

## The Technological Uncanny as a Permanent Dimension of Selfhood

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### Abstract and Keywords

“The uncanny valley” indicates that as a robot approaches a nearly human state, initial positive responses quickly turn to strong revulsion. After reviewing various explanations for this phenomenon, this chapter interprets the uncanny feeling towards humanoids not as a response to a lack of humanness but rather as a response to the inability to fathom and appropriate what makes the viewer of the robot different from the robot, that is, what makes the viewer human. The more technologies become intrusive, the more this inability is intensified, making the technological uncanny a permanent dimension of selfhood. As a result, technology cannot be simply externalized and conceived as an outside factor that can determine or liberate us, nor as something that can destroy or strengthen us. This insight calls for a more sophisticated account of how technology is shaping us, as well as how we would like to be shaped by it.

Keywords: uncanny, technology, self, alterity, self-formation, inside-outside, extimacy, Lacan

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## 1. Introduction

In previous decades, the view of technologies not being neutral has been defended from a range of perspectives (Ihde 1990; Latour 1992; Stiegler 1998; Feenberg 2002; Verbeek 2005). From these perspectives, technologies are seen not as merely neutral means developed by human beings to achieve certain goals that they have set for themselves. Rather technologies are attributed a power to co-shape both our world and our ideas, goals and values. They are shaping, according to some of these authors, even what it means to be human (Stiegler 1998; Verbeek 2005, 2011). Recognizing that technologies are normative and, hence, “norm” what we consider “successful or good self-formation” or an “enhanced self” has a far-reaching *existential* implication. Going beyond the inside-outside dualism and recognizing that what we consider our “inside” self is to a great extent shaped by our “outside” world implies that our “inside” is to a great extent also *for us* an “outside,” which we cannot completely possess. Therefore, we cannot completely

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master and constrain our own process of self-formation. Or put differently: we do not completely possess the self that we attempt to form. It is not merely a “patient” that we can mold as we please.<sup>1</sup>

This sense of otherness within can be experienced, as I will discuss in this chapter, as uncanny. Our very selfhood seems to contain an otherness that cannot be simply externalized but is a constructive and structural part of what makes up who we are, which can elicit an eerie feeling. The question that I will address is how this otherness within that goes beyond the inside-outside distinction should be comprehended, whether there are more “voices,” more types of “otherness” within the self—which is already suggested by the idea of a self that forms itself—and how these types of otherness relate to one another. The notion of the “uncanny” will be used to unravel these relations of alterity within, and to shed light on our existential condition in the light of a world saturated with technologies.

The concept of the “uncanny” has a history. In his seminal 1906 essay, *On the Psychology of the Uncanny* (*Zur Psychologie des Unheimlichen*), Ernst Jentsch takes as a starting point for his investigation of the uncanny the etymological meaning of the German word *unheimlich* (literally, “un-home-ly”), indicating that someone who experiences something uncanny is not quite “at home” or “at ease” in the situation concerned. The impression of the uncanniness of a thing or incident involves a “dark feeling of uncertainty,” which is related to a “lack of orientation” (Jentsch 1906 [2008], 217, 224). Jentsch indicates that there is one exemplary experience that illustrates this uncanny feeling most clearly, namely the “doubt as to whether an apparently living being really is animate and, conversely, doubt as to whether a lifeless object may not in fact be animate” (Jentsch 1906 [2008], 221). For Jentsch, this is portrayed particularly in fiction, and more specifically, in storytelling. The lifelike doll Olympia, which features in E.T.A. Hoffmann’s story “The Sandman” (*Der Sandmann*), is for Jentsch the prototypical example of an artifact that instigates a gloomy feeling of uncanniness (Jentsch 1906 [2008], 224).

The feeling of the uncanny that is brought about by automata was taken up in 1970 by the Japanese roboticist Masahiro Mori and designated as the “uncanny valley.” Reviewing the different explanations of this “uncanny valley” will allow me to put forward an alternative interpretation of why encounters with humanlike automata elicit an eerie feeling. Hooking into how Jacques Lacan, via Sigmund Freud, takes up Jentsch’s view of the uncanny, I will propose that uncanny feelings not only say something about our psychological responses to humanlike robots but also echo an ontological structure at the ground of human existence. Inspired by Lacan’s notion of “extimacy,” I will depict uncanniness as a fundamental dimension of our self-relation, as a permanent structure of subjectivity.

Lacan’s notion of “extimacy” (Lacan 1997, 139; 2006, 224, 249) contributes to explaining why our capacity to form ourselves is restricted. This concept displays how the self is to a great extent a product of external influences and, therefore, cannot simply mold itself into whatever shape it pleases. However, Lacan’s analysis primarily focuses on the symbolic order (language, laws, customs), not sufficiently taking into consideration the increasing

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impact of technologies on our self. Taking up Jean-Luc Nancy's concepts of "intrusion" (Nancy 2008, 161, 163, 167, 168, 169) and "being closed open" for technology (Nancy 2008, 168), I will illustrate how in our current era a technological order is ever more strongly shaping our selfhood. This technological order is "other" and "own" at the same time, which explains why technology can be experienced as uncanny.

Acknowledging that the technological uncanny is increasingly becoming a permanent structure of selfhood indicates that technology cannot simply be externalized and seen as an outside factor that can determine or liberate us, nor as something that can destroy or strengthen our autonomy. Both transhumanists who put their hopes on technologies that could enhance our physical and mental capacities and bioconservatives who warn us of the dangers of technologically tinkering with our biological and psychological make-up fail to sufficiently consider the implications of technology becoming "extimate." The proposed view calls for a more sophisticated account of how technology is shaping us, as well as how we would like to be shaped by it.

## 2. The Uncanny Valley

Ernst Jentsch (1906/2008, 223) already indicated that people confronted with clever automata are likely to grow more uneasy as the automata become more lifelike and refined. The more sophisticated the machine, the less confidence a spectator would have in drawing a line separating the animate from the inanimate. In his 1970 article entitled "The uncanny valley," the Japanese roboticist Masahiro Mori depicted more precisely the relationship of familiarity and similarity in human likenesses and the positive or negative feelings that automata and other humanlike artifacts provoke. As a robot or other human duplicate becomes more human-like there is an increase in its acceptability, but as it approaches a nearly human state responses quickly turn to strong revulsion; as the robot's appearance continues to become less distinguishable from that of a human being, the emotional response becomes favorable once again (see Figure 1).

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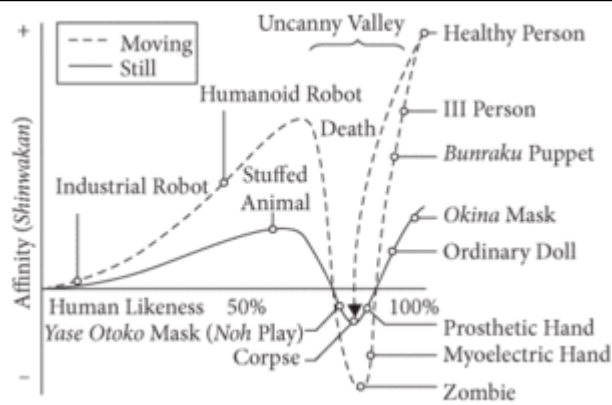


Figure 1. Mori's uncanny valley graph. The figure is taken from the 2012 translation of Mori's original paper: Mori, Masahiro. 2012. "The Uncanny Valley," Translated by Karl MacDorman and N. Kageki under authorization by M. Mori. *IEEE Robotics and Automation Magazine* 19: 99. Copyrights: Institute of Electrical and Electronics Engineers.

It should be noted that as the graph of the uncanny valley (Mori 2012, 99) flattens toward its peak, there is very little distance between the last instance where we still appreciate the robot's clever resemblance and the first disorienting moment that we feel repelled by its appearance. This "little distance" indicates that it is "minor differences" that instigate an uncanny feeling, an observation that can also be found in a different context in Freud, which I will take up later in this chapter.

In designing humanoid robots, Mori advised to escape the uncanny valley by keeping a safe distance from complete human likeness (Mori 2012, 100). Instead of realistic eyes or hands that prompt uncanny feelings, designers, Mori recommends, should attempt to manufacture stylish devices that are sufficiently different from human faculties and, at the same time, could be easily and comfortably incorporated or related to (Mori 2012, 100). His advice has been taken up by engineers and filmmakers who, also for commercial reasons, try to avoid having their designs fall into the uncanny valley (Geller 2008). However, at the end of his paper Mori indicates—without further explanation—that his graph could also fulfill another function: "We should begin to build an accurate map of the uncanny valley so that through robotics research we can begin to understand what makes us human. This map is also necessary to create - using nonhuman designs - devices to which people can relate comfortably." (Mori 2012, 100). The order suggests that understanding what makes us human through an analysis of the uncanny valley is of even greater importance than creating "homey" robots. I will return to this later.

In later years, multiple studies sought to establish whether the uncanny valley is a real phenomenon and, if it is, to explain why it exists. Participants' ratings on familiarity or eeriness have been plotted against the human likeness of human replicas, using humanoid robots, androids and computer-generated characters; also morphing techniques have been employed to morph doll faces into human faces. Some of these studies show

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nonlinear relations that resemble the uncanny valley (MacDorman and Ishiguro 2006; Seyama and Nagayama 2007). A more recent study (Mathur and Reichling 2016) in which participants' ratings of 80 real-world android faces were observed and examined also detected a curve resembling the uncanny valley. However, other empirical studies did not detect nonlinear relations and, hence, did not confirm the uncanny valley hypothesis (Hanson 2005; MacDorman 2006; Bartneck, Kanda, Ishiguro, and Hagita 2007; Poliakoff, Beach, Best, Howard, and Gowen 2013). There are no rigorous controlled studies that unequivocally support the existence of the uncanny valley. However, there is support for its existence from a large number of more anecdotal studies and observations. Hence, whether the uncanniness of human-like artifacts is a function of their human like-ness remains debatable (Wang, Lilienfeld, and Rochat 2015, 394).

Multiple hypotheses have been proposed to explain the uncanny valley. Among these are a number of so-called perceptual theories. The *Pathogen Avoidance* hypothesis (MacDorman and Ishiguro 2006; MacDorman et al. 2009) was suggested by Mori himself, claiming that the uncanny valley must be related to "our instinct for self-preservation" (Mori 2012, 100). From this perspective, visual anomalies in human replicas, which are *perceived* as genetically very close to humans, elicit disgust because an evolved mechanism for pathogen avoidance detects these deficits as indicative of a heightened risk for transmissible diseases.

Alternatively, the *Mortality Salience* hypothesis (MacDorman and Ishiguro 2006) suggests that some humanlike robots remind human observers of their own inevitable mortality, thereby eliciting the uncanny feeling driven by a fear of death. Resembling dead people who move jerkily, humanoid automata would elicit the fear of being replaced by an android Doppelgänger, being soulless machines, or losing bodily control (see also Ho, MacDorman, and Pramono 2008). Eerie feelings are explained in terms of defense systems that then are triggered to cope with that unpleasant prospect.

The *Evolutionary Aesthetics* hypothesis posits that humans are highly sensitive to visual aesthetics. This hypothesis suggests that selection pressures have shaped human preferences for certain physical appearances signaling fitness, fertility, and health. From this perspective, low attractiveness rather than lack of realism would explain the uncanniness of a human replica (Ferrey, Burleigh, and Fenske 2015; see also Hanson 2005).

In addition to perceptual theories, theories have been proposed that focus more on cognitive aspects to explain the uncanny phenomenon. The *Violation of Expectation* hypothesis was also suggested by Mori himself (2012), using the example of a prosthetic hand that appeared real at first sight but elicited eerie sensations as people realized that it was artificial. From this perspective, human replicas elicit an uncanny feeling because they create expectations but fail to match them (Mitchell et al. 2011). Here uncanniness is elicited not so much by how humanoids look but rather by how one thinks or assumes they will or should look. Saygin et al. (2012) suggested that a humanoid stuck inside the uncanny valley elicits repulsion because it is no longer judged by the standards of a robot doing a

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passable job of pretending to be human, but is instead judged by the standards of a human doing a terrible job of acting like a normal person.

The *Categorical Uncertainty* hypothesis goes back to Jentsch, who argued that uncanniness is associated with uncertainty and mistrust which generates disorientation. From this perspective, the uncanny phenomenon concerns the process whereby cognitive uncertainty emerges at any category boundary; negative affective responses are seen as a result of categorically ambiguous images, for example morphed images of a real, a stuffed, and a cartoon human face (Yamada, Kawabe, and Ihaya 2013).

The *Mind Perception* hypothesis addresses the question “On what bases do people perceive each other as humans?” From this perspective, the uncanny feeling is linked to violating the cognitive expectation that robots lack certain capacities that characterize humans, especially subjective experience, that is, the ability to feel and sense things (Gray, Gray, and Wegner 2007).

A theory that also focuses on robots coming too close to humans, instead of not close enough, is the *Threat to Distinctiveness* hypothesis, which suggests that humanlike robots, blurring category boundaries, undermine human uniqueness (Kaplan 2004; Ferrari, Paladino, and Jetten 2016). From this perspective, the fear of being replaced by a robot might not instigate fear of death but poses a threat to human identity, which elicits repulsion.

Wang, Lilienfeld, and Rochat (2015, 395f) have evaluated the validity of different perceptual theories and indicated that they suffer from limitations attributable to the methodologies used to test their hypotheses. Another problem they raise is the usage of morphed images or computer-generated characters, instead of existing human replicas, which forfeits, according to them, a certain degree of ecological validity. They have also evaluated cognitive theories that attempt to explain the uncanny feeling (2015, 397f) and pointed out that some theories of this kind neglect to explain what the cognitive expectations for humans and those for robots are, and why violating such expectations could elicit the uncanny feeling. They also note that cognitive theories fail to explain why attributing human feeling and sense experience to nonhuman and nonliving things, which belongs to a broader phenomenon known as anthropomorphism, does not seem to elicit negative effects in various other domains. In addition, Wang, Lilienfeld, and Rochat (2015, 398f) discuss conceptual difficulties in the translations and definitions of “uncanny” (“shinwakan” in Japanese) and “human likeness,” and problems in measuring the dependent variable in the uncanny valley hypothesis. They suggest that unclear interpretations and conceptualization of the variables in the uncanny valley hypothesis may have contributed to inconsistent findings.

Wang, Lilienfeld, and Rochat (2015) stress the importance of studying the cognitive underpinnings of the uncanny phenomenon. They argue that many of the mentioned hypotheses provide plausible accounts of the uncanny phenomenon from different perspectives, while “they have neglected to verify the underlying assumption that observers would spontaneously perceive a human replica that closely resembles humans as a per-

son" (2015, 401). Wang, Lilienfeld, and Rochat (2015) believe that this assumption is plausible, given the proclivity we have to anthropomorphize inanimate or nonhuman entities in literature, the arts, sciences, and in perception (Guthrie 1993).

Recognizing the cognitive process of anthropomorphism allows Wang, Lilienfeld, and Rochat (2015) to propose their own *Dehumanization* hypothesis. They argue that attributing humanlike characteristics to robots does not by itself explain the uncanny feeling; instead the uncanny feeling, they believe, must be understood as a response to a lack of humanness. An anthropomorphized human replica is not perceived to be a typical robot but is rather seen as a "robotlike" human. If the "robotlike" human then reveals its mechanistic nature, its humanness (above all the capacity for emotions and warmth) is questioned, which leads to dehumanization, thereby diminishing its likability and eliciting the uncanny feeling. This hypothesis is not necessarily in conflict with other hypotheses but interprets their findings from a different perspective: "The more human observers attribute humanlike characteristics to (i.e., anthropomorphize) a human replica, the more likely detecting its mechanistic features triggers the dehumanization process that would lead to the uncanny feeling" (2015, 402).

### 3. An Alternative Explanation of the Uncanny Valley, or the Importance of "Minor Differences"

The various hypotheses that I have listed above undoubtedly explain relevant aspects of the negative responses of certain humans to certain human-like robots. Moreover, Wang, Lilienfeld, and Rochat rightly show the plausibility of the assumption that in many studies observers tend to spontaneously perceive a human replica that closely resembles humans as a person. What is also noteworthy in relation to this assumption is that it is not the big but rather the *little* differences that evoke feelings of repulsion: observers spontaneously take humanlike robots as persons but are then repelled if they do not come close enough to humans, if small disparities reveal their lack of "humanness." The difference between having this "humanness" or not having it, seems to manifest itself in very subtle and elusive features: a small delay, an unexpected acceleration, an unfamiliar gesture. One moment the humanoid is human and the other he is not.

From a psychological perspective, the nonhuman, mechanistic traits of humanoids are primarily revealed in a lack of emotions and warmth, which, from this perspective, might be a sufficient explanation. However, from a more philosophical-existential perspective, the looming "little big" question is: "what makes this humanness"? What makes the ability to feel and sense "human"? Would we consider an android that perfectly possesses these capacities human? Or are these capacities mere surface markers of a deeper layer that designates a human? What is required to bridge the gap between a humanoid and a human? Often these questions lead to a kind of philosophical embarrassment: what makes us human seems to escape us. The psychological accounts of feelings of uncanni-

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ness seem to allow us to see something that may have otherwise remained hidden, something strange about our own identity and existence.

I am not the first to make the move from a psychological to a more existential-philosophical account of the uncanny. Katherine Withy (2015, 48) argues, building on Martin Heidegger, that the psychological accounts of the feeling that may accompany uncanniness refer to an “originary angst” that grounds falling (*Verfallen*), an “angst” expressing that the human cannot get a full hold of its own ground. From this perspective “humanness” is not characterized in terms of certain capacities that can be observed and measured but is, rather, rendered virtually *inaccessible*; as our mode of existence it is “too close to see.” The feelings of uncanniness are interpreted as a fundamental mood that discloses a deeper ontological structure at the ground of human existence.

Yet instead of building on Heidegger, I would like to remain closer to the originators of the analysis of the uncanny. In his 1919 essay entitled *The “Uncanny,”* Sigmund Freud discusses and criticizes Jentsch’s concept of the uncanny. He also draws on the work of Ernst Hoffmann and, like Jentsch, considers him the “unrivalled master of the uncanny in literature” (Freud 1981, 3686). In contrast to Jentsch, Freud did not regard almost-real objects *as such* as disturbing and dissonant, but rather believed that such feelings reveal deeper turmoil and psychopathology (Freud 1981, 3683). When Hoffmann’s protagonist Nathaniel sees his object of love (the doll Olympia) partly dismantled with her eyes popped out of their sockets, thinks Freud, a repressed feeling resurfaced, namely the submerged fear of castration that survived from early childhood. Freud describes the uncanny as a “class of the frightening that leads back to what is known of old and long familiar” (Freud 1981, 3676), and, citing Schelling, as “*the name for everything that ought to have remained ... secret and hidden but has come to light* (Freud 1981, 3678).” For him Jentsch’s conception of the uncanny is incomplete, since the recurrence of something repressed is required in order for a situation to be experienced as uncanny: without such resemblance, it can merely be frightening, which is different from uncanny. Freud stresses that this explains why the uncanny does not simply refer to something foreign but to an instance where something is foreign, yet disturbingly familiar at the same time. It is the “minor differences” that instigate a sense of uncanniness.

It is impossible and unnecessary to go here into questions regarding the validity of Freud’s theory of repression. What I would like to take from Freud’s approach is the idea that uncanniness revolves around the *tension* between unfamiliar and familiar, and hidden and revealed. Allowing us some freedom of interpretation and going outside of Freud’s psychoanalytic framework, we might say that the humanlike robot elicits a feeling of uncanniness because it reveals something that *ought to have remained hidden*, namely the unfathomability of that which makes us human. The “minor difference” between the robot and the observer of the robot disorients not only because the robot is slightly different but also because what makes the observer different appears to be incomprehensible. From this perspective, the uncanny feeling is interpreted not only as a



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response to a lack of humanness in the robot, but also as a response to the viewer's own inability to fathom and appropriate this "humanness" that the viewer herself possesses.

In line with this view, I propose that the uncanny valley might say at least as much about us as it says about human-like robots. The robot might confront us with something uncanny in *us*. It is because a human-like robot resembles me without being completely identical ("minor differences") that I am confronted with my own unfoundedness, which is constitutively strange to me. I not only become aware of what makes me different from the robot but also of the impossibility for me to appropriate this difference. I do not suggest (nor exclude) that this explanation or interpretation could be validated by empirical research. Rather, I propose it as an explanatory, theoretical framework that could provide more insight into how technology is increasingly invasive and how our self has always been open for this technological intrusion. Following Lacan, who, via Freud, takes up the idea of the uncanny, will enable me to further elaborate the idea of these alterity relations within.

### 4. The Otherness of the Self as "Extimacy"

Freud uses the phrase "narcissism of minor differences" to show how it is the little differences "in people who are otherwise alike that form the basis of feelings of strangeness and hostility between them" (Freud 1981, 2355; see also 2553, 4506). Rudi Visker (2005, 433) explains that "narcissism" for Freud refers to an initially completely self-contained Ego that gradually opens up to reality. There is a movement from the inside to the outside: initially the Ego is a narcissistic entity exclusively focused on its libidinal drives, but then can gradually learn to redirect part of its energy and invest it in things outside itself. From this perspective, the self is originally a closed entity that can and should learn to gradually lose its protective shell and open up to the outside world and other people that, on first sight, seem strange and foreign. At this point, Visker (2005, 433) turns to Lacan. He notes that Lacan starts from the inverse hypothesis: the movement is not from the inside to the outside but from the outside to the inside. There is no closed original Ego, but rather the Ego is discovered and developed through the other.

Visker argues that connecting the notion of the "uncanny" to the concept of "narcissism of minor differences," which Freud himself did not explicitly do, and, via Lacan, reversing Freud's hypothesis, can foster insight into "alterity-relations within." This type of relation indicates that not only the otherness of other people needs to be recognized, as Emmanuel Levinas relentlessly stressed in *Totality and Infinity* (1961/1969) and other works, but also the otherness that somebody finds in herself.

In his famous essay *The Mirror Stage* (1949/2005) Lacan argues that the child discovers itself as a unified entity in and through something else, such as its own mirror image, the body of another child, and the responses of its parents. It would be inaccurate to say that the child recognizes itself in the Other, since it is only by virtue of that other and the discourses, goals, ideals and desires that others impart on it, that the child develops and discovers a self. From this perspective, identity is the result of identification, though without

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assuming that there is a subject prior to that process of identification (see also Julien 1990, 43–51).

Lacan's view of the relation between self and other is paradoxical and uncomfortable: the other is both the necessary condition for forming a self and at, at the same time, an obstacle that prevents the self from reaching the unity that it seeks. In Visker's words:

identity will always bear the trace of an exteriority that it cannot fully interiorize. I am another (*je est un autre*) means: I cannot do without that other through whom I get an I. That other becomes someone that I cannot expel. In other words, my alienation is original, for it is implied in my self-constitution. There is no 'selfhood' without 'foreignhood.' The self is not something I possess, my 'self' is irremediably infected with an otherness that prevents me from being fully at one with myself.

(Visker 2005, 433)

Instead of understanding the alterity within in terms of introducing another "in" the self, the self is revealed as something that is from the beginning contaminated with another. Lacan calls this otherness of the self *extimacy*: the "own"-ness of the self is both strange and familiar, both inside and outside, neither inside, nor outside. The self is always outside its center; the self is, one could say, referring to Helmuth Plessner's view that the human never completely coincides with herself, "ex-centric" (Plessner 1975).

Besides developmental psychological accounts of the self (such as the mirror stage), Lacan uses surrealistic and Escher-like figures to visualize the dizzying structure of extimacy, for example in the topology of the Möbius strip: the Möbius strip's half-twist results in an "odd" object (Lacan 2014, 120) because the single surface of the strip passes seamlessly from the "inside" to the "outside." Not only is it impossible to distinguish the inside surface from the outside one, but it is also impossible to tell left from right. It is disorienting and confusing: "You literally can't make heads or tails of it" (Robertson, 2015, 18). For Lacan, self-relations are characterized by this perplexing strain to distinguish "inside" from "outside."

From this Lacanian perspective, not only the other or otherness outside escapes definition—as Levinas (1961/1969) attempted to illustrate—but also the self that is confronted with that otherness. The self is not something I completely possess but is rather irremediably infected with an otherness within that prevents it from being fully at one with itself. The alienation is original, for it is implied in its self-formation. The self finds itself attached to something within, which is experienced as its selfhood, without being able to sufficiently understand and explain this attachment. It was *already there* before the self discovered itself as a self-reflecting agent. It cannot be fully objectified because it is always too close to the self.

This otherness within has for Lacan different dimensions. For one, the self's alterity within entails the influences of the external world that we have gradually incorporated. As we

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have indicated above, a child discovers and develops a unified self through embodying different external instances. The image that the self projects on itself through others is, according to Lacan, also an *imago*: a unified, stable and ideal totality (“that’s you Helena, yes you are a wonderful girl, you are a princess, you’re going to grow up to be beautiful and smart, just like your mommy”). The self attempts to realize this ideal image through identification, and, subsequently, enters a lifelong quest to correspond wholly with this Ideal-I, a quest that, Lacan stresses continuously, can never be completely fulfilled (Lacan 2005, 12, 15, 18). The *imago* also refers to the *imago Dei*, the image of God in which human beings were created and with which they should strive to conform but can never completely achieve. It is important to stress that the *imago* is not an emanation of the individual but the result of an encounter with larger Others and their desires, goals and ideals. Lacan sometimes designates this dimension, which also corresponds to a phase in the development of a child, as the “Imaginary Order” (Lacan 2005, 158, 161).

The images that others project on the self, by virtue of which it develops a sense of an unified Ego, also gradually enable the self to enter into what Lacan sometimes calls a Symbolic Order (and sometimes the “Big Other”): the pre-existing order of customs, institutions, laws, mores, norms, practices, rituals, rules, traditions, and so on of cultures and societies, which are entwined in various ways with language (Lacan 1997, 20, 81). The Imaginary and Symbolic do not coincide: the Imaginary is central to Lacan’s account(s) of ego-formation and manifests itself in dyadic relations (such as in the self and its mirror image), whereas the Symbolic constitutes triadic relations by introducing, besides dyadic and intersubjective relation, a trans-subjective symbolic order that normatively regulates the relations between particular beings and society (Lacan, 1997, 81, 234). In short: the self is what it is in and through *mediations* of the endorsed image that others project on it, as well as through subjecting it to socio-linguistic arrangements and constellations.

There is besides the Imaginary and Symbolic Order also something else that constitutes the self, a dimension that Lacan designates with different names: the Thing (*La Chose*), the Real Other or the Real Order. In the *Mirror Stage* (1949/2005) Lacan stated that in the image of the child reflected in the mirror there is one element, like the eyes of a creepy, living doll, that fails to integrate into a functional totality and necessarily appears fixed and immobile: the gaze. It has an uncanny way of detaching itself from me, said Lacan (Lacan 2014, 97; Robertson 2015, 25). It refuses to integrate into a functional totality. The reflection in the mirror serves to organize the child’s movements and body parts in a unified whole. At the same time, this framing seems to leave behind a “residue” that escapes the subject’s sense of complete mastery over her body (Lacan 2005, 3). Visker stresses that this drive within, unlike *angst* in Heidegger or shame in Levinas, is not something that is liberating or beneficial but an uncanny guest, a Thing that the self needs to be protected from. In all my attempts to control and “domesticate” it, I recognize that it escapes me, might cross the borders that I and society have set, disorient me, and potentially might destroy me (Lacan 1997, 43–56).

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However, the Thing is also not sheer negativity, as Lacan's depictions of the Thing might suggest. It is something that does not fit and cannot fit into an encompassing frame of meaning. By virtue of this aspect, the self can never be completely captured and domesticated by the ideal images that others project on it, nor by the symbolic order in which it is immersed. It is this dimension that gives the self particularity and singularity.

This characterization of the self renders Lacan's psychological anthropology completely at variance with Anglo-American ego psychology and the Enlightenment spirit, which seek to strengthen people's ego and liberate them from restrictions. Despite having consciousness, the self is not a locus of autonomous agency, it is not the seat of a free "I" determining its own fate. The self is thoroughly *compromised*. The other (in its three manifestations as Imaginary, Symbolic, and Real) is both the necessary condition for forming a self and an obstacle that prevents the self from reaching the unity, autonomy and singularity that it seeks, not only because it cannot meet certain demands of others or because it has been shaped by a world that it was thrown into (to borrow a Heideggerian term) but also because it can never fully appropriate what it desires. Without the other it is impossible to discover and develop subjectivity or selfhood and, at the same time, the other prevents it from becoming an autonomous being, unaffected by its traces, inscriptions and whims; or put yet differently, in all my attempts to become an independent and unique self, I remain to a great extent a repository for the projected desires and fantasies of larger others and a plaything of the idiosyncratic and disruptive vagaries of an unruly force within.

This makes, as indicated earlier, the "otherness" in the self more disturbing, since the self is unable to externalize it, detach itself from it and localize it, which explains its uncanniness. Since the self becomes what it is by virtue of its encounters with manifestations of this other, it remains always a stranger or other for itself. The self is never completely "at home." Its "own"-ness is, as we have seen, both strange and familiar, which explains why uncanniness is a permanent dimension of its subjectivity.

It is crucial to understand this other within from a radical anti-essentialist view that goes beyond inside-outside dualisms, since the other that is beyond our control is, at the same time, responsible for forming our self; our self-relation is inherently an alterity relation. The self is, contra Freud, not something that has to learn to open itself for others, but rather has to find a way to live and not to be crushed by that other that, from the beginning, is already inside: the stranger outside me can make me aware of and awakens the otherness inside me, which can fill me with incongruity, confusion and, sometimes, rage (see also Visker 2005, 435).

## 5. Being "Closed Open" for Technology

Lacan illustrates how otherness structurally constitutes the self. In his depiction of how society shapes the self he predominantly focuses on the world of language, laws and customs. However, in our present culture, we are witnessing, besides or in addition to a Symbolic Order, the ever-stronger ubiquity of a Technological Order. Today virtually all facets

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of our lives are saturated with technology. It must be said that the material world is not absent in Lacan's account. It is notable that his prime example of Otherness involves an artifact, namely the "mirror image." In fact, in the 1949 text, Lacan seems to think of artifacts as equally relevant props as humans (parents, peers, etc.) within the context of subjectivation but in subsequent reinterpretations of the mirror stage during the 1960s, he increasingly highlights the supporting role of fellow human beings, caregivers' narratives, and socio-linguistic factors. If Lacan would have lived and written in our era, where technologies are becoming more intimate and intrusive than ever before, he probably would have emphasized more the role of technologies such as screens, tablets, mobile phones, social networking services, brain imaging and other medical technologies, and algorithms and other digital grammars. In order to explain how we find ourselves in an "extimate" relation not only with a symbolic but also with a technological order, and how this relation is increasingly shaping our selfhood, I will complement Lacan's notion of "extimacy" with Nancy's view of being "closed open" for technologies. This technological order that is "other" and "own" at the same time, might further explain in what sense technology is experienced as uncanny in our current era.

In 1990 the French philosopher Jean-Luc Nancy got severely ill and needed to undergo a heart transplant. In an autobiographical essay entitled *L'intrus (The Intruder)* he documented this experience. Nancy notes that his heart has always seamlessly kept him alive, supplying oxygen and nutrients to the tissues in his body. Before his illness, his heart was, as Nancy describes, the most private and intimate part of himself and, at the same time, not more than a piece of meat, invisible and without meaning. After he got ill, his relation to his heart radically altered: in order to survive, he had to get rid of it. Nancy says: "My heart became my stranger" (2008, 163). Nancy was still his heart but, at the same time, his heart became something foreign. Instead of an ally, suddenly his heart became a dangerous enemy. His heart became an intruder, not one that enters from outside but one that enters from *inside* (Nancy, 2008, 162f.). We see here that the idea of an "intruder from inside" renders the apparently clear-cut distinction between "inside" and "outside" opaque.

Besides his sick heart, Nancy describes many other forms of strangeness that he experienced. The donor heart that he got was seen as a stranger. As Nancy states: "my heart can be a black woman's heart" (Nancy 2008, 166). Also his own immune system—normally his most important protector and ally—became a threat, since it needed to be suppressed in order to accept the donor heart. Furthermore, his age became a stranger, since the donor heart could be twenty years younger than he is (Nancy 2008, 169). And this was not the end of Nancy's strange encounters: after his heart transplant, Nancy got sick again and developed cancer; now the cancer cells, which prior to his illness were not identified as different, became a dangerous stranger.

The long list of strange entities that he came across in his body led to Nancy's observation that not only parts of his body but also his body *as such* is a stranger to him. Moreover, while reading Nancy's essay it gradually becomes clear that its main theme is not his heart transplant, nor his cancer cells, nor his illness. His line of thought culminates in

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a reflection about how the “intruders” from within and without reframe his view of his “self.” He writes:

I am the illness and the medicine, I am the cancerous cell and the grafted organ, I am these immuno-depressive agents and their palliatives, I am these ends of steel wire that brace my sternum and this injection site permanently sewn under my clavicle, altogether as if, already and besides, I were these screws in my thigh and this plate inside my groin.

(Nancy 2008, 170).

In addition, Nancy’s focus shifts from observations on his body and the way he relates to it to a reflection on the technologies that are inserted in his body, the technological manipulation of his body, and how his relation to these technologies sheds a different light on his body and self.

In relation to the notion of the “intruder,” Nancy employs the idea of the self being “closed open” (Nancy 2008, 168) which together signify how the technologies that are used to treat and keep his body alive are ever more interwoven with his very self: “‘I’ always find itself tightly squeezed in a wedge of technical possibilities” (Nancy 2008, 162). The idea of being “closed open” indicates that the technologies used to treat Nancy should not be seen as strangers from an outside realm that infringe the self; rather the self is exposed as always having been part of that “outside.” As Nancy explains: “What a strange me! Not because they [the surgeon, the technologies] opened me up, gaping, to change the heart. But because this gaping cannot be sealed back up. ( ... ) I am closed open” (Nancy 2008, 167f.).

Nancy stresses that current technologies highlight the alterity in selfhood, though, at the same time, he makes clear that they did not cause or generate it: “never has the strangeness of my own identity, which for me has always been nonetheless so vivid, touched me with such acuity” (2008, 168; see also Slatman 2007). Nancy attempts to illustrate, very much in line with Lacan, that alterity is a constant dimension of our self and self-experience. It can also be experienced if the body is not ill. The heart transplant and other technological intruders make this experience only more acute, but have not generated this being “closed open.” We have always been strangers to ourselves. In Nancy’s words:

The intruder is nothing but myself and man himself. None other than the same, never done with being altered, at once sharpened and exhausted, denuded and overequipped, an intruder in the world as well as in himself, a disturbing thrust of the strange, the *conatus* of an on-growing infinity.

(Nancy 2008, 170)

The self has always been outside itself and, hence, can never be completely *closed* in order to entirely possess itself.

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It is clear that for Nancy (and for Lacan) the self has always been “closed open,” but that does not imply that with the advent of new technologies there is nothing new under the sun. New and emerging technologies have expanded the possibilities to “intrude” in the “closed open self,” which is also confirmed by Nancy: “I am turning into something like a science-fiction android, or else, as my youngest son said to me one day, one of the living-dead.” (Nancy 2008, 170) Besides tradition, education and culture, now technology has become a dominant force in self-formation processes, as Nancy very intimately has experienced. The human has always been “closed open” but now she can immediately intervene in her own bodily constitution. The potential to be “closed open” has always existed, but technologies today take increasing advantage of this potentiality:

Man becomes what he is: the most terrifying and the most troubling technician, as Sophocles called him twenty-five centuries ago, who denatures and remakes nature, who recreates creation, who brings it out of nothing and, perhaps, leads it back to nothing. One capable of origin and end.

(Nancy 2008, 170).

Lacan’s idea of “extimacy” highlights that the self is not a closed “inside” that then learns to open up to the outside world, but that the self is rather discovered and developed in and through a pre-existing symbolic order, an order that, on the one hand, is constitutive for its subjectivity and agency and, on the other hand, is an obstacle that prevents it from reaching the autonomous unity that it desires. What Nancy’s elaboration of his experience of being “closed open” for technologies adds to this framework, is that the self, as an epistemic object, is ever more deeply immersed in a pre-existing realm of biomedical knowledge and technology. This technological realm is increasingly shaping the self. The technology that potentially always can intrude in the self also affects and transforms how the self experiences itself, and in which direction the self is formed. For Nancy, technology does not extend the mind or the self but the self has always been open and exposed and now technology is excessively *confiscating* it (see also Aydin 2015): “the subject’s truth is its exteriority and its excessiveness: its infinite exposition. The intruder [in this case technology] exposes me to excess. It extrudes me, exports me, expropriates me” (Nancy 2008, 170).

Complementing Lacan’s notion of “extimacy” with Nancy’s view of being “closed open” for technologies makes it possible to reinterpret the other within in terms of technology within. The technology within is not completely strange or foreign, since it is a constitutive part of our subjectivity and selfhood. At the same time, technology prevents one from becoming an autonomous and singular being, unaffected by its engravings. Technology is strange and familiar, at the same time. That “at the same time” explains why it can be experienced as uncanny.

## 6. Alterity in Selfhood and the Question of Technological Self-Formation

The idea of the uncanny has been used to designate an alterity within that cannot be simply explained in terms of something external that challenges or influences our internal convictions, preferences, values, or goals. From Freud I have taken the view that the uncanny cannot be simply be opposed to the canny: *heimlich* and *unheimlich* are not simply opposites, since *unheimlich* signifies the concealed and the hidden and, at the same time, the familiar and domestic. The uncanny within is strange and familiar, at the same time.

Lacan's notion of "extimacy" has been employed to further illustrate how "ownness" does not exclude but rather includes "otherness." This notion expresses, on the one hand, that even our most personal goals, aspirations and ideals that we attempt to realize in order to become an ideal-I are derived from significant others in our lives. The sense of being a unified Ego is derived from images that others project on me. My desires are ultimately desires of others, such as my parents, educators, role models, superstars, Party, God, Nature, and Science. In confrontation with significant others we gradually enter a symbolic order that enable us to become part of a community and define ourselves from a third person perspective as subjects with certain roles, duties and responsibilities.

On the other hand, Lacan stresses that there is also some-Thing in us that prevents being completely absorbed by societal aspirations, values and ideals, including ethical, political, and (we can add) *technological* rules, regulations and grammars. Although by virtue of this drive humans are singular beings, Lacan points out that this dimension should not be romanticized; in its purest form it is an unfathomable and disorienting abyss of withdrawn-yet-proximate alterity. In order to regulate its drives and impose a form to them, the self needs help in the form of a symbolic and technological frame or narrative. Lacan stresses the importance of the Symbolic and Imaginary and their protective, orienting and stabilizing workings. At the same time, he points out that the process of subjectivation and socialization always hold the chance of excessively repressing and fixing the self through a particular, "sheltered" system that ultimately becomes a straitjacket and prevents developing a singular identity.

Through a reading of Nancy's *Intruder* I have tried to complement Lacan's social order of language, laws and regulations with a technological order that is increasingly shaping the very nature of our selfhood. In our current era technologies and technological systems can be added to the Lacanian Imaginary Other that projects its desires on us, and the "Big Other" that regulates our conduct: an iPhone is not only a handy device for making calls, texting and surfing the web, but promises us to upgrade our identity and lifestyle. Brain imaging technologies are increasingly used not only to diagnose diseases and lesions but also to correlate brain activation with psychological states and traits, up to a level that, some predict, will enable us to correct the mental states that someone ascribes to herself or even establish whether someone really possesses free will (Aydin 2018). Upcoming persuasive technologies will influence our wishes and desires more seamlessly,



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making it even harder to recognize them as being projected to us (Frischmann and Selinger 2018).

The idea of a socio-technological order influencing and regulating our conduct and interactions, as well as generating social stability, is not a completely novel view. Philosophers like Hegel and Gehlen have argued that institutions and institutionally conveyed mental habits have the formal and informal function to unburden and give coherence and continuity, to compensate for the human's lack of instinctual determination. However, Lacan and Nancy illustrate that this order is a constitutive dimension of the self, and cannot be simply externalized and objectified. Instrumentalist and determinist approaches to technology, as well as techno-optimist and techno-pessimist approaches (including transhumanist and bioconservative approaches) often overlook that technology cannot be simply situated outside humans and their condition. The "technological other" limits our capacity to form ourselves not because it constrains an original capacity to make autonomous decisions, but because this "technological other" has engraved—and is ever more deeply engraving—its structures in our very origin. Technology increasingly enables us to form ourselves into stable and socially dependable beings and, at the same time, prevents us from reaching the autonomy and uniqueness that we seek, which could account for the uncanniness that some technology seems to elicit.

Reflection on the uncanny feeling triggered by a humanlike robot prompts the question not only of what makes robots different from humans, but also what makes humans different from robots: the lack of humanness that would elicit the uncanny feeling instigates the question of what makes up this "minor difference." In confrontation with the humanlike robot I not only become aware of what makes me different from it, but also of the impossibility for me to appropriate that difference. The elaboration of the "extimate structure" of the self has led to the finding that the self is formed in the image that the "outside world" projects on it. Since the "outside world" is increasingly a world of technology, the self, being "closed open," is increasingly being shaped in the *image* of technology; technology is increasingly becoming the "Big Other," the dominant "intruder within." Thus, perhaps in the confrontation with the strange and, at the same time, familiar robot, the self not only uncannily senses the human in the robot but also *the robot in the human*. From this view, it is inaccurate and inadequate to frame the self as something that could or should close itself off from, or alternatively learn to open itself for, technology. In line with what Lacan and Nancy say about the other within, I propose instead that the self should find a way not to be restricted and crushed by, but rather live in a *deliberate* way with, the technology which from the beginning is already inside.

However, there is a complicating factor which I have ignored so far. For Lacan the social order, on the one hand, protects the self from arbitrariness and excess and, on the other hand, always comes with the chance that protection keels over to repression. What Lacan does not seem to have envisaged, besides the view that that the symbolic other could be toppled by a technological other, is that this technological other, instead of securing *order*, could also become a source of disruption itself. For example, transhumanists and other techno-optimists who propose enhancing human capacities by means of existing and

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emerging technologies often do not take into account that these technologies are influencing, challenging and disrupting our very standards for establishing what *are* “enhanced capacities.” They wrongly assume that it is possible to refer to univocal standards for measuring what is “disabled” and “normal,” as well as what is an enhanced self or “successful or good self-formation” (Aydin, 2017). In addition, the authority of traditional “Big Others” is more easily questioned and challenged in our current global society, which harbors different and sometimes opposing views, values and ideals, different and opposing views that are accessible to ever greater parts of the world population through the Internet and other media. Not only do we need to deal with the human being as a “monster and an abyss,” that is, a being that escapes every possible uniform categorization and, therefore, continuously is able to challenge and disrupt our standards, we now also seem to witness a “technological other” becoming an additional disruptive force. The technological other is becoming an additional disorienting dimension that could further intensify the uncanny within.

In the wake of univocal standards being challenged and undermined from different others without and within, the question of how to form ourselves becomes ever more acute. How is it against this background still possible to sustain the ideal of “good self-formation”? How can one develop both a coherent and a singular self in the light of our intrinsic technological condition? Recognizing that technology “conditions” our humanness, could we also consciously employ it to “condition” our humanness in a certain desired direction and form ourselves in a “good” way? I believe that the notion of “sublimation” might prove itself fruitful in this respect, but that is a topic for a later study.

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### Notes:

(1.) In this chapter I use the concepts of "self" and "identity" interchangeably, and not in the more technical-analytic fashion that we can find in debates about personal identity, agency, self-identity, etc. Their meanings should be derived from the elaborated theories and views.

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