

# Recovering a “Disfigured”<sup>1</sup> Face: Cosmesis in the Everyday Use of Facial Prostheses

Gili Yaron, Guy Widdershoven, and Jenny Slatman

**Abstract:** Prosthetic devices that replace an absent body part are generally considered to be either cosmetic or functional. Functional prostheses aim to restore (some degree of) lost physical functioning. Cosmetic prostheses attempt to restore a “normal” appearance to bodies that lack (one or more) limbs by emulating the absent body part’s looks. In this article, we investigate how cosmetic prostheses establish a normal appearance by drawing on the stories of the users of a specific type of artificial limb: the facial prosthesis. Given that prostheses are first and foremost devices worn upon the body, such an analysis requires an understanding of the ways in which bodies and technologies interact. We thus interpret users’ stories by critically engaging with the work of disability researcher and Actor-Network theorist Myriam Winance, as well as with the postphenomenological scholarship of Don Ihde and Peter-Paul Verbeek. Using this framework, we explore users’ attempts to achieve a proper fit between their faces and their prostheses, the technological transparency such a fit enables, and the ways in which transparency mediates users’ everyday exchanges with others. We conclude that a normal appearance, when it is achieved by means of prosthetics, enables the device’s user to navigate a precarious social environment as they encounter and interact with others in public.

**Key words:** facial prosthesis, technological mediation, transparency, disfigurement, passing

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**Gili Yaron**, Department of Health, Ethics and Society, Faculty of Health, Medicine and Life Sciences, Maastricht University, PO Box 616, 6200 MD Maastricht, the Netherlands; tel: +31433884515; g.yaron@maastrichtuniversity.nl.

**Guy Widdershoven**, Department of Medical Humanities, Amsterdam Public Health Research Institute, VU University Medical Centre, De Boelelaan 1089a, 1081 HV Amsterdam, the Netherlands; g.widdershoven@vumc.nl.

**Jenny Slatman**, Department of Culture Studies, School of Humanities, Tilburg University, PO Box 90153, 5000 LE Tilburg, the Netherlands; J.Slatman@uvt.nl.

## 1. Introduction

Prosthetic devices that replace an absent body part are generally considered to be either functional or cosmetic. According to the function-cosmesis divide, functional prostheses aim to restore (some degree of) physical functioning to the user—her ability to walk or grasp, for instance. Cosmetic prostheses, by contrast, set out to emulate the missing body part's looks. Cosmesis, in this regard, denotes the attempt to restore a “normal” appearance to bodies that lack (one or more) limbs. As anthropologist and prosthesis user Steven Kurzman writes: “In a social context, artificial limbs are ideally invisible in order to facilitate mimicry of nonamputees and passing as able-bodied” (2001, 379). Despite the term's associations with make-up and aesthetic surgery, cosmesis in prostheses is anything but frivolous or trivial—indeed, the importance of cosmesis for users of artificial limbs suggests the function-cosmesis division may be problematic.

But how do cosmetic prostheses establish a normal appearance? Remarkably, the majority of studies on prostheses do not engage with this question: Authors routinely mention cosmesis as one of the possible features associated with artificial limbs, and, like Kurzman, often link cosmesis to users' ability to “pass as normal,” but rarely offer in-depth explorations of this issue. In this paper, we aim to further investigate cosmesis by examining a specific type of artificial limb: the facial prosthesis. Such artificial noses and eye sockets are clearly cosmetic par excellence—they do not compensate for lost abilities or senses, but (attempt to) restore normal facial appearance. As such, these devices form a perfect case study for our investigation. Even though they are worn merely for the sake of appearing “normal,” it is quite clear that these artifacts are nevertheless indispensable for the people who use them. These are people who lack an ear, eye socket, or nose due to trauma or disease, and wear a facial prosthesis to cover and conceal this absence.

In order to gain insight into how cosmetic prostheses establish normal appearance, we draw on the stories of users of facial prostheses. Given that these prostheses are first and foremost devices worn on the body, an adequate analysis of their cosmetic role requires an understanding of the ways in which bodies and technologies are bound up together. We thus interpret users' stories against the background of the work of disability researcher and Actor-Network theorist Myriam Winance, as well as of postphenomenology—a field of inquiry within the philosophy of technology focusing on the embodied aspects of human-technology relations.<sup>2</sup> Informed by these sources, our analysis will shed light on the meaning of “cosmesis” and “passing” in the use of facial prostheses, while ultimately also complementing the postphenomenological theoretical framework.

## **2. On Technological Mediation: Conceptualizing the Use of “Intimate” Technologies**

Facial prostheses can be considered a kind of “intimate technology.” Intimate technologies are artifacts that are worn in close proximity to the body, are embedded within it, or involve the personal life of their users. Within Science and Technology Studies (STS), researchers such as Annemarie Mol (Mol 2002; Mol and Law 2004), Nelly Oudshoorn (Oudshoorn 2015), and Jeanette Pols and Ingunn Moser (Pols and Moser 2009) have recently all applied an empirical approach to their explorations of the co-constitution of such technologies and the embodied, situated selves that use them. Myriam Winance’s work on the ways by which this co-constitution is achieved in the case of wheelchairs resonates with this scholarship. As Winance shows, these devices and the bodies of the people who use them must be adjusted to each other during a process of ongoing, laborious negotiation, which involve not only the chair and its user, but also family members, partners, and friends, various experts and knowledges, the users’ environment, and so forth (Winance 2006, 2010). As they share the adjustment work, both the wheelchair and its user can be said to take each other’s shape.

Understanding how the usage of devices impact upon users’ lives, however, also requires an understanding of the ways technologies shape human experience. In his well-known work, Don Ihde has explored several ways by which human beings relate to technologies (Ihde 1990, 2002). Among other things, Ihde’s postphenomenological analyses show how technological artifacts become incorporated into the body of their users. Technologies, when embodied in this way, extend their user’s sensorial capacities: their sense of sight, hearing, etc. In this so-called “embodiment relation,” the technology can be said to mediate between user and world. Ihde’s ideas have been taken up by many who seek to understand the relationship between humans, technologies, and the world. His concepts of technological “extension” and “mediation,” in particular, have proven influential in debates within contemporary philosophy of technology. To name but a few recent contributors using these notions: Susanne Lettow addresses the body’s absence in the philosophy of technology (Lettow 2011), Kirk Besmer analyzes the ways in which Cochlear implants are incorporated by their users (Besmer 2012), and Lucie Dalibert discusses the difference between incorporation and embodiment by examining a neuromodulation technology called “spinal cord stimulation” (Dalibert 2016). Indeed, the fact that the postphenomenological framework has proven fruitful for current analyses of the role of technological devices in human life, is

evidenced by the recent publication of an edited volume dedicated to new scholarship on human-technology relations (Rosenberger and Verbeek 2015).

At present, one of the most notable proponents of postphenomenology is Peter-Paul Verbeek, who has expanded the scope of Ihde's work in order to examine how artifacts mediate not only the perception of (aspects of) the world, but also praxis or action. Having done so, Verbeek draws out the implications of technological mediation for technology design (Verbeek 2005). In his latest work, this author uses this distinction between perception and action in order to expound upon the inherently ethical dimensions of such mediation: using the concept of "nudge" introduced by Richard Thaler and Cass Sunstein (Thaler and Sunstein 2009), Verbeek explores the ways in which technologies subtly influence users' behavior in ways deemed desirable by designers (Verbeek 2006, 2011). Yoni Van Den Eede has also built upon Ihde's work in a recent paper on the "in-between" nature of technologies (Van Den Eede 2011). Specifically, Van Den Eede has argued that Ihde's notion of transparency in the use of an instrument—the fact that objects "disappear" from a user's experience as she focuses on the task at hand—is an inherent feature of technology as such.

The conceptual tools provided by Winance, Ihde, Verbeek, and Van Den Eede prove instrumental for our goal of making sense of how artificial facial limbs establish normal appearance. Before we apply their insights to the topic of cosmesis in facial prostheses, we first set the stage by providing some background information about these devices, as well as a short exposition on the empirical study upon which this article is based. We then proceed by analyzing respondents' stories about their experiences with facial prostheses, focusing on their attempts to achieve a proper fit between their faces and their prostheses. Next, we discuss the technological transparency such a fit enables. Finally, we investigate the ways in which transparency comes into play in users' everyday interactions with others. Our findings, as will become clear in the conclusion, resonate with the work of the scholars discussed above, but also challenge several common assumptions about the ways in which users and technologies interact.

### **3. The Facial Prosthesis**

Facial prostheses are silicone devices that are worn in order to replace an absent facial limb or area.<sup>3</sup> In most cases, the original facial limb was amputated in the course of the medical treatment of Head and Neck cancer (HNC) or due to an accident. Facial prostheses are designed to closely resemble the appearance of the missing facial part. Most commonly, these prostheses substitute for an absent

nose or “orbita” (the eye-socket, including a “shell” or glass eye, and perhaps an eyebrow as well). In some cases, so-called “complex prostheses” will replace a larger facial area, consisting of several facial limbs. Rarely, facial prostheses will replace (part of) the cheek. Facial prostheses are usually attached to the face by means of medicinal glue or magnets that adhere to metal pins implanted into the face. Facial prostheses are custom-made at specialized service facilities which operate within or in conjunction with hospitals and medical centers or centers for (special care) dentistry. When outfitting a prospective user with a facial prosthesis, prosthetists aim to achieve as close a fit as possible between the user’s face and the device. This means that the prosthesis’s attachment to the face is secure, that its color and texture match the user’s skin, that it is comfortable and that its shape resembles the replaced facial limbs. During intake at the service unit, a cast is made of the prospective user’s face in order to determine the shape of the amputated area. The prosthetist then models a prototype of the missing limb upon this cast. This prototype is used in order to make a mold—the “negative” used in the production of a series of facial prostheses. The prosthetist then mixes together silicone, colorants, and fibers (which mimic small capillaries in the facial skin) in order to approach the shade of the prospective user’s complexion, and presses this mixture into the mold. If the device is to be attached by means of magnets, metal pins are also inserted into the silicone. Next, the silicone mixture is baked in an oven. Once it is finished, the now firm prosthesis receives some final tweaking on the user’s face. After a period of usage of about three to six months, prostheses become worn-out: they become stiffer, discolored or frayed. Users will then receive a new prosthesis from the same mold. When the mold itself is worn out, the design process is repeated from the beginning.

#### **4. Participants, Recruitment and Analysis**

This article is based on a qualitative study of how people who lack a facial limb and use a facial prosthetic device experience and make sense of their altered appearance and their prostheses. After receiving ethical clearance for the study (file number NL35486.031.11), the first author interviewed twenty individuals who wear a facial prosthesis (eight women and twelve men) who were recruited through the Dutch service unit from which they receive their prostheses. In this group, six respondents make use of nose prostheses, ten carry orbita prostheses, three wear complex prostheses, and one uses a cheek prosthesis. Of the interviewees, nineteen have undergone the amputation of (a) facial limb(s) due to HNC and one had an accident that damaged his face.

The participants in our study were all interviewed at home or in another familiar setting by the first author, sometimes together with their partners. The interviews all lasted between forty-five and ninety minutes, and were tape recorded and then transcribed verbatim. Analyzing the interview texts, the first author performed a thematic analysis in order to understand how respondents experience and make sense of their faces and prostheses. In the process, she received feedback from the other authors. In addition to these interviews, the first author also performed observations in three different prosthetics clinics in both the Netherlands and Belgium, and talked with the prosthetists working in these clinics. These observations and conversations served to further our understanding of the rehabilitation trajectory on which the users of artificial facial limbs embark, and yielded insights into the nature of different types of prostheses, their design, manufacturing, and maintenance.

Leaving the clinic with a facial prosthesis does not so much mark the end to our participants' rehabilitation trajectory but rather its beginning: the prosthesis will start playing its role in the life of its user within the context of their ongoing projects and daily activities. It is in this context that the facial prosthesis appears as a cosmetic device. In order to understand how cosmesis establishes a normal appearance, it is thus necessary to explore how prostheses are put to use within these everyday settings. In the following sections, we explore this usage by presenting users' stories about their daily lives with their facial prostheses.

## **5. Achieving a Proper Fit**

By emulating the lost facial limbs it sets to replace, facial prostheses do not merely shield the amputated facial area from view. The gauze dressings, Band-aid, or eye-patch many users wear to bed or in the privacy of their own home would be more than adequate in this regard—and are more comfortable to boot. The people interviewed for this study nevertheless prefer to wear a facial prosthesis, because this device allows for a semblance of facial normality that is unavailable when using a bandage. Normal facial appearance, however, is no done deal, easily accomplished by the simple act of putting on the prosthesis. It is a hands-on, ongoing outcome that requires users to monitor, tinker with, and adjust to their prostheses in order to make sure the device fits their face properly. Gaining insight into how facial prostheses facilitate normal facial appearance, therefore, requires an understanding of how users attain a good fit. In this section, we make use of the work of Winance in order to explore what we call the “fitting practices” of the participants in our study.

## Cosmesis in the Everyday Use of Facial Prostheses

The different ways by which respondents accomplish a good fit between their artificial facial limb and face can be clustered into three groups: (a) fitting practices that target the prosthesis itself, (b) fitting practices that require the use of different props, or (c) fitting practices that involve adjustments to users' own face and body.<sup>4</sup> The story of Timothy,<sup>5</sup> a man who wears a prosthesis over the hollowed-out area of his left cheek, serves to illustrate how the prosthesis itself is targeted in users' efforts to facilitate a good fit:

[I] often touched my face with my left hand, just to feel whether it was still there . . . ; since we have been talking, I've probably done this [presses the prosthesis into place] twice already. . . . Because I'm afraid that it, now that I'm talking a lot, will somehow come off. (Timothy)

Touching the prosthesis regularly, for Timothy, serves to ascertain the device adequately hides the amputated area in his face—something he considers extremely important:

When I'm at a restaurant and I feel that it is [coming] loose . . . well I find it awful when that thing is just dangling there. That is terrible, I feel horribly self-conscious. (Timothy)

Timothy's monitoring finger forms a part of his efforts to avoid baring his scarred and dented cheek to others. Similarly, other respondents check their device's hold visually by repeatedly checking their mirror image. One respondent, for instance, uses a small mirror attached to a strap on the inside of his wrist for this purpose. Fitting practices that target the prosthesis itself ensure the wearer's facial difference is successfully hidden from view.

But a proper fit involves more than the prosthesis's secure hold on the face. A misaligned, gaping, or discolored device, although not actually revealing the amputated area underneath, will still refer to the "disfigurement" by betraying the prosthesis's artificiality. For this reason, many users also strive to make sure the device's fakeness does not "stand out." Their efforts include caring for and maintaining the prosthesis, which keeps it from deteriorating, but users also tinker in different ways with the device. One respondent, for instance, always makes small horizontal cuts along the lower corners of older nasal prostheses that have lost their suppleness. These cuts divide the stiff borders of the prosthesis into two flaps, somewhat resembling a fishtail, which are able to independently follow his facial movements when he speaks animatedly, laughs or eats. In this way, this man prevents the device from gaping at the sides. Such tinkering serves to conceal the

concealing device itself: it aims to make sure that the prosthesis does not give itself—and its wearer’s very need for cover—away.

The second cluster of fitting practices consists in the usage of different props that conceal the prosthesis’s artificiality and thereby help establish a good fit between the prosthesis and the face of the wearer. Some respondents, for instance, make use of thick-framed (sun)glasses in order to hide the edges of the device, where the difference between skin and silicone is most apparent. Others strive to realize a color match between the prosthesis and their skin tone, either by applying make up to their prosthesis, or by maintaining a constant skin shade throughout the seasons by using a sun lamp. As Leon, a participant carrying a nasal prosthesis, says:

I bought a sun lamp to retain the color of that nose. It’s quite important that I do that. [Otherwise] you’ll really get color differences, right. I always take the prosthesis in a shade slightly darker than my skin, because when summer arrives I’ll be sitting out here on the balcony, and, well, I get a tan very quickly . . . , meaning I would have to get another prosthesis. (Leon)

Fitting the prosthesis to the face, then, does not only involve the prosthesis itself, but also different objects that help wearers to make the device less noticeable.

A third way by which respondents set out to accomplish a good fit between their face and their prostheses is through adjustments they make to their own face and body. One woman, for instance, spoke of having her hair cut in a specific way in order to camouflage the borders of her orbita prosthesis. Several of the men interviewed mentioned growing beards for the same purpose. Leon’s story about his tan is another example of a bodily adjustment geared to ensuring a proper fit. Such adjustments, however, may also involve bodily postures and the body’s spatial positioning. One participant refrains from laughing or yawning too widely in order to keep her nasal prosthesis from coming off. Others minimize their blinking in order to maintain a semblance of symmetry between the artificial and organic eye<sup>6</sup>. A number of respondents also mention their embodied preference for specific lighting conditions. Timothy, for instance, prefers to walk in the shade when going out in public: when shadowed, his prosthesis will not stand out as much, nor will it appear more matted than his own slightly shiny skin.

Winance’s work on the use of wheelchairs is instructive for understanding the achievement of proper fit between the device and its user as a two-way undertaking: the artifact is adjusted to its user, but the user also has to adjust herself to the device. As Winance writes when describing the process of wheelchair tests, in



which patients receive a chair that fits their needs: “The actors [involved in the test] act on the materiality of the person and the chair in an attempt to make them suit together” (Winance 2010, 101). The human and the nonhuman in various fitting practices can thus be said to mutually constitute each other in the process of finding an optimal fit. They literally take on and make each other’s form. The user of the prosthesis is no longer the same person when wearing the prosthesis, nor is her body the same body. The prosthesis, in turn, receives its ultimate shape and meaning in and through users’ attempts to find a good fit with their face. Forms and meanings may vary, of course, as particular users and prostheses meet each other in particular situations. A nasal prosthesis, for instance, may be experienced and “practiced” differently, and it may have different effects in the context of a user’s private house than in a public location, such as a restaurant.

Some of the efforts towards ensuring a good fit will soon become ingrained, automatic habits. Consider in this regard Timothy’s tracing finger, for instance, or his tendency to walk in the shade. The habitual entrenchment of such familiar bodily routines, for postphenomenologist Robert Rosenberger, is an important characteristic of many human-technology relations (Rosenberger 2012, 2015). Adopting and elaborating on the phenomenological notion of “sedimentation” to describe the process leading to such entrenchment, he writes: “This term . . . refer[s] to the way that our past experiences build up (like sediment solidifying into rock) to provide a pre-set context of significance through which our experiences occur” (Rosenberger 2015, 127–28; see Rosenberger 2012 for a more detailed discussion of sedimentation). Sedimented bodily routines, in other words, form a “pre-conscious” or implicit structure of meaning through which human beings relate to the world. And in our technology saturated world, this relationship often involves the habitual use of everyday technological devices.

The automatic nature of such sedimented fitting practices means that respondents’ efforts to achieve a good fit are often no longer consciously experienced. Other fitting practices, however, cannot be “forgotten” in this way, because they require conscious attention and take up time and effort:

I used to find it troublesome, and I still find it troublesome. . . . I need to take it out every evening, clean it; I find it laborious. I have to put it in again in the morning; well, sometimes it goes well in just one try, but I may also have to press ten times before it [is] in place, because it has to fit perfectly against my ear. . . . Well, I’m always messing about with it, so I find it an inconvenient thing. (Timothy)

Not all prostheses require the same amount of fuss.<sup>7</sup> Still, the hassle that comes with the attempt to achieve a good fit is a recurrent theme in the lives of the participants in our study. In many cases, achieving a proper fit also requires a measure of planning and preparation, as well as access to a private area with a mirror and the necessary appliances (i.e., running water, the adhesive, the cleaning solution for removing dried out glue, a surface to put everything on). The very act of leaving the house can thus become something of a project, which keeps some wearers from running a quick errand or staying the night elsewhere. Indeed, Leon has ceased going on vacation due to his fear of the possibility of a prosthesis emergency. The fuss and hassle associated with some fitting practices, therefore, does not only result from users' attempts to find a good fit between their artificial facial limbs and their face and body; it also involves users altering their schedule, priorities, routines and (social) activities. Users adjust both their bodies *and* their life projects in order to achieve such a fit.

## **6. Technological Transparency**

The aim of the various fitting practices described above is to make the facial prosthesis look like an integral part of its user's face, rather than an artificial object placed upon that face. Understanding how artificial facial limbs facilitate normal facial appearance, however, requires more than an adequate grasp of the different ways by which users attain a proper fit: it also demands further insight into what such a fit enables. In this section, we use Ihde's theory of technological mediation in order to pursue this issue. As we show below, a good fit enables the prosthesis to become transparent and thereby "retreat" into the user's face. This, in turn, allows the device to simultaneously cover the amputation and recover the face.

Being directly confronted with a severely "disfigured" face can be tremendously disturbing for people unaccustomed to this sight. As soon as the cavity resulting from the amputation leaps into view, it will dominate the face and evoke a sense of disjointedness in the viewer, who cannot manage to make sense of what she sees. But the image the amputated face presents may be disturbing not only for others who gaze upon it, but also for the amputee. Describing the way his face looks after having undergone a nasal amputation, one respondent says:

Well, no, you don't have to put that on display; that is such a horrible. . . . For yourself, too, when you're standing in the bathroom in the morning, and well, you simply shouldn't think about it. If you do, then, uh, you just might start feeling sorry for yourself [chuckles]. (John)

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Dora, who wears a nasal prosthesis, describes a similar attitude towards her amputation as something that is best kept hidden:

My biggest fear is, that when I'm no longer on top of it all, later, that I would forget [to put] that thing [on] . . . [and] walk outside just like that all of a sudden. (Dora)

The amputated, “broken-up” face, in this sense, is quite literally *dis*-figured: it lacks the form and coherence of a face. In extreme cases, a face may look so distorted or even grotesque that it is no longer recognizable as a human face for an unsuspecting onlooker. This may lead not only to an inability to interpret the face as a face, but also to repulsion if not outright fear.<sup>8</sup> As David Le Breton writes in a recent paper on personal identity and facial transplantation: “the disfigured person recalls, with a force that comes solely from his presence, the imagery of the dismantled body that haunts many nightmares” (Le Breton 2015, 14).

By disrupting the face, the amputation in fact disturbs the effect of “faciality,” which, according to philosophers Gilles Deleuze and Felix Guattari, allows human beings to recognize faces and attribute them to (particular) individuals (Deleuze and Guattari 1988; Black 2011). Faciality occurs whenever a viewer encounters the “white wall/black hole system”: an even background that is interrupted by two (or more) foregrounded dots. Together, the white wall and the black holes conjure the illusion that there is “someone” within the whiteness, someone who is peeking outwards. This, then, is an illusion of subjectivity and personhood. As Daniel Black puts it: “the interaction of plane and hole produces [a visual] experience of self-contained interiority, of there being a unified someone ‘behind’ the face” (Black 2011, 6). This mechanism is at work not only whenever a viewer encounters a perforated white surface (e.g., the surface of the moon); it also presents itself in everyday face-to-face exchanges. Here, faciality ensures that one is able to see through and beyond the material facial features of one’s interlocutor. When perceiving another person’s face, that is, one does not perceive a fragmented collection of facial features and organs. Instead, one sees the person one is interacting with. It is this illusion that is disrupted by the amputation.

In replacing the lost facial limb, the well-fitting facial prosthesis recovers faciality: it re-establishes a viewer ability to “look through” the face and see the person “behind” it.<sup>9</sup> The device is then no longer seen as a separate object covering the face but retreats into it, thereby allowing for a semblance of facial completeness. As Winston, who uses an orbita prosthesis, explains:

[The prosthesis] was an entirely different sight than that bandage, right, now [my face] is really kind of entirely complete again. (Winston)

Asked to clarify what he means by ‘complete,’ his wife adds that, when looking at a face, “you expect two eyes.” The prosthesis does more than merely covering the amputation site, as a bandage or patch would do—it conceals the very need for cover. As a result, respondents’ appearance often no longer attracts others’ attention. As Laura, a woman wearing an orbita prosthesis indicates:

Yes, I can just tell that since I have gotten my prosthesis, that less people really stare or something. . . . Yes, really. I could tell instantly, immediately in that first week already. Yes, [it’s different] than when you’re wearing a Band-Aid. . . . especially out in the street or at the mall, with the glasses on, yes, people don’t notice it as much. (Laura)

When it successfully recovers the face in this way, the facial prosthesis returns a recognizable, legible human shape to the face: It “re-figures” the “disfigured.”

In order to understand how the prosthesis retreats into the face, we now turn to Ihde’s post-phenomenological analyses of how technologies extend the body. As indicated in the introduction, Ihde’s work explores different ways by which humans relate to technologies (Ihde 1990; Verbeek 2005, 2006). One such way is the embodiment relation: here, artifacts extend users’ sensorium and thereby mediate their access to the world. A telescope, for example, enables its user to see things that are far away by extending her visual capacities. As it mediates sense perception, the device itself retreats from its user’s focus, while the phenomena it reveals take center-stage. Thus, when a user adjusts the focus of her binoculars, she may alternate between seeing specks of dirt on the lens or seeing the bird she set out to spot. The lens itself, however, disappears from view. Indeed, as the device becomes incorporated into the user’s bodily experience, it becomes transparent. Van Den Eede (2011) elaborates on Ihde’s account of technological mediation by pointing out that transparency necessarily has its counterpart in opacity: as the device through which users perceive becomes transparent, the object perceived becomes very much present, or rather, opaque.

The framework of technological mediation provided by Ihde and Van Den Eede makes it possible to view the prosthesis’s retreat into the face as an instance of transparency. Thus, when wearer and prosthesis fit together properly, the complete(d) face—and the person “within”—is foregrounded (or opaque) while the device recedes to the background (or becomes transparent). This means that

the prosthesis extends the visual perception of the person looking at the wearer, rather than the wearer's own sense of sight. In this sense, both the wearer of the prosthesis and her observer can be said to embody the artificial facial limb. We will return to this point below. For now, it is sufficient to note that a well-fitting prosthesis becomes transparent, thereby facilitating a semblance of facial completeness and recovering its wearer's face.

## **7. The Prosthetic Mediation of (Inter)action**

Respondents' attempts to establish a good fit between their prosthesis and their face, as we argue above, is driven by their desire to achieve a normal appearance. Such a fit enables the device to become transparent, and thereby recover the face. But what do the users of prosthetic devices gain from such recovery? In this section, we explore how the prosthetic recovery of participants' face permits them to "pass as normal" in public spaces, and discuss what such passing entails.

As wearers of prosthetic legs imply, passing as normal means that they can avoid being marked by others as being an "odd-bod" (Murray 2009, 577; see also Murray 2004 and 2005 for an analysis of the personal significance of artificial limbs). Resonating with this account, many participants in our study indicate that their prostheses recover not only their face, but also their inconspicuousness. In fact, for some respondents the device retreats to such an extent that being marked as different in public is hardly ever an issue. As one man who wears a complex prosthesis that replaces his nose, left eye, and part of his forehead says:

I say, when I walk along at a brisk pace, then nobody sees it (Gabriel)

Thanks to both his well-fitting prosthesis and the fleeting nature of the street encounter between strangers, Gabriel manages to remain an anonymous "anybody" for passers-by, instead of being noticed as an unusual "somebody." This anonymity means that users of facial prostheses can evade the unwanted attention of others—the staring gazes, remarks, and questions that people with a visibly different appearance encounter in public and that make many of them feel uncomfortable and unwelcome (Garland-Thomson 2009). As Thelma, a participant who carries an orbita prosthesis says:

I can just go outside again, I can just cycle again. . . . I still get compliments like, 'gosh, you almost cannot tell . . . [the prosthesis] is so well-made' (Thelma)

Oliver, an interviewee who wears an orbital prosthesis, phrases this ability to not stand out in a crowd in terms of freedom:

[Wearing the prosthesis] gave me feeling of greater freedom, indeed . . . it's people's staring that makes you realize you're different than others (Oliver)

In (re)covering the face, the prosthesis thus enables its wearer to traverse and occupy public spaces which would otherwise prove inhospitable. *Passing as normal*, in short, allows the prosthesis wearer to *pass by* others unnoticed, which in turn enables her to *pass through* public spaces unhindered by unwanted attention. Passing thus allows its wearer access to the public domain, thereby facilitating inclusion in it.

By (re)covering the face, however, the facial prosthesis does more than just granting access to a public context characterized by transitory encounters: it also accomplishes (a larger measure of) ease in lengthier interactions. As established above, the confrontation with an atypical face, whether caused by the amputation itself or by a conspicuous cover, may be quite disturbing for an unwary onlooker. Indeed, it may also disturb people who are already familiar with the amputation site. Describing her discomfort when looking at her husband's uncovered face when he sleeps without his prosthesis, John's wife says:

Yes, I prefer it [when he leaves the prosthesis on at night] . . . [i]t's a very strange sight, really. . . . [A] big hole you're looking right into. The septum is no longer there, you just look all the way into the throat, you can actually see the uvula hanging there. (John's wife)

Being confronted with such a sight is not only unsettling; it can also hamper the onlooker's ability to enter into and maintain straightforward face-to-face exchanges with their visibly different conversational partner. By simultaneously drawing in and repelling the onlooker's gaze, a facial difference holds the onlooker's attention. This will disrupt the flow and ease that normally characterize "live" interactions, because the facial difference then disrupts the onlooker's ability to focus on the conversation and approach their interlocutor as a full-fledged partner in the interaction. Indeed, such "interaction uneasiness"<sup>10</sup> has been reported in other cases of facial difference, such as facial immobility due to Parkinson's Disease (Nijhof 2009, 2011).

It is this disruption that Kurzman alludes to when claiming that his leg prosthesis allows him to "be treated like a fully human being" (Kurzman 2001, 381). By returning the appearance of facial wholeness to its wearer, the properly fitting

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prosthesis keeps its user's conversational partner from becoming side-tracked by the unexpected image of the amputated or bandaged face.<sup>11</sup> Moreover: this also keeps the wearer herself from feeling awkward about her interlocutor's unease. By (re)covering the amputated face, then, the artificial limb enables both parties to the encounter to maintain (some measure of) interactional ease in face-to-face exchanges, thereby restoring the possibility of a social exchange. The prosthesis could thus be said to (re)cover not only its user's physical face, but also their public, social face.

As they recover their users' face, artificial facial limbs enable users to move anonymously through public spaces and facilitate interaction ease. This means that such devices mediate not only perception, but also action. Although Ihde refers to such mediation of praxis, it is Verbeek (2005, 2006) who provides a systematic analysis of how technologies mediate users' capacity to act. Doing so, Verbeek draws on Bruno Latour's Actor-Network Theory, which offers many examples of the ways in which technologies invite their users to behave in specific ways, and inhibit them from acting in other ways. Similarly, when it (re)covers the damaged face, the facial prosthesis invites others to—literally—disregard the wearer's facial difference, and thereby makes possible both unhindered access<sup>12</sup> to public areas and flowing face-to-face exchanges. Using Verbeek's terminology, the device mediates not only perception but also action. This mediation of (inter) action, however, takes place *by virtue of* the mediation of perception. One and the same technology, apparently, mediates on different levels simultaneously. In fact, one could argue that perception, action and interaction are all aspects of mediation which cannot be seen in isolation. After all, a pair of glasses, too, will mediate a user's sense of sight, which enables her to read an e-mail and keep in touch with her faraway friend.

But such mediation requires work, as Winance shows. Mediation is not the given, straightforward effect of putting a device to use. Rather, as the stories of our interviewees reveal, ensuring that the prosthesis appears as an integral part of the face and thereby becomes transparent is the result of ongoing efforts. On a more general note, many within STS have argued that technologies are never just functional, instrumental tools that fulfill human desires, assist differently abled or ill human beings, or replace human labor, but always require new forms of work and new skills to fulfill their promise. While Winance focuses primarily on the work experts put in in order to make a wheelchair optimally suit its user, the fitting practices we describe illuminate the continuation of this work beyond the institutional context of the prosthetist's clinic. The work involved in these fitting

practices is performed primarily by users themselves. It becomes a central part of users' lives, targeting not only the device and their own body, but also their life projects. Moreover: this work may serve to disable these users in different ways than their functional impairments or atypical appearance do, as it requires them to constantly monitor their prosthesis's fit, fuss with it, and adjust their priorities.

Both the mediation of perception and the invitation of action, however, are not restricted to the facial prosthesis's wearer. Essentially, these two types of mediation take place in a social setting: the relationship between user and viewer. Although it would go too far to say that both partners in the encounter use the technology, it is nevertheless clear that it is not only the wearer who makes use of this device's capacity to (re)cover the face. When the facial prosthesis is worn, it is the viewer's visual perception of the wearer's face that is mediated by the device, not the wearer's sense of sight. When wearers work to achieve a proper prosthetic fit through their various fitting practices, they approach their face from the "outside," as an image in the eyes of an external viewer. This, as Sartre calls it, is a modus of "being for the other" (Sartre 2013): a perspective on the self that incorporates the other's gaze. Fitting practices thus form the embodied, materialized internalization of the gaze of the other. For this reason, when an artificial facial limb facilitates "passing as normal" and interactional ease, it acts upon the relationship between user and passerby and user and interlocutor, respectively, affecting the way they interact. An artificial facial limb does not mediate between its wearer and (aspects) of the world, but between this wearer and others.<sup>13</sup> The wearer of the prosthesis does not gain access to physical reality by means of (scientific) instruments, as Ihde would have it. Nor is she Verbeek's actor in a practical world. Instead, the prosthesis's user is first and foremost a social creature who carries the device in order to—quite literally—face others. In the case of cosmetic prostheses, technology mediates between users in a principally *social* world, a world inhabited by people, both strange and familiar, whose interactions with and relationship to each other are tremendously affected by the usage of technologies.<sup>14</sup>

## **8. Conclusion**

In this paper, we have explored the meaning of cosmesis in the everyday use of facial prosthetic devices by drawing on interviews with users, as well as on different bodies of literature. The facial prosthesis, as we have shown, restores normal facial appearance to people with facial limbs absence by emulating the missing limb's look. This requires a proper fit between the device and its wearer's face. Using the work of Winance, we have discussed respondents' various fitting practices as



a continuous process of mutual adjustments between users and their prosthesis. When these practices succeed, the facial prosthesis not only covers its wearer's amputation, but also recovers her faciality. Drawing on Ihde's notion of technological mediation (or more precisely, the embodiment relation), we have then demonstrated how facial recovery hinges on the device's transparency. Finally, elaborating on Verbeek's work, we have shown that transparent facial prostheses mediate not only perception and action, as he indicates, but also social interaction. By helping its wearer to pass as normal, this device enables her inclusion in public spaces and participation in social exchanges. Revolving, as it does, around the navigation of precarious social environments, cosmesis serves a most important function in the everyday lives of users of prosthetic devices.

Ultimately, our findings serve to complement postphenomenology's traditional focus on the first-person experiences of the users of technological devices. By inquiring into the social role of facial prostheses, we illustrate how technologies affect the second-person perspective typical of relationships between subjects. These insights are relevant for theorists working in postphenomenology and STS, and merit further research into the role of "the other" in the use of technologies. Another important venue for further inquiry suggested by our work concerns the social repercussions of the interplay between disability, visible difference, and assistive technologies. In addition, our findings regarding the role of medical aids in the social lives of their disabled users are relevant for scholars in the sociology, philosophy, and psychology of health and illness. In a more practical vein, our work is also pertinent for health care professionals who are interested in the different roles assistive devices play in the lives of their users (see for a similar point in the context of prosthetics: Hoogsteyns and van der Horst 2013). Finally, scholars working in Disability Studies may gain from our analysis of "passing" as involving a set of material, embodied, and situated practices, which are accomplished rather than given.

In the end, however, one conclusion cannot be overlooked: the function-cosmesis binary is quite a problematic one. Functional prostheses, as Murray suggests, are not principally approached by users as a means to restore ability, but rather as aids that enable them to fulfill various social roles such as breadwinner or dancing partner (Murray 2009). And as our own work illustrates, cosmetic prostheses serve a similar purpose in allowing their users to encounter and interact with others in public spaces. Both function and cosmesis in prosthetics, it appears, revolve around users' ability to meaningfully relate to others, and cannot be understood in isolation from this manifestly social role.

## Notes

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1. In recent years, the term “disfigurement” is increasingly seen as inappropriate when describing the looks or condition of people who have an atypical appearance due to the derogative associations it evokes. In this paper, we prefer to use such non-offensive alternatives as “visible (facial) difference,” or “atypical face.” When we cannot avoid it, we use quotation marks to denote the problematic nature of the term “disfigurement.” Most often, however, we follow UK charity organization Changing Faces’ guidelines in referring to facial difference or to those with facial difference, by opting for neutral, descriptive phrases such as “facial limb absence/loss,” “amputation,” or “amputated (facial) area” (for more information, see <https://www.changingfaces.org.uk/about-us/press-media/media-guidelines>).

2. Although we use both Winance’s ANT-approach and postphenomenology in accounting for the experiences of people with facial limb absence, the two theoretical endeavors do not always sit well together. In particular, there is an ongoing and important debate between ANT and postphenomenology regarding the status of first-person experiences. Whereas scholars in postphenomenology roughly follow classical phenomenology in departing from and analyzing first-person subjective experiences, ANT researchers prescribe a radically symmetrical approach to subjects and objects, which precludes attributing experiences any special status. For more elaborate discussions of this point, see, for instance, (Ihde 2002; Lettow 2011).

3. Facial prostheses are referred to differently throughout the literature, and the various practitioners interviewed used different terms. The most common alternatives are “Maxillofacial prosthesis” and “epithesis.” For reasons of clarity, we will use the most straightforward term, “facial prosthesis.”

4. Achieving a good fit does not only involve the visible body, but also requires that the prosthesis is felt to be comfortable when worn upon the skin. Many users report that, especially after a period of prolonged usage, the prosthesis tends to chafe or press into their face, due to the device’s tight fit. It is beyond the scope of this article to discuss this tactile dimension to fit, as we focus on the visual aspect of the fit between the device and its wearer. The issues of comfort and tactility in prosthetics, however, remain significant.

5. It is important to offer a qualification as to the outcome of these endeavors: some users of artificial facial limbs manage to achieve a good fit, while others do not.

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Moreover, whether they manage to establish such a fit depends not only on their own efforts, but also on factors they cannot control (e.g., the form and size of the amputated area, lighting conditions). This means that even those users who are adept at accomplishing a good fit are not always able to guarantee it.

6. The name ‘Timothy,’ like all the other names we use below, is fictitious, so as to guarantee respondents’ privacy.

7. Leg amputees who use an artificial leg mention similar embodied efforts such as adjusting their gait in order to conceal their amputation and thus pass as able-bodied (Murray 2009). Interestingly, the ability to pass often plays a paradoxical role in the lives of users. Capturing this paradox, cinema and media theorist Vivian Sobchack, who is an above-the-knee amputee, describes “the great delight that I take . . . in the way my prosthetic leg can pass as real and the desire I have to show it off” (Sobchack 2006).

8. The efforts involved in these various fitting practices imply that the prosthesis regularly takes on quite a “presence” in its user’s daily dealings and bodily awareness. As a result, many users find that their ability to fully immerse themselves in their everyday projects and activities is disrupted by their constant efforts to achieve a proper fit. More importantly, the fear that drives these practices—the fear of being exposed as visibly different and prosthetic—can be severely disrupting in its own right.

9. When confronted with a bandage or dressing rather than the amputation, onlookers may not respond as strongly. Such a cover, however, often has the effect of confusing onlookers, and leads them to question what is hidden underneath.

10. Of course, no matter how good the fit between the prosthesis and its user, artificial facial limbs never disappear from view entirely. This means that the viewer may shift back and forth between seeing the prosthesis as a separate object placed upon the face, and seeing the face as a whole. As in the famous images in which the old woman becomes a young lady, or the rabbit a duck, it is possible to switch between the two *gestalts*, but impossible to see them both at the same time.

11. This concept was first introduced by Goffman in his well-known study on stigma and its management (Goffman 1963), and developed further in some of his later works.

12. Again, due to the fact that prostheses do not disappear from view entirely, they may still attract attention and thereby disrupt face-to-face interactions. This happens, for instance, when an interlocutor notices the artificial eye does not move, or when a child, looking from a lower vantage point, notices a gap between the nasal prosthesis and the wearer’s upper lip. All in all, however, prostheses that fit well are often less conspicuous and thus less disruptive than the image presented by the bare, partly amputated face, or the bandaged face.

13. As we show in section 5, the fuss, planning, and preparation that accompany some users’ efforts to achieve a proper fit imply that activities like running an errand

or going on vacation may be less easy to manage. Although it enables these users to pass unnoticed and thereby grants them access to public areas, the prosthesis may thus constrict users' ability to enter public spaces as well. As Winance writes when describing the process of mutual adjustment between users and wheelchairs: "this process of adjustment is ambivalent. Through adjustment, some possibilities of action emerge, but also some impossibilities" (Winance 2006, 55).

14. This mediation of social relations does not only involve the wearer and the perceiver, but may also include the wearer's partner, family, and friends as they help this wearer to (re)cover his or her face. One respondent's wife, for instance, reminds him to put on the prosthesis when going outside when he neglects to do so. Another respondent often asks her friends whether her prosthesis is still aligned when they go out together. For more on how "insiders" who are "wise" to the disabled or visibly different person's condition help this person to pass, see (Lingsom 2008).

15. Of course, many scholars have pointed out the fundamentally relational aspect of human existence. Ike Kamphof, for instance, has recently drawn attention to the way in which a newly introduced tele-monitoring technology in Dutch Homecare led to the reinterpretation of the relationships between caretakers and patients, in particular with regards to patients' privacy (Kamphof 2015). As already mentioned above, Winance, Mol, Pols, and others, too, have explored the way in which technologies mediate within networks of people, devices, animals, markets, knowledges, bureaucracies, and so forth. Instead of focusing on the user/world relationship as Ihde and Verbeek do, these authors all focus on a network of relations constituting both. However, these scholars rarely explicate the significant ways in which such technologies mediate *human relationships* (e.g., dependency, ways of being together). Winance, for instance, mentions but does not expound on the ways in which wheelchair usage comes into play within social relationships, changing users' ability to walk together with others, the way in which different chairs produce different forms of dependence and independence for users and others, or how users' choice for a sportive model allows them to appear in a certain way—i.e., sporty, young, able despite their disability—to others.

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