuses him from running.

The experiences related here suggest that amputation has come to be associated with athleticism, especially for younger and healthier amputees. Pressure to demonstrate athleticism takes the form of casual comments from friends and family, invitations to compete, and foundation grants to offset the cost of specialized prostheses. When individuals accept sponsorship to acquire custom running legs, they are asked to "give back" by appearing as athletes in advertisements and at promotional events. Jake, Jessica, Marie, Debbie, and the bilateral amputee I saw riding across the finish line all accepted the challenge of running and biking with their prostheses. Karla responded to the expectation of athleticism with grand plans that she later came to see as inappropriate for her. Sandra and William recognized the absurdity of their friends' suggestions, but they used their age to excuse themselves from the expectation of athleticism rather than directly challenge the idea that amputees ought to be athletic.

Disability Repaired

Thus far, I have highlighted the ways users take the blame for the difficulties of using a prosthesis. Taking this one step further, some respondents expressed the expectation that prosthetics could fix and complete their bodies by comparing their situations favorably to other types of disabilities. Based on the assumption that prostheses were good replacements for lost legs, many respondents questioned whether amputation was a legitimate disability.

Nick, a retired soldier in his twenties, had no trouble accepting the label of disability; he saw it as a simple expression of reality. When I asked him if he thought of himself as disabled, he replied, "Absolutely! …Well, I'm missing a limb so I guess it kind of speaks for itself. It's not like it's growing back any time." But this acceptance of disability was not without qualification. In response to a question about feeling a part of a disabled community, he struggled to describe his feelings of empathy for others living with disability:

> I don’t want to say it… because it can be taken a different way. But I look at people, let’s say, with autism or mental retardation or MS or oh man, there’s so many, Parkinson’s disease. All the other disabilities that are out there that are amongst us. Like, I actually feel a little bit more - what is the damn word I’m looking for - open to it maybe. Maybe like I’m a little bit more accepting of it, given that I now know what it's like to be looked at because I look different than everybody else and that people just stare... But yeah, I look at different kinds of people now and I see, yeah, granted it's an old fat person at the grocery store shopping in the cart that I should be using. Are they obese? Yeah. Well, that’s kind of a disability in a weird way. It may have been self-induced; however, I still feel like my heart is open to all disabilities because now I am a disabled person.

Here, Nick simultaneously aligns himself with and distances himself from people with other types of disabilities. When he refers to being “a bit more accepting” he signals a self-conscious difference between himself and others, or perhaps a change from his previous conceptions of disability. Even as he talks about being more open, he uses language that is derogatory and a touch hostile: “mental retardation,” “old fat person,” and a disability that is “self-induced.” His ambivalent language suggests that he feels himself safely set apart from these others.

Though he could imagine himself part of a “disabled community” and identified with others, he judged his condition favorably in comparison with others, explicitly pointing to the prosthetic technology that allowed him to walk:

> In Vietnam they didn’t have this kind of technology and so these guys were in wheelchairs for several years before they were given the chance to walk again. And I don’t know where I’d be if I was in a wheelchair because I hated the wheelchair. It really put me in a dark place and I didn’t like it. I hated being in a wheelchair. I just, I don’t know what it was about it but I just hated it. And I understand that some guys don’t have that choice. And that’s another part of it too is that some guys don’t have a choice to throw on a prosthetic leg.

When thinking about other types of disability, Nick emphasized his ability to “throw on a prosthetic leg” and walk. Not only does this comparison call into question amputation as a legitimate disability, his nonchalance about prostheses downplays the work and pain of learning and using a prosthesis.

Like Nick, Jake also focused on the difference between walking and using a wheelchair when I asked him if he felt a part of a disabled community. He was uncomfortable counting himself as truly disabled.

> Even though I spent a little bit of time in a wheelchair, I don’t have to spend the rest of my life in a wheelchair… I just had a taste of it, I didn’t have to eat it, I can appreciate what they’re going through, I have respect for them, but associate with them? Not so much because I feel like I’d be insulting them. I can get up and walk. I can drive a car, put on pants and long-sleeved shirt, you wouldn’t know anything’s wrong with me. But you have to be there all the time. You do sometimes rely on the charity of other people for some of the things you can’t do. And I know when I was like that, I hated it. I can appreciate and understand what they’ve been through, but I cannot say that I align with them because I feel like I would be wronging them.

Though he means this as an expression of respect for the experiences of others, Jake’s comment positions his condition as clearly more desirable than one that would require a wheelchair. His ability to walk and hide what might be “wrong” with him allows him to escape the designation as disabled. Even if his prosthesis only affords these abilities some of the time, he feels this sets him apart from those who depend on wheelchairs. Not only does this statement imply that amputation need not be a disability, it hides the dependence involved in using a prosthesis. In comparing himself to others, he makes no reference to the technological assistance he needs to walk or drive a car or to the stares and comments he described at other points in the interview. When he addresses wheelchair users in the second person ("you have to be there all the time"), he suggests that he no longer needs to "rely on the charity of other people." By this account, the prosthesis takes up its role as a functioning body part and successfully negates his potential disability.

William, the active above-the-knee amputee who always hated to run, demonstrated a similar ambivalence toward the term "disabled." When I asked him if he considered himself to be disabled, he said:

> Yeah, I think I am. But what does that mean? That's like a big Band-Aid. I think I'm disabled in the sense that I can't run and I can't do some things as well as other people, but it's a minor disability, not a major disability. In my eyes, somebody who's disabled – I guess in a way I don't think I'm disabled, because I think of somebody who's disabled needs a wheelchair, immobilized, if they can't go on their own.

Rather than focus on his missing body part, William used what he *is* able to do and his *degree* of independence as a measure of (dis)ability. By describing his amputation as a "minor disability, not a major disability," he compared his amputation to other conditions to show that his situation was not that bad. Ultimately, he does not think he is disabled, because, in his mind, being disabled means using a wheelchair. The invisibility of his prosthesis in this comment implicitly defines his artificial leg as part of his body rather than an assistive device he "needs" to "go on [his] own."

William regarded his prosthesis as a replacement leg, and demanded that it live up to this expectation. He recounted the story of going on a birthday trip to Paris with his wife in the midst of working with his prosthetist to perfect the fit of his socket. His ill-fitting prosthesis made it difficult to walk around, but he and his wife persisted in their plans to sight-see on foot. He told me, “I could remember, my wife would be half a block ahead of me, and she’s be looking up at me, like hurry up and the pain was overwhelming, and it was really hard.” In telling this story, William regarded his sight-seeing struggles as frustrating but inevitable. At no point in the interview did he mention regretting the trip or reflect on possible alternatives like postponing or planning a less active itinerary.

His trip to Paris reflects his general strategy for dealing with his condition and possible disability. At another point in the interview, he told me:

> If you’ve got kids, then you don’t want your kids to think of you as disabled or unable to do things, because I think that unless that’s really the case and you’ve simply got to accept it, then you want your kids, you want to set an example where you’re never going to quit, you’re always going to try, and you’re going to do this stuff, right? Because they learn from you, it’s by example is the most powerful way to teach anybody anything.

For William, “accepting” his amputation meant trying to do everything so that his kids would know he could do anything. Not only did he feel he needed to work at not being disabled, this quote suggests that he hoped his kids would cope in a similar manner. To be sure, this attitude served him well in many respects. It helped him push through the challenges of learning to use an artificial knee and continue to live his life in the face of a major setback. But his attitude also begs the question of when he could decide that it is “really the case” that he was unable to do something.

By the time I interviewed these men, Nick, Jake, and William each had successfully integrated his prosthesis into his life. Though self-serving, their estimation that they were better off than those dependent on wheelchairs was understandable. But even respondents who had not experienced such success shared similar expectations for their prostheses to be more body part than assistive device and to set them apart from the permanently disabled. Michael, a man in his late 20s, was working as a police officer when a sudden illness forced doctors to amputate both legs above the knees. When I met him, he was adjusting to new sockets and learning to use a pair of computerized knees, so he was not able to use his prostheses all the time and relied on a wheelchair to get around.

Despite the difficulties of his situation, he did not identify as disabled. When I asked Michael if he thought of himself as disabled, he said, “No. I call myself RoboCop.” He explained, “I got robotic legs, and I’m still human. And I was a cop, so RoboCop.” He valued his independence, wanted to be sure he could do things for himself, and complained about his mother trying to help him too much. When I asked him if he felt connected to a disability community, he told me:

> No… I’m going to be walking again. So I don’t feel it’s a disability, I haven’t felt like it’s a major thing to overcome… I know what to do to stand up and walk again, just got to do it, that’s how I see it. So there’s other people worse than I am.

Michael’s refusal to consider himself disabled is particularly notable considering that he was in the process of learning to walk on two prostheses with artificial knees – an activity he described as “like walking on stilts.” He also talked about being forced off the legs for weeks at a time following surgery and skin breakdown on his residual limbs. During these periods, his hips would become tight from sitting in a wheelchair, "so when you first stand up, it's almost like an old lady, hunchbacked, cause you can't really extend your legs… it took a long time to stretch my hips." If someone who is living through these frustrations can still claim "it's not a major thing to overcome," his urge to understate the burden of amputation and his faith in prostheses must be great indeed. Michael was not willing to classify himself with other wheelchair users because he saw this use as temporary. The implication is that amputation – even bilateral above-the-knee (transfemoral) amputation – does not count as a real disability because prostheses will be just as good as organic legs.

Marvin, too, was unable to use his prosthesis when I interviewed him. He was in his fifties, a long-time diabetic, and on dialysis. The dialysis made his limbs swell and, as a result, his prosthesis did not consistently fit. He mostly used it to stand and stretch. He described many daily difficulties, from finding the money for groceries, to dressing, to managing untidy roommates, to making his way to the bus stop in his manual wheelchair. Though his days were full with doctors' appointments and public transit, he wished for a job that could make his finances more stable and life more comfortable.

While Marvin made limited use of his prosthesis, he felt that it would have greatly improved his situation if he could have walked with it. When discussing the idea of being disabled, he told me:

> Sometimes I go, "Who's disabled?" But when I go to get jobs and stuff like that, and apply for applications, I more than qualify in a lot of places, and they say, "you're overqualified, but so far we don't have any open positions for somebody in a wheelchair, and we have no way of accommodating you." I get a lot of that… And I was thinking, if I'm

> wearing the prosthetic, well then, that wouldn't be an issue, and I'd be limping around and everything else, but I'm also realistic. This thing doesn't fit all the time. There'd be days I wouldn't show up for work because I couldn't put it on.
>
> …[If the prosthesis fit] the disability issue wouldn't be an issue. There's something about this wheelchair that just turns everybody off. They'll automatically tell you we just don't have a position for a person in a wheelchair. You need to be able to reach and do things, bring things down, boxes. The position requires that you do so, so I'm stuck between a rock and a hard place that way.

In Marvin's experience, his wheelchair creates his status as disabled and he states that if he could use a prosthesis, "the disability issue wouldn't be an issue." He imagines that his other health conditions would not represent a disability or prevent him from working if only he could use a prosthesis to fix his amputation.

Jerry, a man in his seventies, also struggled to make use of his prostheses. He was quite ill and described how his health and his family had deteriorated simultaneously. He had lived with a below-the-knee amputation for years before losing his other leg, above the knee, to a gangrenous sore that developed while in the hospital for one of his many health problems. Throughout the interview, he denied that his amputations were connected to his failing health. In his opinion, he lost his legs because of nursing neglect in the hospital and described these experiences as if his bed sores might have happened regardless of his vascular problems and ill health.

When I met him, Jerry was working with a long-time amputee who ran regular group sessions for other amputees learning to walk. Jerry used crutches and a scooter in addition to his two prostheses to get around and felt he was making progress toward walking. But despite his clear mobility problems, he drew a line between himself and others with disabilities. Since I had met him at a group class, it appeared that he had joined a community of amputees, but when I asked him if he felt connected to a group of people with disabilities, he responded, “No. That’s a different world.” When I asked him why, he said:

> I’m afflicted. I’ve something wrong with me. People are helping me, and I’m trying my hardest to get well. It’s like the student and the teacher. You don’t necessarily become good friends with the teacher, they just teach you. So I’m going to school, and [the instructor] and whoever, that’s a separate world to my world.

Jerry regarded his amputations and his mobility problems as “afflictions” and implied that they were temporary injuries he would recover from. The amputees and physical therapists he encountered regularly were there to teach him how to use his prostheses correctly – a process that would help him to “get well.” Jerry spoke of his amputation as something that would be repairable through the right technical knowledge, perhaps in contradistinction to his other ailments. The hope he had invested in his teachers further reflects his failure to recognize the individual work that would be required for him to overcome his particular obstacles.

Despite their struggles, Michael, Marvin, and Jerry maintained a faith that their prostheses could solve their problems. By comparing themselves to others, Nick, Jake, and William questioned their own status as disabled. Both strategies downplayed the degree that amputation created disability. But the myth of the prosthetic panacea was not only apparent in respondent’s self-assessment. Respondents also described various encounters in which others regarded the prosthesis as an unproblematic replacement limb, thereby disputing the respondents’ status as disabled.

Debbie considered her prosthesis to be a great improvement over the severely damaged foot she lived with for fifteen years before her amputation. After surviving a major car wreck, she had tried to save her foot at the cost of her mobility. She felt that, in comparison to her prolonged pain and the use of crutches, walkers, and wheelchairs, her prosthesis did make her able-bodied. As she put it:

> I don’t feel disabled. I am able. I just walk a little slower sometimes. Right now I am. This is my third day without crutches. Overall I say no… Just because I take my leg off and set it by my bed at night, I don’t feel that that makes me disabled anymore.

In relation to her previous experience, Debbie could overlook the accommodations required by her prosthesis. Walking “a little slower sometimes” did not warrant the term disabled. Nevertheless, she was willing to defend her right to use disabled parking:

> I had a cop come up and ask me for my proof of disability to park in the handicapped, so I took my leg off and handed it to him. He said, “I’m sorry, I need to see the paperwork that goes with it.” I said, “Are you kidding me?” He goes, “Somebody called to complain.” Somebody called to complain because I didn’t look disabled enough.

Debbie walked well enough not to call herself disabled, but she also knew what accommodations she required. Her comment that she does not feel disabled *anymore* also reflects how she appears to others, but her reliance on special parking points to the hidden work of this accomplishment. The extra stamina that Debbie required to walk and the potential pain she may have experienced was not readily obvious to a casual observer, and she was loath to flaunt these. However, her ability to walk well confirms the notion that her prosthesis eliminates her disability. Her appearance as able-bodied conflicts with common assumptions about who is entitled to disabled parking. The punch line of her story about the cop who insisted on "seeing the paperwork" relies on the idea that he was unconvinced that amputation should truly count as disability. Without popular awareness of contemporary prostheses and active amputees, this would simply be the story of a callous police officer. Instead, it is an example of how the reputation of prosthetic technology can precede the devices used by everyday people.

Karla found that her friends also failed to acknowledge amputation as a disability based on the presence of her prosthesis. After her accident, she had worked hard to maintain her busy lifestyle in New York City. But when she eventually decided to quit her job and move home so that she could better take care of herself, she found that some of her friends were less than sympathetic:

> My friends of my past before my accident don't get it – they don't get trauma, so when I came home from New York, working my ass off, and just wanted to do nothing, they were like "What do you need? You have a leg. What do you mean, you need time off?"

In the eyes of these friends, the prosthesis should have restored Karla so that she could take part in all the activities of fast-paced twenty-something life. In a subtle way, Karla seemed to agree. Her comment here implies that she downshifted in order to cope with her psychological trauma rather than her new physical condition. She read her physical setbacks as manifestations of her post-traumatic stress disorder, allowing her to overlook the degree to which her prosthesis may or may not have demanded a lifestyle change.

While Debbie and Karla maintained their right to special consideration, others appeared to internalize the message that amputation did not entitle them to accommodations or extra help. Lisa described being forced to display independence because of her family's inability to understand her particular limitations. She was shocked that her stepmother and stepsisters never offered her any help when her father was unavailable to carry her luggage:

> They were leaving to the gym and they saw me struggling, carrying my bag and I had about three bags, … they didn't offer. I was taking it downstairs and stairs are harder. I can't carry all that stuff cause I would fall, so I would do it one by one. I can do it. It just takes me longer and it's just, it'd be really helpful if [they would] just do it for me, but they just walked on by and they're like, okay, see you when you get back.

One interpretation of this story describes a household where the father would have helped with the luggage out of chivalry while the women did not feel beholden to such gestures. Another interpretation might be that the stepmother and stepsisters feared insulting Lisa's pride. Either way, she was not treated as someone with a legitimate need for help. Her stepfamily assumed that Lisa could, and perhaps should, handle her bags herself even if they were capable of helping. Whether they meant to foster independence, to help her feel normal, or were simply being thoughtless, they treated her as if her prosthesis had completely restored her to able-bodiedness.

For her stepfamily, Lisa's prosthesis signaled her repair and therefore meant that she would be held to the standards for able-bodied young women regardless of what she felt capable of. Lisa appears to have internalized this logic herself. At the time I interviewed her, she was still struggling to keep her socket fitting correctly and regain the independence she had had before her illness. When I asked her if she thought she was disabled, she told me:

> I don't like the word. I don't, I mean, I think right now I kind of do [think of myself as disabled] because I'm not as self-sufficient or independent, like where I want to be, because of the crutches and I can't walk all day, especially because it's not fitting right now. So that's more like a reality check for me, like, I can't do this, I can't do that. I know I shouldn't focus on that but you know, it's the truth right now. Last year there was a time when I was completely off crutches, I could walk, but then I stopped going to the gym and I started gaining a little weight, or it wasn't fitting properly, so you could tell when I walk, it would move off to the side, and that means it's too big, and that makes me self-conscious too cause it's like weird. I know you see some person walking like that, like what the hell's going on? But when it was fitting and I was able to walk, you know, you just feel more independent, more self-assured.

This quote shows her ambivalence about accepting the label of "disabled." Lisa had come to think about disability as a temporary state that comes and goes depending on the fit and function of her prosthesis. Her disability can be eclipsed by the independence and confidence that her prosthesis can provide. She described her degree of disability as closely connected to her use of crutches and how much she thinks others will notice her unusual gait. She was reluctant to acknowledge her limitations and practical needs, saying she knew she "shouldn't focus on" what she can't do. For Lisa, to admit her limits was a moral failing or undeserved indulgence. Actions like those of her stepfamily helped to reinforce this attitude.

As Lisa's ambivalence demonstrates, living up to the expectation of repair means minimizing and hiding from others the special needs and discomforts associated with using a prosthesis. Allen provided a good illustration of this. A single man in his 40s, he had lost his leg above the knee after a car accident. At the time of the interview, he had been struggling for nearly two years to heal from his injury. He spent weeks using crutches following multiple surgical revisions to his residual limb. Setbacks with the fit of his socket also kept him from using his prosthesis. He spoke about the difficulties of relying on crutches, mentioning the impossibility of vacuuming or moving his trash bins. As I pointed out in the last chapter, he also felt that he received negative attention in public when not wearing a leg. Nevertheless, Allen resisted the idea that he was disabled. He told me:

> Do I think I'm disabled? No, I think "challenged" is a perfect word… Maybe by society's standards, maybe I can get a placard 'cause I'm disabled under their functions, but I don't think I'm disabled. I can do anything, most things.

Despite his extended use of crutches, this statement implies that he regarded this as temporary. He thought of himself as a prosthesis user who, compared with someone dependent on crutches, could do "most things." With his prosthesis, Allen was "challenged," not disabled.

Though Allen seemed eager to dismiss the label of disabled, he still had a lot to say about the hassles of using an artificial leg. For example he described the complicated logistics of changing out of his suit and dress shoes on a business trip. To do so, he had to remove his leg to adjust the alignment of the heel and don it again:

> You've been in your suit all day, and you want to put on tennis shoes. I just don't go up and take off my clothes and put on my shorts and run out. I've got to put my leg on, put the liner on, you know, you have to spray alcohol on it to get your leg to seat, there's all kinds of things, and of

> course you have to be able to go there and do all that in a timely manner too to catch up with everybody else, or you're just sitting in your room.

Here Allen describes the extra work of dressing with a prosthesis. He alludes to the difficulty of allowing himself the accommodation of extra time if he wants to "catch up with everybody else." His comment suggests a need to hide his extra work from his colleagues by not keeping them waiting rather than requesting extra time. Doing so prevents awkward interactions, but also maintains the image of the prosthesis as an unproblematic replacement for an organic leg. Allen's self-characterization as challenged rather than disabled supports this approach to accommodating his prosthesis. His "challenges" are his own to deal with, but a disability might entitle him to special consideration from others for which he was unwilling to ask.

In these accounts, the presence of and expectations for prosthetic legs set the stage for interpersonal interactions that interrogate the status of amputation as a disability. While the police officer in Debbie's story and the friends in Karla's directly challenged their claim to accommodations, Lisa and Allen described unspoken expectations that demanded uncomfortable compliance or explicit resistance. These stories suggest that it is not only amputees invested in the possibilities of their assistive technologies who see prostheses as repairing amputees and negating disability; members of the general public think this too. People enforce and reinforce this expectation by ignoring the presence of the amputation and by assuming the artificial leg to be equal to any other leg.

By suggesting that prostheses are satisfactory replacement limbs, the myth of the prosthetic panacea treats amputation as a temporary injury rather than a permanent disability. Respondents spoke of prosthetic legs as having the potential to set amputees apart from those with permanent disabilities. Such sentiments not only came from successful walkers like Nick, Jake, and William, but also from Michael, Marvin, and Jerry - respondents who struggled to use their prostheses. Based on the accounts of other respondents, family members, friends, and strangers will also question the legitimacy of classifying amputation as a disability. Many respondents regarded their artificial limbs as body parts rather than assistive technology, drawing a distinction between prostheses and devices like crutches or wheelchairs. Such comments imply that disability is defined less by bodily condition and more by species of assistive technology.

Enacting Prosthetics as Panacea

The examples presented here illustrate how the myth of the prosthetic panacea identifies everyday artificial legs as high-tech replacement body parts. Great expectations for prosthetic technology were expressed as a stubborn faith in the devices despite struggles and failures. An association between prosthetics and athletics created opportunities and pressures for amputees to participate in sports, especially running and bicycling. Finally, the identification of prosthetics as a panacea for the problems of amputation allowed respondents to set themselves apart from the permanently disabled and accept being treated as full- and able-bodied.

Contemporary prosthetic technology enjoys a formidable reputation that, apparently, is not easily tarnished. With so much excitement over prosthetics in popular culture, it would not be surprising if new amputees were disappointed by the shortcomings of the actual prostheses they receive. Though respondents did speak about disappointments and setbacks, many of them interpreted these as isolated and personal issues. They were inclined to blame problems on themselves, their prosthetists, or flaws with their particular device. Few were critical of the prosthetics industry, the Western approach to prosthetic design, or questioned the presumed superiority of a prosthesis over other modes of mobility.[20] When devices did not work out, the tendency to blame the user loomed large enough that Sandra and George were compelled to defend themselves against accusations of laziness with detailed explanations for why their circumstances were exceptional. Mark even proclaimed, "The prosthetic is perfect, it's my physiology." He was so convinced that his prosthesis could not be blamed for his troubles that he reported his willingness to encourage potential amputees to "hack it off" without mention of his pain. Through this hesitance to blame the technology, prostheses acquired and maintained their status as indispensable, functional, and desirable body parts.

Users also contributed to the identities of their prostheses when they downplayed the work they did that made their prostheses function as good replacements for their lost legs. Respondents described many forms of pressure to enact a body repaired by prostheses. Jake, Jessica, and Marie were offered opportunities take on athletic challenges while William and Sandra had to explain why they were not interested in learning to run on Cheetah Legs. Lisa felt forced into independence by her step-family's indifference and Debbie was challenged when making use of disabled parking. But respondents also

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[20] While I have not focused on these cases here, they are worth noting. In addition to George who opted for a scooter and Sandra, who chose to return her C-legs, Leo also rejected his microprocessor knee in favor of a lower-maintenance mechanical knee. I also met an amputee who went out of her way to have old-fashioned exo-skeletal prostheses made for her because she found them to last longer. She felt that the current standard of artificial leg was over-designed and unnecessarily wasteful.

displayed internal pressure to demonstrate that their artificial legs set them apart from people with permanent disabilities. Respondents like Nick, Jake, Michael, and Lisa emphasized how prostheses made amputation a temporary disability. William's walking vacation and his insistence that his kids should not consider him disabled reflect a moral imperative to overcome his disability by using his prosthesis with little extra accommodation. Similarly, on business trips, Allen appeared reluctant to keep his colleagues waiting or allow himself more time to change out of his suit, suggesting his discomfort with calling attention to the difference between prosthetic and organic legs.

In Disability Studies, there is a well-articulated critique of the "supercrip" – the persona of someone who resists the label of disability by demonstrating extraordinary abilities (Berger 2008; Davis 2006; Howe 2011; Kama 2004; McRuer 2006b). Scholars argue that this pernicious stereotype encourages us to see disability as a defect to be denied or overcome rather than a circumstance to accept and accommodate or even embrace. Jake's heroic participation in his "dumb crazy bike ride," Jessica's triathlon, or Debbie's initial resistance to the hand-cranked bicycle each illustrate how the myth of the prosthetic panacea enables and encourages a supercrip mentality. The many instances of respondent's reluctance to accommodate or accept the limitations associated with using a prosthesis bear witness to the denial that so worries disability scholars.

Understating, ignoring, and hiding the accommodations required by their artificial legs allowed the respondents themselves, as well as others, to experience prostheses as near perfect replacement parts and a cure for the disability associated with amputation. Though every respondent had their share of struggles with their prostheses, those quoted here were invested in the idea that prosthetic technology could and should enable them to do what they wanted to do and save them from being considered truly or permanently disabled. Whether intentional or not, these amputees perpetuated the myth of the prosthetic panacea by hiding the extra time, effort, and pain associated with prosthesis use.

Conclusion

Popular excitement over prosthetic technology has generated the expectation that amputees can and should be restored - or even enhanced - by high technology. This expectation is not simply a journalistic fantasy, but a notion that amputees themselves struggle with.

The examples in this chapter illustrate the production of both human and object identities in social interactions that involve both. Based on popular expectations and the hidden work of users, prostheses are seen and treated as good as organic legs. In turn, the presence of prostheses as a perceived "cure" for amputation implies that amputees are more temporarily ill than permanently disabled. People recovering from amputation are therefore subjected to the demands of the "sick role" (Parsons 1951) where they are expected to endure whatever is necessary for them to be healed. Thus, failure to use a prostheses successfully is interpreted as laziness or a lack of fortitude. To be disabled by amputation becomes a moral failure.

It is tempting to bemoan the impact of these cultural expectations on amputees, but calling for a counter campaign emphasizing the dark realities of amputation would hardly please many of these respondents. The myth of the prosthetic panacea contributes to pressure to overcome disability by demonstrating the functionality of one’s prosthesis, but it is this very pressure that many respondents embraced and celebrated as inspiring. Before these technological possibilities were a reality, amputee identity was far more constrained. The possibilities associated with the technology gave hope to respondents like Shirley, Jerry, Michael, and Marvin despite their difficult circumstances. It provided respondents like Marie, Jessica, and Jake moments of pride in their athletic accomplishments and abilities that might not have otherwise been realized. Thus many amputees are deeply invested in the promises of the prosthetic panacea and reap benefits despite its demands. Indeed, some even face the path of amputation with the hope provided by the prosthetic panacea.

The problem with the myth of the prosthetic panacea is not so much that it encourages amputees to strive for athleticism or improved function, but that it presents these goals as easily attainable through the consumption and use of technologies. This implicit technological determinism diminishes the glory and the human effort of recovering from amputation and living with – much less competing on – a prosthesis. To assume that an artificial leg is equal to an organic one is to ignore daily, non-trivial work that requires time, energy, and resources. When the police officer asks for documentation, when friends see the leg as fixing the problem, when family members fail to slow down or help out, the prosthetic leg is expected to be just like a normal healthy organic leg. The human efforts that allow an artificial limb to function are hidden and the prosthesis gets all the credit.

In public opinion, prosthetic technology has transformed amputation into a repairable and temporary disability, creating pressure on amputees to strive for full restoration. If a prosthesis is the same as (or better than) an organic leg, it follows that amputation is repairable. Jake's story of witnessing back flips and sprinting in the physical therapy room supported such a conclusion: "I guess it ain't that bad being an amputee." Compulsory athleticism for amputees reflects changes in what may be expected of prosthetic technology and suggests that amputation need not be a disability. In past generations, success in overcoming amputation typically involved leading a "normal life" featuring gainful employment, marriage, and children. Today, overcoming amputation involves declining accommodations reserved for people with disabilities and demonstrating athletic capability.

These changes not only imply that amputation is not so clearly stigmatized as it once was, they suggest deeper cultural changes in how Americans think about what bodies are for and how bodies contribute to social and personal identity. For many respondents, prostheses represent the potential for modern medicine to fix even the gravest impairments. In addition, the compulsory athleticism experienced by respondents suggests a new standard by which health is measured by participation in competitive sports. By this logic, the body is not so much a fragile divine gift meant for productive or reproductive work, as a tool that may be repaired and optimized.

IV. WALK THIS WAY: BODIES AS ACTANTS IN THE PRODUCTION OF DISABLED IDENTITY

I have illustrated how human and object identities emerge from relationships between amputees, prostheses, and other people. In this chapter I describe a workshop in which amputees learned to walk more smoothly and more confidently on their prostheses to demonstrate how bodies too come to have identities through interaction. Workshops gave me the opportunity to witness some of the labor involved in making artificial legs just as good as "normal" legs including the work of relating to one's body in a new way. In interviews, respondents struggled to understand my questions about how they might think about their bodies differently after learning to use a prosthesis. Many assumed that I was interested in their opinions of how their bodies looked – their body image. While relating to one's body as an object is commonplace, talking about this relationship is not. Leaders of mobility clinics offered specific technical instructions designed to help participants alter their relations with their bodies. Observing and helping as participants practiced and learned from these instructions gave me a chance to see how prostheses could influence relations between amputees and their bodies.

The study of body mechanics, sometimes referred to as biomechanics, that undergirds these techniques has long assumed that an aesthetically "normal" gait would also be a functionally optimal gait. This informed a series of influential gait studies conducted at the Biomechanics Laboratory at University of California in the 1940s and 1950s (Inman, Ralston, Todd, and Lieberman 1981; Saunders, Inman, and Eberhart 1953). These studies investigated "normal" walking by photographing and measuring young (often military) men as they walked on treadmills. They have led to the modern fundamentals of physical therapy and biomechanical engineering, where the gait is broken up into phases (stance and swing) and ideal joint alignment, balance, weight distribution, and body placement have been measured and characterized. Further, researchers have worked to define normal walking with respect to function, so that normal gait could be understood as an objective good, rather than an aesthetic preference. Thus, the entire exercise of physical therapy is organized around the assumption that walking more normally is not only a social desire, but imperative for maximizing one's health.

In the world of gait training, an attractive walk is a mark of good function and, simultaneously, good function is beautiful. However, as I argued in the last chapter, the importance and meaning of good function for amputees has changed since the 1950s. Where good function once implied the ability to walk, carry, and attend school or work, it now often implies the ability to run, jump, exercise, and compete.[21] This same shift in expectations was evident in the workshops I observed and suggests a new set of expectations (and therefore new possible identities) for bodies.

According to the booklet distributed in workshop I describe here, the session aimed for improved mobility and "enhanced" performance. It might be assumed that such

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[21] For some, the goal is also to pass. I have demonstrated that not every amputee feels compelled to pass as normal, but, of course, many professional and amputee workshop participants were interested making passing easier. In another context, I once heard a physical therapist offer his services by telling an amputee, "With some work, I could help you walk so well no one would ever know." The goal of passing can be especially compelling to people who have recently suffered an amputation and are anxious to restore a sense of comfort and normalcy with their bodies.

goals are only for the young and active. However, on more than one occasion, I have heard professionals argue for the importance of better mobility for amputees of all ages by pointing out that “we all need to be able to move a little faster sometimes,” for instance while crossing a busy street or escaping a fire. The same professionals point out that learning to walk more evenly and symmetrically on a prosthesis can help to protect the hips and knees from problems common in advanced age.

To meet the twin goals of aesthetics and function, the workshop I describe here covered exercises that were meant to change the relationship between the body and the prosthesis. Additionally, by asking participants to consciously alter their walk – an activity that most people rarely think about – the exercises challenged them to change their relationship to their bodies. Ultimately, with enough practice, an amputee could learn these new relations so well they would no longer have to think about them and the actions could be fully delegated to the body.

Body as Self, Body as Object

In this chapter, I show how eliminating the *a priori* distinction between human and nonhuman allows me to consider how human bodies sometimes act as independent objects in social life rather than manifestations of human will. I do this by broadening the approach to human and object identities I presented in the previous two chapters. Starting with an interactionist view of identity, in which personal identities and attributes are not located in the individual but accomplished collectively in social interaction, I have extended this understanding of identity from humans to objects. This not only means that objects are a part of the interactions that create human identity, but that objects, too, acquire a kind of identity through the interactions they are part of. If, as Actor Network Theory (ANT) holds, prosthetic body parts should be considered distinct agents with their own social identities, the same can be said for organic body parts. I propose a framework in which an analytical distinction is drawn between body-as-self and body-as-object, where each acts semi-autonomously in social interaction.

I ask how to think about the body as an ANT-style *actant* in an interactionist analysis of social identity. Shall the body be subsumed into the human actor since there is, after all, no human action without the body? Or can the body be considered an object that may either support or resist human action? I argue for the utility of conceptualizing the body as simultaneously occupying dual roles: as both object and as self. This allows for the analysis of relationships between a conscious self and a body-as-object within a network of actors. Since it is in the context of relationships that identities are made, it is crucial that body and self be described as distinct so that the relationship between the two may be articulated.

There is a long tradition of creating such distinctions, whether they be between mind and body, self and body, "I" and "me". Mead (1962), for example, described the body as "very definitely" distinguishable from the self (136), and further distinguished two types of selves, the "I" and the "me". His distinction between body and self hinged upon the ability for the self to reflect upon itself – an ability that, according to Mead, the body does not have (136). The difference between "I" and "me" is similarly based on self-reflection, but in a more temporal way: the "me" is something that may be reflected upon, where the "I" is the present-tense self that may know and respond to the "me", but the “I” cannot know or respond to itself (174). For Mead, the “I” represents that part of the self that responds, in real time, to the events around it, and is thus the locus of under-determined and uncertain action. The “I”, as he says, “is not given in the ‘me’” (177).

In my use of the term self, I do not mean to imply the sort of self Mead specified. Similar to Mead, I seek to demarcate an entity that might be seen as both embedded in or a part of a physical human body, yet able to relate to that body as an object. But unlike Mead, my distinction is not meant to be a taxonomy or anatomy of the self. Instead, the self I refer to is the entity that social identity is commonly meant to describe. I assume that the self is what most social science refers to with the term “individual.” It is the part of the person that is presumed to be conscious, deliberate, and somewhat consistent. The “body-as-self” is certainly a construct, just as the “body-as-object” is a somewhat arbitrary designation. But the point of separating them is to make analytical space for talking about how the body-as-self and the body-as-object do not always operate in concert: that they communicate well or badly with each other, resist each other, and negotiate with each other.

These terms are also a method for naming the ways we may regard other people alternately or even simultaneously as both selves and physical objects. For example, if a man trips and falls into the street, he may say, “How clumsy of me,” thereby assigning responsibility to himself, as opposed to blaming his body by saying, “Foot! What are you doing?” But his companion may have a more telling response when she catches him or pulls him back from the traffic. In guiding his body physically rather than warning him verbally, she acknowledges his fall as unintended and interacts with his body as an object. In contrast, when she reaches out to shake his hand, she relates to his body as a self.

I am wary of the theoretical pitfalls of making a stronger ontological claim about bodily dualism. Certainly, many scholars have expressed dissatisfaction with the Cartesian split between body and mind. Phenomenology has been one influential response to this problem (Latour 2004; Merleau-Ponty 1962). But with its singular focus on the experience of the material world, phenomenology offers few tools for thinking about social relations and collective meaning making. Butler's concerns about positing a divide between sex and gender as a way to appeal to a natural body outside of culture also problematizes attempts to demarcate the boundaries of the body (Butler 1999). These are central issues in debates about whether and how to decide on *what the body is.* However, I believe I can remain agnostic on the issue of body ontology and still suggest that an analytical divide between body and self can be useful when studying social life.[22]

In her account of bodies and body parts moving through a hospital, Annemarie Mol showed how bodies are treated as both selves and objects within the same system and still these disparate bodies "hang together" as a coherent concept for both professionals and patients (Mol 2002). I follow Mol in accepting that in social life, bodies are treated as both self and object without apparent confusion on the part of participants. However, while I find her ideas quite compelling, I do not find it necessary to adopt

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[22] At the end of this chapter, I do consider historical changes in the definition of what the body is and what it is for, but there I am interested in examining cultural ideals more than arguing for a particular ontology of the body. Noting changes in cultural definitions does not require me to declare a strong ontology; I can still remain agnostic.

Mol's notion of a multiple reality and to declare this a new basis for an "ontological politics" (Mol 2002: viii). Rather, my goal is to develop a practical method for studying the interactions between people and objects that also accounts for the role of bodies.

To do so, my framework requires a strategy and a language for talking about the ways that bodies are both selves and objects. I argue that we cannot decide in advance if the body ought to be considered a self or an object at any given moment; we must look for clues in the actions of bodies and responses to those actions on the part of selves. However, it will be impossible to describe these relations if I preclude myself from describing bodies as objects simply on the grounds that the body is never *only* an object. The actions of bodies-as-object must be accounted for in ethnographic work if we are to understand the role of bodies in the processes that create social identity.

In carving out a space for the body-as-object, I am not seeking to defend traditional dualisms. Rather, I propose a pragmatic analytical language that distinguishes between body-as-object and body-as-self, acknowledging that the self too is embodied. Such a distinction is meant to call attention to the times and places that bodies are treated as objects and to preserve the possibility that this treatment is legitimate rather than an indication of abuse. I seek to create the possibility of describing the relations between body-as-object and body-as-self, especially in situations where the body-as-object resists the will of the self. Without such distinction, it becomes too easy to miss the work of relating to one's body and the negotiations between selves and bodies-as-object. For the sake of reading ease, I will refer to a body-as-self simply as a "self" and to a body-as-object as a "body" throughout this discussion.

The approach I use allows me to describe how prosthesis-use maintains and alters the identities of bodies as well as identities of selves and devices. Prostheses may emerge as painful supports, unruly tools, or legitimate, integrated body parts. Both selves and bodies may be rendered abled or disabled, awkward or graceful, flexible or stiff. Just as the analyses of the previous chapters pointed to new possibilities and expectations for the identities of amputees and prostheses, I argue that the bodies of amputees, and bodies in general, are judged to a new standard and take on new meanings in current physical therapy practices.

A more traditional micro-sociological account of a walking workshop might focus on the interactions between professionals and patients, what was said, how it was said, and how this reflects social norms of bodily integrity, beauty, and ability. Or perhaps it would focus on the historical context of physical therapy, biomechanics, and prosthetic design and how these informed the practices that amputees now experience. All of these factors are important to consider when making sense of ethnographic data. Yet such approaches risk overlooking the contribution of bodies and body parts. In addition to interpersonal relations and historical context, I pay close attention to how bodies, as objects, influence how meaning is made in these physical therapy practices.

Learning to Relate at Mobility Workshops

I attended four different mobility clinics for lower limb amputees in the course of my research. Three of these were one-time events designed to teach amputees and physical therapists techniques for helping amputees to improve gait or running technique and speed. I also attended one meeting of class that met weekly in a rehabilitation gym.

This chapter focuses on fieldnotes from one of these events: a one-day five-hour workshop sponsored by a large manufacturer of prosthetic components. The workshop was led by a nationally recognized expert in physical therapy for lower limb amputees, whom I will refer to as Dr. Smith[23]. This particular workshop has been offered periodically around the country.

While I had the chance to attend four such programs and am aware of at least one other, these opportunities are relatively rare and must be actively sought out by amputees. The techniques taught are not a standard part of training for physical therapists and are unknown to many practitioners. Thus, the language surrounding the body and the approach to walking that I witnessed, as well as the assumption that the prosthesis use could be enhanced through such training is not particularly common. In the course of my research, I have met many amputees who had never had formal gait training and either did not feel they needed it or were unaware that such techniques existed. The perception that prosthesis use is intuitive and can be mastered immediately is one aspect of the myth of the prosthetic panacea. While many amputees do find they can walk almost immediately, stamina, balance, and control must be developed through practice. Though formal training may be unusual, it nevertheless represents one set of techniques for making explicit and altering the mechanics of prosthesis use.

Of all the workshops I observed, the one I focus on was the largest. The event was held in a large hall cleared of most furniture. I estimated there to be at least seventy

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[23] I have assigned all workshop participants aliases to protect their privacy.

people in the room, including physical therapists, prosthetists, amputees, caretakers, and representatives of the event sponsor. The amputees were of all ages and abilities, though most were probably over the age of fifty. Some used wheelchairs, walkers, crutches, or canes. Some were not yet able to walk, but observed from the sidelines. Among both amputees and professionals, women greatly outnumbered men.

As a participant with two organic legs, I was assumed to be a physical therapy student. Shortly after I arrived, someone turned around and asked me if I would like to help. While I do not have any formal training as a physical therapist (and never claimed to during my research), my research made me relatively comfortable with the language and I knew I could understand and follow the instructions. I was eventually paired with a woman I will call Patty. I estimated that Patty was in her sixties. She had a unilateral below-the-knee amputation due to complications of vascular disease. Her other health problems meant that she wore a large protective brace on her “sound” leg. She walked stiffly with a limp and used a cane. Still, she was very positive and determined to learn all she could at the workshop. Before we began, I explained who I was and what my project was about. She graciously allowed me to assist her with the drills.

At the start of the workshop, the large crowd assembled around the perimeter of the room, standing back to allow for an informal oval of floor on which the able-bodied instructor paced as he spoke. With the help of a volunteer with an artificial leg, Dr. Smith demonstrated some of the main aspects of walking with a prosthesis he hoped to cover that day. He spoke of the special relationship between the feet, the flexion of knees and toes, the momentum of the pelvis, and the swing of the arms. To make some of his points, he would intervene in the model's walk by touching or even pushing into parts of body. This was how he introduced a technical understanding of this most mundane of movements both through spoken language and physical demonstration.

In the workshop, the presumed relationship between good function and aesthetics was celebrated every time Dr. Smith demonstrated a new technique on an amputee selected from the crowd. Each demonstration had the same basic structure. The participant would be asked to walk however she would normally walk. Dr. Smith would then discuss the principle he was focusing on and how the participant's gait could be improved. He would then suggest an intervention, either a physical manipulation of the amputee's body performed by a therapist or, more often, a new way for the amputee to think about and thus control her body. For the latter, he would ask the participant to walk again, but follow his directions as she made her way across the room. Usually this would take the form of a rhythmic reminder, for example: "Reach! … Reach! … Reach!" His instructions would make a difference that was visible as a smoother or faster walk. Such differences were evidently visible to others, for each time, applause would break out encouraging and honoring the new accomplishment.

The interactions I observed at these workshops illustrate the need to describe body and self as somewhat independent. To show how selves, bodies, and prostheses take on identities in social interaction, I focus on three specific sets of relations. First, I examine how the workshop addressed interactions between bodies and prostheses by calling attention to and interpreting how the prosthesis feels. Second, I describe how Dr. Smith called on the self and body to relate so that the self may better control the body. Third, I discuss how relations between self and prosthesis are addressed with a language of trust. Once I have described the three sets of relations, I highlight the labor involved in learning to improve one's gait and the ways in which both bodies and prostheses resist the process.

Relating Body and Prosthesis: Feeling the Foot

Though some scholars have been writing about relations with objects for years (Alac 2009; Knorr Cetina 1997; Suchman 2007; Turkle 1984), such discussions are quite unusual in everyday conversations. Talk of relating to one's prosthesis is decidedly uncommon. To clarify the relationship between their bodies and prostheses, participants were asked to draw an analogy between organic legs and prosthetic legs throughout the workshop. Many of the exercises were designed to help amputees find ways to use their prosthetic leg as they presumably already use their organic leg. Though prostheses and organic legs are not the same, we learned one basic method for altering the relationship between organic and prosthetic body parts: feel and be aware of particular sensations and how you can change them. In one striking example, Dr. Smith encouraged his pupils to feel the corners of their artificial feet in the same way they felt their organic feet. He asked, "How many of you can feel your prosthetic foot?" acknowledging that it was on some level a funny question, but at the same time an important skill. He told them, "Today we are going to teach you to feel that foot."

To demonstrate this, he used the handle of a butter knife to tap the heel, big toe side and the little toe side of the sound foot first, then the artificial foot. After tapping each foot, and allowing the "patient" to feel these parts of the foot, they were then to practice pushing into these different corners of the foot, first on the sound side, then on the prosthetic side. The amputees were asked to observe their prosthetic and sound sides in the same way and find a way to respond to both by pushing into the corners of each foot.

This was not trivial for Patty. It was a struggle for her to think of these vibrations as located in an artificial foot that did not feel anything. She told me that when I tapped on the prosthetic foot, she just felt vibrations in the knee no matter where it was tapped. She couldn't feel the difference between the places. It was easier for her to push into the three corners of the foot. She said she could feel the difference, but she had never thought about it before.

Compared to reports from interview respondents, Patty's experience was not unique. When I asked interviewees if they ever felt that their prosthesis was a part of them, many talked about the distinct sensation of a prosthesis that could rarely be ignored. Carol compared it to wearing a girdle. Peter compared it to a favorite jacket. Karla honed in on the popularly assumed parallel between artificial and organic legs when she told me:

> It's never going to feel like I have my leg again, and that's something that happens. People who aren't amputees think, oh, it's just like having your leg. That's not true. Every moment is different.

These respondents emphasized how foreign their prostheses felt, even if they did not cause them pain. Other respondents spoke of fleeting moments when they could forget that their leg was prosthetic, or were hopeful that they would someday "get to that point" (as Donald put it), but few spoke of having the sensation of consciousness in their artificial foot. Daniel was one exception. He reported, “Sometimes when I have the leg on, I feel like I could wiggle my toes.”

In the workshop, changing the way she visualized her body made a difference to Patty’s physical relationship to her prosthesis. It allowed her to interact with it differently and in turn subtly alter the way that she walked. The work did not stop at reframing the body and the artificial body part; thinking about the prosthesis differently was not a way to wish or will better walking into existence. Instead, the re-description was the basis for a physical reorientation.

Not only did this exercise suggest a new way for body and prosthesis to relate, it also taught the “therapists” an unusual way to relate to a prosthetic foot, and for that matter, a knife. Dr. Smith warned the physical therapists, “Don’t cut yourself. You can hit the artificial foot as hard as you like - it won’t hurt - but don’t get rambunctious and go hammering the sound side.” The act of tapping on someone else’s foot with a butter knife was truly out of the ordinary. Making physical contact with someone else’s artificial foot was even more unusual, even for professional physical therapists. As humorous as his advice seemed, it was also a good reminder because, though the “patient” was meant to feel the feet as similar, the “therapists” had to treat them differently for the effect to be felt. Without enough force, Patty could not feel me tapping on her prosthesis, but I had to be careful not to hit to her fragile sound side in the same way.

What made this potentially difficult to remember is that nearly everything about prosthetic design leads the observer to treat an artificial foot as the same as an organic foot. The two kinds of feet are arranged in a symmetrical pair, prosthetic feet are made to be the same size and approximately the same shape as the organic foot, the person who wears them relies on both to walk in the familiar bipedal way, and even if the leg is uncovered, people usually wear matching shoes. Add to this the language of the workshop which encouraged us to think of the two kinds of feet as equal partners in the task of walking. Thus, while the amputee-students had to work to feel how their two different feet could work in the same way, the therapist-students had to learn and appreciate the differences between the two kinds of feet that were all too obvious to the amputees.

By calling attention to and interpreting how the prosthesis feels, Dr. Smith worked to alter the interactions between bodies and prostheses. These exercises aimed to transform the prosthetic foot into a felt body part for the amputees as well as remind the therapist-students of the prostheses's limitations. Thus, this is a specific example of how the identity of objects is constituted in interaction.

Relating Self and Body: Muscle Control

As with athletics or dance, physical therapy focuses on technical bodily movements. It is therefore no surprise that the body is spoken of as external to the conscious self. This workshop offered new ways of relating – speaking and listening – to one's body. The amputee-participants were asked to think about their bodies in new ways and to consciously adjust how they used muscles and body parts they rarely thought about. In one demonstration, Dr. Smith called attention to specific muscle groups and the sensation of the residual limb by asking the volunteer to tighten her buttocks and thigh muscles, first at the same time, then each one separately. He explained that these muscles need to fire in sequence as she walks. Then he talked about feeling that the residual limb was really down into the socket and instructed his students to reproduce that feeling of reaching into the socket as they walked.

By calling our attention to the micro mechanics of walking and the sensations of these small movements, the instructor was calling out new possibilities for relating with our bodies. I found myself trying out these isolations myself. How difficult is it to tighten one side without the other? How much practice would it take to change the timing of these movements as I walked? Thinking closely about how I managed to walk would be a change in how I, myself, relate to my body, simply by making this mundane act feel strange, even miraculous.

Thinking about the feeling of a residual limb in the socket of a prosthesis could be equally odd. Most of the amputees I interviewed reported being able to stand and walk on their first prostheses almost immediately and without special instruction. Additionally, some compared sockets to shoes and referred how they could become uncomfortable or painful after walking a lot. Rarely do we speak of feeling our foot in our shoe or moving into our shoe as we walk, though certainly this does happen. The instruction to feel the residual limb in the socket called attention to an uncommon body part that many participants had only recently acquired. To initiate largely automatic muscle movement or activate a residual limb, the conscious self was called upon to listen to body parts that often act in silence.

Such instructions were not necessarily easy to understand. Participants had to make sense of them by trying them out. After this demonstration, Smith asked everyone to practice stepping and walking while thinking about flexing the butt and thigh, pushing down into the socket, and pushing down into the toe while walking over the prosthetic leg. There was an observable but subtle change in everyone's gait, but it was clear that everyone was thinking a lot about walking.

The amount of effort and concentration evident in the room underscores that it is not simply a matter of controlling the body, for there is nothing simple about such control. That is precisely what makes these workshops valuable to those who attend. In order for someone to alter their gait, it is necessary to find ways to work with and listen to the body and body parts that make walking possible. The instruction to observe the sensation is an instruction to listen to and be ready to communicate with these objects that might otherwise be ignored or taken for granted. Simply shifting attention to the feeling of walking along with the intention to reach into the socket made a visible difference in how people were walking.

Dr. Smith hoped to encourage a new relation between the self and body so that the self might train the body to move differently. When this was successful and an amputee's body responded, it had a discernible effect on the confidence of the amputee, the grace of the body, and the functionality of the prosthesis. This shows how selves, bodies, and prosthesis took on identities in the social interaction between the workshop participants and their limbs, be they artificial or organic.

Relating Self and Prosthesis: Trusting the Leg

Dr. Smith focused on sensation and isolation to alter relations between self and body and between body and prosthesis. To describe relations between self and prosthesis, however, he appealed to a more psychological language of trust. Dr. Smith had a technique for demonstrating how even participants with good-looking walks still did not always trust their prostheses. He selected a young volunteer with a good gait and asked her to walk up and down the room. As she made her way, he placed his hand on her sound hip, applying pressure to demonstrate how hard it was to throw her balance off or stop her. But when he did the same thing on her prosthetic side, he could easily throw her back as she tried to step forward onto her prosthesis.

This physical encounter between the bodies of instructor and model illustrates the degree to which the mechanics of walking can be entirely out of conscious control. By pushing into her hips as she walked, he could make her fall back onto her sound side, despite her efforts to counter his pressure.

By attempting to treat both sound and prosthetic sides as the same, this exercise tested the degree to which the prosthesis behaved as part of the body and, by implication, how well it was integrated into the self. Dr. Smith explained the difference between the sound and prosthetic sides in terms of trust. When people do not trust their prosthesis they hesitate to put their full weight on it or swing their hips fully as they walk. However, he pointed out that prosthetic legs, and energy-returning feet in particular, are designed to take advantage of the full force of the body bearing down at every step – they are powered by this movement. But trusting a prosthesis is not easy. It is difficult to feel where an artificial foot is in space and it is likely that the prosthesis has failed at one time or another. Many assure themselves by taking shorter or quicker steps on the prosthetic side, but rather than helping the gait, such measures result in a limp.

The demonstration made visible the goals and the benefits associated with a more even stride. To be able to show the lack of momentum on the prosthetic side was evidence of the hazards of failing to trust a prosthesis. The discussion of trust suggested that amputees could change their physical relationships to their artificial legs and feet by altering an emotional relationship. If an amputee can come to trust the prosthesis to hold and transfer her body weight, artificial legs will respond to this trust and behave differently. To help them fully utilize their prostheses and thus walk more easily, Dr. Smith challenged his students to have faith in their prostheses in the same way they had faith in their sound legs.

Despite the dependence on their prostheses that all amputees experience, my interviews suggest that the trust that Dr. Smith encouraged is not common and would therefore be hard-earned. Some interviewees responded to my question about the prosthesis being a part of them by referring its role in daily life. In answer to this question, Dorris told me, “Oh, yes. Without my prosthesis, I have no life. It's the first thing I do in the morning, and the last thing I do at night. It's just part of my body.” Susan also referred to her degree of dependence on her prosthesis, but came to the opposite conclusion: “No. I need it. I use it. It has to be there. But it’s certainly not part of me.” And Jessica gestured to her long familiarity with her prosthesis collection when she responded, “I guess so, yeah. I don't know why they wouldn't be, I've worn them for so long. I've been dealing with this shit for so long.”

Each of these responses addresses the intimacy between the user and the artificial limb but does not appeal to the physical sensation of having an organic limb. Instead, these women spoke of physical dependence and familiarity with emotional gravity and a touch of resentment. Far more common than speaking of trust, respondents told stories of sudden breakdowns, blisters and injuries that kept them on crutches, and fears of falling. No wonder, then, that trust in a prosthesis is difficult to achieve.

The idea that amputees must trust their prosthetic legs represents a change in how these legs are designed and parallels a change in thinking about what bodies are for. The idea for one of the first energy returning feet came from a small survey conducted by researchers in Seattle (Kegel, Carpenter, and Burgess 1978). Respondents to this survey wanted better mobility to do things like jump, walk for exercise, or run after children. According to prosthetic expert John Michael, this was the first time designers took seriously the possibility that amputees wanted to be more active. The resulting design, called the Seattle Foot, incorporated a length of metal between the heel and toe that acted as a spring as the wearer rolled over it. This design allowed the prosthetic foot to act more like an organic foot when walking or jogging.

Around the same time, amputee and researcher Van Phillips developed his FlexFoot – the precursor to the Cheetah running leg. Where the Seattle foot was designed to be interchangeable with a standard SACH foot, the early FlexFoot was sold as an entirely new system that did not include a prefabricated cosmesis. Zenon Wojcik remembered the first time he saw the FlexFoot pictured in a brochure. He told me, "I could not, for the life of me, picture how this thing was going to work. I think I mentioned it looked like the tip of a ski, and I thought, how do you walk on that?" But when he saw it demonstrated, it was a revelation:

> It wasn't until I got to one of these conferences, seven months, eight months later, that I actually got to see one. And what I did see was a guy actually running, which up until that point, running had always been awkward for amputees. It's always sort of a skip and a hop and even with people below the knee, it's never been normal looking. This changed. Once you saw how [the FlexFoot] worked and what it did, it was like, boom, a real eye opener. I mean in terms of design and in terms of concept, you can actually as you're walking, as you step off you toe, you can kick dirt up just like you could with your other foot. And then when you see someone run that runs as well if not better than you do, that was pretty impressive. That was sort of the light that went on, like, "Aha!"

Other professionals I spoke to who were in the field at the time reported a similar epiphany. Not only did FlexFoot allow amputees to run more fluidly, it radically departed from the anatomical model of prosthesis design that had dominated the industry since the American Civil War. A prosthetic foot that looked less like a foot, but acted more like a foot was a radical rethinking of what feet had to be.

Both the Seattle Foot and the FlexFoot appeared on the market in the mid-1980s and acknowledged the desire among amputees for more advanced mobility. Apparently, up until that time, designers had assumed that amputees would be satisfied with basic walking. The established Seattle group responded with a design that fit with current fabrication methods, but Van Phillips developed an entirely new system that departed from a long trend in anatomical designs. The recognition of the demand for these prostheses reflects a shifting expectation for what bodies needed to be. Satisfactory restoration now had to include the capacity to run and jump. The FlexFoot design was ultimately influential in the development of a mechanical prosthetic aesthetic and challenged previous notions of what a prosthesis had to look like.

Like Dr. Smith, the Seattle Foot and the FlexFoot assumed that amputees should relate to their prostheses in the same way that they relate to organic legs. These energy storing feet can literally add a spring to the step, but the spring must be loaded with the body's weight. They are designed to afford more natural walking and running, but entrusting them with one's full body weight is anything but natural. It takes courage and practice to master walking and running on a prosthesis, even when they are designed to behave like healthy human feet.

The trust required to take advantage of energy returning feet is an example of the kind of relationship selves may have with technological objects. It is not enough for body and prosthesis to be physically joined; the embodied self must surrender control of the body's weight with each step. Doing so promises a more effective body with improved endurance, a prosthesis that is a better leg, and a self that is more independent, confident, and worthy.

Bodies and Prostheses Resist

Altering relations between body, self, and prosthesis requires effort. Working with Patty helped me to appreciate just how difficult these instructions could be. She was a motivated student and took each task quite seriously, but she still struggled to feel her body and get it to respond. I noted how her labor and the effect of her efforts were clear to me: "When she was thinking about it, it did change the evenness of her walk, … but her hands were fists and she looked like she was thinking quite hard." Furthermore, not all of Dr. Smith's interventions produced noticeable changes for her. Toward the end of the workshop, we were given instructions for how to use the movement of the upper body to improve the balance and stability of the gait. Dr. Smith asked a young woman to walk up and down the room, pointing out that one of her shoulders "did not want to move" as much as the other. To intervene, he followed her and gave the stubborn shoulder a little push or pull to force it into symmetry with the other side.

This was harder for me to do for Patty. She seemed pretty stiff and could not move very quickly because of her brace. I tried to help her swing her shoulders more evenly a couple of times, but I did not see much change. Our struggle to make this exercise work for Patty was not a problem with the instructions; I believe I understood the intent of this exercise. Instead, this is a good reminder of the body's presence and influence in the lesson. Dr. Smith told us to expect some resistance on the part of the body – one side will not "want" to move – and in this case his suggestions could not overcome that resistance. Stiff muscles and the brace conspired against us, and Patty and I could not improve this aspect of her gait.

Toward the end of the workshop, Patty was beginning to get tired, and was thinking about leaving, but she hesitated. She kept saying, "I don't want to forget this." Her determination and her fatigue serve as a reminder that relating to one's body in new ways is hard work, and this work cannot be accounted for without an analytic separation between self and body. If humans enjoyed seamless communication between conscious will and bodily action, there would be no need for physical therapy or other types of physical and athletic training. To the contrary, finding ways to communicate with one's own body, to listen to it and get it to respond to one's will, is not trivial. It is a challenge to be met in much of everyday life, especially for people with disabilities and chronic illness.

The work of controlling a body is not individual, but social, for it is affected by the way others speak about and relate to the body in question. When prosthetists and physical therapists give advice or feedback on how to improve an amputee's gait, they are relating to, responding to, and intervening in their patient's will, body, and prosthesis. Their comments can alter the patient's self-consciousness, bodily awareness, and performance. Alternatively, as examples in the last chapter illustrate, an amputee's unreasonable expectations of himself and demands from others can lead him to ignore their pain or disregard problems with their prostheses. Mark and William each described walking in an ill-fitting prosthesis to the point of getting blisters severe enough to keep them on crutches for days after. Debbie persisted in using a foot-pedal bicycle despite pain in her hips. In these cases, despite their convictions, their bodies or prostheses responded by breaking down and demanding attention.

An analysis of disability that refuses to acknowledge the extra unavoidable work involved in managing stubborn assistive technologies and resistant body parts will always miss an important source of inequality. Describing disability as a mismatch between cultural expectations and non-standard (but equal) bodies, the "social model" of inequality is well equipped to argue for widespread changes to the built environment that can ease this burden, but leaves little room for addressing the disadvantage of having a body that simply needs more assistance in nearly any context. Scholars who argue for a complementary concept of impairment have sought to address this with a term that signals the differences between abled and disabled bodies that persist through cultural reinterpretation.

My approach is different in that it calls attention to the interactions between bodies, technologies, selves, and others that create both stigmatized identities *and* practical disadvantages. Just as we cannot make an *a priori* decision regarding the relative importance of human or non-human action, we cannot make general presumptions about the relative importance of physical conditions or cultural expectations in the making of social identities or disadvantage. Identities and disadvantage are not only affected by the practical demands of the situation and cultural ideals, but also physical and social relationships between the players.

As I suggested in the last chapter, the extra pain, labor, and time required to use a prosthesis is not alleviated by increasing acceptance of amputees as basically “normal.” Instead, successful adaptation to the environment and social acceptance appear to push these challenges out of sight, making them illegitimate complaints. The efforts of the workshop participants exemplify the unusual tasks associated with managing a non-standard body.

Relationships and Identities Established

Within this workshop, people worked to change their gait by altering the relations between body, prosthesis, and self. Amputee-participants were asked to think about their bodies and prostheses in new ways and to consciously adjust the relations between their bodies, their prostheses, and the floor. To facilitate these changes, the therapist-participants learned to speak to their "clients" about their bodies and prostheses in unusual ways (e.g., instructing someone to feel her prosthetic foot), and to demonstrate this new vision of the body through physical manipulation. In this process, the therapists too altered their relationships to the people they worked with, as well as the bodies and prostheses of those people.

The question and the challenge that motivated this workshop was, *how similar can these two types of legs become?* The similarity was never total and could not be secured. Instead it was a goal that informed a set of negotiations between selves, bodies, and prosthesis. I have suggested that, in the course of the workshop, Smith built and encouraged analogies between artificial and organic body parts. He demonstrated the utility of learning to enact a physically and emotionally symmetrical relationship between the two. As amputee-participants practiced isolating muscles, reaching into their sockets, and feeling and pressing into the corners of their feet, they worked to relate to their bodies and their prosthesis in similar ways. At the same time, therapist-participants had to be reminded of some salient differences between artificial and organic feet, specifically their sensitivity to pain.

Amputee-participants were asked to trust their prostheses and allow their bodies to rely on the artificial leg as much as the organic leg. Again, Smith stressed the similarity between the two legs, but also described the physical orientation of the body toward the prosthesis as dependent on trust in that prosthesis. To change this, an amputee would have to simultaneously discipline her emotional and bodily stance, working to move both sides of the body symmetrically to prove to herself that the prosthesis could be trusted.

Without drawing a distinction between body-as-self and body-as-object, Smith's method of analogy between organic and artificial body parts would be difficult to capture. The instructor challenged his students to relate to their prosthetic legs and feet in the same ways that they relate to organic body parts and this relation would be invisible if body parts were assumed to be coextensive with the self. The analogy helped individuals change their relationship to their bodies and prostheses and this made a difference to how much a prosthesis might be experienced as integrated into the person, by both user and observer. When this analogy was successful, the self, the body and the prosthesis worked well together and were observed as a whole and total embodied individual. When the analogy broke down, the prosthesis looked and felt like an uncomfortable crutch.

Finally, it is important to remember how difficult this work is and that the body is not always able to respond to these efforts. Walking in a new way by relating to one's body differently required concentration and practice. The exercises were only a starting point for a program of bodily training to which participants may or may not be able to commit. Without practice, it appeared unlikely that the amputee-participants would manage to make their new walk feel "natural" by not having to think about it, by successfully delegating (to use a term favored by Latour) the work to their bodies. Furthermore, some techniques would be out of reach for certain participants, depending on the overall health, flexibility, strength, and endurance of their bodies.

The relations I have described contributed to the identities of selves, bodies, and prostheses. The workshop not only shored up Patty's identity as disabled and deserving but also worked to render her prosthesis and her body more capable and functional than they were before. The meaning of Patty's social identity as an older woman with a disability not only emerged from her interactions with other people in the room, her identity depended on the objects that surrounded her and her body. With the help of her prosthesis and her cane, she arrived at the workshop already less disabled than she might otherwise be. She was capable of walking on two legs, could most likely traverse a curb, and may have even been able to climb stairs. However, by emphasizing a universal if occasional need to move faster regardless of age or health, the premise of the workshop identified her as in need of improvement in her mobility. At the same time, the goals of the workshop defined her as potentially more enabled by her participation and also deserving of the opportunity to learn. She was not too old or too ill to be capable of improving her gait and benefiting from such improvement. She was not a lost cause. It was worth everyone's time to teach her these new skills.

Patty's success in the workshop relied on her attention and commitment, on my verbal and physical feedback, and on Dr. Smith's ability to communicate to us. But Patty's body, her prosthesis, and the relation between the two also influenced the degree to which she could be enabled by the instructions. Certain exercises simply could not be executed due to the resistance of her body and her assistive technologies. For others, an ill-fitting socket might have made it extremely difficult or perhaps painful to "reach" into a socket with their residual limb. Such contingencies are just as much a part of the work that goes into the making and unmaking of disabled identity (Moser 2006b) as the instructions and feedback of coaches and the conscious effort and focus of the student. In this case, Patty's identity as a disabled person, a capable student, or a good walker was created out of the many relationships in play within the workshop.

Patty's prosthesis also took on an identity as an acceptable and functional foot based not only on how it appeared to Patty and to others, but how it related to her body and other objects. Even at the outset, Patty's prosthetic foot was in many ways more able than her fragile organic foot. This identified her prosthetic side as her "sound" side. In our attempts to alter Patty's relationship to her body and prosthesis, her prosthesis became an even better foot – more responsive, more integrated, and more aesthetic (by contributing to a more attractive walk). It is easy to see that this change in the identity of the prosthesis clearly does not originate in a change in the physical constitution of the prosthesis: there were no adjustments made to the alignment or design on the object itself. The change came from altering the relations that the prosthesis participated in.

Patty's body also had an identity as capable or disabled, somewhat distinct from the identity of herself. Her disability was evident in the behavior of her body, specifically a stiff and somewhat lopsided gait. I noticed myself responding to her limp in two ways simultaneously. The effect of her limp on her general comportment made her seem hesitant and timid – a snap judgment about Patty's social identity based on the appearance of her body. But her limp also signaled to me that this was someone who may need a bit of extra consideration and assistance – a judgment about what sort of body was before me.

Not only did Patty's body contribute to her identity, her body came to have a particular identity *independent* of Patty's identity. My impression of her character was based on little else than deeply ingrained stereotypes, but upon working with Patty, I could see that she was a tough and determined woman. My judgment of her body, however, was not erroneous. Observing her limp alerted me to the possibility that she may very well have non-standard needs and limitations. To ignore this possibility by moving too fast, putting too much pressure on her hips, or hitting her foot too hard would have been callous, disrespectful, and even dangerous.

The ability to describe the identity of the body as distinct from, though related to, the identity of the self is crucial in making sense of disability as a source of social inequality and embattled identity. Scholars have worked so hard to decry specious body-based character assessments that any serious consideration of bodily difference has become almost taboo. My assessment of Patty's needs based on observation of her body may seem mundane and commonsensical, but such assessments have been delegitimized by arguments for political equality based on a universal conception of humanity. Noting and consciously responding to physical differences is assumed to be rude or a sign of bigotry. This is problematic, for there are times when ignoring physical differences means denying people extra consideration they may need. When visions of social equality implicitly assume bodily sameness, it becomes impossible to argue for the accommodations and considerations required for just treatment and access to opportunity.

The workshop identified the bodies of all amputee-participants as dysfunctional machines that could be optimized and tuned through technical interventions. The workshop goal of enhanced mobility and performance implies that any body can be made more capable with properly deployed prostheses and practices. The assertion that, for personal safety, “we all need to move a little faster sometimes” underscores the degree of mobility demanded by modern urban life. Finally, the technique of trusting a prosthesis to take advantage of energy-returning properties reflects the relatively new expectation that amputee bodies can and will be taught to incorporate prosthetic technology.

Conclusion

Over the five hours of the workshop, students learned techniques meant to make walking with a prosthesis more closely resemble the mechanics and appearance of “normal” walking. The hope was that these techniques could ultimately “unmake” disability (Moser 2006b) by improving the efficiency of locomotion, easing the discomfort associated with artificial legs, and veiling the visible traces of amputation. To achieve this, Dr. Smith had to do more than indoctrinate his pupils in a specific definition of good walking and the students had to do more than follow directions and submit to physical manipulations of their bodies. This process of learning to walk differently required students to understand and then practice a new way of relating to their prostheses and to their bodies.

In my account of this workshop, I have attempted to bring the body, as a somewhat autonomous actor, into the network of relations that constitute a physical therapy technique, thereby tracing how the body participates in the production of social identities and this allowed me to describe how gait training maintains and alters the identities of self, body, and prosthesis. Both selves and bodies may be rendered abled or disabled, awkward or graceful, flexible or stiff. Prostheses may emerge as painful supports, unruly tools, or legitimate, integrated body parts.

I have drawn a distinction between the body-as-self and the body-as-object in order to apply ANT's symmetry principle to analyses of bodies. The case of prosthetic limbs highlights the shortcomings of a traditional framework in understanding the complex interactions and results thereof. The case of prosthetic limbs helps to make the logic of this move clear. If artificial body parts, that are clearly objects, may or may not be integrated into the human body or the self, then the same might be said of organic body parts. Similarly, I cannot decide at the outset if bodies are more like selves (human) or more like objects (nonhuman?). In practice, regarding a body as an object need not refer to the humanity of the body at all, only the degree to which it enacts object-ness by resisting conscious control or by receiving physical manipulation.

Viewing bodies as *actants* in social interactions draws attention to *all* the roles bodies play in society. Despite the many theoretical arguments about how to conceptualize the body, it cannot be decided in advance whether bodies ought to be primarily considered the source of intentional human action or stubborn obstacles to be overcome. Bodies may be best thought of as biological, expressive, fixed, or flexible, depending on the context and the relationships in which they take part. Here, I advocate a framework which, in certain contexts, can provide a more accurate assessment of the social interactions and resulting identities than one which simply hides or ignores the subtleties of the self, body, and technology.

V. CONCLUSION

The use of prosthetic legs is a revealing example of everyday interactions between humans and technology. Through my analysis, I have argued that, like humans, objects and bodies come to be identified through their participation in social life. To do so, my task has been to describe technologies and bodies as forces in social life without implying technological or biological determinism. I started with an interactionist approach to the construction of identity, in which social identity is described as constantly achieved through social interactions. Borrowing from ANT and STS, I included objects, such as prosthetic body parts, as important players in these interactions. I then illustrated how this analysis can be extended to organic bodies and body parts as well. I have also documented aspects of living with prosthetic legs which journalists and scholars of technology have overlooked. I have demonstrated how high expectations for prosthetic technology combined with a desire to see all bodies as equal can hide and delegitimize the extra work of managing amputation and disability in general.

While I take inspiration from some well established theories, my approach contributes a unique synthesis. Micro-sociologists have long argued that human identities are a product of social interaction (Fenstermaker and West 2002; Garfinkel 1967a; Goffman 1969; West and Zimmerman 1987). Scholars of science and technology have argued that technological objects are part of networks and social relations (Knorr Cetina 1997; Latour 1992; Suchman 2007).And theorists have argued for the importance of the body in sociology (Bourdieu 1984; Foucault 1977; Giddens 1991; Sewell 1999; Turner 1996). Some have suggested that concepts from STS be applied to questions of the body

(Galis 2011; Latour 2004; Mol 2002; Moser 2006a: 376; Place 2000; Prout 1996; Schillmeier 2010: 124; Timmermans and Haas 2008). However, none of this scholarship connects these ideas to explain how bodies influence, but do not determine, social identity. The way I have combined these ideas offers a methodological strategy for studying bodies and objects in social interactions. Looking for relations between selves, bodies, and objects, has allowed me to attend to the contributions of each in the production of identity, difference, status, and disadvantage.

In *Prosthetic Aesthetics*, I examined how artificial body parts play a role in the social negotiation of human identity, with special attention to how prosthetic aesthetics make a difference in social interactions. I found that the appearance of artificial legs does not always need to match the appearance of the missing organic leg. Instead, prosthetic legs speak of user identity in more subtle ways, indicating social identity – the status, character, and categorical membership of the user – and personal identity – the unique and coherent biography that defines the individual. Respondents talked about their satisfaction with prosthetic aesthetics in terms of attracting the right sort of attention and presenting an authentic self. Appearing and feeling “normal” was not about meeting a particular standard but about adequate self-expression and comfortable information management.

In *The Prosthetic Panacea*, I argued that prosthetics take on their own object identity through both their technical capabilities, popular expectations, and the quiet work of amputees. The assumption, held by amputees and others, that prostheses will repair amputation helped to maintain the reputation of prosthetic technology as a panacea for the problems of amputation. Some respondents described their own struggles to adopt prostheses as personal temporary setbacks rather than due to the shortcomings of prostheses. Many expressed ardent faith in the possibility that prosthetic technology would fix them despite the problems they had experienced. Furthermore, respondents described encounters with friends, family, and strangers that implied that amputation is not a permanent disability and the expectation that amputees should be athletes regardless of past interests. While contemporary prostheses can allow amputees to be more physically active, the tendency to overlook the difficulties and pain of prosthesis use helps to maintain the technology's reputation as a cure-all for disability.

In *Walk This Way*, I extended my concept of object identity to organic bodies, arguing that bodies themselves participate in social interactions and, in so doing, take on an identity distinct from that of the self. I discussed a walking workshop that encouraged amputees to relate differently to their bodies and prostheses. By learning to feel and to trust their prostheses and by training their bodies, amputee-participants could make their prostheses and their bodies perform smoother, more even walking. The workshop promised the ability to change the participants' confidence, appearance, and safety by helping them to move more "naturally" and more quickly. It promised to change prosthetic legs into more compliant and effective tools. And it promised to transform a disabled body with an assistive device into one integrated and functional unit.

I have illustrated some of the attributes and cultural expectations that shape the social identities of amputees, prostheses, and bodies. My data shows that amputation is not necessarily an obvious source of stigma, that prostheses can at times be considered legitimate body parts, and that human bodies can, with practice, incorporate artificial parts. These findings suggest some current cultural assumptions about what all bodies are for.

What Bodies Are For

Each chapter suggests cultural standards for bodies that go beyond expectations specific to amputation. The nuances of prosthetic aesthetics points to the many ways that bodies are expected to reflect social and personal identity. As many have noted before me, bodies are read for clues about relevant social information such as group membership, personality, and competence. A body will also offer information about an individual's past experiences and unique biography. However, like the prosthetic legs I have described, bodies can convey this information in surprising ways and their legibility is context specific. Categorical identities like age, gender, race, or disability are read in relation to one another, to the situation, and to assumptions about the biography of the individual in question. For example, I found that I might be assumed to be an amputee in the context of my research sites. Because of my age and gender, it would not have been unreasonable to assume in these situations that I could be an accomplished prosthesis user who happened to be wearing pants. I learned quickly to wear shorts, skirts, or open-toed shoes to allow others to assess my outsider status when attending support groups or speaking about my work. This helped me to relieve potentially awkward encounters and put others at ease by not making them ask outright about my amputation status. This illustrates that bodies are not assumed to be for maximizing one's apparent status (though they are at times deployed this way). Rather, they are regarded as sources of socially relevant information and are expected to express information with a range and subtlety that goes well beyond coding gross social categories.

The myth of the prosthetic panacea represents the hope that deviant bodies can be normalized through technological intervention. Prosthetic devices are held up as the prime example of how disability might be erased through assistive technology. Within this mythology, an amputee joined to an artificial limb demonstrates that bodies are machines that can be repaired with replacement parts. While this vision of what amputee bodies *are* has been central to the design of prostheses for generations (Herschbach 1997; O'Connor 1997; Perry 2002; Serlin 2004), the visions of what bodies are *for* suggested by the prosthetics industry and reflected through respondents' comments is relatively new. The emphasis on performance, exercise, and athletic competition reflects the new importance of bodies in leisure and health and fitness rather than occupational abilities. Anson Rabinbach (1992) may have wondered if the body is obsolete in the workplace, but it is certainly not obsolete in a culture that places such a high moral value on health and fitness. In many contemporary contexts, bodies are for maintaining or optimizing, maximizing health, and cultivating athleticism.

In the walking workshop, participants learned how to do the work that is hidden by the myth of the prosthetic panacea. This is also the work that makes it possible to regard prosthetics as a fix for amputation. The workshop was justified by the assertion that all amputees, regardless of age or health status, are entitled to strive for a minimally capable body. Such a philosophy not only identifies bipedal bodies as the goal for all, it implies that such bodies can be created out of medical technology and physical therapy techniques. The exercises demonstrated the possibility of training and optimizing bodies through practice. Thus, bodies are not to be accepted as they are; bodies are for personal transformation.

Disappearing Stigma of Disabiltiy?

In 2007, amputee athlete Sarah Reinertsen was pictured dancing in a New York City night club on the front page of the New York Times Sunday Styles section. Under the headline, “Clearly, Frankly, Unabashedly Disabled,” Reinertsen appeared wearing a denim miniskirt and prosthetic leg with an exposed pylon, mechanical knee, and glittering socket. She was quoted as saying, “This is who I am. If you have a problem with that, that’s your problem” (Navarro 2007). Similarly, during the 2012 London Olympic Games, Oscar Pistorius attracted much attention when he became the first double amputee to compete in Olympic Track and Field. In the years leading up to these games, Pistorius was engaged in a long and controversial battle with the Olympic Committee over the possibility that his prosthetic running legs give him an unfair advantage. In NBC’s coverage of his first heat, the commentator quoted Pistorius as saying, “Being disabled doesn’t have to be a disadvantage” (NBC 2012).

The celebration of amputee athletes like Reinertsen and Pistorius represent a contemporary fascination with users of artificial legs who, with their style and athletic accomplishments, appear to challenge the meaning of disability and bodily normality. Glamorous photographs of each have featured them wearing obviously artificial legs. Their athletic accomplishments are offered as both inspirational proof of mind over matter and as evidence that, given the right technology and the will, physical disabilities do not have to be a setback – they are merely a challenge to be overcome and a unique biographical detail.

These examples echo my findings and are particularly remarkable when compared to Goffman's treatment of amputation in *Stigma*. He wrote of amputation as an undeniable disability that necessarily discredited an individual. I do not mean to suggest that amputation is never a source of shame or discrimination, only that it can no longer be assumed that amputation is stigmatized in nearly all situations. This raises the question of when and how these changes came about. How did a condition, that was once the paradigmatic example of permanent and grave disability, come to be regarded as temporary and preferable to other types of impairment? How did prosthetic technology come to represent the hope that all disabilities may be overcome?

My preliminary research indicates that the change in how people regarded prosthetics and amputation was made possible by at least three historical trends that came together in the 1990s: technological development in prosthetics, a popular embrace of personal technologies, and civil rights discourses.[24] As I outlined in the introduction, improvements in socket design and fabrication afforded more intimately fitting prostheses. These developments turned out to be crucial for the successful development of energy returning feet as the new sockets could evenly distribute pressure on a residual limb. Combined with lighter-weight materials – many developed for Cold War efforts –

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[24] Recall that, while wounded soldiers returning from the Middle East in the 2000s benefited from and amplified this change, it was already set in motion by 2001.

the new prosthetic designs made athletic competition more attractive and accessible to young amputees.

The visibility of amputee athletes changed the public face of prosthetics. For example, Aimee Mullins made her Paralympic debut in 1996. Following this appearance on the international stage, she went on to model on the runway for fashion designer Alexander McQueen and was featured in a number of fashion magazines. Her image as a beautiful woman literally joined to technology and art clearly resonated with the popular culture of the time. In addition to creating an iconic image of a glamorous and successful young amputee, her exposure in the media fed into the celebration of a new type of prosthetic technology that was visibly mechanical (Mullins ; Smith 2006). I believe that an analysis of popular media coverage would find an escalation of interest in amputees starting with the debut of the FlexFoot in 1985 through the 1996 Summer Olympic Games in Atlanta, Georgia. Active and glamorous amputees like Mullins, Reinertsen, Pistorius, and Heather Mills road this wave of interest to build their fame and personal brands.

There was also a flurry of academic literature contemplating the notion of cyborgs and human-machine relations in this time period (Gray 1995; Haraway 1991; Latour 1993; Suchman 2007) – some of which featured users of prosthetic limbs (Jain 1999; Stone 1995; Wills 1995). No doubt, the visibility of amputee celebrities at the time influenced this academic work. The image of amputees joined to high-tech prostheses represented a cluster of hopes and fears for medical technology that also fed the budding discipline of bioethics (Evans and Schairer 2009). Like the decades after the American

Civil War (O'Connor 1997) or the introduction of Taylorism (Rabinbach 1992), this was a moment of cultural anxiety over the acceptable interfaces between humans and technological objects. Unlike previous eras, however, the new technologies of the 1980s and 1990s were personal (rather than industrial) and increasingly were carried on the body. Computers became a ubiquitous feature of American life; Walkman portable audio cassette players and cellular phones came on the market in this period.

Changing meanings of amputation, prosthesis use, and disability also reflect a larger struggle in American culture to move away from a discourse of deviance to one that embraces and respects diversity. In 1963, Goffman wrote that “separate systems of honor were on the decline,” (Goffman 1963: 6) gesturing toward increasing homogenization in American society. While it may be the case that certain ethnic groups became increasingly integrated into mainstream society, it is now clear (through and, perhaps, because of the internet) that subcultures continue to abound (Williams 2006; Williams 2007; Wilson and Atkinson 2005). Furthermore, since the 1950s, the Civil Rights, Women’s Rights, Gay Rights, and Disability Rights movements have continuously challenged the notion that social stigma is a necessary or permissible response to difference. By the 1990s, social critics and public service campaigns had been attacking traditional thinking about the relationship between bodily attributes and social treatment for some time. While these changes have been neither universal nor complete, they do appear to have made room for a wider range of possible, legible, and acceptable forms of identity.

These changes make the case of amputees in the contemporary U.S. a particularly good one for exploring how stigma and disadvantage may change independently, suggesting that the effect of stigma on inequality may be overestimated by stigma scholars. What Goffman could once unquestionably identify as a stigma is no longer clearly so. Furthermore, social inequality cannot be reduced to or explained by reference to status and discrimination alone. Though contemporary stigma scholars have worked to revise Goffman's ideas, for instance by refining the definition of stigma in terms of "labeling, stereotyping, separation, status loss, and discrimination" (Link and Phelan 2001), the concept must be used within a broader vision of structural sources of disadvantage and oppression. While stigma may loom large in the lives and interactions of individuals, it may nevertheless play a comparatively small role in the durability of disadvantage.

My research puts into relief the complexity of what Goffman called stigma, partly because of the unique situation of lower limb amputees. Prosthetic legs have particular technical attributes that lend themselves to the image of a technological panacea that other assistive devices do not enjoy. Artificial arms and hands, for example, cannot replace the subtle and varied functions of organic hands as effectively as artificial legs can replace the lost function of organic legs. Quotes from my respondents make it clear that they regard wheelchairs and crutches as a different class of assistive technology all together. However, the popular excitement and hope surrounding amputees and their artificial limbs appears to influence assessments of other types of physical disabilities. People love the idea that technology will someday do for others what it has done for amputees. This is visible, for example, in media coverage of powered and computerized exoskeletons designed to help people with paralysis to stand and walk. Therefore, it is imperative that studies of other types of disabilities resist the temptation to assume stigma and discrimination. Rather, the details of particular social interactions – including the presence of bodies and technologies – must be examined to appreciate how the negotiation of social expectations and attributes contributes to social status and inequalities.

Many of the dynamics that Goffman assumed to be symptomatic of stigma do still fit the experiences of amputees, but without the generalized shame so central to his concept. This does not mean that amputees face no disadvantages, but perhaps stigma is not the best explanation for either the awkward social situations or the inequality that is associated with amputation. In particular, the case of American amputees calls into question the assumption that visible bodily differences, especially associated with disability, will nearly always be stigmatized and thus efforts will always be made to hide them. Furthermore, in situations where amputees are treated as just as capable, or more capable than everyone else, their disadvantages are not eradicated. Instead, the extra work and pain required by their condition is ignored and erased, not only by others, but by the amputees themselves. While stigma and discrimination are certainly problems, acting as though all bodies are equal in the name of etiquette or political correctness does little to alleviate the disadvantage of having a non-standard body.

Future studies

This research suggests possibilities for future studies of prosthetic technology and offers a methodological approach suitable for studying other topics related to identity, bodies, and technology.

Many of the amputees I spoke to were curious about my findings. They wanted to understand how unique their experiences were. Though I found most of my respondents through groups of amputees, many nevertheless felt isolated. The interview data I have collected suggests some of the possible ways that amputees regard their prostheses, but does not provide information about how common these are. A larger survey-based study of amputees who use or have used artificial limbs would clarify how many prosthesis users make use of a cosmesis and some of the common reasons for this choice. Such a study could offer information about how demographic characteristics, such as income, gender, or race, might be linked to prosthetic aesthetic choices. If properly designed, it could also shed light on whether most amputees are excited, satisfied, or disappointed with their technology in light of the hype that surrounds them, and how many people have experienced the sort of compulsory athleticism I have described. By collecting information about how long respondents have been amputees, it would be possible to investigate how attitudes toward one’s prosthesis may change the longer one lives with amputation. The results of this kind of study would clarify how local or regional aesthetic expectations are and if the mechanical aesthetic I have documented is a temporary fad or a lasting trend. It could contribute to our understanding of how amputees and other survivors of drastic bodily transformation come to terms with their new bodies over time.

Finally, it would illuminate current cultural attitudes toward bodies, disability, and assistive technologies.

An expanded history of the development of contemporary artificial limbs would be an interesting and rich story. Not only would it offer a look at the influences of Cold War material sciences, developing approaches to physical therapy, and civil rights movements, it could be an opportunity to evaluate theoretical debates about whether the current moment ought to be understood as late modern or post-modern, especially with respect to the concept of post-humanism. The history of prosthetic aesthetics reflects changes in attitudes about what bodies are and what they are for in the western world – changes that have been noted and anticipated by many scholars of modernity and post-modernity (Giddens 1991; Haraway 1991; Latour 1993; Rabinbach 1992; Shilling 1993). Each of these thinkers locates bodies and bodily expectations at the center of their ideas about the distinctive qualities of the late twentieth-century, but they differ in their willingness to identify a break from a previous era. By investigating the cultural and technical underpinnings of the very specific phenomenon of prosthetic aesthetics, this history would offer a concrete example with which to think about the changing meaning of the body, how much these changes characterize the current moment, and whether there is good reason to locate a distinctive departure from the traditions of modernity in the 1980s and 1990s.

The theoretical approach I have presented can be applied to topics common in the sociology of the body such as obesity, health and fitness regimes, and body modification as well as studies of disability and chronic illness. This style of analysis makes room for accounts that go beyond the cultural symbolism of bodies by focusing on how the constraints of the body are negotiated and show how these negotiations shape both culture and the body. For example, using this approach in a study of obesity would help keep in focus how the physical realities of living with a larger body contribute to the experience of fatness *in addition to* the stigmatizing reactions of others and cultural celebrations of thinness. Such an approach would push beyond a condemnation of stereotyping and thin fetishes to acknowledge how thinness is patrolled by the built environment and take into account the practical problems that make living with obesity difficult and may also frustrate attempts to lose weight.

Focusing on the stigma of obesity to the exclusion of these other issues can sometimes imply that people should always accept and be accepted for who they are, thus replacing the moral imperative to lose weight with the moral imperative of self-acceptance. By attending to how self, body, others, and objects in the built environment interact, there is room to consider the legitimate frustrations of living with obesity beyond social degradation and might generate novel ways to think about obesity that balance the competing imperatives to lose weight or accept one’s self. For example, the challenge of finding clothes that fit or navigating a crowded restaurant do not require the judgment of others to make them unpleasant features of a stubborn body. Regardless of whether one accepts himself, these sorts of situations make obesity a constant, inconvenient, and expensive problem to solve. While tolerance and patience can certainly help, they will not in themselves make having a larger body a non-issue. But the example of prosthetic legs suggests that finding non-dieting ways to solve the practical problems of fatness could, over time, alter the meaning of obesity for better or for worse. A sensitive social scientific analysis of such solutions could help make them forces for positive cultural change rather than sources of stigma.

Thinking about the body as active in social life might also make possible a variable analysis of the role of medical intervention that goes beyond decrying the “medicalization” of life, instead calling our attention to possible and surprising interactions between selves, bodies, caretakers, and technologies that make up and transform medical practices. Instead of critiquing psychiatric medications, for example, for making healthy people regard themselves as ill, social scientists could take seriously the benefits patients report as a way that the body influences social life. There is then room to ask how effective psychiatric medication is changing the meaning of mental illness or ask how the benefits of psychopharmacology might be enjoyed without requiring that people to be permanently classified in potentially stigmatizing ways.

Concluding Thoughts

At some point in my fieldwork, I began asking amputees how they felt about door-holding. I wanted to understand how I was supposed to handle these brief but fraught encounters. Some complained about people always holding doors for them, while others told bitter stories of being ignored. I concluded that it is always best to ask, “Can I get that for you?” or “Can I help you?” because it seemed impossible to predict who might be offended and who might be grateful for the help. Just as I have argued that an analyst cannot decide in advance how bodies do and do not make a difference, we should hesitate to make blanket rules about how to read bodies in everyday life. Equal treatment is not always dignified treatment. Regarding someone with dignity requires being attentive to signs of an individual's needs and limitations and respecting their right to politely correct your assumptions and refuse help. This takes more work than following presumed rules of chivalry; it requires us to take seriously, and tolerate, the bodies and objects that make a difference in social life.

APPENDIX A: SELECTED QUESTIONS FROM INTERVIEW GUIDE

Introduction

I am interested in understanding the experience of using an artificial limb. I am especially interested in hearing about your experience of learning to use a prosthesis and how it helped you get back to your life. So I am interested in what worked and what didn't, what was easy and what was difficult. With this in mind, why don't you start by telling me your story; when people ask you "what happened," what do you tell them?

Rehabilitation and Prosthetics

- When did you get your first prosthesis? What kind was it? What was it like?
- What did you think of the way it looked?
- Was it easy to walk on right away, or did it take some practice?
- Did you do any physical therapy? If so, what was that like?
- Describe your typical day.
- What kind of prosthesis do you wear now? Does it work well? What do you think of the way it looks?
- How many prostheses do you have and use currently?
- Were there activities that you had to give up? Are there any that you have taken up since your amputation?
- How much concentration does it take to walk? Does it ever feel like second nature?
- Do you ever feel like your prosthesis is a part of you?
- Are there times or places where you prefer to go without your prosthesis?
- Did your amputation change the way you dress? Do you ever wear clothing that shows off your legs? When or where?
- What would be your ideal prosthesis?

Interpersonal Relationships

- Who has been most helpful to you in the course of your recovery? How have they been helpful?
- Is there anyone who has been less than helpful to you? Anyone who ended up being a liablity? How so?
- In public do you think people are interested in your limb? Have strangers ever asked you about it? What about friends?

- Has anyone ever been surprised to learn that you use prosthetics?
- How has your amputation affected your intimate relationships and/or dating?
- Do you think your friends/ family/ colleagues think of you as disabled? Do you think your amputation makes a difference to them? What have they done that makes you think so?
- Do you think of yourself as disabled?
- Do you feel connected to a community of amputees? Do you have contact with other amputees?
- Do you feel like you are part of a wider disabled community?

Miscellaneous

- Has your experience made you more aware of your body than you were before? Has it made a difference to what you think is important about your body, about what it is for?
- Are there any books, movies, TV shows or celebrities that you found particularly inspiring during your experience?
- Are there any portrayals of amputees that annoy you or you find frustrating?

Special Questions for Experienced Amputees

- How many prostheses have you had since your amputation (estimate is okay)?
- Do any of them stand out as big improvements? Did you have a favorite? What were these like and approximately what years did you wear them?
- When did you first become aware that people were wearing their prostheses uncovered/unfinnished?

APPENDIX B: SELECTED DEMOGRAPHIC CHARACTERISTICS OF INTERVIEW RESPONDENTS

Alias	**Gender**	**Race/ Ethnicity**	**Highest Level of Education**	**Age at time of Interview**	**Age at Time of Amputation**	**Level of Amputation**	**General Cause of Amputation**	**Prosthesis in Use at Time of Interview?**
Allen	Male	White	College	44	42	Above Knee	Trauma	Yes
Bob	Male	White	College	62	60	Above Knee	Illness	Yes
Carol	Female	White	College	75	74	Below Knee	Illness	Yes
Daniel	Male	White	High School/ Trade	57	55	Below Knee	Illness	Yes
David	Male	Not White	Some College	26	22	Below Knee (bilateral)	Illness	Yes
Debbie	Female	White	Some College	50	45	Below Knee	Trauma	Yes
Donald	Male	White	Graduate School	71	70	Below Knee	Trauma	Yes
Doris	Female	White	Some College	90	43	Below Knee	Trauma	Yes
George	Male	White	Some College	61	59	Above Knee	Illness	No
Jake	Male	Not White	Some College	24	21	Below Knee	Trauma	Yes
Jerry	Male	White	High School/ Trade	73	72	Above and Below Knee (bilateral)	Illness	Yes
Jessica	Female	White	College	32	15	Below Knee	Trauma	Yes
Karla	Female	Not White	Some College	25	19	Below Knee	Trauma	Yes
Keith	Male	White	College	29	23	Above Knee	Illness	Yes
Leo	Male	Not White	Graduate School	77	36	Above Knee	Trauma	Yes
Lisa	Female	Not White	Some College	23	19	Above Knee	Illness	Yes

Marie	Female	White	High School/ Trade	23	19	Below Knee	Trauma	Yes
Mark	Male	White	Some College	44	38	Below Knee	Trauma	Yes
Marvin	Male	Not White	Graduate School	59	57	Below Knee	Illness	No
Michael	Male	Not White	College	26	24	Above Knee (bilateral)	Illness	Yes
Nick	Male	White	Some College	30	27	Below Knee	Trauma	Yes
Peter	Male	White	College	30	28	Above Knee	Trauma	Yes
Ruth	Female	White	College	67	14	Below Knee	Illness	Yes
Sandra	Female	White	Graduate School	59	29	Above Knee (bilateral)	Trauma	Yes
Shirley	Female	Not White	Some High School	69	63	Above and Below Knee (bilateral)	Illness	Yes
Steve	Male	White	Graduate School	49	17	Below Knee	Trauma	Yes
Susan	Female	White	College	67	20	Below Knee	Trauma	Yes
Vincent	Male	White	High School/ Trade	41	39	Below Knee	Trauma	Yes
William	Male	White	College	58	54	Above Knee	Trauma	Yes

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