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Cute or creepy, that is the question of liveness: can artificial actors perform live?

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Abstract

This paper examines the liveness of the performative acts of technologically simulated or synthesized agents in interaction with humans. It questions the ability of artificial performers to construct a sense of live presence on stage and in other daily performative scenarios and evaluates our perception of liveness in those contexts. In this critical and comparative analysis, I study the live quality of Hatsune Miku's live musical performances – a computer-generated cyber celebrity with a three-dimensional holographic body and an artificially synthesized singing voice – and the stimulating interactions of PARO, the seal – an adorable therapeutic cuddle-robot utilized as an emotional companion in nursing homes and hospitals. Using performance and media theories, I examine the audience/users' affective responses and engagement quality with the holographic singer and the robotic pet, directly leading to the acceptance or rejection of the claim to the liveness of these techno-actors. This research also evaluates the impact of the application of cuteness (or *kawaii*) in designing non-human agents versus the emergence of creepiness in interactions with their incorporeal bodies on our emotive response. The objective is to study the difference between the liveness and aliveness of non-human, non-living performing agents and the impact of evoking the sense of "cute" versus "creepy" on warping the Uncanny Valley Curve.

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Cute or creepy – That is the question of liveness: can artificial actors perform live?

Tierno u horrible, esa es la cuestión de la vivacidad: ¿pueden actuar en vivo los actores artificiales?

Resumen

Este documento examina la vivacidad de los actos afectivos y de las actuaciones de los agentes simulados o sintetizados tecnológicamente en la interacción con humanos. Cuestiona la capacidad de los intérpretes artificiales para crear una sensación de presencia en vivo en el escenario y en otros contextos habituales donde deben actuar y evalúa nuestra percepción de la vivacidad de las actuaciones en ellos. En este análisis crítico y comparativo, estudio la calidad de la vivacidad de las actuaciones musicales en vivo de Hatsune Miku –una celebridad cibernética generada por ordenador con un cuerpo holográfico tridimensional y una voz sintetizada artificialmente– y las estimulantes interacciones de PARO, la foca, un adorable robot terapéutico que da abrazos utilizado como compañero emocional en residencias de ancianos y hospitales. Por medio de teorías de actuación y audiovisuales, examino las respuestas afectivas de la audiencia o de los usuarios, y la calidad de la conexión con el cantante holográfico y la mascota robótica, lo que conduce directamente a la aceptación o rechazo de la afirmación sobre la vivacidad de estos actores tecnológicos. Esta investigación también evalúa el impacto de la aplicación de la ternura (o kawaii) en el diseño de agentes no humanos frente a la aparición de lo horrible en las interacciones con sus cuerpos incorpóreos en nuestra respuesta emotiva. El objetivo es estudiar la diferencia entre la vivacidad y la vitalidad en los actores no humanos, no vivos, y el impacto de evocar el sentido de «tierno» frente al de «horrible» en la deformación de la Curva del valle inquietante.

Palabras clave

tecno-vivacidad; tecno-actor, kawaii *, vivacidad, actores digitales, actores artificiales generados por ordenador*

1. A note to the readers about liveness

I would like to jumpstart my written monologue by posing a few questions about liveness and its new manifestations in our age of digital mediation, simulation, and synthesis. In particular, I am interested in artificial actors and I want to understand what happens to the liveness of performances when a technologically-synthesized actor replaces the living performer. What matters, what doesn't, what qualities remain, what qualities emerge, and how we perceive this new form of liveness created by technological bodies – a new quality that I will refer to as "techno-liveness".

Here are my questions for you:

First and foremost: what is liveness? How does our perception of liveness in a live performance differ from that of a live interaction? Is every live interaction perceived as live, or in other words, containing the quality of liveness? If not, what type of interactivity creates a sense of liveness?

What is the perception of liveness? Is liveness an objective or subjective entity? Is interactivity necessary for the construction of liveness? Do we need to be human to perform live? Do we need to be a living being to create a sense of liveness on (a physical or virtual) stage? How is liveness different from aliveness?

We may think we know the answers to some of these questions. For example, we have all seen trained animals perform in a circus or animal show. We have interacted with virtual voice-enabled intelligent personal assistants such as Alexa or Siri. We have all watched heartfelt animations and felt a lot of emotional connection, empathy, and response toward the performative journeys of cartoon characters. On the other hand, we have all interacted with customer service that sounded machinic and been to theatrical performances in which we fell asleep because the performers had no captivating stage presence. Considering all of these, I wonder what liveness means when it comes to interactive systems, and how this pure, ephemeral, unique quality of performance that theater and performance studies scholars have obsessed over for years can be redefined and reenvisioned for the new generations raised addicted to digital stimulation and interactivity.

2. Liveness in the state of flux

2.1. Definitions and debates

Many performance studies scholars have referred to liveness as a unique fundamental quality of performance distinguishing live performing arts from other art forms. Live performance has been frequently referred to as authentic, auratic, life-like, real, unpredictable, and lively, as opposed to superficial, rigid, scripted, and petrified recorded media. Peggy Phelan, one proponent of this view, considers the core of live performance to be the presence of a performer's mortal body. She believes this unique quality of this art form is mainly rooted in the fact that it happens in the present moment in front of the audience's eyes and, more importantly, by a corporeal body that rehearses their death in front of live witnesses (Phelan 1993, 146). Other scholars such as Philip Auslander, Herbert Blau, and Steve Dixon have different views on the meaning of liveness and the importance of human performers in a live performance.

According to Philip Auslander, a prominent liveness scholar, this term first appeared and gained meaning at the beginning of the performance

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mediatization era, particularly with the emergence of live radio in the early twentieth century. In fact, liveness was created to differentiate between the two modes of recorded and live performance, showing the inherent association of liveness with the media. In his first examination of this notion, Auslander defined live performance as a kind with performers and audience both physically and temporally co-present. Over time, however, he acknowledged that said conditions were not those required for liveness (Auslander 2008, 60). Mathew Causey went one step further from the co-presence argument and even questioned the necessity of the human body in a live performance. He claimed that the conditions and meaning of the body, liveness, and interactivity have all changed in performances of our techno-culture, and "the material body and its subjectivity are extended, challenged and re-configured through technology" (Causey 2006, 16). Incorporating this new reterritorialized[1] body into live performances challenges the old definitions and territories of liveness, leading to a reterritorialized sense of liveness, live performance, and the body.

Considering the new types of technological embodiment, mediation, and interactivity in our techno-human era, the definition of liveness over time has changed from the spatiotemporal co-presence of the performer and the audience to their temporal co-presence (Auslander 2012, 7). With a shift from corporeality to digital interactivity, liveness was redefined as real-time engagement with a feedback loop, before finally being reframed as the viewer's subjective experience in interaction with any performing entity, including technologically-synthesized actors, digital agents, and interactive objects – to be examined in a phenomenological study.[2]

2.2. Techno-liveness

In this paper, I define and examine the notion of "techno-liveness" as the live quality of performance in which the corporeal body of the performers is replaced with an interactive technological agent ("techno-actor"). I argue that the application of digital media and computational technologies in designing interactivity and embodiment, specifically in the usage of techno-actors in digital performances, does not lead to the disappearance of performance liveness but rather to the emergence of a different perception of liveness by the viewers.

3. Who are techno-actors?

For this analytical study of techno-liveness, I define "techno-actors" as technologically simulated, mediated, or synthesized performing entities

and examine how their performative interactions can elicit emotional engagement and response in the audience. To this end, I conducted a comparative analysis of two techno-actors with different forms of embodiment, interactivity, and affective impact on the spectator/user: PARO, an embodied companion robot, and Hatsune Miku, an anime singer with a virtual body on stage.

3.1. I am Hatsune Miku

Figure 1. Hatsune Miku, © Crypton Future Media, Inc. 2007
Source: http://www.crypton.co.jp/mp/pages/prod/vocaloid/cv01.jsp

Hatsune Miku, "The First Sound from the Future",[3] is a Vocaloid[4] with the holographic anime-style body of a sixteen-year-old virtual female singer (see Figure 1). As a popular cyber-celebrity, she appears in different forms in the pop culture and entertainment industry, from a character in video games and animation to music videos and concert halls. Many products such as toys, clothes, and even racing cars are also designed based on her embodiment and color palette. This paper mainly discusses her presence as a 3-D holographic body in her live

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1. As a key concept in the theories of Deleuze and Guatarri "to deterritorialize is to free up the fixed relations that contain a body all the while exposing it to new organizations", whereas reterritorialization is repacking the undone structure and freed-up elements into a new assemblage to make a new expression (Parr 2010, 71). A reterritorialized body is a new body in the process of deformation and reformation in a new matrix of flesh and technology.

2. "Phenomenology is the study of structures of consciousness as experienced from the first-person point of view. The central structure of an experience is its intentionality, its being directed toward something, as it is an experience of or about some object" (Stanford Encyclopedia of Philosophy 2013).

3. Hatsume Miku means 'the first sound from the future' in Japanese.

4. "Vocaloid is a commercial singing voice synthesis software developed by Yamaha based on diphone concatenation. One of the most popular Vocaloid products is Hatusne Miku, developed by Crypton Future Media company" (Kenmochi 2010).

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musical performances. Her huge fan base and pricy sold-out concerts demonstrate her acceptance as not only a popular anime character in the virtual world but also a celebrity-level live performer on stage.[5]

Figure 2. Hatsune Miku Live in Los Angeles, © Crypton Future Media, Inc. 2011
Source: https://live.staticflickr.com/2590/5714338983_b0670b747e_b.jpg

3.2. My name is PARO

Figure 3. Peter Häll / Tekniska museet, National Museum of Science and Technology, January 2018. PARO, the robotic seal. Source: https://digitaltmuseum.se/021027754238/robotsal

PARO is a therapeutic robotic baby Harp Seal designed to function as an interactive emotional companion mainly for elderly residents of nursing homes and to stimulate patients with dementia, Alzheimer's, and other cognition disorders.[6] Equipped with five sensors, PARO responds to haptic stimuli – being held, touched, or stroked – to aural stimuli – her name, greetings, or praise – and light and temperature stimuli. PARO has proven scientifically helpful in treating elderly patients with dementia and cancer (Chevallier 2022). According to medical and service providers at various nursing care centers: "PARO provides an outlet for residents to pursue their nurturing side. It has a calming effect"; "Contact with PARO seems to help bring [the residents] back to life" (Barcousky 2010). In her "live interactions", this non-living robotic agent ironically seems to bring liveliness to patients.

Its manufacturing company claims: "By interaction with people, PARO responds as if it is alive, moving its head and legs, making sounds, and showing your preferred behavior."[7] Similar to a living animal, PARO responds with unpredictable motions and gestures based on what it learns from the environment, evoking a sense of live interaction in the users. PARO's behavior also changes over time based on multi-sensorial impulses it receives from people: "PARO learns to respond to words its owner uses frequently. And if it's not getting much petting time, it will cry" (Guizzo 2009). The playful, performative nature of PARO's interaction with people and the affective reactions it elicits in patients depict the unique presence of PARO as an engaging robotic techno-actor.

4. Analysis of PARO and Miku's techno-liveness

Based on some of the qualities of performance associated with liveness, I will examine the unique presence of Miku and PARO, the immediacy and engaging qualities of their performance, and their ability to form a community or social engagement. I will also look at the specific characteristics of their voices, embodiment, interactivity, and the application of cuteness (or kawaii) in their design and gestural choreography. To this end, I will closely analyze one of Miku's performances and the adorable interactions of PARO with patients to explore further the new form of liveness, which I argue is embodied in their performances. By probing into the implementation of kawaii[8] as an element of design and an artifact of cultural aesthetics, this phenomenological analysis of liveness studies the dialectics of cute and creepy as a backdrop in the human psyche, influencing one's perception of techno-actors' liveness.

4.1. Live presence of techno-actors: Miku's manifestation of presence on stage

Even though Miku lacks a corporeal body, her human-like voice, lifelike yet cartoonish embodiment, and interactivity create a captivating experience for the audience and a sense of "hyperpresence" on stage (Hansen 2015). Mark Hansen believes it is, in fact, the absence of physical con-

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5. Hatsune Miku has released thousands of songs and has gone on tour in the United States, Indonesia, China, Japan, Mexico, Taiwan, and Malaysia, and many other countries all over the world, with concert tickets sold out at many venues.
6. "PARO is an advanced interactive robot developed by AIST, a leading Japanese industrial automation pioneer. It allows the documented benefits of animal therapy to be administered to patients in environments such as hospitals and extended care facilities where live animals present treatment or logistical difficulties" (http://www.parorobots.com n.d.).
7. Ibid.
8. Kawaii style has been a major cultural phenomenon in Japan since the eighties and is used to describe female idols in Japanese pop culture (Sone 2017, 152-161). It has become an important component of their consumer culture's aesthetics and has also spread to international markets and audiences.

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straints that allows virtual actors like Hatsune Miku to evoke an intense yet unique sense of presence in their live performances. Miku can instantaneously deform and modify her body, voice, and costume, move freely on stage, and appear and disappear at any moment, making anything possible in her performance and keeping the audience on their toes.

Moreover, looking at some more classical theories of presence, Eugenio Barba, the well-known theater director, defines the presence of an actor as a "dilated and effective" nature of their body on stage and their ability to "hold and guide a spectator's attention" (Barba 1995). I argue that Hatsune Miku's holographic body is a virtual embodiment of Barba's definition of the actor's presence. Not only does her colorful, radiant body fully grasp and maintain the audience's attention for the entire duration of the concerts, but also it is physically expanded and spread in the auditorium via the audience's costume, makeup, and glowsticks. This cosmic-shaped "rhizomatic"[9] extension of her body into the audience space, along with the sound of her songs echoing throughout the auditorium, depict her fans' intense enthusiasm and dedication. Moreover, this heightened manifestation of her on-stage and online presence has created a sense of community[10] both inside and outside the live event (Anderson 2021).

A question raised here is the difference between the live presence of a virtual agent versus a human actor performing a similar performative act on stage. For this purpose, I borrow another definition of Presence from Joseph Chaikin, a well-known theater practitioner and theorist. In *The Presence of The Actor*, Chaikin defines *Presence* as a unique quality (of an actor/performer) that "makes you feel as though you're standing right next to the actor, no matter where you're sitting in the theater" (Chaikin 1972, 20). In the case of Miku, I argue, with her cyber-celebrity persona, goddess-like aura, immortal youth and beauty, and immaterial body made of light, the audience will never feel too close to her but will instead feel fascinated and mesmerized by her hyper-presence and unstoppable performance on stage. The way her translucent body appears and disappears and morphs on stage fully grasps the audience's attention and conducts their motions and voices in the auditorium, regardless of their distance from the stage, illustrating the expansive hyperpresence of her virtual body beyond the definition of presence by Chaikin.

In *Mapping Ideology*, Slavoj Žižek rejects a fundamental difference between cybersex and real sex (with a human) by referring to a Lacanian argument that the sexual act is already phantasmic in nature and in fact, there is no sexual relationship: "the real body of the other serves only as a support for our phantasmic projections. [. . .] In other words, 'virtual sex' [. . .] simply renders manifest its underlying phantasmic structure" (Žižek 1994, 2). This argument becomes relevant in the context of Miku's live performance, in which her holographic projected body ironically becomes a screening site for the virtual projections of the spectators, from the space of the imaginary to the space of the real. This ongoing tension between virtual and real, corporeal and ethereal, and presence and absence during Miku's performance problematizes the concept of liveness even further.

By using the same Lacanian thesis in his argument, Matthew Causey rejects "the constructed binary of real and virtual" in a live performance: "If you accept Lacan's argument, then the anxieties surrounding the shifting perspectives on the nature of presence, aura, and liveness, regarding the ontology of the theatre, brought about by the advent of new media performance, are entirely without merit. Everything has always-already been virtual" (Causey 2006, 16). Even though I consider Causey's conclusion to be too reductionist to encapsulate the broad scope of all performances, I believe his argument can be appropriately applied to the live presence of Miku. Recognized as a virtual celebrity with popular computer-generated songs, voice, and cartoonish body, Miku's virtual embodiment on stage is intrinsic to her act. The fantastical scope of her persona precedes her performance, and fans familiar with her computer-generated voice and songs who have watched the various modes of her embodiment in different media buy concert tickets expecting to see another manifestation of her virtual body on stage. The appearance of her young, appealing, fantastical body made of color and light in feminine cartoonish proportions on stage, with cute blue ponytails and a high-pitched voice, is the closest fans can come to a kawaii fantasy come to life. In other words, the virtual body of Miku that has already been re-projected in the mental space of the fans is being re-embodied once more in a new virtual modality on the physical stage – adding another layer to the recursive cycle of projections and virtuality.

4.2. The cute factor: "OMG! PARO is so cute!"

As a cute, lovable, therapeutic, and cuddly baby Harp Seal, PARO was designed to bring a level of comfort to users. The performance of cuteness, innocence, and femininity, inspired by kawaii aesthetics, is an integral part of PARO's design. "While kawaii is often associated with animals and inanimate consumer goods, the significance of the human body remains central to its effect [. . .] When addressed to animals or inanimate objects, it seeks to signify them as something almost human, and therefore requiring something approaching the emotional engagement due to humans (and often human infants in particular)" (Black 2008, 39). PARO's cuteness lies not only in its soft furry body, tempting users to pet and embrace it, but also in its cute noises, in how it bats its eyelashes, and in how it gently moves its body like a small baby animal or human.

PARO's cuteness is so disarming that people automatically feel attracted to it and experience a strong desire to take care of this adorable

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9. Deleuze and Gautarri's concept of "'Rhizome' describes the connections that occur between the most disparate and the most similar of objects, places and people; the strange chains of events that link people … and assemblages of bodies" (Parr 2010, 232).
10. Creating a sense of community around a live event, happening here and now, is another quality of performance liveness (Auslander 2008, 63-68).

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baby seal. Its ability to provoke instantaneous emotions in the users brings a live quality to its interactions, causing them to automatically treat it like a live animal or a human infant. This may be why interacting with PARO was proven to be a substitute for animal therapy. Using machine learning algorithms and particular interaction design, her behavior is designed so that her reactions will likely be perceived as spontaneous life-like responses, exhibiting a unique presence in a performative yet therapeutic setting. In his phenomenological study of liveness, Auslander claims the core of liveness is the audience's experience during the interactions, regardless of the entity with which they are interacting or its aliveness (Auslander 2018). By eliciting emotional response and the impulse to play, PARO stimulates people to engage with it and with their surroundings, creating a feeling of social connectedness (Shu-Chuan Chen 2022, 130-137); (Macalupu Chira 2022). In this way, PARO's performative interactions with patients generate a sense of liveness comparable to that of a living companion – human or pet – which can contribute to patients' emotional well-being (Katsuno 2022, 252-255); (Au 2022).

4.3. The clash of virtual and real in Hatsune Miku's performance of cuteness

As an embodiment of the notion of kawaii on stage, Hatsune Miku automatically resonates with the Japanese anime subculture obsessed with cute, cartoonish characters and products. Similar to many other female-gendered humanoid artificial bodies and virtual idols, Miku performs an exaggerated version of a particular form of femininity in her act, complicating the gendered notion of self (Black 2012); (Mavridis 2022); (Sajadieh 2019); (Miyake 2023); (Wolfe 2022). Her kawaii-inspired performative schoolgirl persona contributes to the fetishization and commodification of a particular type of culturally-desired gender dynamics: cute artificial women, and male consumers. With no skin, bone, blood, internal organs, or sexual agency, her doll-like, non-threatening female body becomes a phantasmic object of desire in the male-centric culture of anime (Black 2008, 41). This virtual image, however, cracks with the emergence of Miku's ethereal life-sized body on the physical stage.

While this embodiment of their fantasy in reality is undeniably thrilling for fans, it also clashes with the projected image of Miku in the audience's perception – colliding with their intersubjectivity. Despite creating a sense of unease, this also keeps the performance thrilling, contributing to the liveness of Miku's act. Emerging from within the dark empty space, her virtual body is formed and transformed on stage. Dancing and singing as a live performer with a ghost-like body on a physical stage, Hatsune Miku appears with

an expansive hyperpresence despite the absence of a physical body. The dialectical tension between presence and absence, material and immaterial, human and non-human, becomes a core component of her performative act. Her body is shaped through a continuous (Deleuzian) state of becoming, a continual flow of change between being and not being, becoming present, becoming absent, becoming affective, and becoming live.

4.4. Cute or creepy?

A similar affective cuteness implemented in the embodiment and interactivity design of Miku exists differently in the fluffy body and pet-like, babyloid[11] interactions of PARO. The users unload their emotions on the robotic baby-harp seal as if interacting with a pet or baby. Applying kawaii in designing characters and robots seems to be a successful approach to connecting the missing dots between human and machine and provoking emotions toward artificial bodies. Moreover, the tension between experiencing a sense of ickiness and a desire to adore the adorable can result in emotional conflict and a feeling of unease toward PARO's performative gestures. In their study on the ethical implications of using PARO in elderly homes, Calo *et al.* observed, "The two intuitive responses were: 1) 'Oh, this is so cute!' or 2) 'Wow, there is something deeply creepy about this'" (Calo, *et al.* 2011, 21). The same response can be seen in people's first encounter with Hatsune Miku. The reactions of the non-Japanese viewers to a recording of her performance[12] were either an immediate adoration of her cute body, voice, and performance or extreme agitation and surprise by her live act and the exhilaration of hundreds of fans singing along and dancing at her concerts.

In his revisiting study of liveness, Auslander points out the significance of the audience's perceptual experience in interaction with a technological agent: "Liveness is neither a characteristic of the object nor an effect caused by some aspect of the object such as its medium ability to respond in real-time or anthropomorphism. Rather aliveness is an interaction produced through our engagement with the object and our willingness to accept its claim" (Auslander 2018). When spectators find techno-actors unrelatable or creepy, they subconsciously dismiss the possibility of adequately engaging with them and genuinely assessing their effectiveness.[13] According to Lacan, the affective experience of sex and according to Auslander, the affective perception of liveness are subjective experiences, so the audience's intense visceral experience of ickiness can be a game changer. In other words, we can further claim that the study of kawaii and creepiness – the two poles of the audience's affective experience in interaction with Miku and PARO – becomes the core of the phenomenological analysis of techno-liveness.

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11. Babyloid is a "robot baby, designed to help ease depression among older people by offering them companionship" (Scitechdaily 2011).

12. In the two videos, *Kids React to Hatsune Miku and Elders React to Vocaloids*, in the first encounters of some American children and elders with Hatsune Miku, the responses range from finding her cute to finding her simply wrong, creepy or nonsensical (Kids React 2011); (Elders React 2013).

13. Research has shown that in elderly care homes in which PARO was used, most patients developed an emotional relationship with it, which resulted in the betterment of their physical and psychological states and their social interactions. However, there were still people not open to interacting with her, saying they were "too old to be relaxed by such a thing" (Wada & Shibata 2007).

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4.5. The existential foundations of the creep factor

Phelan, in *Mourning Sex*, claims that "theatre and performance respond to a psychic need to rehearse for loss, and especially for death [. . .] The enactment of invocation and disappearance undertaken by performance and theater is precisely the drama of corporeality itself" (Phelan 1997, 3-4). If performance does, in fact, function as a psychological rehearsal for the death of our mortal bodies, what would be the impact of having a non-living performer devoid of flesh, bone, and blood on stage? How can a performer made of lights, sensors, circuits, and actuators possibly enact such a ritual of mortality without evoking any sense of death and loss? And what is the reason and implication of the impulsive feeling of eeriness aroused as a response toward these technologically-synthesized bodies? I argue this is precisely where the disgust toward techno-actors comes from.

According to Rozin *et al.*, "the centrality of death in disgust suggests a more general construal of disgust within a modified psychoanalytic framework" (Rozin, Haidt & McCauley 2008, 761). I further argue this direct association also suggests the significance of disgust in disrupting the theatrical framework of audience engagement and empathy. Moreover, the evocation of disgust toward techno-actors such as PARO and Miku may be rooted in the notion that their presence reminds us of our vulnerability and mortality. Knowing that an immortal technological agent who can outlive us would not only look and behave similarly to us but would also be capable of developing a human-like emotional connection with us can evoke intense psychological discomfort.

This phenomenon is comparable to the effect described by the Uncanny Valley theorem: a negative emotional response invoked by characters closely resembling humans (in a small threshold) (Mori, MacDorman & Kageki 2012, 100). It is perceived as a psychological discomfort similar to the experience of cognitive dissonance (Ferrey, Burleigh & Fenske 2015). In their attempt to explain this effect, Mori proposes that this sensation may be the human's fear of death and instinct for self-preservation: "The sense of eeriness is probably a form of instinct that protects us from proximal, rather than distal, sources of danger. Proximal sources of danger include corpses, members of different species, and other entities we can closely approach" (Mori, MacDorman & Kageki 2012, 100). When we see a body on stage which resembles a human (or a familiar animal) but which is better and more polished – a body that does not make mistakes or forget its next move, a body that does not get sick, old, or die – we feel an immediate rush of anxiety, constituting an anxiety of extinction. The fact that this body imitates our rehearsal of mortality but cannot experience it reminds us of our own mortality.

Conclusion

Cuteness is associated with birth, creepiness with death. The lack of mortal flesh in techno-actors that rehearse and exhibit the performative gestures of loss and death in front of our eyes can invoke a sense of sluggish under-the-skin eeriness combined with existential angst, which I argue is rooted in our fear of technological singularity and extinction. The arousal of this effect can disrupt our affective, empathic response to them, resulting in our rejection of their claims to presence and liveness altogether. After all, regardless of the aliveness state of the techno-actors, as the live audience of these performances, our mortality cannot be erased or ignored. The solution to the question of techno-liveness, nevertheless, may fall at the other end of the "cute versus creepy" spectrum. In other words, the question of techno-liveness may become the question of whether the artificial actors can have enough of an affective impact on the audience that the scale tips on the side of "cute" and outweighs the creepiness.

When cuteness overpowers creepiness, we may forget about the immortal performers' ontological nature altogether and simply enjoy our engagement with them. One thing that we can all agree on is our desire as a species for kawaii: the small, the adorable, and the feminine. This is the primary reason why the Internet is filled with videos of puppies, kittens, and babies. Ultimately, this passion for cuteness is one reason why it is acceptable and joyful to bring a little baby into this world, which in the broader scheme of things may be the first step towards accepting our death at the other end of the tunnel.

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