

GET INTO THE UNCANNY VALLEY

DIETER MERSCH

| *From a Buddhist point of view, to be fully human requires a radical rethinking of what it means to be a human in the first place. Borody 2013: 36*

MASAHIRO MORI'S BUKIMI NO TANI GENSHŌ

In 1970, Masahiro Mori, a Japanese roboticist, published a hypothetical essay entitled, *Bukimi no tani genshō*. The discussion of this essay in Jasia Reichardt's 1978 book, *Robots: Facts, Fictions, and Predictions*, introduced the topos of the "uncanny valley," as Mori's title was translated, to a wider audience.¹ Mori's hypothesis, based on speculative rather than empirical evidence, was that the closer the resemblance of an artificial hominoid to a human beings, the eerier we find it. Typical reactions are shock, fear, or revulsion. Putting aside the fact that this hypothesis was not backed up by empirical data, and its validity has therefore always been and perhaps always will be a matter of contention, the focus of the essay at hand is the plausibility of its implicit intuition.

The title *Bukimi no tani genshō* can be read in different ways. While the Japanese word for uncanny, *bukimi*, is part of the title, it refers to *genshō*, phenomenon, so that a more literal translation is "when phenomena become uncanny." *Bukimi* means not only uncanny, but also uncanniness or weirdness, as well as the more spectral "eerie." Decisive for Mori's theory is the process of *shinwa-ka*, which he placed on the y-axis of his graph. *Shin* means heart and *shinwa* means myth or, one could also say, the mythology of the heart or feeling, whereby the suffix *-ka* can signify negation or, in this case, the demythologization of emotion. In that case, *shinwa-ka* would have to be translated as "unfamiliarity," but with a focus on process or on the demystification as in "becoming unfamiliar." Since Japanese thought is always dialectic, comprising ambivalences and the simultaneity of positive and negative aspects, the word can mean both the synchronicity and the asynchronicity or dissonance of emotions. This strange shifting is important. What has become known as the "uncanny valley" refers in the main to this instability and its temporality. We are not dealing with a *state*, but with a dynamic within which the transition from familiarity to unfamiliarity takes place. Also lost in the translation "uncanny" is the meaning of the original German term "*unheimlich*" which

¹ Reichardt 1978. New translation: <https://spectrum.ieee.org/automaton/robotics/humanoids/the-uncanny-valley>, IEEE Spectrum, 29 Dec. 2017 (22.06.2021). In 2005, Christian Keyzers, Frank Pollick and Karl MacDorman organized a workshop on the uncanny valley at the fifth IEEE-RAS International Conference on Humanoid Robots in Tsukuba, Japan. In a letter addressed to this workshop, thirty-five years after first proposed the concept of the uncanny valley, Mori stated: "While I introduced the notion of the Uncanny Valley, I have not examined it closely too far." Nevertheless, he also included two short personal observations regarding the concept of the Uncanny Valley, both of which are critical of its original formulation. See MacDorman et al. 2009: 695–710.

refers to a feeling of being at home, *heimisch*. Mori was interested in a similar *momentum* of loss due to some irritating detail or barely noticeable dissonance able to set off a sudden change of relationship. “To a certain degree, we feel empathy and attraction to a humanlike object,” Mori said in conversation with Judit Kawaguchi (2011: 1), “but one tiny design change, and suddenly we are full of fear and revulsion.”

Mori illustrated this in his original text using the examples of myoelectric silicon prosthetics and animated robots:

Movement-related effects could be observed at the 1970 World Exposition in Osaka, Japan. Plans for the event had prompted the construction of robots with some highly sophisticated designs. For example, one robot had 29 pairs of artificial muscles in the face (the same number as a human being) to make it smile in a humanlike fashion. According to the designer, a smile is a dynamic sequence of facial deformations, and the speed of the deformations is crucial. When the speed is cut in half in an attempt to make the robot bring up a smile more slowly, instead of looking happy, its expression turns creepy. This shows how, because of a variation in movement, something that has come to appear very close to human—like a robot, puppet, or prosthetic hand— could easily tumble down into the uncanny valley. (Mori 1970: 4)

THE DIAGRAM

Mori's text illustrates the process of the uncanny valley in the form of a fictitious curve that first ascends and then makes a sudden steep descent only to again climb to familiarity and synchronicity. It ends at an approximation of confrontation with a familiar person or object. The curve, which, as stated above, makes no claim at empiricism, resembles a wave that bounces between two extremes. The example furthest from human likeness is industrial robots, the acceptance of which, in Mori's observation, only becomes problematic when they take on the appearance of human beings. This effect is intensified when artificial figures are animated. Still images are less problematic than moving images or animated dolls, interactive avatars, or ghostly apparitions.

Mori based this observation on his personal experience that growing perfection, especially in the development of prosthetics, could quickly flip to become the opposite. For example, hand prostheses that look like the real thing nevertheless remain cold and lifeless, which can cause a moment of shock when somebody shakes the hand. Theodor W. Adorno (1996: 61) describes a similar shock during a meeting at Charlie Chaplin's house:

Together with many others we were invited to a villa in Malibu ... While Chaplin stood next to me, one of the guests was taking his leave early. Unlike Chaplin, I extended my hand to him a bit absent-mindedly, and, almost instantly, started violently back. The man ... [had] lost a hand during the war, and in its place bore

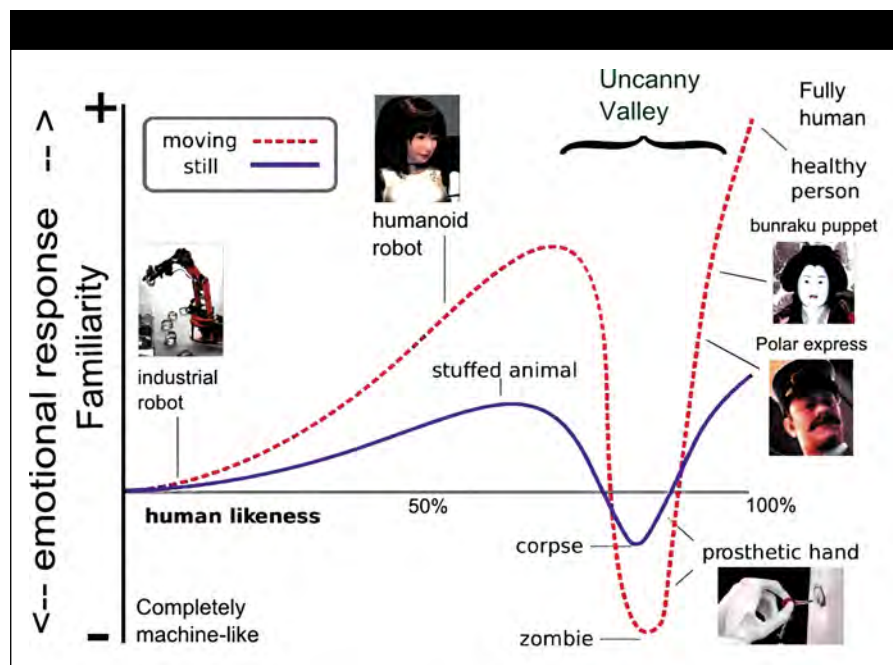


FIG. 1

GRAPHIC ILLUSTRATION OF THE UNCANNY VALLEY

practicable claws made of iron. When I shook his right hand and felt it return the pressure, I was extremely startled, but sensed immediately that I could not reveal my shock to the injured man at any price. In a split second I transformed my frightened expression into an obliging grimace that must have been far ghastlier.

Tellingly, Adorno uses the word “claw,” illustrating the unbridgeable difference between a prosthesis and a hand. A claw has a bestial, monstrous and therefore alien element. Mori is interested in this moment of alienation: That which is too similar becomes dissimilar and revolting, like a corpse that is no longer the same as a living body and which sparks a mixture of revulsion and fascination, necessarily including a moment of spontaneous distancing.

The diagram clarifies this with the level of similarity and familiarity on the y-axis, while various humanoid figures are placed along the x-axis, from simple robots to fictional characters or *Bunraku* puppets. In between, at the lowest point, are the epitome of all specters, zombies, the undead who walk again between the worlds, creatures that still exist today in voodoo magic, unable to live or die, but forced to wander aimlessly in no category at all. The logic of Mori’s graph is simple:

This kind of relation is ubiquitous and easily understood. In fact, because such monotonically increasing functions cover most phenomena of everyday life, people may fall under the illusion that they represent all relations. Also attesting to this false impression is the fact that many people struggle through life by persistently pushing without understanding the effectiveness of pulling back. That is why people usually are puzzled when faced with some phenomenon that this function cannot represent (Mori 1970: 1).

Interestingly, the graph pertains only to the visual level. It shows a function of perception alone, while also expressing a relation. Hence it says nothing about the realism of the figures themselves, but merely about our experience of them, that is, the way in which we meet them. Although the uncanny valley hypothesis today plays a role in the theory and practice of digital simulations, it describes less the boundaries of virtual systems and their hypermimetic construction and more the question of what we see and hear and hence the *aesthetic decidability and undecidability of phenomena*. Seen in this way, one could speak of a Turing Test for the eyes and ears.

BEYOND CATEGORIES

Although Mori’s argument was intuitive and heuristic, empirical studies since then have attempted to both prove and disprove his hypothesis.² But confirmed or rejected, the question remains of the *effect* the graphic curve is actually representing. The interpretation closest to hand is that we look at, and react to, avatars, robots, and other artificial objects differently than we do to other human beings. This difference does not manifest itself as a classical metaphysical differentiation such as made between human and artificial intelligence, or between nature and technology, reality and media, etc., all of which presuppose a categorical distinction, but between that which can be categorized at all and that which cannot. It is decidability itself that is in question. This idea of an inability to categorize goes back to an early attempt at explaining the concept by Ernst A. Jentsch in his 1906 essay “On the Psychology of the Uncanny,” which Freud references in his essay “The Uncanny,” although he did not agree with Jentsch’s conclusion.³ For Freud, the root of the uncanny lay in childhood experiences that had been repressed and suddenly emerged from the unconscious, while Jentsch focused on the doubtfulness of categorizations, that is the question of what something is: Alive or inanimate? Human or non-human? Real or simulated? Importantly,

² Around two-thirds of the studies on the uncanny valley, mostly in the fields of psychology and theories of perception and cognition, support Mori’s hypothesis, although they did not find a deep “valley” but rather a slight fall that flattens to the extent that we are familiar with simulations and other artificial figures in films, computer games, and virtual reality modelling. Decisive is whether one is looking at static images of deceptively realistic “faces” or moving images with facial expressions, gestures, and voices. The most prominent defenders of the theory are MacDorman and Chattopadhyay 2016; in contrast, a 2009 empirical study claims that humanlike androids that were barely distinguishable from humans were not liked less than humans; see Bartneck, Kanda, Ishiguro, and Hagita 2009.

³ On the phenomenon of the uncanny see Jentsch, 1997 [1906] and Freud 1955. Freud draws explicitly from both Jentsch and the uncanniness of the automata in E.T.A. Hoffmann’s *Night Pieces*.

he stressed not only discrepancies in the ability to categorize, but also multivalence and cognitive dissonance. Whichever explanation one prefers for the phenomenon, at the fore is always something undefinable or ungraspable that resists all attempts at rationalization. This is illustrated particularly well in the literature of German Romanticism and its rejection of Enlightenment and the belief in reason; one need only think of E.T.A. Hoffmann, Novalis, Achim von Arnim or Friedrich Schlegel. Seen in this way, the uncanny addresses an uncontrollable, non-rational reservoir of obsessions that waylay us and cause feelings of fear—or its opposite, the sublime—creating an aura that in theology was linked to the *mysterium tremendum et fascinosum*. The uncanny is hence similar to a state of unresolvable ambivalence or a loss of meaning—that moment at which concepts become confused and our intellectual capacities suspended, when we stare into an unfathomable abyss and can no longer trust our senses. Mori's uncanny valley denotes exactly this moment of destabilization—the inconsistency of conceptual frameworks, the gap in the system of logical classification.

There is only a trace of this in Mori's graph; it is an insufficient metaphor for the sudden drop that, in the technological or digital age, defines the turning point of mathematical rationalism or that point at which mathematical calculation melds with the incalculable. Within a formal system, it marks the loss not only of any and all criteria but also of certainty, and of any testimonial function, hinting at the fragility of mathematics. At the same time, it reminds us that nothing about our usual perceptions or social relationships should be taken for granted, for they no longer apply when confronted with an alterity that we have no means of relating to.

ETHICS OF DISSIMILARITY

Mori was not looking for a positive use for his heuristic of the uncanny valley. He was not, for example searching for the threshold that robotics and virtual reality research would need to cross in order to successfully create the “really” perfect illusion. His interest was in the opposite. Mori propagated an ethics of design that followed the primacy of dissimilarity, not of similarity or the “as-if” (Reichardt 1978: 26–27):

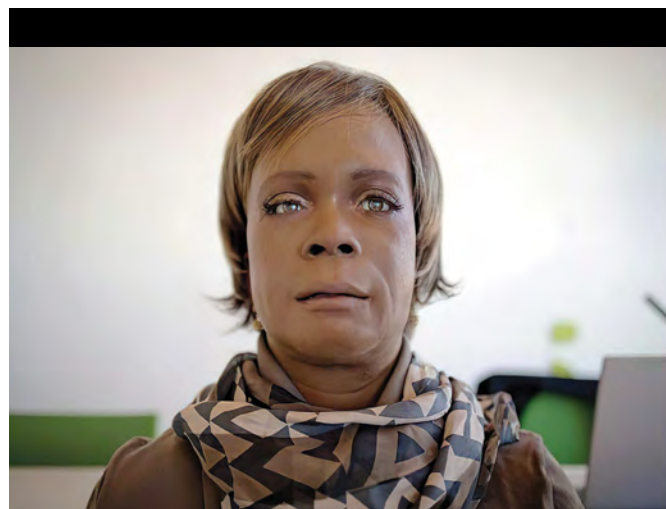


FIG. 2

HUMANOID ROBOT

[HTTPS://MEDIUM.COM/SWLH/THE-UNCANNY-VALLEY-5C6D62CC1BB8](https://medium.com/swlh/the-uncanny-valley-5c6d62cc1bb8)

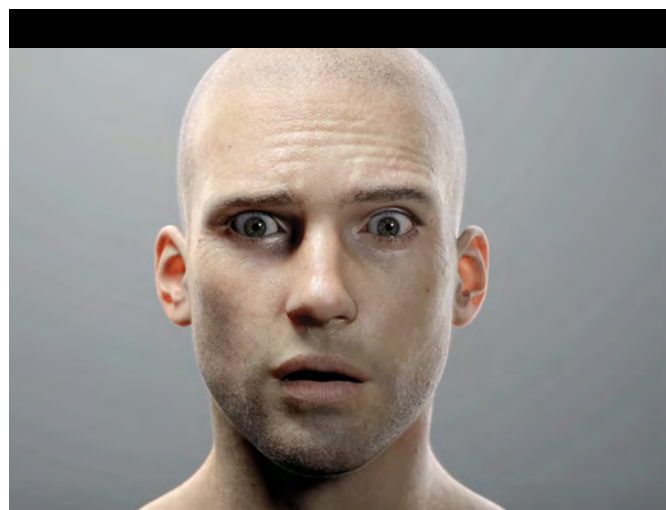


FIG. 3

“ED,” FACIAL ANIMATION WITH MIMICRY AND EXPRESSION BY CHRIS JONES

[HTTPS://WWW.DIGITALPRODUCTION.COM/2014/10/08/TSCHUESS-UNCANNY-VALLEY/](https://www.digitalproduction.com/2014/10/08/tschuess-uncanny-valley/)

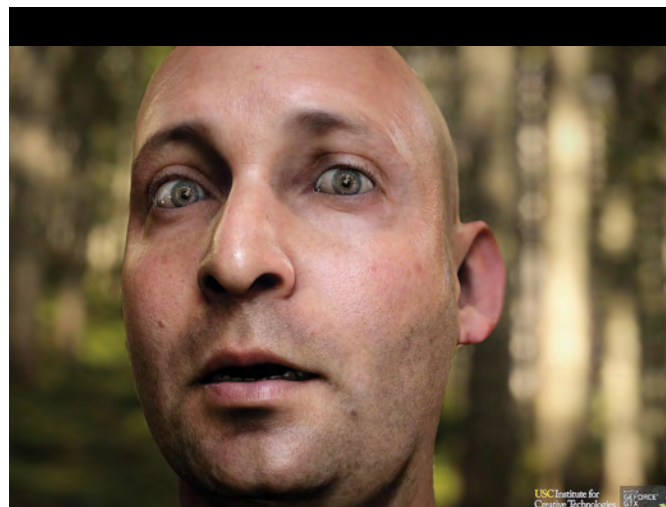


FIG. 4

RENDERING AN AVATAR IN A MOVING IMAGE

We should begin to build an accurate map of the uncanny valley, so that through robotics research we can come to understand what makes us human. This map is also necessary to enable us to create—using nonhuman designs—devices to which people can relate comfortably (Mori 1970: 5).

Consequently, our aim should not be to optimize similarities in order to in the end create beings that we could mistake for other people—real children, flight attendants, consultants, or caretakers—but rather to expose their constructedness so that we are clear of their non-human status at all times. Mori therefore proposed a moral principle for robotics according to which all humanoids would be able to communicate with us “understandably” or interact with us “meaningfully” without either moving or acting or looking like human beings. Only in that way could we prevent aversion and achieve social acceptance (Borody 2013: 33). He therefore came to the conclusion—in opposition to the leading trends in robotics and in cinema—that we should privilege nonhuman design and create artificial or artful sculptures. Following that logic, rather than the technical precision of the “Vienna Hand,” the prostheses with which he began his explorations, it would be better to create something along the lines of the wooden hands modeled for Buddha statues that are, like the figure they are attached to, but literally, “sympathetic,” if perhaps less “manageable.”

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POSTSCRIPTUM

When Masahiro Mori published his essay in 1970, he could not have known the extent to which, 50 years later, we are surrounded, indeed occupied, by humanoid beings of all kinds: not only cyborgs and humanlike robots, but also other artificial creatures more reminiscent of bugs, cockroaches, dogs and the like. On screen media, moreover, we get to see a wide variety of artificial faces, both fictional and of apparent “real” human faces which seem to be indistinguishable from portraits of existing humans. We are also confronted with avatars, animated monsters, even lifelike dinosaurs or cartoon characters mingling with human beings as if they were living in the same space. Perhaps the strangest and creepiest of all these creatures, however, are certainly the *Real Dolls* made of silicone, equipped with rudimentary software or AI to satisfy our sexual appetites and which are capable of minimal conversation, but also of articulating emotions. Or better yet, they form nothing more than dummies oriented exclusively to male masturbation practices. Mori in the first place raised the question of our relationship to such beings. His approach suggests that the more realistic and human-like these artificial beings appear, the more frightening or eerie they become. But beyond affection, we have to ask what kind of “relationship” we can have artificial beings at all, and here sex dolls serve as a perfect example, because our relationships with them tell us a lot about our social self-understanding. And as far as the basic question of the *Actor & Avatar-project* is about general relationships to human-like artifacts and their possible play with identity and alterity, we—in the face of dolls—are immediately confronted with the abyss of the *Uncanny Valley*, because they are obviously objects that are supposed to arouse desire and not aversion or rejection by feelings of uncanniness. It thus seems that, by their very nature, they are already paradoxically structured. In any case, with *Real Dolls* we are dealing with the perhaps most extreme example of what ignites the question of possible differences in modes of reference, i.e. how we behave towards them, whether they function, as parts of the Actor Network Theory would claim, as independent actors, who participate in a symmetrical order, whom we must acknowledge as partners or integrate into our collective life, or whether they are different from any human being and thus generate the reality of social asymmetry.

Sex dolls, sex machines, and their various configurations can thus be seen as paradigms that question the mere assertion of equal relations between humans and artifacts and hence raise the deeper problem of the peculiarity of “human” or “social” relations in contrast to relations to mere things or technical apparatuses, no matter how perfect they are designed or not. Consequently, they can be conceived as test figures on the basis of which the hypothesis that we behave in a different way towards artificial beings or other technical objects than towards humans can be proved. The assertion of symmetrical networks thus obviously skips over the specific *ethicity of reference*, so that the circle of behaviour is expanded as if there were a mutual interchangeability between the social and the technical or material. Certainly, things or technical devices open up new possibilities of behaviour—but also of distortion, think of the crudeness of dealing with defective appliances. Such practice we would never allow ourselves toward other humans; indeed, if we were dealing with them in such a way, we would turn away in disgust and penalize the violation. The intuitive reserve, the moment of terror that Mori anticipated (for humanoid robots were still utopia in his time), thus concerns not only the artificial creatures and the degree of their similarity—this is true only on the level of perception—; instead, they point directly to ourselves, i.e., to what we feel and may be capable of. In other words, they touch the core of our “social” competence and its possible deformation.

Sex dolls, however, can demonstrate the already existing degree of this deformation. It is therefore obvious that feminist approaches, as well as artists in particular, have addressed them and the fantasies of masculine desire they embody. The approaches are as diverse as they are controversial. Some incorrigible apologists invoke the freedom of fantasy,

the right to act it out within the boundaries of one's own imaginary—disregarding the fact that every moment of this fantasy has already reduced the female body to a mere object of possession. It is not so much the moral indignation that counts here, but rather the sedimentation of power-relations which are already inscribed into the plastic skin of the dolls as ever-ready sex vessels. Other apologists see in the use of intelligent sex robots the possibility of combating human trafficking and the sexual enslavement of women—by shifting violence into a surrogate act. Apart from the fact that there is no empirical evidence for this position, it is an illusion to believe that surrogate acts protect against real acts. In contrast, Megan Walker, in one of the most famous campaigns against sex dolls in Germany, launched by the EMMA magazine, recognized in silicone substitutes the “ultimate devaluation of women,” virtually their “dehumanization.” Reduced to a ready-made consumer article, sexuality becomes a mere use—or even abuse—because “what could be more interchangeable than a silicone doll?” And further, “The sex doll is every woman who has rejected him; every woman he cannot have; every woman who has been more successful than him; who has been praised more than him; who has been more desired than he could ever have dreamed...” The pamphlet appropriately criticized these fetishes as projection-screens, as mere surfaces for power-fantasies and inferior desires for revenge. In her study *Living Dolls. The Return of Sexism*, Natasha Walter furthermore blamed the ubiquitous sexualization and trivialization of women through pink dolls, dresses, and other children's toys for stylizing

themselves into objects and thereby furthering their alienation. The doll cult is thus diagnosed as the fruit of a hypersexualized culture, which at the same time provides information about how it shapes and organizes the relationship between the sexes.

More than 100 years of women's emancipation is thus undermined and turned into its paradoxical opposite: as freedom for humiliation and self-abasement. Moreover, it correlates with the pornographic industry and its everyday presence not only in film and advertising, but above all on the Internet and in social media. At the same time, it produces what in its outward appearance companies like *Realbotix* or *Abyss Creations* offer to worldwide customers for consumption: hyper-realistic sex dolls or AI-supported sex robots whose faces can be designed according to photos of prominent or desirable but unattainable female objects.¹ One of the most prominent of those products, *Harmony*, is modelled after Pamela

Andersen. She smiles, squints her eyes, moans and whispers to her would-be lover, “I was created to give you pleasure.” According to *Lumi Dolls*, a company that tried to run a sex doll brothel in Barcelona, the doll-objects are perfect submissive partners. Consequently, as Laura Bates has put it rightly, having sex with them means committing already a rape. Made for the unrestrained acting out of one's own urges and drives, they can be nothing more than misogynistic wish fulfilment; however rape is

not a mode of sexual play, nothing that promises satisfaction of a sexual desire, and hence “not an act of sexual passion,” but the destruction of every possible form of human relationship, because it devastates the relational capacity of the raped person itself. One must therefore distinguish these sex dummies from cheap and innocuous sex toys. Clearly, sex aids have long existed,² but sex robots in contrast position women as such as toys to play with. By making these robots as realistic as possible—from self-warming models to those that speak and suck, from some with a real pulse to others that flirt with their owners—their creators are selling far more than just an inspirational plaything, because they effectively reproduce real women with imitated properties, mostly bodily exaggerated, however without any will and autonomy. Their consumers thus buy the total lack of will.



FIG. 5

REAL DOLL

SEE [HTTPS://WWW.REALDOLL-SHOP-AUGSBURG.DE/P/JETZT-VORBESTELLEN-MANGA-TPE-REAL-DOLL-LIEBESPUPPE-DEE-138CM-INKL-STANDFUSS-FUNKTION](https://www.realdoll-shop-augsburg.de/p/jetzt-vorbestellen-manga-tpe-real-doll-liebepuppe-dee-138cm-inkl-standfuss-funktion)

¹ The order situation is not small: up to 600 hyper-realistic sex dolls per year are delivered to customers worldwide with an amount of more than 12.000 \$ per doll.

² See for example the historical investigation of Ruberg (2022). From a sociological and philosophical perspective see also Bendel 2020.

Undoubtedly, sex dolls are a symbol of an excessive economization of the female body, which at the same time is disfigured by burlesque overstatements of secondary sexual attributes. It is no wonder, however, that the initial critical statements were in turn transgressed by feminists to the effect that, conversely, a performative reevaluation of the dolls was advocated, for instance through their repurposing or appropriation as instruments of a liberation from heteronormative constraints. Tanja Kubes, for example, has pointed out that the development of intelligent sex robots could hold significant queer potential, such as by helping to enable sexual satisfaction and emotional connection beyond masculine domination in “post-” and “transhuman” futures. Similarly, John Danaher in *Should We Be Thinking About Sex Robots?* has attempted to frame the strict rejection of “sex tech” by placing technical companions in a complex history of artificial objects of satisfaction. However, this presupposes that they shed their manifestly sexist appearance, their tendency to degrade women to their mere external sexual features in order to shape them beyond fetishization. Performative inversions and transvaluations are therefore always also a design task.

Such a productive *heteromorphosis* can be seen in particular in the numerous artistic explorations of the *Real Dolls* and other sex machines; think of filmmakers such as Elison De Fren (in this volume) or Maria Arlamovsky³ or photographers such as Elena Dorfman (in this volume) and Alexandra Aderhold or the artist Arvida Byström, to name but a few.⁴ In her exhibition *A Doll's House*, the latter shows selfies together with the silicone doll *Harmony*, which is, as it were, sympathetically brought into a consonance with her own body in order to skewer the manifest obsession with identity-politics in digital media, especially Instagram or Tik Tok. In a sense, it is the critical production of synonymy on the basis of *hypermimetism*, the goal of which is virtual assimilation, reduplication, and thus the standardization of one's own existence. For this purpose, the doll is tanned with spray, her hair is dyed, and she is put into the same girlish clothes of the artist, in order to assimilate her appearance to the doll in the same way as the doll's appearance to the artist.

Consequently, there is a danger of confusion, which, despite all the sweetness of the pictures, creates an eerie and threatening effect. Precisely because the images appear to be affirmative, dipped in exaggerated pink or displayed as glossy transparencies, this uncanniness in turn implies a distance that corresponds to that predicted by Masahiro Mori

in his *Uncanny Valley* essay. At the same time, the images imbue both “beauties” with a melancholy of futility that makes it clear that the cold reality of technical perfection, which compensates for human's supposed lack, transforms itself into deficiency in order to leave the human body damaged.⁵ The technical, as a human invention, can do nothing but producing imperfection; therefore technology is not suitable as a standard for transhumanist utopias.

Whatever one's attitude to sex dolls and sex robots however is, no opinion proves innocent. This is true for both the critical ones and those that primarily use artistic strategies of performative transformation or “negative affirmation,” not to mention the apologetic ones. This is due to the fact that in every attitude a certain type of social relationship is implemented, which must first be worked out. A basic assumption indeed to assume an essential

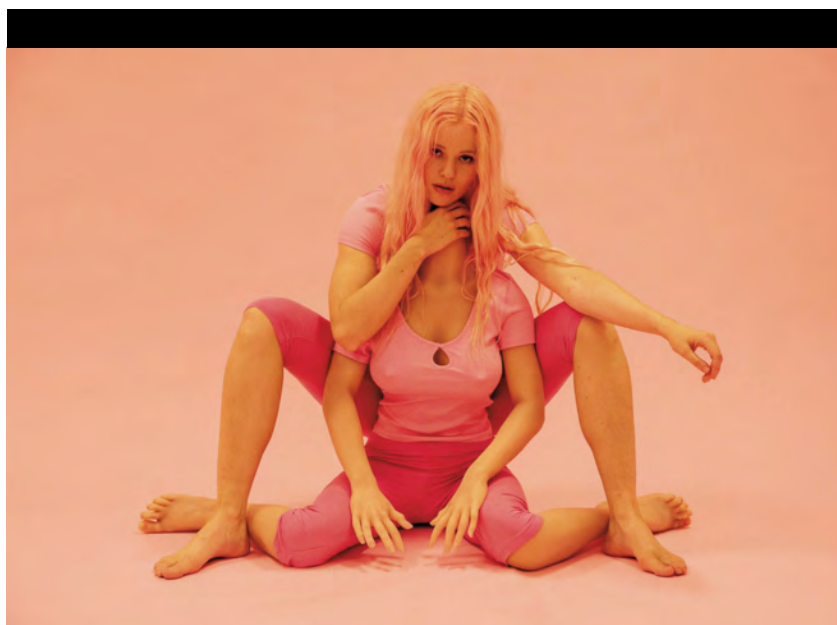


FIG. 6
ARVIDA BYSTRÖM, *A DOLL'S HOUSE*, 2022.

SEE [HTTPS://WWW.ANOTHERMAG.COM/ART-PHOTOGRAPHY/14308/ARVIDA-BYSTROM-SEX-ROBOT-THE-DOLLS-HOUSE-EXHIBITION](https://www.anothermag.com/art-photography/14308/arvida-bystrom-sex-robot-the-dolls-house-exhibition)

³ <https://futurezone.at/digital-life/es-gibt-keinen-sex-mit-robotern/401063730>

⁴ <https://www.arvidabystrom.se/>

⁵ See with regard to the deficiency of human beings and the deficiency of technology also Heßler 2023.

incommensurability of types of relationships—that is, that we behave differently toward technical things, or artificial creatures than we do toward other human beings, because, as Maurice Merleau-Ponty rightly put it, relations “among men (...) that are human” are always already socially terminated, i.e. grounded in a certain form of sociality, whereas the human-machine relation as well as the human-object relation do not actually function socially, but can at best be derived from the primordially of human-human relations. This also means: We must already be in a social space in order to be able to develop “bonds” to objects, be it for sentimental or libidinal reasons. Human-doll relations therefore always exist only as reductive relations: as projections, fetishizations, or pathologies. This inevitable reductivity also denotes the error of the widespread symmetry postulate from certain readings of Actor-Network Theory.

Philosophically-theoretically as well as empirically, the claimed difference can be seen in encounters with avatars and with human faces. In accordance with the conviction that truth is often only decurved in exaggeration, *Real Dolls* can also serve as models for this thesis beyond the avatar/face difference. It is less about the woman as an available “commodity”, about her objectification and reduction to a number of body orifices as templates of male greed—denouncing this form of desire as a form of mere violation is certainly correct—but primarily about the fact that any kind of doll sexuality necessarily distorts what sexuality means, namely in the sense of Sigmund Freud’s “libido” as a true social binding force, or *koinōnia*. This is why the dolls occupied such a prominent position in the various investigations of the project: as paradigms, taken to the extreme, of a discontinuity or even incompatibility that dissects the social itself. One could say: the fact that the phantasm of sex dolls has become reality in the *Real Doll* is itself already a symptom of an immanent destructiveness in the social.

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