Toward the Bio-Uncanny: Evolution, Perception, and the Pseudoscientific Rhetoric of the Liminal Face and Body

Giovanni Pennisi
Università degli studi di Torino
g.pennisi@unito.it

Abstract This article reconsiders the concept of *uncanny* by shifting focus from artificial human-like simulations to the perception of biological bodies and faces. It begins with a theoretical overview – from Jentsch's epistemic ambiguity, through Freud's notion of the return of the repressed, to Mori's "uncanny valley" hypothesis – showing how the uncanny involves both failures of classification and disruptions of perceptual or behavioral expectations. Building on this, the article explores the uncanny's possible evolutionary function as a high-sensitivity alert system, triggered when a stimulus resists categorization and violates predictive coherence. These two dimensions – *categorical uncertainty* (CU) and *violation of expectation* (VE) – provide a structural template for uncanny experiences. Two case studies illustrate how CU and VE can interact. In *mirror self-face perception in schizophrenia*, disrupted predictive mechanisms fracture the sense of bodily continuity, producing perceptual dissonance that later gives rise to CU. In *simianization* – the racist portrayal of Black individuals as resembling or blending with nonhuman primates – ontological ambiguity is imposed in advance, shaping expectations about how the racialized body is to be perceived or will behave. In both cases, the uncanny emerges from a dynamic interplay between anticipation and categorization, where disturbance in one destabilizes the other. The article concludes by adding a third dimension: latency. The uncanny unsettles not only by confusing categories or defying expectations, but by revealing something long repressed or disavowed. Integrating this latent dimension with CU and VE provides a fuller account of the uncanny, grounded in the perceptual, evolutionary, and cultural conditions of human embodiment.

Keywords: uncanny, categorical uncertainty, violation of expectation, mirror self-face perception in schizophrenia, simianization

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0. Introduction

The term *uncanny* has circulated in academic discourse for several decades, gaining traction across fields from psychoanalysis to robotics and human–computer interaction. Initially rooted in early 20th-century psychoanalytic theory, the concept was first articulated by Ernst Jentsch in 1906 in his analysis of the *unheimlich* – a German term denoting a sense of eerie unfamiliarity emerging from what is otherwise familiar. Sigmund Freud expanded on Jentsch's ideas in his 1919 essay *Das Unheimliche*, where he

situated the notion within a broader psychological system. Translated into English in 1925, *unheimlich* became *uncanny*, a term that has since developed a rich interdisciplinary legacy.

From the 1970s onward, interest in the uncanny was reignited, especially in studies of human–machine interaction. A key catalyst was Japanese roboticist Masahiro Mori's hypothesis of the "uncanny valley" (1970), which proposed that entities resembling humans – but falling short of full realism – provoke discomfort. According to Mori, this effect arises when near-human appearance generates an expectation of lifelikeness that is subtly subverted by perceptual discrepancies. His insight highlights the role of thresholds: even slight deviations from anticipated human features can disrupt recognition and render the familiar unsettling.

Yet in its earliest formulations the uncanny was already concerned with biological bodies and faces. In 1906, Jentsch had explored the uncanny potential of living bodies: alongside artificial simulations such as wax figures and automata, he described situations in which the ontological status of a living being becomes unstable, particularly in cases of illness or psychological disturbance – conditions that, he noted, «make a quite decidedly uncanny impression on most people» (1906: 204, my transl.). Among these, he included epileptic seizures, which render the body suddenly unresponsive and beyond voluntary control – suspended, according to the cultural beliefs of the time, between the human and the demonic (cf. *ivi*: 204–205). For Jentsch, the *unheimlich* emerges whenever our capacity for orientation fails, whether the source is organic or mechanical. Freud's later reworking of the concept in 1919, while shifting the focus toward the return of the repressed, did not abandon this bodily dimension: his discussion of the doppelgänger, for instance, is bound up with archaic beliefs about the survival and duplicability of the body.

It is only with the subsequent reception of the uncanny – especially after Mori's hypothesis and the rise of debates in robotics and human–computer interaction – that attention came to concentrate predominantly on artificial human-like figures. These later discussions tended to foreground technological simulation and symbolic meaning over the concrete ways in which living bodies can themselves become uncanny, thereby marginalizing a dimension that was already central in Jentsch and implicitly present in Freud.

Yet the biological and, more specifically, the human body is far from immune to being uncanny. On the contrary, it can become a powerful site of estrangement not only for an external observer, but – crucially – for the subject who inhabits it. The body becomes uncanny to itself when the mechanisms that sustain prediction, identification, or embodied selfhood break down, or when socio-symbolic frameworks impose an inherent instability upon certain kinds of bodies. In such situations, one's own face or corporeality may appear estranged, ambiguous, or disturbingly "other."

This article examines two cases in which the uncanny arises not through artificial replication but through a collapse of the perceptual and categorical boundaries that enable the recognition of the self as fully animate – as in mirror self-face perception in schizophrenia – or fully human – as in simianization, a rhetorical and visual strategy that ambiguously positions certain subjects between the human and the simian.

Crucially, the phenomena discussed here do not rely on a shared causal substrate. In schizophrenia, uncanny experiences stem from disruptions in perceptual and proprioceptive prediction; in simianization, they emerge from socio-cultural imaginaries that assign inherent instability to certain bodies. Rather than treating these cases as expressions of a single mechanism, I approach them as distinct configurations of a broader analytical pattern in which processes of categorical attribution and expectation become unstable, and in which latent perceptual or ideological layers – what I have

elsewhere called the «latency of the uncanny» (Pennisi 2023a) – are brought to the surface.

Within this perspective, the article proposes an expanded way of conceptualizing the uncanny: one not confined to technological mimesis but encompassing the evolutionary, sensory, and discursive conditions through which the human body may come to be perceived as a liminal object.

1. Brief history of the uncanny

The English term *uncanny* entered theoretical discourse as the literal translation of the German adjective *unheimlich*, most notably through the English edition of Sigmund Freud's 1919 essay *Das Unheimliche* – published in 1925 under the title *The Uncanny*. In this influential text, Freud explores the semantic and affective ambivalence of the *unheimlich*, drawing on an earlier contribution by German psychiatrist Ernst Jentsch, *Zur Psychologie des Unheimlichen* (1906). Jentsch offers one of the first systematic attempts to conceptualize the *unheimlich*, describing it as a response to situations that destabilize ontological certainty.

He illustrates this effect through a diverse set of examples: wax figures whose stillness and realism blur the line between the animate and the inanimate; life-sized anthropomorphic automata that mimic life too precisely; and biological phenomena such as epilepsy, «an illness that does not seem to originate in the human world, but rather in strange and mysterious realms» (Jentsch 1906: 204-205, my transl.), and which momentarily suspends the body between these domains. He also describes fleeting moments of misrecognition – when, in the dark, a placid lake is mistaken for a monstrous eye, or the shape of a cloud becomes the face of a demon (cf. *ivi*: 204). These instances reveal how the uncanny arises from a fundamentally interpretive doubt (cf. Surace 2021: 360), plunging the mind into a state of irresolution where it can no longer determine what it is truly confronted with. The unsettling effect emerges when we are momentarily unable to categorize what we are facing as either alive or lifeless, human or nonhuman.

Building on Jentsch's insights, Freud introduces an etymological dimension to the concept by examining the German root *heimlich*, from which *unheimlich* is derived. Although its morphological structure – *Heim* meaning "home" and *-lich* as a standard adjectival suffix – might suggest connotations of the domestic or familiar, Freud shows that *heimlich* also carries less intuitive meanings, such as "secret", "concealed", or "kept from view". The *unheimlich* (uncanny), then, refers not simply to what is unfamiliar, but to something «that ought to have remained secret and hidden but has come to light» (Freud 1919, eng. transl: 225)[1].

Understood in this way, the uncanny does not arise solely from the cognitive or emotional dissonance provoked by a rupture in the symbolic structures that normally organize experience. It also emerges from the unexpected surfacing of a hidden element of the self or of reality – something not meant to become intelligible, and whose sudden appearance is disturbing precisely because it forces a confrontation with a latent dimension that we are neither prepared nor supposed to face. This dimension, which I have described as the «latency of the uncanny» (Pennisi 2023a), will be revisited in §5.

A major reactivation of the concept occurred in 1970, when Masahiro Mori introduced the now widely discussed "uncanny valley" hypothesis. Although developed

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[1] In this passage, Freud draws on a definition previously formulated by Schelling, who described the *unheimlich* as «the name given to everything that should remain secret, hidden in latency, and that has come forth» (quoted and translated in Griffero 2021: 120).

independently of the psychoanalytic tradition, Mori's model shares with Jentsch and Freud a focus on the unsettling effects produced by entities that resist stable classification. In a short but influential essay, Mori observed that as artificial figures become increasingly humanlike, our emotional response tends to become more positive – until a certain threshold is crossed. At that point, minor deviations from expected human appearance or behavior begin to provoke unease, eeriness, or even revulsion. This sudden drop in emotional affinity – the "valley" – marks the zone in which an object appears almost, but not fully, human.

What disturbs, Mori explains, is not artificiality per se, but the way near-perfect resemblance generates an anticipatory framework that is then subtly betrayed. Describing a prosthetic hand that looks lifelike but feels cold and rigid to the touch, he writes: «we lose our sense of affinity, and the hand becomes uncanny» (Mori 1970: 98). The discomfort stems from a mismatch between visual cues and sensory feedback – an incongruity that disrupts perceptual coherence. This phenomenon has since been observed in a range of interactions with technological artifacts such as robots (Rosenthal-Von Der Pütten & Krämer 2014; Mara, Appel & Gnambs 2022), CG characters (Tinwell, Nabi & Charlton 2013; Giuliana 2022), avatars (Shin, Kim & Biocca 2019), and deepfakes (Kishnani 2025), among others. At the same time, empirical research on the uncanny valley remains highly controversial and theoretically fragmented; as Wang, Lilienfeld and Rochat (2015: 395) note, no single explanatory model has yet achieved robust consensus.

According to Wang, Lilienfeld and Rochat (2015), the theoretical foundations of the uncanny valley can be structured into two principal interpretive approaches: the *Categorical Uncertainty* (CU) hypothesis, associated with Jentsch, and the *Violation of Expectation* (VE) hypothesis, linked to Mori (cf. Wang, Lilienfeld & Rochat 2015: 396). In the literature they discuss, these hypotheses are usually treated as distinct, sometimes competing accounts of what underlies uncanny responses. In this article, however, I use CU and VE mainly as analytical dimensions rather than as mutually exclusive causes: they designate, respectively, disruptions in classification and disruptions in prediction that can, in principle, co-occur in a given situation.

The example of highly realistic humanoid robots can help to illustrate how CU and VE may be instantiated together: an observer might be unable to decide whether the figure counts as "really" human (CU) while also being affected by subtle deviations from expected expression or movement (VE). Crucially, this is only a heuristic phenomenological description. The explanatory hypotheses themselves concern subpersonal processes, and the relationship between personal-level experience and such processes remains an open theoretical issue. To avoid conflating levels, I will treat CU and VE simply as labels for families of mechanisms that can be analytically distinguished, even when they are jointly manifest in experience.

To better understand how CU and VE interact in producing the uncanny, the next section adopts an evolutionary lens. This perspective helps illuminate how such responses may have emerged as adaptive strategies for navigating ambiguous or threatening stimuli in our environment, while also clarifying the limits of purely functional accounts when confronted with sociohistorically shaped forms of uncanniness such as simianization.

2. Evolutionary function of the uncanny

Already in his original formulation of the uncanny valley hypothesis, Mori suggested that the sensation of eeriness might serve a fundamental adaptive function:

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> Why were we equipped with this eerie sensation? Is it essential for human beings? I have not yet considered these questions deeply, but I have no doubt it is an integral part of our 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 (Mori 1970: 100).

Building on this intuition, several researchers have interpreted the uncanny as the expression of evolved cognitive-emotional mechanisms attuned to potential threats. Wang, Lilienfeld and Rochat (2015) reviewed three principal hypotheses that explore the uncanny from an evolutionary perspective:

- The *Pathogen Avoidance* hypothesis, which links uncanny sensations to disgust responses triggered by anomalies in human-like replicas – such as pallor, asymmetry, or erratic movement – that may unconsciously signal disease (MacDorman *et al.* 2009; Rozin & Fallon 1987);
- The *Mortality Salience* hypothesis, which posits that lifeless or reanimated human forms – like dolls, wax figures, or androids – evoke discomfort by unconsciously reminding observers of their own mortality (MacDorman & Ishiguro 2006);
- The *Evolutionary Aesthetics* hypothesis, which suggests that uncanny reactions occur when artificial faces or bodies diverge from evolved standards of health, fitness, or attractiveness (Hanson 2005).

Wang and colleagues also highlight several limitations common to these models. First, none has been robustly validated through experimental designs capable of establishing a clear causal link between specific features of uncanny stimuli and the emotional responses they elicit. While some studies associate uncanny reactions with individual differences in disgust sensitivity or fear of death, the findings remain largely indirect (cf. Wang, Lilienfeld & Rochat 2015: 395).

Second, all three models presuppose that uncanny entities are perceived as human – or close enough to trigger mechanisms calibrated for human recognition. This assumption is crucial: in the absence of such perception, responses linked to disease avoidance, mortality awareness, or reproductive fitness would not be activated. Yet, as the authors point out, this assumption often remains unexamined in the literature (ibid.).

Third, many uncanny figures do not clearly exhibit signs of disease, death, or unattractiveness, suggesting that these cues alone cannot account for the full range of uncanny responses. These limitations point to the need for a more integrative framework, but also reveal the risk of stretching evolutionary models beyond their proper domain.

A useful, though speculative, starting point is offered by Moosa and Ud-Dean (2010), who reinterpret the uncanny not as a reaction to specific cues but as the product of an evolved danger-detection system. Their account situates uncanny-like feelings within a continuum of adaptive responses to ambiguous or potentially threatening stimuli, focusing on how organisms might react to entities whose status along the alive/dead dimension is unclear or troublingly unstable.

To illustrate this, Moosa and Ud-Dean propose a nine-level gradient of emotional aversion, ranking entities by the degree of perceived danger they may signal:

1. Dead insect
2. Decomposing insect body
3. Dead small animal
4. Decomposing small animal

5. Dead large animal
6. Decomposing large animal
7. Human corpse
8. Decomposing or freshly dead mutilated corpse
9. Freshly dead mutilated corpse with sudden movements

As they explain, «at the extreme end of the spectrum is a fresh, dead corpse with sudden movement, which is indicative of the greatest degree of danger because it clearly suggests that the death-causing agent might be in close vicinity» (Moosa & Ud-Dean 2010: 13).

The scenario they describe makes explicit what earlier theories had implied: that uncanny responses can be understood as part of a high-sensitivity detection system for threats in close perceptual proximity. Moosa and Ud-Dean themselves do not articulate this in terms of specific cognitive mechanisms such as categorical uncertainty or violated expectation. However, their gradient can be fruitfully read as compatible with a picture in which two kinds of disruption are jointly at stake: difficulty in placing an entity on the alive/dead or human/nonhuman divide (CU) and a sense that its behaviour or appearance deviates from what is normally anticipated for its supposed kind (VE). This is an interpretive extension rather than a claim about the authors' own terminology.

On this reading, what distinguishes uncanny scenarios within a broader danger-detection system is not the presence of particular content cues (e.g., blood, pallor), but the way in which ambiguity about an entity's category interacts with a sense of disrupted prediction. This configuration produces a state of epistemic and perceptual dissonance that demands urgent attention, precisely because it may signal a possible danger here and now, just as Mori had foreshadowed. Importantly, this dual mechanism need not be confined to interactions with artificial artifacts; it can also be instantiated in mirror experiences or in socio-symbolic categorizations of bodies.

This evolutionary perspective is not meant to provide a unifying subpersonal explanation for all forms of uncanniness. Rather, it offers a functional template that can be instantiated by different neurocognitive or discursive mechanisms in different domains. In the following sections, I examine two phenomena in which the conjunction of ambiguity and disrupted expectation becomes particularly salient: mirror self-perception in schizophrenia and the visual rhetoric of simianization. In the first, a disruption of perceptual and, crucially, proprioceptive prediction leads to ontological uncertainty concerning one's own face; in the second, it is the collapse and re-inscription of categorical distinctions at the ideological level that destabilizes, in advance, how certain bodies are perceived and sets the very horizon of what can be expected from them. In both instances, the uncanny effect is further intensified by the surfacing of a latent element of the self or of the social order – a core feature of the *unheimlich* in Freud's sense.

3. Uncanny mirror experiences in schizophrenia

The psychopathological literature contains numerous accounts of individuals with schizophrenia who report mirror experiences that are not merely anomalous but deeply unsettling. These episodes frequently involve a breakdown in self-recognition, distortions in bodily perception, or disintegration of spatial perspective. Consider the following examples:

> Agnese [a schizophrenic patient] did not recognize herself in mirrors that returned the diaphanous and ruined image of her face, nor did she recognize the meaningful

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> contours of things: [she was] immersed in a radical autistic solitude (Borgna 2004: 127, my transl.);

> When I am looking into a mirror, I do not know anymore whether I am here looking at me there in the mirror, or whether I am there in the mirror looking at me here […]. Are there perhaps two 'I's? (Kimura 1994: 194, my transl.);

> Since I was little, I have had a fear of mirrors. Sometimes the face in the mirror does something unexpected or looks like a drawing. At other times, when I walk past the mirror my specular image remains in the mirror. I can have the feeling that my mirror-image remains in the mirror after I have left the bathroom. It is very disturbing since it is as if I left it behind and it becomes angry with me as a result (Sandsten, Parnas & Zahavi 2022: 276);

> [In the mirror] naturally I see my facial features, but I see the face differently, as if the head in practical terms had burst open behind and something were coming out of it; that's nonsense, of course, isn't it. The hair is different, above all the hair gets distorted. The face is like it, for example, sometimes is represented for Mickey Mouse (Harrington, Oepen & Spitzer 1989: 379).

What these reports share is a profound inability to recognize the self in the mirror. This collapse of recognition involves not just perceptual distortion, but a fundamental uncertainty about whether the mirrored figure belongs to the domain of the self, the animate, or even the human – versus the domain of the non-self, the inanimate, or the nonhuman. At times, the image appears to acquire a disturbing autonomy, as if it were endowed with agency. What emerges here is a first layer of uncanniness: the destabilization of a boundary between two mutually exclusive categories. The mirror image oscillates between being familiar and alien, between the self and something radically other (see Pennisi 2023b).

However, the uncanny dimension of mirror experiences in schizophrenia does not stem from categorical uncertainty alone. Rather, it appears to originate from a deeper disruption: the violation of perceptual and proprioceptive expectation. A striking example is offered by the case of M.D., an eleven-year-old boy at high genetic risk for schizophrenia:

> When I look at the mirror, for example washing my face or my teeth, after a while I feel I do not exist, as if the mirror makes me forget who I am… my image at the mirror is always the same, it doesn't change… then I try to close my eyes but when I open them I have the same feeling (Poletti & Raballo 2019: 319).

According to Poletti and Raballo, M.D.'s experience may be explained by a dysfunction in *corollary discharges* (CDs), a well-documented feature of schizophrenia (Feinberg & Guazzelli 1999; Ford et al. 2001). CDs are internal copies of motor commands that the brain sends to sensory areas to anticipate the sensory consequences of voluntary movements (Crapse & Sommer 2008; Subramanian, Alers & Sommer 2019). These predictive signals allow us to distinguish between sensations caused by ourselves and those originating externally. In the visual system, CDs help maintain perceptual stability across eye movements by signaling to the brain what to expect even before the movement occurs (Sommer & Wurtz 2008; Wurtz 2018).

Applied to mirror perception, CDs likely help sustain the brain's ability to anticipate what will be seen when one faces a reflective surface – such as a certain expression or configuration of one's own face. As the case of M.D. seems to suggest, «CD alterations may hamper the perceptual prediction of one's own reflected image at the mirror, that is

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processed as a highly likely input when one looks in a reflective surface» (Poletti & Raballo 2019: 321). In other words, the recognition of one's reflection depends on the continuous and immediate integration between visual input and the brain's expectations about what should appear – expectations shaped by both previous experiences and by the motor commands responsible for subtle movements like blinking, shifting gaze, or tilting the head. When these anticipatory signals are disrupted, the image in the mirror may begin to appear strangely unresponsive or disconnected, no longer following the body's intentionality.

Over time, this repeated mismatch between predicted and actual visual feedback can erode the association between one's bodily movements and the mirrored image, to the point where the reflection ceases to be experienced as an extension of the self and may ultimately be perceived as entirely other (cf. *ivi*: 322). Thus, in this case, the uncanny is not initially produced by the inability to classify the image, but rather by a prior breakdown in the predictive and proprioceptive mechanisms that normally sustain recognition. Because CDs are among the most basic neurocognitive operations that support perceptual coherence in our species, a disturbance at this level represents a primary disruption – one that precedes the very possibility of attributing the image to a stable category. The fact that such a disturbance is observable in a child still in a prodromal, pre-psychotic phase of the illness underscores how fundamental this mechanism is. His failure to recognize his reflection stems not from an abstract cognitive confusion, but from the concrete perceptual fact that the image does not update or respond to his actions as expected.

This interruption in sensory prediction fractures the continuity of meaning usually conferred upon one's reflection, leaving behind an image that appears inert and emotionally vacant. Faced with this absence of coherence and resonance, the mind may attempt to compensate by imposing new meaning upon the image, which in turn may be shaped by the patient's delusional pattern. For example, a patient with persecutory delusions may come to interpret the reflection as another person with hostile intent (cf. Laing 1960: 126), thereby collapsing the boundary between self and other. In cases of mystical or religious delusions, the mirror image may be perceived as a demonic or supernatural entity (cf. Caputo, Lynn & Houran 2021: 443-444), challenging the boundary between the human and the nonhuman. In more severe cases, such as Cotard's syndrome – a rare neuropsychiatric condition sometimes nested within schizophrenia (see Bott *et al.* 2016) – the reflected face may be seen as lifeless, destabilizing the boundary between the living and the dead (see Gardner-Thorpe & Pearn 2004).

In all these instances, the disruption of the mechanisms that normally allow one's face to be predicted and recognized generates an uncanny experience directed toward the self. When the reflection no longer follows proprioceptive and visual expectations, the subject encounters a first moment of violated anticipation. This mismatch opens a space of instability in which the image ceases to behave as "my" face should.

From here, a secondary form of categorical uncertainty can emerge – uncertainty about whether the face is one's own, someone else's, or even fully human or alive. The mind attempts to resolve this ambiguity by retroactively imposing meaning upon the anomalous image, often along delusional lines.

This dynamic shows that uncanny feelings – whether arising from violated expectation (VE), categorical uncertainty (CU), or their concatenation – need not be limited to external objects such as automata or humanoid robots. They can arise in relation to one's own body when the predictive scaffolding that normally anchors self-recognition collapses. Schizophrenic mirror experiences thus reveal that the uncanny can be

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internally directed, producing estrangement not from an external replica, but from the self as perceptually and categorically unsettled.

4. The uncanny power of simianization

While the previous section examined the uncanny effects of mirror self-recognition in schizophrenia – where a disruption in perceptual anticipation fractures the subject's capacity to assign their reflected face to a clear and stable categorical domain – this section turns to a phenomenon in which ambiguity is embedded from the outset. It is the socially constructed perception of Black people as inherently liminal – neither fully human nor entirely other – that gives rise to a framework of expectation shaping how their bodies are perceived, interpreted, and acted upon.

Simianization refers to the attribution of physical, cognitive, or moral traits associated with nonhuman primates to racialized subjects – predominantly, though not exclusively, Black individuals (Hund, Mills & Sebastiani 2015). Though often considered a subcategory of animalization, simianization holds a distinctive position within the history of dehumanization. Unlike antisemitic portrayals of Jews as rats, lice, or other vermin – symbols designed to evoke disgust through associations with filth or contagion (see Geller 2018) – simianizing representations operate within a semiotic register that is less metaphorical and more ontologically insinuating. As Mills (2015) observes, their peculiar "semiotic aura" stems from the historical plausibility of the ape–human hybrid, a figure imagined as occupying a transitional position in the chain of being even before the publication of Darwin's evolutionary theory (cf. Mills 2015: 29–30). This proximity, both morphological and symbolic, renders simianization particularly enduring and disturbing, collapsing the categorical divide between human and nonhuman in a way that feels uncomfortably real.

This narrative has long been legitimized by pseudoscientific discourse. As Sebastiani (2015) documents, anatomists and naturalists such as Edward Tyson, Georges-Louis Leclerc de Buffon, and Edward Long contributed to the construction of a supposed biological continuum between Africans and nonhuman primates. Tyson's anatomical studies of apes and Long's use of such comparisons to argue for an ontological alignment between African populations and great apes helped confer a veneer of scientific authority upon deeply racist ideas. These discourses were instrumental in framing Blackness as a deviation from normative humanity and thus in justifying slavery and colonial domination.

Simianization, however, did not remain confined to academic writing. It circulated widely through visual culture, particularly in forms that linked Blackness to sexual threat and bestial violence. In the nineteenth century, Frémiet's sculptures of gorillas abducting women gave material form to fantasies of hypersexualized, uncontrollable nonhuman masculinity (see Hund 2015). A similar logic resurfaces in King Kong (1933), where a giant ape abducts a white woman and is ultimately killed by white men to restore social order. As Affeldt (2015) notes, the film's symbolic associations are easily decoded as part of an iconography of racial violence, deeply rooted in fears of miscegenation and the myth of the Black male rapist that permeated American society at the time.

Such imagery has proven remarkably persistent. From racist caricatures of Barack and Michelle Obama as chimpanzees (Wingfield & Feagin 2012) to courtroom reporting that draws on ape metaphors in describing Black defendants (Goff et al. 2008), the trope of the simianized Black subject continues to shape cultural perception.

Importantly, according to Woods and Hare (2020), what makes simianization so affectively charged is its connection to the uncanny valley. Great apes, unlike vermin or livestock, are disturbing not because they are radically other, but because they are almost

human. Their resemblance triggers an affective response marked not by revulsion alone, but by a deeper kind of cognitive and emotional unease, rooted in a sense that the boundary between human and nonhuman is not as sharp as we would like to believe. When this logic is mapped onto human subjects, it produces a uniquely toxic form of dehumanization. The simianized subject is not simply degraded; they are placed within an ontological space that renders them persistently uncanny – unsettling because too close.

In Jentsch's terms, simianization cultivates a permanent "intellectual uncertainty" about what one is truly confronted with: a human being, or something only provisionally admitted to the human. In Freud's sense, the uncanny arises from the feeling that a disavowed "truth" about human animality – or about racial hierarchies presented as natural – has come to light. The unsettling effect lies less in a momentary perceptual doubt than in the ideological insistence that the Black subject is the revelation of a disturbing biological reality.

It is this condition of liminality that Fanon describes in *Black Skin, White Masks*, when he writes:

> The black man has two dimensions. One with his fellows, the other with the white man. […] This self-division is a direct result of colonialist subjugation […]. Its major artery is fed from the heart of those various theories that have tried to prove that the Negro is a stage in the slow evolution of monkey into man (Fanon 1952, eng. transl.: 17).

The simianized subject internalizes this hierarchical framing, locating himself on an unstable rung between the human and the animal. This ontological instability corrodes self-perception and social navigation alike, creating a fractured relation to one's own embodiment (cf. Pennisi 2025: Chap. 3).

At this point, the contrast with schizophrenia becomes particularly revealing. In mirror self-perception, as discussed earlier, the uncanny emerges when the brain's predictions fail to match visual and proprioceptive input – leading to a disintegration of self-categorization. In simianization, by contrast, the uncertainty is not generated by perceptual breakdown but imposed in advance by a racialized symbolic order. It is not the image that fails to conform to expectation, but the expectation itself that is structured around an inherited framework of ambiguity. The Black subject is perceived not as unpredictable, but as predictably unstable, always already located in a liminal space. As Fanon puts it with bitter precision: «A man was expected to behave like a man. I was expected to behave like a Black man – or at least like a nigger» (Fanon 1952, eng. transl.: 114).

The uncanny, in this instance, does not erupt from a sudden violation of prediction in the moment of perception. It resides in the structure of anticipation itself, in what Yancy (2008) calls the "elevator effect" – the way the racialized body triggers fear or unease in everyday encounters, regardless of behaviour, purely through the meanings ascribed to it. When a white woman flinches upon sharing a confined space with a Black man, her reaction is not a response to his actions, but to his categorization. The perceived threat lies not in the body's behaviour, but in what that body has come to signify. The categorical liminality assigned to the Black male body defines the bounds of expectation, and the woman's fear is an affective realization of those expectations. The uncanny here is pre-emptive and ideological: it does not arise from violation, but from the assumption that violation is inevitable.

Simianization thus reveals a structurally inverse yet affectively parallel pathway to the uncanny. Rather than emerging from a perceptual mismatch that generates uncertainty,

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it arises from a pre-existing categorical instability that dictates how perception unfolds. The Black body is not uncanny because it deviates from the norm; it is uncanny because it is never permitted to be part of the norm in the first place. What makes simianization such a persistent and potent mechanism of dehumanization is precisely this: it embeds the subject in a structure of ontological ambiguity that precedes recognition, shaping not only how others respond to them, but also how they come to perceive themselves. At the same time, the mechanisms at stake here are discursive and institutional rather than neurobiological; any appeal to CU and VE in this context must therefore be understood as mapping the structure of uncanny attribution, not as positing the same subpersonal processes as in schizophrenia or in the uncanny valley of robotics.

5. Conclusion: the latency of the uncanny

The two cases examined – mirror self-perception in schizophrenia and simianization – have shown that the uncanny is not limited to artificial replicas or near-human simulations. On the contrary, it can emerge with equal or greater force in relation to biological bodies. In both instances, the uncanny effect arises through a collapse of the categories and expectations that usually allow us to recognize someone or ourselves as fully animate or fully human. The familiar body becomes strange not because it has changed, but because the structures that grant it meaning and coherence have fractured or revealed their own instability.

In the case of schizophrenia, this fracture occurs when the predictive mechanisms that normally coordinate movement and perception – especially those underpinning proprioceptive self-affection – are disrupted. As a result, the mirror no longer reflects a coherent self, but a static, disconnected image, which prevents the patient from categorizing the specular face as that of oneself, or even as human or alive. This breakdown, while rooted in perceptual processes and affecting categorical certainty, also reactivates something deeper: a regression to the pre-reflective bodily experience described by Lacan in his theory of the mirror stage. Before the child learns to perceive the body as a unified whole, it is encountered as fragmented and unstable – a condition Lacan famously called the "body-in-pieces" (cf. Lacan 1949, eng. transl: 97; see also Gallop 1982). In schizophrenia, this developmental phase – normally surpassed through the structuring function of the mirror – resurfaces, revealing a latent form of bodily experience that continues to exist beneath the surface of recognition. What the mirror brings to light is not merely a distortion, but something that has always been there: the body before the emergence of a stable self-image (see Pennisi 2023a, 2023b).

Simianization shows a different dynamic. Here, the uncanny does not arise from perceptual breakdown, but from the imposition of a prior ambiguity embedded in racialized discourse. The Black subject is not suddenly misrecognized but is already inscribed within a symbolic order that casts them as both human and not-quite-human. This contradictory positioning is not experienced as surprising, but as if it confirms something already suspected – something "scientific", evolutionary, or natural. In this way, the uncanny power of simianization lies in its capacity to present a racialized subject as a hidden truth brought to light. The uncanny emerges not from a visual shock, but from the sense that a latent layer of meaning has become visible: a supposed proximity between humans and apes that masquerades as an insight into biological reality while in fact crystallizing historically contingent prejudices.

In both cases, then, what surfaces is a latent structure – whether perceptual, developmental, or ideological – that does not replace the other mechanisms of the uncanny, but adds a further layer to them. The uncanny arises not only when categories blur (categorical uncertainty) or when expectations are disrupted (violation of

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expectation), but also when something long buried or concealed becomes perceptible – unsettling not because it is unknown, but because it was always silently present. This, as Freud noted, is the deeper essence of the *unheimlich*.

The comparison between schizophrenia, simianization, and the uncanny valley should therefore not be read as an attempt to reduce three heterogeneous phenomena to a single explanatory mechanism. Rather, it suggests treating the uncanny as a multi-level, "family resemblance" concept whose instances are connected by overlapping features – CU, VE, and latency – realized by different configurations of neurocognitive, embodied, and discursive processes. By integrating the notion of latency into the broader framework already provided by CU and VE, we gain a fuller understanding of why certain bodies, faces, or forms become uncanny, but we also expose the limits of purely functional and evolutionary accounts when they confront historically situated forms of dehumanization.

It is not just that uncanny figures confuse us or defy prediction. It is that, in doing so, they expose the deep structures – psychological, perceptual, historical – that make recognition and self-identification possible in the first place. In this brief disruption, the hidden scaffolding of meaning is momentarily revealed, and with it, the uneasy realization that what feels most familiar – our own body, or the category of "the human" – is never fully secure.

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