Being Prosthetic in the First World War and Weimar Germany

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Abstract In this article I discuss the prosthetic phenomenon during the First World War and Weimar Germany. As opposed to contemporary trends, with their inflationary use of the 'prosthesis', sometimes even hypothesizing 'prostheticization' as a paradigm, I seek to return the debate about the prosthesis to its historical concreteness. I describe the phenomenology of the prosthesis in three senses: first, in the statistical sense, in the form of a dramatic growth in the number of prostheses; second, in the visual sense, in the form of a dramatic growth in the visibility of the prosthesis. Basing myself on the Heideggerian perception of the 'phenomenon', I seek to reveal an additional, third, aspect of the phenomenology of the prosthesis. It is my contention, against the background of the major catastrophe of the First World War and the frequent crises that afflicted Weimar Germany, but also in the light of additional contexts – technological, economic, cultural – that the prosthesis was increasingly perceived as a phenomenon, i.e. as something which appeared in a wide range of ways – as prosthesis, as tool (hammer, writing instrument), as an organic limb (hand, leg), and even as a paradigm (man as 'prosthetic God', man as 'Dasein').

Keywords Dasein, foreign body, Germany, Heidegger, phenomenology, prosthetics

This article will discuss the prosthetic phenomenon in the First World War and Weimar Germany. An examination of the prosthetic phenomenon in the period in question is of interest for a number of reasons. The prosthesis played a central and decisive role in the rehabilitation of the German body during and following the war, and hence both directly and indirectly in the rehabilitation of other systems – primarily economic and social. The dramatic appearance of the prosthesis

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also made it a genuine cultural icon. We find it 'starring' in literature, the movies, the plastic arts.

Most of the studies that have addressed prosthetics have focused on specific, partial aspects of the phenomenon only: the medico-technological aspect, the economic aspect, the social aspect and so on. Many, not to say most studies, have addressed its cultural expressions (Fineman, 1999: 85–114; Foster, 2004; Perry, 2002: 75–101). In this article, I propose a synthesis of these aspects. Moreover, I wish to expand the historical context of the prosthetic phenomenon during the period under review, taking it beyond the limits of the debate about the German body and the process of its rehabilitation. I believe that the phenomenon must be understood in far broader contexts, including the increasing acceptance and popularity of a variety of medical-therapeutic practices such as plastic cosmetics, even psychoanalysis. The prosthetic phenomenon, primarily in Weimar Germany, should be understood in an even wider context of a mass consumer society that placed ever more emphasis on appearance and the look of products. Prosthetics, which structure and shape a whole, aesthetic human body, must also be understood, I would argue, in a context comprising the Weimar advertising industry, fashion, the 'sports mania' and more. The prosthesis, in other words, functioned as an additional accessory in the Weimarian 'Society of the Spectacle', to borrow Guy Debord's term.

I also seek to place the prosthetic phenomenon in another context: that of the emergence of the 'New Man'. As will be shown, the prosthesis, particularly in Weimar Germany, was not only viewed as a substitute required by the realities of amputated limbs, as an artificial imitation of 'the real thing'. I will identify quite a few voices that saw the prosthesis as preferable to the organic body part. The prosthesis, then, was viewed as an element in the construction and shaping of a prosthetic 'New Man', who was viewed not infrequently as more perfect, more efficient and an improvement on flesh-and-blood man.

As stated above, the choice of the concept of a prosthetic *phenomenon* is not an accident. It is, in fact, essential to the arguments to be presented below. Such an approach is informed by Martin Heidegger's definition of 'phenomenon' – another product of Weimar Germany – as presented in his *Being and Time* (1996 [1927]). The 'phenomenon', according to Heidegger, is 'what shows itself, the self-showing, the manifest' (1996 [1927]: 25). The history of the prosthetic phenomenon as recounted in this article rests on three meanings that are contained in the Heideggerian concept of 'phenomenon'. The first is a discussion of the prosthesis as it showed itself and was manifested in the sundry contexts already noted above. The second is born of the fact that the prosthesis had only a limited presence in the public sphere until the First World War. That was apparently because of the relatively small number of amputations being performed. But it was also a result of an emphasis on the aesthetic prosthesis, that is, a prosthesis that resembled the original, organic limb. All this changed dramatically during the First World War and in its aftermath, both because of the large number of amputees but also because of a growing interest in the functional prosthesis, which did not attempt to look like the organic limb. As such, the prosthesis became in these years a 'phenomenon' in the simplest meaning of the word, a phenomenon, that is, which showed itself.

And yet – and this is the third meaning of the phenomenon – the prosthesis was not just a statistical or visual phenomenon. As Heidegger explained, a phenomenon's manifestation is always subversive of its own 'essence'. That is because the phenomenon is always already embedded within a meaningful situation, the emphasis being on its practical significance. Thus, for instance, in an example borrowed directly from Heidegger, the phenomenon of the 'forest' does not just show itself or is not just manifested as a forest. The phenomenon of the forest already always contains a practical significance. Thus, Heidegger writes: 'the forest is a forest of timber'. And in the same spirit he continues, 'the mountains [are] a quarry of rock, the river is water power, the wind is wind "in the sails"' (1996 [1927]: 66).

I will argue here that after the First World War the prosthesis began to be perceived as just such a phenomenon. Psychologists, psychiatrists, philosophers and others would claim that the best kind of prosthesis is that which ceases to be a prosthesis. In other words, the best prosthesis is that which does not appear to be such. The best prosthesis is that which appears as a 'hammer', such as in the instance of a carpenter whose arm has been amputated, or as a 'hand' in the instance of an amputee who desires to grasp an object, or a 'leg' in the instance of an amputee who wants to walk. This was the context for Freud's claims in 1930 about man as being another 'prosthetic God'. I will return below to Heidegger in regard to this very matter.[1] Towards the end of the article, I would like to suggest identifying in the transition from Weimar Germany to Nazi Germany a transition from one prosthesis phenomenology to another.

Why do I refer specifically to prosthesis *phenomenology*? Over something like the last two decades, we have witnessed two key trends in research into the prosthesis. The first is the inflation in the use of 'prosthesis'. In this context, cultural critic Vivian Sobchack (who herself has a prosthetic left leg) recently wrote:

> Sometime, fairly recently, after 'the cyborg' became somewhat tired and tiresome from academic overuse, we started to hear and read about 'the prosthetic' – less as a specific material replacement of a missing limb or body part than as a sexy, new metaphor that, whether noun or (more frequently) adjective, has become tropological currency for describing a vague and shifting constellation of relationships among bodies, technologies, and subjectivities. (2006: 19)

The 'prosthesis' has indeed become common currency. In a variety of contexts, *inter alia*, we hear and read such terms as 'prosthetic consciousness', 'prosthetic memory', 'prosthetic aesthetic', 'prosthetic territories', 'prosthetic processes', 'prosthetic subaltern', etc. (Sobchack, 2006: 19–20).

The second trend in the study of the 'prosthesis' is characterized by the way in which it is turned not only into the ultimate 'substitute', but also into a methodology. From a historical, sociological, anthropological, concrete phenomenon, the prosthesis has become a genuine paradigm. This paradigmatic view of the 'prosthesis' eliminates the distinction between 'natural' and 'artificial'/'technological', and hypothesizes 'original prosthecity', to use the term coined by cultural theorist Joanna Zylinska. The body is perceived as situated in a network of relations that criss-cross the envelope of the skin. Rather than being conceived as 'molar', the body is a 'body-in-process', a series of co-dependent additions and replacements (Blackman, 2008: 117; Zylinska 2005: 123, 132).

These two trends are both legitimate, of course, and have also made a major contribution to research into the body generally, and the prosthesis specifically. Nevertheless, often – all too often – it seems that the transition from the prosthesis to the 'prosthesis' has been made without due caution. Apparently, we seem to forget that a prosthesis is sometimes just a prosthesis. Because of the 'sexiness' of the 'prosthesis' metaphor, if we continue with Sobchack, we forget that the prosthesis originates in something that is lacking, in loss, even in a catastrophe.

I believe that the historical-phenomenological approach that I propose here, exposing the prosthesis as it manifests itself, will enable us to return to the concreteness of the prosthesis phenomenon, including its various manifestations (the prosthesis as prosthesis; the prosthesis as arm and leg; as brush and writing instrument; as cultural icon and more). Furthermore, this will also reveal the prosthesis as a paradigm, but this time out of its specific historical context. It is my contention that the prosthesis can definitely act as a paradigm, but as a historian I would not wish to impose contemporary paradigms or theories on this history. In the best case, this would be an anachronism. Instead, I shall try as far as possible to read the prosthetic phenomenon in the period in question on the basis of the prosthetic paradigms as they appeared in the period in question, first and foremost against the background of the catastrophe of the First World War.

The Prosthesis and the First World War – From Aesthetics to Function

The dramatic appearance of the prosthesis in Germany in the middle of the second decade of the 20th century was first and foremost the upshot of the catastrophic physical injuries suffered by its soldiers and civilians during the war. 'Bodily injuries as a mass phenomenon,' as an amputee wrote in 1919, 'or rather injuries that appear en masse – this is the new thing that this war has brought about' (Kügelgen, 1919: 53). The injuries were indeed unprecedented. A report submitted in 1922 by the Chief of the Army Medical Service, Otto von Schjerning, gave the figure of 4,211,469 injured men. According to Schjerning, army doctors treated some 19 million cases of injury, including a high level of injuries which disfigured external appearance, with the following breakdown: 24.7 percent combat wounds, 13.4 percent dermatological disease, 6.8 percent orthopedic disease (Whalen, 1982: 40, 66–7, 72–3). In the course of the war, according to one of the estimates, limbs were amputated from some 80,000 German soldiers. In all, 24,083 soldiers lost one or both of their upper limbs, while 54,953 lost one or both of their lower extremities (Fineman, 1999: 88). Psychiatrist Alfred Hoche put into words the war's enormous cruelty when he wrote that it 'repeatedly performed the terrible experiment of separating the four extremities from the body' (1919: 11).

The prosthesis was a major, not to say crucial, element in the German rehabilitation project. It was one of the constituents of the new, wide-ranging arrangements that operated in post-war Germany, with the goal not only of providing the war's injured with financial compensation, but also, and primarily, of rehabilitating them both physically and vocationally, and integrating them in society as productive citizens (Cohen, 2001).

Germany was not prepared for the massive physical injuries to its soldiers and civilians. This was a fact stressed by numerous experts from all the areas involved in making prostheses: technicians, engineers, doctors and others. The prosthesis had been on offer a long time prior to the First World War, and yet both during and after the war there was insufficient infrastructure to deal with vast numbers of amputees and the sharp rise in demand for prosthetics. From the very beginning of the war, the Germans had to cope with major problems in the process of prosthesis manufacturing, including slow production rates, poor product quality, an absence of standards, and a shortage of specialists and experts from the areas of medicine, engineering and elsewhere (Borchardt et al., 1919). Most of the artificial limbs made during the period between the Franco-Prussian war (1870–1) and the First World War were largely aesthetic prostheses, which were designed to help the amputees during their leisure hours as a substitute for the missing limb. The standard aesthetic prosthesis was handmade, and generally speaking was made of wood and covered with felt. Celluloid nails tried to give a natural appearance. During the First World War years and the 1920s, the aesthetic prosthesis started to become a target of criticism by experts from a variety of areas who supported the industrial rationalization movement. Although it was considered 'humanitarian', it had no practical significance other than limiting the amputee's feeling of inferiority. Increasingly, the aesthetic prosthesis came to be viewed as the complete antithesis of the functional – either the prosthesis was aesthetic, i.e. it was inherently attractive and made the body more appealing, but was weak and not useful, or it was functional, i.e. inherently ugly and made the body ugly, but was more usable. As viewed by contemporary experts, the former was considered a foreign body in the human body (Ach, 1920: 13; Bauer, 1916: 1; Kempf, 1930: 136; Leymann, 1919: 737; Price, 1998: 16–28). I will return to a discussion of this last point later.

The catastrophe of the First World War thus served as the source of the dominant status now given to the practical value of the prosthesis. It is interesting to note that the shift from an aesthetic to a functional view was to be found in other areas of life during this period as well. Thus, for example, advertising industry artists lost their pre-eminent position as designers to professionals who had been trained in a variety of other disciplines, such as economics and psychology. The demand for an 'aesthetic' advertisement, in other words, now gave way to the functional imperative of its effectiveness (Reinhardt, 1993: 24–168). In architecture, too, the emergence of the Bauhaus was testimony to the abandonment of an older aesthetic style in favor of a functionalist vision.

The First World War, which affected an unprecedented number of able-bodied Germans, shifted the emphasis from the production of aesthetic artificial limbs to usable prosthetics to which various accessories and devices could be attached, such as: rings, drills, hammers, screwdrivers and others. Prior to the war, neither the amputees themselves nor society expected them to return to a normal way of life, to functioning fully at home and at work. Because of the massive injuries to soldiers, this view lost its relevance (Fineman, 1999: 103–7; Perry, 2002: 80–96). The functional imperative now had to outweigh the aesthetic imperative. The decisive importance of prosthetics in the post-war period was also reflected in a wave of patent registrations for improved, more sophisticated prostheses (see, for example, 'Die Dr. Kröger-Prothese', 1921: 133–4; Klossek, 1922: 13; 'Patentschrift Nr. 365908', 1925 [1922]).

One of the major landmarks in the history of German prosthetics can be dated to 1 February 1916, with the establishment of the Artificial Limb Testing Station, on the initiative of the Association of German Engineers. The 'Station's' declared goal was to improve both the quality and the use of prostheses and the concomitant accessories, against the background of the new challenge posed by the war. Henceforth, what was called for were not only more user-friendly and simply designed prosthetics and aids, but also ones which were more durable, lighter, more easily adapted, which could be fitted quickly, mass-produced at low cost, using modular designs on the basis of replacement parts, making it possible to make unlimited use of the device in order to tackle specific requirements of everyday life. During 1916, additional branches of the 'Station' were opened in Danzig, Düsseldorf, Gleiwitz and Hamburg (Bauer, 1916: 8; Hartmann, 1919: 18–57; Price, 1998: 125–64).

A day after the establishment of the 'Station', on 2 February, a permanent exhibition opened at the AEG Hygiene Museum in Berlin under the title 'Replacement Limbs and Work Aids for the War Wounded, Accident Victims and Disabled'. The exhibition displayed models of all the prosthetics and work aids available on the market so as to compare them, evaluate their effectiveness and allow practical conclusions to be aired in public. In 1916 a special department on the history of the prosthesis was established at Dresden's Hygiene Museum (*Führer der Sonderausstellung*, 1916: 7–8; Hartmann, 1919: 18–57; Price, 1998: 127–34; Roth, 1990: 48).

The state also took part in the prosthetic rehabilitation project in a variety of ways. This was even reflected in small details. The state funded the issuing to amputee soldiers of four residual-limb socks, or up to eight for double amputees ('Stumpfstrümpfe auf Kosten des Reichs', 1922: 2). It was the state which issued prosthesis wearers who received a pension from it with lubricating oil to lubricate the metal parts of prostheses, amounting to around 100 grams a year per prosthesis ('Schmieröl für die Träger künstlicher Glieder', 1920: 67). If an amputee lost his prosthesis, or alternatively if the latter became unusable, the state provided a replacement. This was not done if the loss of or damage to the prosthesis occurred as a result of incorrect use, malice or serious neglect, or alternatively if the prosthesis was insured privately, for example under home fire or burglary coverage ('Ersatz für in Verlust geratene Kunstglieder usw.', 1920: 150).

The primary aspiration of prosthesis manufacturers was to create a substitute for the organic limb that would enable the amputee to continue to function normally in his everyday life, and above all to regain his ability to work (Dreyer, 1917: 329). This aim dictated the stages in the process, right from its beginning, i.e. from the moment that a decision was taken to amputate the limb. Wilhelm Röpke, a prosthesis specialist, argued that surgeons were more inclined to amputate during wartime than during peacetime because of the harsh conditions. Nevertheless, he contended, even during wartime, when performing his amputation the surgeon must bear in mind the prosthesis which will be fitted subsequently, since amputation's ultimate goal is to produce a stump with functional ability (Röpke, 1917: 220). The approach involved a complete way of thinking about amputees, from the moment of amputation up to the fitting of the prosthesis. For instance, a long period must not be allowed to lapse between the amputation and the fitting of the prosthesis, because energy was needed in order to get used to the latter. In all individuals there is an instinct to reject the foreign body. Hence a man will tend to get used to the absence of his limb very quickly, and will also tend to forget how to perform simple actions, such as grasping, holding, feeding himself, and so on, which will generally be performed for him by others. In contrast, if the amputee receives the prosthesis soon after the amputation of the limb, he can retain part of this energy and use it for the purpose of successfully coping with the prosthesis (Cohn, 1917: 130–1).

The two primary means available to amputees on their road to rehabilitation and returning to normal working life were the various aids which helped them in their various activities (such as brushes, eating utensils, etc.), and prostheses. One of the worst problems in the post-war field of the various aids and devices for amputees was the absence of standards. This fact made their use very difficult, and concomitantly made the process of manufacturing them more expensive. Prosthesis wearers could only use these devices if their technical characteristics were suitable for them, for example, if the connectors were suitable for prosthetics. The solution to all these problems was to make the manufacturing process uniform, on the basis of a single standard. Such a standard would not only enable each amputee to use any device that he wanted to, but would also open up to him the entire employment market. In addition, once a uniform standard was set for manufacturing the various components, it would also be possible to produce them on a production line and hence to cut costs. The most important and sensitive places where such standardization was required included the thread which enabled individual parts to be connected and added to the prosthesis; the connecting unit by means of which the arm was affixed to the dressing; the connecting screw for the straps used for highly flexible connections between different straps and other parts of the dressing; and the belt and strap buckles. The first standard for manufacturing these components was drawn up in 1916 by the Artificial Limb Testing Station (Leymann, 1919: 742).

Many of the aids and appliances available to the amputee made his everyday life easier and made him a functioning person. German amputees who had been wounded in the war had available to them a large number of aids and appliances from a range of areas: aids for looking after and grooming the body (different brushes); special items of apparel (shoes with patented buttons, a ready-made collar, a flat wallet which opened by pulling); eating utensils (a pocket knife which opened easily, a stable egg cup); writing implements (a device for holding a quill, a pen that could be held in the mouth), and a whole slew of

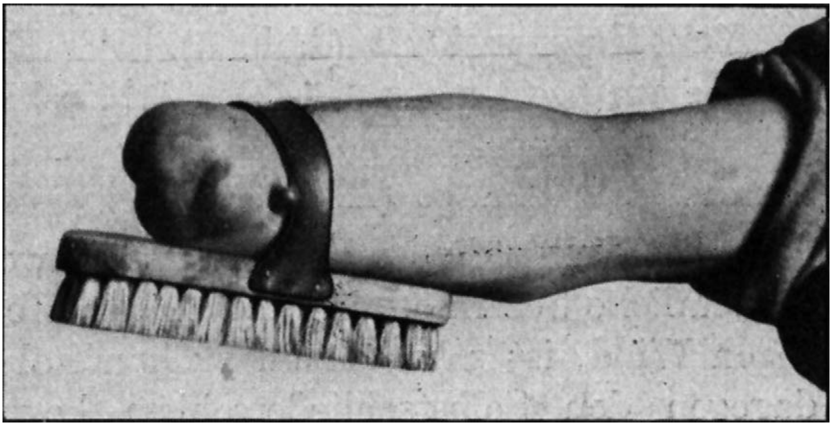


Figure 1 Washing brushes with a Sauerbruch pin
Source: Borchardt et al. (1919: 883, Figure 3).

devices for other areas (a device for card games, a device for holding a telephone handset, a carrier for a basket, a bicycle for one-legged riders) (von Künßberg, 1919: 881–96).

But more than anything else, the prosthesis itself – not the range of aids and devices – was designed to give the amputee the ability to function and work. As was only natural, prosthesis manufacturers concentrated on what were the most important parts for work purposes, first and foremost the limbs. In their attempts to highlight the importance of the hand, experts even relied upon Immanuel Kant, who argued that 'the hand makes the human being, the rational animal, able to handle all things; it is his outer brain!' (Schlesinger, 1919: 321). In Kant's terms, the characteristics of the hand were universality and neutrality. It was not supposed to have problems performing any special task, and hence in practice was capable of performing all tasks. 'It is the tool of tools, without itself being a tool' (Schlesinger, 1919: 321). The hand could guide a horse, build a house, write a book, wield a sword. The hand was 'nature's wonderful masterpiece' (Bauer, 1916: 5). But this very multi-purposeness made it very vulnerable, and hence it needed additional tools in order to achieve its purpose. Prosthetics, in the view of one prosthesis manufacturer, should be produced according to every worker's special needs. An amputee who used his arm in the home setting would need a 'usable arm' with 'versatile' types of grip and a 'good' appearance for 'light and medium-to-hard' types of work. A farmer, in contrast, would need a 'very powerful, fixed, simple working arm' with 'simple' types of grip and an 'indifferent' appearance for a 'heavy' type of labor (Schlesinger, 1919: 323).

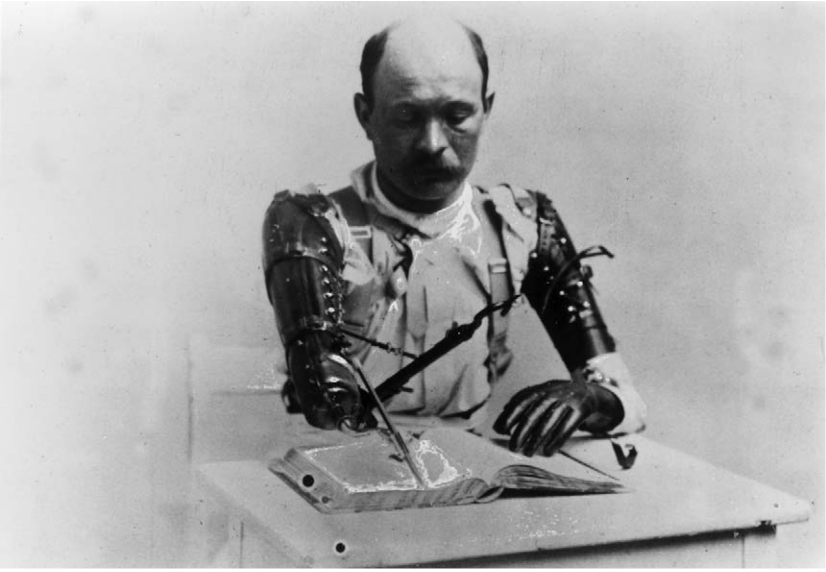


Figure 2 Man who has lost both arms writing
Source: Ullstein bild.

One of the pioneers in the area of applied prosthetics was Ferdinand Sauerbruch, whose name was given to the revolutionary hand prosthesis which could be moved by its wearer. The first hand prosthesis of this kind was made in 1835, but it and many others produced pre-war failed to meet the new challenges – quality mass production – posed by the First World War. What was unique about Sauerbruch's prosthesis was that in the course of its planning and manufacture, attention was paid not only to the technical characteristics of the prosthesis itself, but also to the stump and muscles which henceforth would be considered an integral part of the prosthesis. Surgically speaking, Sauerbruch managed to produce 'pressure bumps', power points which protruded from the muscle of the residual limb and could be used as a source for moving the artificial arm. These surgical interventions were called 'kinetic operations'. In them the remaining muscles were shaped such that later the prosthesis could be fitted to them by means of straps, so that it could be operated more effectively (Kempf, 1930: 137; Sauerbruch, 1919: 234–6). It is noteworthy in this context that, according to one claim, good prostheses were also supposed to stimulate dormant abilities in the stump itself (Dreyer, 1917: 330). Another prosthesis from this period was the Kresser artificial arm, which according to an account by one of its users was the 'first hand with sensation', since 'the amputee does not have to rely on the hand's mechanics: with his residual stump there is a precise sensation of whether and how he is holding an object. Depending on his wishes and needs, he can hold firmly or less firmly' (Klossek, 1922: 13).

Efforts focused primarily on adapting the prosthesis to the amputee's body, as well as restoring his ability to work. This was known as 'work therapy' (Böhm, 1919: 1027). Engineers and doctors proposed a range of diverse principles and methods for achieving this goal: occupational consultancy services not only for vocational guidance, but primarily in order to awaken the desire to work; placing the stress on not neglecting the remaining living organic body part so as not to lose that as well; creating a mixed working environment comprising both healthy and disabled people; integrating prosthesis wearers in work settings on the basis of Taylorist principles, and more (Bauer, 1916; Beckmann, 1919: 995–1011; Böhm, 1919: 1025–37). These methods were applied to soldiers while the war was still being fought. On 1 March 1915 a special course opened for left-handed men whose hands had been amputated. The course trained its participants in 'stenography and typewriting'. It was held at the Paulinenhilfe Orthopedic Clinic in Stuttgart (Sippel, 1916: 23). A soldier who had all four extremities amputated managed by means of four artificial limbs to earn a living as a master turner (Bauer, 1916: 11).

The functional prostheses were intended to help the German amputee not only at work, but also in his everyday life. Dr Max Cohn, a senior physician at Berlin's Moabit Hospital, lost his left arm at the beginning of the war. He was one of the first Germans to be fitted with a Carnes arm prosthesis, which was developed in the United States in 1908–9 and imported into Europe just before the outbreak of the First World War. What was unique about the Carnes arm was that it made it possible to bend and flex the fingers and the palm joints to three positions, to rotate the forearm and to bend the elbow. This also made possible the grasping and holding movements which are so crucial to people's routine activities. Cohn's most important discussion focused on the possibilities opened up to him by this prosthesis. Cohn both explained and illustrated how activities which were apparently impossible for an amputee could be performed: to put documents into a wallet, and retrieve them; to count coins; to strike a match; to use a billiard cue; to hold and play cards. This prosthesis also made it possible to perform the different kinds of jobs done by laborers, civil servants, mechanics, farmers and others. Cohn explained the different types of activities, and presented the 'dos' and 'don'ts' needed to achieve optimal results.

Prosthesis manufacturers used all the materials available to them in order to produce the most effective prosthesis which would give its wearer optimum abilities. Materials used for the body of the prosthesis, its skeleton and its padding included both the traditional and the new: wood, leather, vulcan fiber, horn,

Figure 3 Taking a flat object (bill) from the table
Source: Cohn (1917: 57/Figure 8).

sheet aluminum, Roburalmin, celluloid, steel, brass, hemp, rubber and others. The use of these materials was intended to give the prosthesis the strength and flexibility qualities characteristic of the original organic body part (Bingler, 1919: 724–35). Notwithstanding the technical improvements and materials used in the prosthesis manufacturing process, wearers had to look after their prosthesis and maintain it. For example, they had to be careful not to get it wet if at all possible. If it did get wet, for example in the rain, it had to be dried. Prosthesis wearers had to be meticulous about cleaning their artificial limbs thoroughly and at set intervals, using special tools and cleaning materials ('Abgabe von Reinigungsmitteln', 1920: 127; Paal, 1920: 86–7).

'Giving the Prosthesis a Soul' – The Psychologization of the Prosthesis

The success of the functional prosthesis was not only the result of its technical features, but also and primarily of its adaptation to the amputee's body and to this physical, mental and emotional ability to use it properly. Hence the process of manufacturing the prosthesis involved not only engineers and doctors, but also psychologists, psychiatrists and experts from related fields (Marbe, 1927: 5–6). They all shared the hypothesis that it was not sufficient to produce a prosthesis which was suitable in engineering and medical terms, but that it was also possible and indeed desirable to integrate it into the person's mental and psychological processes so as to achieve functional completeness. The primary aspiration was to give the amputee as vital a sense as possible of the new foreign body. These researchers proposed new theories on the subject and performed a range of experiments in order to test them.

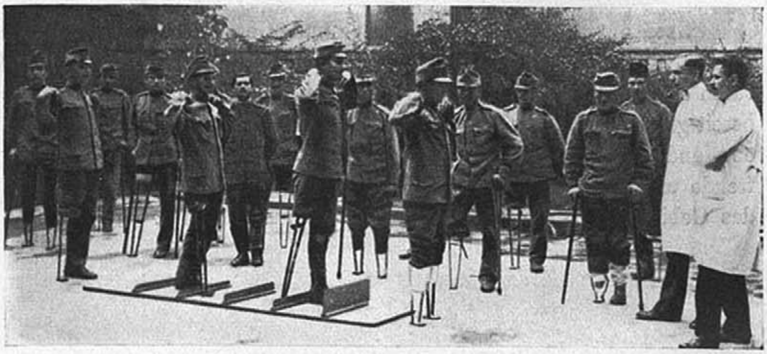
Psychiatrist David Katz contended that as a result of the war and the resultant large number of amputees, psychology should be given an important role in the prosthesis manufacturing and design process, as well as in the process of adapting the prosthesis to the amputee. His basic assumption was that the production of a quality prosthesis was not enough: it had to be designed in such a way as to serve the disabled person in the most functional fashion. This, then, required the psychologization of the prosthesis manufacturing process. This had to start with studying the relationship between physical motorics and the senses. The artificial limb had to be designed accordingly. According to one of the statistics presented by Katz, only 13 percent of prosthesis wearers who used the artificial device at work continued to wear it out of work hours also. The main reason for this was that they simply did not feel it. Consequently, what was needed, in Katz' opinion, was to make the transition from this experience of dulled senses to a more advanced stage of 'giving the prosthesis a soul'. As Katz put it, the prosthesis must not be a 'foreign body' in a living body, and hence psychologists had to consider the question of how the amputee could be made to feel the prosthesis. One of the technical possibilities was to connect taut leather straps from the prosthesis to a living organic area so that each of its movements would be felt by the nerves (Katz, 1921: 1–118).

However, Katz was more interested in the psychology of the senses. The psychological mechanism that constituted the basis for prosthesis construction was known to everybody, he argued. Everyone was aware from his personal experience that working with a variety of tools, and even a feeling of clothes and other objects with which he came into contact, 'leads to an expansion of the area of sensation of our body-ego that is controlled by us' (Katz, 1921: 7). What is this like? A blind man who uses a long white cane in order to feel his way in the dark, or any person who senses the ground beneath his feet through the soles of his shoes. According to Katz (1921: 7), there is no basic difference between a healthy person with functioning senses who is in constant touch with the world and a prosthesis wearer.

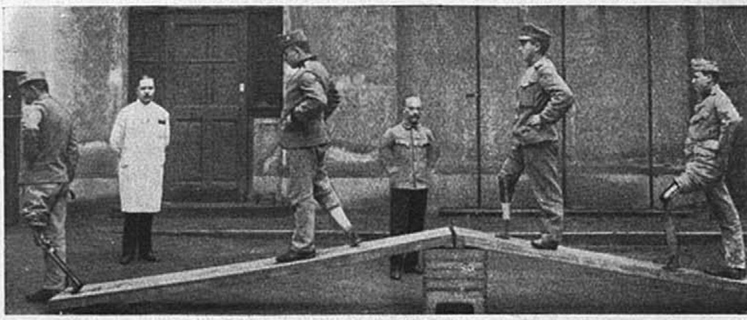
Psychology should take advantage of the fact that prosthesis wearers can imagine the feeling of the amputated body part because this image can help them in using the prosthesis. Katz opted to ignore the classical distinction between 'hallucinations', which are not based on stimulus of the senses, and 'illusions', which are based on such stimuli, because ultimately both have the same effect. In both instances the disabled person feels the body part. In his research, Katz investigated 102 hand amputees who reported on a variety of sensations. Additional evidence of the importance of hallucination and illusion in the psychology of amputees is to be found in the fact that, in many cases, hand amputees tried to perform an action using the amputated body part. For example, they would try to use the imaginary part to grasp an object. These phenomena occurred mainly immediately after getting up in the morning, and sometimes they would recur many years after the amputation. Over 50 percent of respondents reported that the amputated body part appeared in their dreams: 'In my dream I didn't have the feeling that my hand was missing . . . . After my arm was amputated I once dreamed that I managed to catch a mosquito with both hands' (Katz, 1921: 52–3). A number of factors influenced the amputee's ability to continue to experience the imaginary body part, including the time that elapsed from the time of the injury to the actual amputation; the time that elapsed between the amputation and the fitting of the prosthesis; the kind of body part that was amputated; the treatments received in hospital; the exercises performed by the amputee, and more.

Despite the technical, engineering, medical, psychological and psychiatric achievements, many contemporary experts have agreed that, without the amputee's will to regain full functioning, even the best prosthesis will do no good. 'The will is the best prosthesis', is how Hans Würtz, an orthopedist, put it in 1923 (quoted in Fineman, 1999: 90). An echo of these insights can also be found in the accounts of amputees themselves. The common denominator in many of these was the assumption that complete recovery depended first and foremost on the desire to overcome the disability and the amputated part. Despite the objective limitations, there was no reason for them not to go on trips and excursions, not to play sports or not to work (Fehr, 1927: 46–8; Struif, 1927: 99–100). The *Nachrichtendienst des Selbsthilfebundes der Körperbehinderten* published a monthly collection of aphorisms on these subjects written by amputees: 'Anyone who cannot mentally overcome his disability will suffer from it every hour anew . . . . What we disabled need first and foremost is confidence in ourselves' ('Gedanken und Aphorismen eines Krüppels', 1927a: 84; 'Gedanken und Aphorismen eines Krüppels', 1927b: 96).

Carl von Kügelgen, who lost his arm before the war when he was just 16, wrote an autobiographical book, drawing on his experience and describing his life. The book was called *Not a Disabled – A Victor*! *Thoughts and Experiences*



Gehübungen mit Hindernissen.



Gehübungen auf der schiefen Ebene.

Sporttherapeutische Uebungen: Schwimmen von Arm- und Beinamputierten.

Figure 4 Walking and sports therapeutic exercises

Source: Alsberg (1917: 103/Figures 15, 16, 17).

of a One-armed Man (1919). In its six chapters he described his path in life as a man with one arm. In the sixth and last chapter, entitled 'Overcoming', he described his 'victory' over the injury (overcoming the sense of inferiority, 'The victory over one's own self'). Apart from a description of his personal story, von Kügelgen also included in his book advice for amputees, words of encouragement and, above all, an optimistic, unambiguous and crystal clear message about the ability to overcome the defect and prevail. In his introduction to the book he wrote that the world war had brought about a new situation, with a dramatic growth in the numbers of the disabled. In light of this new situation, he wanted to share his personal experience and make his own modest contribution to the general rehabilitation effort. In conclusion he wrote:

> Having once lost my arm, I would not – out of my conscious, free will – have it any other way, for what appeared to be a loss which would make me weaker has actually made me richer and stronger, has made me into what I am. I want my destiny, I love my destiny, I am my destiny. (Kügelgen, 1919: 68)

Treating the Soul through the Body, and Vice Versa – The Psychoanalytic Context

On the face of it, these appear to be two completely different disciplines. Prosthetics involves the body; psychoanalysis the mind and the psyche. And yet, in the current context close ties can be shown between the two. Both prosthetics and psychoanalysis underwent processes of legitimization and popularization during and after the war, as the result of their success in treating injured soldiers. They both also played a central role in the German rehabilitation project in the post-war period: the former in rehabilitating the German body, and the latter in rehabilitating the mind and the psyche. The two disciplines, each in its own way, tackled the physical and mental catastrophe and trauma respectively. Both of them – perhaps more than any other field – grappled with the phenomenon of 'loss'.

While it is true that psychoanalysis focused on the mind and the psyche of those undergoing treatment, to the same extent it also tackled genuine physical symptoms, such as shaking, twitches and paralysis. Thus I find psychoanalysis treating and curing not only the mind and the psyche, but also the body. Like prostheses, the body's shaking or twisted parts, and especially its paralyzed parts, had to be re-integrated into the organic body. They needed to be revitalized. In this sense, I identify in contemporary psychoanalysis not only an important context for the discussion of contemporary prosthetics, but also a fellow discipline.

Here is an example of one case. The case is taken from the clinic of Ernst Simmel, one of the most prominent psychoanalysts of the period, who in 1920 helped set up the Berlin Poliklinik, Germany's first psychoanalytic outpatient service to provide psychoanalytic treatment for nervous disorders. The neurosis, according to Simmel, is an expression of the channeling of the 'psychological' to the 'physical', creating a kind of self-defense mechanism for the mind. The eruption of the neurosis, the symptom of the illness, is therefore also the beginning of the cure. Simmel argued that through analytical hypnosis the physical symptoms could be shown to be seeking to tell the person, in their unspoken fashion, about the mental disturbance from which he is suffering. The internal conflict between the conscious and the unconscious shattered the internal link between them, and hence required an indirect route which would ultimately lead to the external, physical path. The goal was to restore harmony between all the personality components. After identification of the physical symptoms, the only way to achieve such a situation was through psychoanalysis.

Simmel treated the symptom of an arm which, following a bullet wound, felt as if it had gone to sleep and became paralyzed. In medical tradition, such a physical injury was considered to involve only the nerves. In contrast, Simmel argued that after the arm had healed, the unconscious also demanded its share. All the conscious 'knows' is: 'I cannot move the arm.' That is to say, on a conscious level, there was no reason to fear that this constituted anything more than a physical impairment of the nervous system. However, during analytical hypnosis the soldier revealed, through his unconscious, a completely different picture: 'In the excitement of the fighting, my senses swooned. When the shot came, the impact of the bullets was so great that my arm was torn backwards, and my immediate thought was that my arm had been torn off' (Simmel, 1993 [1919]: 26). We see that Simmel, unlike the traditional psychiatrists and neurologists, therefore did not identify the source of the neurotic symptoms in an 'accident', nor did he interpret them as an expression of weak will, character or personality. It was the war as such, according to Simmel, and the frozen and fixed expressions of a terror which could not be expressed, which gave rise to the neurotic symptoms. In other words, it was the traumatic experience of the war which brought about the symptoms. Only through analytical hypnosis, which enabled the unconscious to be expressed through language, could 'the severed arm' be consciously reintegrated into the physical body. Only in this way could the organic symptom also be eliminated. As we learn from this case, psychoanalysis heals not only the soldier's mind, but his body as well. Moreover, in fact this is a therapeutic process similar to that which characterized the process of prostheticization of the German body. In both instances, we are talking of the re-integration of a body part into the organic body: in the prosthetic case, of the re-integration of an artificial part; in the psychoanalytical case, of a part which had lost the organic connection to the body.

The ability to treat the mind and soul through the means of the body (prosthesis), and to treat the body by means of the mind and soul (psychoanalysis), together with the growing popularity of both of these disciplines, points to the First World War as having been a decisive moment in the abandonment of that Cartesian dualism between body and mind according to which, as Tom Slevin has observed, 'the body acted as both the mind's container and boundary'. This dualism had been at the core of 'the traditional Western conception of a "self" that resides within a bodily core' (Slevin, 2008: 45). But during the First World War, and particularly as a result of the catastrophic damage caused by it to the body, but also because of the operative connection that existed between the soldier and various killing technologies such as the machine gun, the 'body' began to be perceived as an 'embodied body'. This 'embodied body' posed a significant challenge, not just to the dichotomy between the 'organic' and the 'artificial', but also to a range of dichotomies between 'body', 'mind' and 'soul'. The following sections will explore the ramifications this development had for the appearance of the 'prosthetic man', as well as for the normative preference for the prosthesis over the organic limb.

The Prosthesis as Cultural Icon

There is no doubt that after the war the prosthesis became an integral part of the German physical phenomenon. It appeared not only as a tangible body part in amputees' bodies, but also 'starred' in the contemporary imagination: in literature, in paintings, in sculpture and even in movies (Mackenzie, 1999). In Brecht, the prosthesis enjoyed an honorable status from the very beginning of *The Threepenny Opera* (1979 [1928]). In Act One, when Peachum wishes to illustrate man's terrible tendency – to stop feeling when he so desires – he says that when a man sees another man standing on the corner with a stump for an arm, the first time he may be shocked enough to give him tenpence, but the second time it will only be fivepence, and if he sees him a third time he'll hand him over to the police without batting an eyelid (Brecht, 1979 [1928]: 5). Immediately after this, when he tries to describe the 'five basic types of misery, those most likely to touch the human heart', the first is: 'Victim of vehicular progress. The merry paraplegic, always cheerful – *He acts it out* – always carefree, emphasized by arm-stump' (Brecht, 1979 [1928]: 8). In Joseph Roth's *Hotel Savoy*, the man who sets up the first movie house in the city whose name we do not know is a director called Erich Köhler, and ironically he has a glass eye (Roth, 1980 [1924]: 95).

Many creative artists fantasized about the head-to-toe prosthetic image that was perceived as the new 'organic' body, which was more than the sum of its parts (Biro, 1994: 71–110; Mackenzie, 1999). It was the body which managed to survive where the previous organic body had failed. Especially on the Great War's killing fields. The new prosthetic body was perceived as *the* modern body, because of its ability to deal with the challenges of the modern era – all-out war, degeneration, the urban space replete with stimuli and dangers such as road accidents (Mackenzie, 1999, vol. 1: 62–86). This body – as identified by Ernst Jünger – is a product of the intersection between the organic body and the modern machine, between the body of the soldier in the world war and modern weapons, between the modern civilian and the various technological means at his disposal, such as the car and the airplane (Jünger, 1931: 11–16). In his 1934 essay 'On Pain', Jünger even went so far as to argue not only that man is the first and to date the only living creature to use artificial limbs, but that through the 'use of artificial sensory organs a higher degree of typical agreement is achieved' (1960 [1934]: 188). The first image of a complete prosthetic body, from top to toe, to appear on the cinema screen was that of the robot in *Metropolis* (1927), directed by Fritz Lang (Mackenzie, 1999, vol. 1: 48–55).

Being and Prosthesis – Being a Prosthesis

In the 1920s, the psychiatrist Paul Schilder developed a psychological argument which placed at its center the 'body-image' through which man perceives and experiences his body. He coined the term 'body-image' itself in 1933 (Schilder, 1933: 367–76). The 'body-image', Schilder argued, does not only comprise the physical and organic body itself, but can also shrink or expand:

> It can give parts to the outside world and can take other parts into itself. When we take a stick in our hands and touch an object with the end of it, we feel a sensation at the end of the stick. The stick, has, in fact, become a part of the body-image. (1950 [1935]: 202)

Schilder argued that everything with which the body comes into contact – a walking stick, a hat, clothes and so on – is charged with narcissistic libido which makes them part of the body-image. When I draw on the skin, tattoo it, make up the face, wear clothes, these are not 'external' additions, but components that become an organic part of my body. According to Schilder, in the 'prosthetic era' following the world war, the human body should no longer be perceived as the organic and authentic component that is separate from and contrasts with the ostensibly artificial cosmetic and prosthetic additions which merely convey a false impression. By focusing on the body-image, Schilder can divest himself of the narrow – physiological and organic – view of the human body. By using the psychology of the body-image, it becomes possible to see and understand how an apparently organic body part, such as a nose, can be viewed as a foreign body, and conversely how a nose which has been operated on and is seemingly artificial, can become an organic part of the face. Prior to this, in 1923, Schilder discussed the prosthesis in precisely the same context. Moreover, the prosthesis was one of the sources of inspiration for the development of the term 'body-image' (Schilder, 1950 [1935]: 29).

The same prosthetic *Weltanschauung* can also be identified in Martin Heidegger's *Being and Time*. According to Heidegger, the activity which is closest to man in everyday life is not cognitional or mental activity, as claimed by prevailing Western philosophy, but rather the practical form which uses tools present in his surroundings. The role of the hammer is to knock in a nail. The role of the nail is to hold a picture. In this sense, Heidegger argues, the tools that I use are not simply what they are in and of themselves, because there is something more 'in their essence'. The hammer is not only a 'hammer', but is also the nail that it hits. Without the nail, the hammer is a mere object. I cannot understand what the hammer is without its 'intentionality' vis-a-vis the nail. I cannot understand the nail without its 'intentionality' vis-a-vis the wall and so on. Hence the tool can 'be' what it is only in the framework of what Heidegger calls 'a totality of useful things' (*ein Zeugganzes*) (1996 [1927]: 62–71).

Tools, Heidegger argues, are not defined according to criteria of physical attributes, but initially and for the most part according to how they are used. Heidegger defines the tool that we use as ready-to-hand or handy (*zuhanden*). And when we use tools, they tend to become transparent. When I use a hammer, I am not aware of it or do not feel it, since it becomes, practically speaking, a part of me. Let us consider the example proposed by David Katz. When we ask a blind man to describe the long white cane used by the visually disabled, in most cases he will describe it according to its physical characteristics: its thickness, length, weight and so on. In this situation, where the blind person is not using the white cane, the latter stops being *zuhanden*, and deteriorates to a condition which Heidegger defines as present-at-hand or objectively present (*vorhanden*). As such, the white cane is a physical object of no significance, a mere object. However, when the same blind person uses the white cane, it will stop being an object with a defined thickness, length and weight, and will become transparent from the blind person's point of view. When using the cane, the blind person is no longer holding a white cane. The cane as a physical object disappears, since now the blind person 'is touching things', 'is walking freely', 'is crossing the road'. The white cane, in other words, has become the blind person's 'hands', 'legs' and 'eyes', respectively.

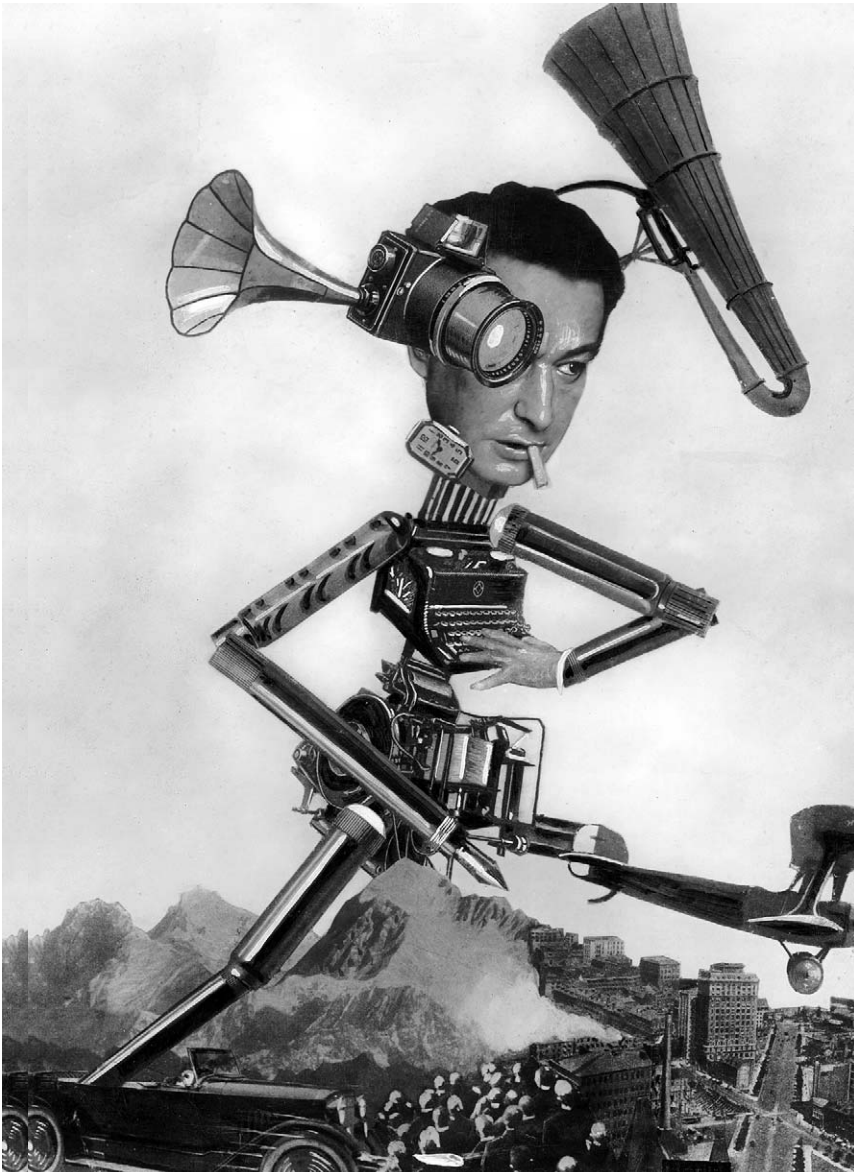


Figure 5 Ready-to-hand/Egon Erwin Kisch, photomontage by Otto Umbehr, 1926
Source: SV-Bilderdienst.

True, Heidegger does not refer explicitly to prostheses. However, in the ‘anthropology’ of the everyday that he proposes, in which man ‘encounters’ tools as *zuhanden* and not *vorhanden*, he provides an expression of that prosthetic

Weltanschauung that perceives tools as part of the human being. This does not, of course, apply solely to the disabled who use tools or artifacts. In fact, all individuals 'encounter' every tool as *zuhanden*. What Heidegger actually does is to propose a radical prosthetic position, since from his point of view every tool can act as a substitute, a prosthesis, for any part. The 'hammer' is the laborer's hands. The 'loudspeaker' and the 'radio' are the listener's ears. The 'camera' is the observer's eyes. The 'airplane' is the passenger's legs. In 'On Pain', Jünger contended that in the modern period: 'Technology is our uniform' (1960 [1934]: 180).

It must be remembered that Heidegger does not use such terms as 'man', 'human being', 'individual', 'body' and so on, because these entities are already defined and realized, and as such the possibility of anything in the world mattering to them is closed to them. (In the preceding discussion, I have used the above terms for convenience's sake only.) In our context, 'man', 'human being' or 'body' are completely unable to encounter anything. The 'human being', as a defined entity, is closed within itself and hence is incapable of going outside or beyond itself to a situation of encounter. In the stead of all these, Heidegger places *Dasein*, or being-there. This is neither defined nor realized, and as such is always already open to the world, i.e. is in some relationship or other to tools and objects. *Dasein* as an undefined and unrealized entity is always already beyond itself, and hence always already present in a situation of encounter. There is a good reason why only *Dasein* – being-there – really exists. And for our purposes, it may be said that the 'physical'/'corporeal' ability of *Dasein* is in fact a prosthetic ability, i.e. an ability to significantly encounter instruments as *zuhanden*. Through these encounters *Dasein* reveals and invents both 'its body' and 'itself' anew, over and over again.

It comes as no surprise, therefore, that in reaction to the phenomenon of the prostheticization of the German body following the world war, some argued that the prosthesis is not merely a reasonable and suitable substitute for the organic part, but also improves the body: its appearance, its performance, its capacities, the 'human' potential contained in it. Without a doubt, the transition that occurred both during and then after the First World War from an aesthetic view of the prosthesis to an emphasis on its functional value raised the very possibility of thinking about the 'artificial' prosthesis as preferable to the 'organic' original. '*I believe*', wrote one of the experts: '*that accurate knowledge of the present-day performance of artificial limbs on the lower extremities can influence the decision in many a case of doubt as to whether or not to amputate*' (Dreyer, 1917: 337, emphasis in the original). Although this testimony specifically referred to the Austrian army, Stefan Zweig recalled as well that physicians fell into line and praised their prostheses so effusively: 'that one was almost tempted

Figure 6 'Amputees walk happily and freely with the completely innovative, extraordinarily light, comfortable, attractive and genuine *original O.I. Light Leg* made of light metal or light-weight wood.' Advertisement for the 'original Lot prosthesis'
Source: *Zentralblatt für Kriegsbeschädigte und Kriegerhinterbliebene* 12: 152 (1929).

to have a leg amputated so that the healthy member might be replaced by an artificial one' (1964 [1943]: 230). In *Civilization and its Discontents* (1930), Freud wrote:

> With every tool man is perfecting his own organs, whether motor or sensory, or is removing the limits to their functioning.... Man has, as it were, become a kind of prosthetic God. When he puts on all his auxiliary organs he is truly magnificent. (Freud, 1962 [1930]: 90–1, 92–3)

Dadaist Raoul Hausmann called for the introduction of a 'prosthesis economy', because, so he argued, this was cheaper and more efficient. What could be done with a prosthesis that could not be done with an organic part, Hausmann asked, answering: boiling water could be poured on it without being scalded; it could take a bullet without pain; it could work for 25 hours on the trot because it never got tired. The expenses of the prosthesis wearer were also less, because a man who had lost part of his body consumes less energy, in other words less food, in other words he could be paid less (Hausmann, 1920: 669–70).

An Aesthetic Prosthesis After All

The phenomenality of the prosthesis was reflected, as I have shown, not only in the attempt to restore the amputee's capacity to work and function, but also in a complete human appearance. Accordingly, following the world war and the increase in the demand for functional prostheses, the production of aesthetic prostheses declined. However, they did not lose their place in Weimar society. The cosmetic hand was known by a whole range of names: the 'beauty hand', 'decorative arm' or 'Sunday arm' (Ach, 1920: 28; Bauer, 1916: 12–13; Dreyer, 1917: 330; Kempf, 1930: 136–7). Every upper-limb amputee of course wanted a prosthesis which would enable him to function, but at the same time he did not give up the desire for it to 'restore his normal form and free him from the pitying eyes which rest on him' (Nicolai, 1919: 683). With the aim of explaining the importance of the aesthetic prosthesis for the upper-limb amputee, one of the experts argued that, just as every disabled person who had lost his eye was unable to overcome his injury until an artificial eye was implanted in the empty socket, so every upper-limb amputee was unable to overcome his disability, both physically and mentally, until he could appear in public armed with an aesthetic prosthesis (Bauer, 1916: 13).

The cosmetic, 'decorative' arm was intended to cover up the aesthetic blemishes, hiding them and restoring his psychological equilibrium to the upper-limb amputee. In contrast to the 'work arm', where practically no attention was paid during production to form, instead focusing almost exclusively on its work-tool aspects, in the case of the 'decorative arm' the manufacturers adapted it to the form of the body. This adaptation was carried out at the very least in such a way that 'through the clothing, the missing limb will be feigned in form and movement' (Nicolai, 1919: 684).

The position of the aesthetic prosthesis can and should be understood not only relative to the needs and desires of those who wish to re-acquire a whole, human appearance, but also in the wider context of a consumer society which developed and became established in post-war Germany (Peukert, 1991 [1987]: 79–190; Sherayko, 1996). Weimar consumer culture is relevant to the prosthetic phenomenon on several levels: in the prosthesis's emergence as a popular consumer good; in its appearance as a subject of advertising campaigns; and, most of all, in the case of the aesthetic prosthesis, in the normative emphasis placed by consumer society on the values of appearance. The consumer context of the prosthesis enables us to explain and understand not only Weimar society as a massive producer and consumer of prostheses, as a natural result of the First World War, but also how the prosthesis itself became a consumer article. In this period the prosthesis became a product worth advertising in order to meet the great demand that had been generated.

Furthermore, the consumer ethos laid the stress, all the more forcefully, on the values of product visibility and appearance (Ward, 2001). In this context, the importance of the aesthetic prosthesis should be seen in generating visibility and showcasing the whole, aesthetic body. In the Weimar 'culture of advertising', in which individuals' clothing, way of speaking and moving – indeed, their entire appearance – were viewed as 'advertising' or 'promoting' themselves (Leipheimer, 1921: 511), there is no doubt that the aesthetic prosthesis was one of the most important and decisive components of self-advertising. This fact acquired even more importance against the background of the economic crises that plagued Weimar Germany, particularly in the final years of the growing unemployment which had millions competing for jobs. The trend towards visibility and showcasing the body, and the ethos of the body beautiful in Weimar Germany, was intensified by the new fashions, 'sports mania', the star and celebrity culture, and many other social and cultural phenomena whose presentation here is precluded by space constraints (Jensen, 2003; Kessemeier, 2000).

I cannot highlight the critical place of the aesthetic prosthesis during the period in question without acknowledging the ever greater importance of cosmetics generally and plastic cosmetics in particular. The latter became critical during the First World War in light of the sheer quantity of external injuries to soldiers' bodies. Plastic surgery, according to one of the estimates, was required by some 60,000 soldiers during and following the world war (Levy-Lenz, 1952: 130). After the war, plastic cosmetics started to invade civilian society in a dramatic fashion, particularly in the form of nose surgery, face lifts, breast enlargements and reductions, and more (Gilman, 1999: 169–77). During this period, plastic cosmetics to a large extent changed from 'luxury medicine' (*Luxusmedizin*) to 'medicine for the people'

(*Volksmedizin*) (Würz, 1929: 1–3). The aesthetic prosthesis was just one cosmetic component among many for rehabilitating and reshaping the damaged German body. Here too we must bear in mind the economic crises which formed the backdrop to these developments. Both the aesthetic prosthesis and cosmetic surgery were considered factors that could increase an individual's chances of obtaining a job (Gumpert, 1983 [1939]: 203–14; Thomas, 1995: 277–8, n192).

It should be remembered that plastic cosmetics included, among other things, those refined aesthetic prosthetics which focused not on the limbs but on other body parts, in particular the face. Major progress was made in the area of prostheses for soft body parts. For example, up to the world war, these had been made of rigid material such as rubber, porcelain or paper pulp. They were remarkably unsuccessful. The new prostheses – for example, for ears and noses – were made of softer, more flexible materials, such as gelatine and glycerine, to which coloring was added. The prostheses were stuck to the head using some type of resin solution (Rost, 1917: 453, 477–8). The fact that having plastic surgery was a perfectly normal thing, which was taken for granted, led in certain cases to patients being instructed by their doctors as to how to make prostheses themselves, such as an ear prosthesis from elastin. In this case, this was a three-part stone and plaster mold into which the patient poured the material, making a new ear for himself on a weekly basis. The materials could be obtained from all pharmacies. The patients would immerse this prosthesis in hot water 'and remold the fitting surfaces to the contours of the defect site' (Conroy, 1983: 700; Pohl, 1931: 367–72).

A good aesthetic prosthesis is one whose wearer does not stand out in public because of it and does not attract attention (Ach, 1920: 27). This non-standing-out and absence of attention are the foundation for his very ability to appear in public. This phenomenality is attained by means of an aesthetically designed prosthesis, and above all due to its ability to move normally. 'Neurotic amputees', then, would generally prefer not to have an aesthetic prosthesis because this would only increase the emphasis on its being an artificial part, because of their inability to control their movements, and all the more so in the case of appearing in public, which generally added to their embarrassment and agitation (Ach, 1920: 27–8).

The aesthetic prosthesis was viewed as primarily suiting most those whose work was not physical. It was mainly intended for those in positions where self-appearance was paramount – officers, clerks, teachers, sales personnel and so on. Until the United States entered the war, these people mainly used the American Carnes prosthesis, among other reasons so that they could move the fingers, using a gut string which was subject to wear and weather conditions, by the back and forth movement of a shoulder harness. However, after the war Carnes was considered an enemy prosthesis. Only then was it replaced by its German counterpart, the Lange prosthesis, named after its German inventor (Bauer, 1916: 12–13; Perry, 2002: 93–6).

The principles governing the manufacture of the aesthetic prosthesis were different from those of its functional counterpart. The decisive question was what an outside beholder would see when he looked at it. A person's body build is normally characterized by symmetry, and hence when an aesthetic prosthesis of an arm is made, it must be a symmetrical reflection of its counterpart and be characterized by similar freedom of movement. 'The eye of the beholder is so sharpened by practice', wrote one of the experts, 'that it will discover every deviation from the normal form. Hence the greatest possible attention must be paid not only to shape, but also to the flexibility and mobility of the natural arm' (Nicolai, 1919: 684). This was the starting point for all the other principles for manufacturing this artificial arm, such as the need for it to weigh the same as the healthy arm in order to prevent the body from tipping to one side. In order to ensure that the prosthesis looked like an organic arm, manufacturers would, for example, design the hand such that the fingers would be slightly bent, with the two closest to the body more bent. In some instances, the prosthesis was even moved in sync with the organic arm by means of straps. The aesthetic prosthesis was lighter than the functional one. Generally speaking, these prostheses weighed between 600 and 1200 grams (Kempf, 1930: 136). Additional accessories, such as gloves, completed the 'authentic' look of the aesthetic prosthesis ('Unentgeltliche Lieferung von Handschuhen', 1920: 35).

While we are on the subject of gloves, it should be noted that prosthesis wearers had a particular problem, since they were unable to put a glove on their organic hand as this would have had to be done with their prosthetic hand. A right-handed prosthesis wearer, therefore, was unable to wear a glove on his left hand. Gloves were always sold in pairs, and so prosthesis wearers had to pay for a pair of gloves when normally they could only wear one glove. One of the original solutions to this problem was the getting together of prosthesis wearers to exchange unused gloves. At these meetings, the wearers of right-hand prostheses gave left-hand prosthesis wearers their left-hand gloves, and in return received their right-hand gloves ('Der Handschuh des Armamputierten', 1918: 4).

The aesthetic prosthesis was not intended for aesthetic purposes alone, and played additional functions. In the case of amputated fingers, prosthetic fingers could be fitted in their stead which looked like the real thing but could also be used for writing. In the case of an amputated arm, the aesthetic prosthesis could be used for grasping, carrying or holding a variety of implements. An aesthetic prosthesis could also be used for carrying light objects or to generate the counter-pressure needed to use a fork or any other small implement (Nicolai, 1919: 707–8).

In aesthetic prostheses, like their functional counterparts, the materials from which they were made were of central, not to say crucial importance. In this case, they were supposed to give the prosthesis the requisite appearance in order to imitate the form and movement of the original organic limb. As a result, rubber straps were used to produce a 'carcass' for aesthetic upper- and lower-limb prosthetics. The appearance of the artificial limb was produced not only because of the look of the materials, but also because of their physical qualities. The rubber, for example, made it possible to reconstruct the movement of stretching and pulling as well as of raising and lowering (Bingler, 1919: 734; Kempf, 1930: 136).

Most of the experts in aesthetic prosthetics paid scant attention to usability and functionality. Nevertheless, the aestheticization of the prosthesis had considerable practical and functional ramifications. By virtue of the fact that it gave the amputee the look or appearance of a normal, healthy person, the aesthetic prosthesis enabled him to go back to living a more or less normal life. This appearance increased his self-confidence, and enabled him to rejoin a social circle. This we learn also from the accounts of amputees describing society's attitude to them, which changed positively and out of all recognition (Beil, 1998: 150–6; Cohn, 1917: 131; Dreyer, 1917: 330).

From Prostheis to 'Foreign Body'?

In conclusion, I wish to indicate a possible research direction with regard to the relationship between the process of the prostheticization of the German body and Nazi body politics. Generally speaking, historians tend to ascribe the Nazi body politics to a reaction to the physical catastrophe of the First World War. The traditional argument is that Nazi body politics was merely an attempt to rehabilitate the German body by radical means, nurturing and improving 'fit' bodies on the one hand, while neglecting, eliminating and exterminating 'unfit' bodies on the other. The prosthesis also 'stars' in the setting of the Nazi attack on the various processes of degeneration – including the injuries inflicted on the German body in the war. Thus, for example, the Nazis came out against the humanistic 'counter-selection' (*Gegenauslese*) policy, which counteracted what they viewed as the 'natural law of selection'. The former, in their eyes, maintained and even fostered the amputee who received artificial limbs (Brohmer, 1935: 99).

Subsequent to our discussion here I seek to highlight another phenomenon. Nazi discourse about the body placed in its center not only the individual body, but also the 'people's body' (*Volkskörper).* The body of the German people, according to the Nazis, also suffered from physical catastrophes in the wake of the war, the establishment of the Weimar Republic, as well as modern processes of degradation in the shape of such things as urbanization and interracial mixing. The Nazis viewed the body of the German people as sick and injured, a body whose blood had been contaminated and so on. Two of the most traumatic events that affected the body of the German people, according to the Nazis, were amputation of limbs and its penetration by 'foreign bodies' (*Fremdkörper*) (Neumann, 2009: 149–81). I would argue that the dominance of the experience of amputation of limbs (alongside the body's complete and utter disintegration) and of the penetration of the body of the German people by 'foreign bodies' can and must also be understood against the background of the processes of prostheticization which I have described above.

However, the 'syntax' of Nazi discourse about the body of the German people was far more flexible. When the Nazis speak of a 'limb' that has been amputated from the body of the people, or alternately about a 'foreign body' which must be 'amputated', the reference is not only to body parts but to actual bodies. In the framework of Nazi body politics, the Jew, for example – but not only the Jew – became a 'foreign body' which must be 'amputated' or excised from the body of the German people. And in the same breath, an ethnic German living outside the borders of the Third Reich would be referred to as a 'living body' (*Leib*) in this body politics – a living element that must be re-attached to the body of the German people (Neumann, 2009: 149–81). In other words, I would suggest identifying Nazi body politics as a particular version of the process of prosthetic rehabilitation which began in Germany with the world war – a prosthetic process which now also related to entire bodies as limbs and body parts. In the spirit of the approach I have proposed in this article, I will argue that the Nazis' rise to power was, *inter alia*, a transition from one physical and prosthetic phenomenology to another physical and prosthetic phenomenology based on the self-manifestation of a body of a different order of magnitude and quality. And yet this brings us to a different topic, one which must be researched in its own right: research which could perhaps be entitled: 'Being a "foreign body" in Nazi Germany'.

Conclusion

In this article I have sought to discuss the prosthetic phenomenon during the First World War and Weimar Germany. As opposed to the contemporary trends with their inflationary use of the 'prosthesis', sometimes even hypothesizing 'prostheticization' as a paradigm, I have sought to return the debate about the prosthesis to its historical concreteness. I have described the phenomenology of the prosthesis, in other words the way in which the prosthesis manifested itself, in the period in question in three senses: first, in the statistical sense, in the form of a dramatic growth in the number of prostheses; second, in the visual sense, in the form of a dramatic growth in the visibility of the prosthesis. And, third, basing myself on the Heideggerian perception of the 'phenomenon', I have sought to reveal an additional aspect of the phenomenology of the prosthesis during the period. It is my contention, against the background of the major catastrophe of the First World War and the frequent crises that afflicted Weimar Germany, but also in the light of additional contexts – technological, economic, cultural – that the prosthesis was increasingly perceived as a phenomenon, i.e. as something which appeared in a wide range of ways – as prosthesis, as tool (hammer, writing instrument), as an organic limb (hand, leg) and even as a paradigm (man as 'prosthetic God', man as '*Dasein*').

In the light of what has become a prevalent trend in recent years – moving from the prosthesis to the 'prosthesis' – I have sought in this article, if I may be forgiven for using figurative language, to put the prosthesis back in its place.

Notes

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1. For a different expression of the prosthetic question, as well as scholarship regarding prostheses, see Jain (1999: 31–54).

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