

ALIENOCENE – SOUND & VISION

PLUMBING THE ABYSSAL

On (Vanta)Blackness + Descent



CECILIO M. COOPER

“It is so black it looks like a mistake [sic].”¹ This is how design writer and cultural historian Kassia St. Clair described Vantablack,² which was released by English company Surrey NanoSystems in 2016. By incorporating this tenebrous new substance, Anish Kapoor’s inlaid sculpture *Descent into Limbo* exemplifies the intimate associations between blackness and the abyssal that animate Atlantic



Anish Kapoor’s covering part of his face with a swatch of Vantablack, Instagram / @dirty_corner [2016]

World visual culture. Despite not being produced by a Black Diasporic artist, works like this warrant sustained attention by scholars serious about Black Diaspora Art History because its rehearsed imposition of negativity onto blackness indelibly fuels

¹ This essay’s focus on Vantablack and Anish Kapoor’s art initially comprised my dissertation’s final chapter. It has since benefitted from generous engagement during the Black Portraiture[s] Toronto conference *Absent/ed Presence* in 2021.

² “Darkest Thing on Earth Helps See into Space” CNN - *Great By Design*, Nov. 23, 2017. <https://www.youtube.com/watch?v=k-ojRLix72U>

structures of visibility itself. This ocular violence in which it traffics is inextricable from the varied contexts in which Black Diasporic people cultivate and navigate visual cultures. Moreover, visual grammars of antiblackness implicitly and explicitly shape the reception, circulation, and practice of Black expressive cultural productions—especially those that are hailed as proffering divergent imaginaries. Positioning himself as a kind of postcolonial hybrid maverick, Kapoor nonetheless eschews directly addressing the racial implications of invoking chromatic blackness in this or his other related works that are replete with religious and phenomenological significance. I examine how Kapoor uses a synthetic coating to devise an artistic rendering of blackness as evacuated space by instead amplifying the racial tenors of its subsurface darkness.

This essay's concern with certain scientifically inflected aesthetics builds upon theorization I've done elsewhere on the *black chthonic*, which affords a mode of considering how netherward forays are demonologically and negrophobically linked to ideas around abyssal fallenness.³ According to Judeo-Christian traditions, tethers between hierarchy, linearity, and blackness have endured since the universe's onset. Atlantic World culture overwhelmingly characterizes the cosmos as being comprised of a vertically oriented territorial amalgam.⁴ Blackened concepts and blackened things being positioned on the bottom of that array betrays the confluence of cosmological, structural, chromatic, and racial meaning. As lowliness, blackness can simultaneously signify inferiority and obscurity in certain contexts. However, black lowliness likewise expresses blackness' foundational role as a fecund seedbed for lifeforms. Blackness is likewise a subsurface phenomenon that iterates a spectrum of vitality via spiritual

³ Cecilio M. Cooper, "Fallen: Generation, Postlapsarian Verticality + the Black Chthonic." *Rhizomes: Cultural Studies in Emerging Knowledge Journal*, vol. 38, 2022.

⁴ "Within these traditions what Dutch architect Ole Bauman has called the 'metaphysics of verticalism' extends from classical structures through the city-cosmos geometries..." Stephen Graham, *Vertical: The City from Satellites to Bunkers*. Verso Books, 2016, 9.

liminality and organic putrefaction. From art to psyche to taxonomy to geography, blackness subtends.

Kapoor's *Descent into Limbo* plays with depth, perspective, and architecture by centering blackness within its composition. He first devised *Descent into Limbo* in 1992⁵, which was more than two decades before Vantablack came on the market and he started working with it to darken *Descent into Limbo*'s floor depression.⁶ In 2018, he brought an updated version of the piece to Serralves Park in Portugal, coated with an even more saturated new super-black.⁷ It was branded with the name Vantablack, which is an acronym for Vertically Aligned Nanotube Array Technology. Before I discuss Kapoor's engagement with Vantablack in his work, I will provide a general overview on this groundbreaking substance. Then, I will consider what implications this peculiar overlap of science and art has for conceiving blackness as an absented presence.

Reviews for this super-black designed by John Hagopian, an optics engineer with the National Aeronautics and Space Administration, were immediately positive.⁸ Surrey NanoSystems has spoken enthusiastically about its potential for practical use in mirror telescopes, yet they minimize its likely applicability for stealth military weaponry. The more consumer-friendly spray-on version that attracted the spike in publicity was modified from one originally designed for aerospace and optics industry specialists. This is a noteworthy pivot given that Surrey NanoSystems debuted its Vantablack prototype at a 2014 Farnborough Air Show.⁹ When optical cavities were

⁵ *Descent into Limbo* [1992] <https://anishkapoor.com/333/descent-into-limbo-2>

⁶ Russell Smith, "Paint it Black: The Subversive Story of Anish Kapoor's Man-Eating Art Piece," *Special to the Globe & Mail*, Sept. 8, 2018. <https://www.theglobeandmail.com/arts/article-paint-it-black-the-subversive-story-of-anish-kapoors-man-eating-art/>

⁷ *Descent into Limbo* [2018] <https://anishkapoor.com/75/descent-into-limbo>

⁸ John G. Hagopian, "Super-Black Nanotechnology Coating for Aerospace Applications. (Technical Insights)." *Advanced Coatings & Surface Technology*, vol. 26, no. 9, 2013, 7.

⁹ Adam Rogers, "Art Fight! The Pinkest Pink Versus the Blackest Black," *WIRED*, 22 Jun. 2017.

added to the carbon nanotubes and placed more sporadically rather than in exact vertical alignment, they collectively optimized the amount of light they refracted. This new structure lent itself to dispersal in spray form rather than the earlier painstaking granular application process with a brush. This modification deepened Vantablack's chromatic appearance while simplifying its application to surfaces and reducing maintenance costs. I am particularly intrigued by the way that *Descent into Limbo's* abyssal quality is generated through two veneers of verticality. 1) Its concave floor indentation has a clear downgrade slope. 2) The nanotube components of its Vantablack coating are arranged in an upright cylindrical formation. Inside a furnace, one layer of a hexagonal lattice is arranged like "a thicket of aligned hairs while another is arranged more like a coral." Incoming photons are deflected off by this nanoparticle labyrinth.¹⁰

Vantablack made press as an exceptional super-black technology, but it is not the first super-black that scientists have studied. Its closest organic rival is observable on the plumage of certain birds-of-paradise populating New Guinea and Australia.¹¹ The tiny, spiked barbules on their feathers scatter more light than those of other birds with smoother feathers. Vantablack's prototype absorbs 99.965% of light, so ranks as the "...world's darkest human-made substance."¹² Its extreme pigmentation is the result of a synthetic concoction that surpasses all other blacks already occurring in nature. By absorbing almost all incident light near it, surfaces coated in Vantablack seem to disappear from the naked eye while amplifying the luminosity of surrounding colors. Whatever it cloaks beneath recedes into a dark aperture. The fabric of the world appears punctured wherever it's used, seemingly exposing a chasm that

¹⁰ "Carbon Nanotubes Built this Bizarre Ultrablack Material." *Verge Science*. <https://www.youtube.com/watch?v=CzW2Xqw7k6A>

¹¹ Michael Allen, "Courting in Super-black." *Physics World*, vol. 31, no. 3, 2018, 5.

¹² Ann R. Thryft, " 'Black Hole' Coating Keeps Satellite on Track: Vantablack Is an Ultra-Black Coating That Absorbs Virtually All Incident Light around It." *Design News*, vol. 71, no. 7, 2016, 23.

stretches from its immediate edges all the way to outer space. Vantablack must be delicately grown in lab conditions, so is subsequently more costly per ounce than diamonds or gold.

Soon after Vantablack S-VIS was released, Indian-born British artist Kapoor secured exclusive rights to use it in his work in 2016. He was not only attracted its pigment, but also its delicate consistency. Kapoor deems it a “proper *non-material*” since the “nanostructure of Vantablack is so small that it virtually has no materiality.”¹³ Vantablack’s thinness rivals that of the most diaphanous substance, yet it is exorbitantly opaque. He added, “It’s thinner than a coat of paint and rests on the liminal edge between an imagined thing and an actual one. It’s a physical thing that you cannot see, giving it a transcendent or even transcendental dimension, which I think is very compelling.”¹⁴ Journalists have equated it with paint, but head of Surrey NanoSystems Ben Jensen attests that Vantablack’s latest iteration is actually “more like a crust” than a liquid.¹⁵

Some of Kapoor’s artworld peers have criticized him for monopolizing it as a creative medium. It is significant that he is not the first non-Black person to use super-black technology to create iconic pieces. NASA designed black nanotube coatings that made its way into Belgian artist Frederik De Wilde’s *NanoBlck-Sqr #1* [2014], with

¹³ Anish Kapoor, “Interview,” *Artforum*, April 3, 2015. <<https://www.artforum.com/interviews/anish-kapoor-talks-about-his-work-with-the-newly-developed-pigment-vantablack-51395>> [my emphasis]

¹⁴ Kapoor, “Interview,” *Artforum*, April 3, 2015.

¹⁵ Qtd. in Dani Deahl, “How Gesaffelstein’s Coachella Set Tricked Mind’s with the World’s Blackest Black,” *The Verge*, April 24, 2019, <<https://www.theverge.com/2019/4/24/18512555/gesaffelstein-coachella-performance-vantablack-monolith>>.

help from researchers at Rice University.¹⁶ ¹⁷ The austere sculpture's composition is reminiscent of Robert Fludd's signature images created nearly four centuries prior. A cross-hatched black square appears in his *History of the Two Worlds (Utriusque Cosmi)* [1617] to designate the limitless universe. But unlike his forerunners, Kapoor used legal channels to prohibit other artists from using Vantablack. Perhaps, its scarcity would raise the market value of the few sculptures that employed it.



A black square illustrates the universe's primordial chaos bordered by the Latin inscription "And so on to infinity" (*Et sic in infinitum*), Robert Fludd, *History of the Two Worlds (Utriusque Cosmi)* [1617]

Outraged by Kapoor's avarice, artist Stuart Semple crafted a super-black alternative to Vantablack that was instead freely available. Black 2.0 and then Blk 3.0 are advertised as the world's mattest, flattest black acrylic paints. The cherry-scented pigment is listed online at Amazon Prime and available for anyone to purchase except Anish Kapoor.¹⁸ ¹⁹ Semple's Blk 3.0 reflects less than 4% of light, which is roughly 3% shy of Vantablack.

¹⁶ Philip Ball, "Material Witness: None More Black." *Nature Materials*, vol. 15, no. 5, 2016, 500.

¹⁷ Sumit Paul-Choudhury, "None More Black." *New Scientist*, vol. 225, no. 3006, 2015, 45–45.

¹⁸ Sarah Cascone, "Vantablack vs. Black 2.0: Which Is the Superblack for You?," *Art World*, 30 March 2017 <<https://news.artnet.com/art-world/vantablack-vs-black-superblack-907556>>

¹⁹ Amazon Prime website;

<https://www.amazon.com/gp/product/B0758GKKGZ/ref=ox_sc_saved_title_1?smid=A22FA175DBCKL6&psc=1>

Semple has since expanded his range by releasing BLINK, the blackest ink in August of last year.²⁰ Though there have always been complicated debates around art's circulation as commodity under copyright and/or as a cultural creation open to fair use, conflict around pigment ownership is unusual given that pigment seems such an essential artistic tool. Semple likens his black products to paint, which alongside clay and canvases should be readily available to anyone who can afford them. In contrast, Surrey NanoSystems' framing of Vantablack as a crust supports categorizing their super-black brand as an invention singularly subject to private use.

Within Kapoor's 2018 installation *Descent into Limbo*, a monochromatic blackness embodies the subterranean space between the floor and an imagined underworld deep below. Kapoor achieved the effect of an impenetrable darkness by coating the inside of the hole with Vantablack. Its inky interior evoked the sense of an infinite void. The title of his piece is taken from both a 15th century painting and engraving with the same name by Italian Renaissance artist Andrea Mantegna. Adam and Eve and other lost souls are depicted within it while demons hover overhead. Jesus makes his way toward limbo—the zone at the entrance to hell underfoot—before his resurrection. Alongside the pitch-black waters of purgatory, limbo also describes geospatial liminality.

²⁰ Megan C. Hills, "The 'Blackest' Black: How a Color Controversy Sparked a Years-Long Art Feud," *CNN Style*, August 20, 2021. <https://www.cnn.com/style/article/blackest-black-ink-culture-hustle/index.html>

It serves as an interstice partitioning Christian heaven from hell where the souls of some dead linger. In Roman Catholic doctrine, limbo jointly refers to two states of spiritual indeterminacy inflected by filial relations—*limbus patrum* (Limbo of the Patriarchs) and *limbus infantium*



Jesus at limbo's threshold,
Andrea Mantegna, *Descent into Limbo* [1475/80]

(Limbo of unbaptized souls).²¹ Wilson Harris describes limbo as, “a certain kind of gateway or threshold to a new world and the dislocation of a chain of miles. It is – in some ways – the archetypal sea-change stemming from Old Worlds”.²² So limbo is a condition that is not only endemic to subterranean milieus, but also the open waters. Harris is not only concerned with how the Caribbean exists geographically as a channel linking Atlantic and Pacific Oceans. This archipelago of the Americas is just one landmark along a vast hydrous tomb in which African kinship bonds were severed by chattel slavery. Christina Sharpe elucidates how the holds of slave ships that shuttled African captives paradoxically foment death while also serving as figurative wombs that birth blackness.²³ As a point of disembarkation at one end of the Middle

²¹ Bruce Gordon and Peter Marshall, *The Place of the Dead: Death and Remembrance in Late Medieval and Early Modern Europe*. Cambridge UP, 2000.

²² Wilson Harris, “History, Fable and Myth in the Caribbean and Guianas,” *Caribbean Quarterly*, vol. 16, no. 2, 1970, 6.

Nathaniel Mackey, “Limbo, Dislocation, Phantom Limb: Wilson Harris and the Caribbean Occasion,” *Criticism*, vol. 22, no.1 (1980), 57-76.

²³ Christina Sharpe, *In the Wake: On Blackness & Being*. Duke University Press, 2016, 27.

Passage, limbo spaces underground and underwater serve as flashpoints for race-making and violent expansions of European empires into the Americas. A whole bloody industry was fueled by the idea that possessing dark skin damned entire peoples to being legitimately enslaveable resources.

Kapoor describes his *Descent into Limbo* not as a hole in the ground, but instead as a “space full of darkness.” In order to truly grasp Kapoor’s provocations, Homi Bhabha suggests that we press, “...beyond the illustrational, ‘the look of the void’” so that we may see how, “the sign of emptiness



Road Runner carrying a black portable hole,
Chuck Jones, *Beep Prepared* [1961]

expands the limits of available space.”²⁴ *Descent into Limbo*’s crater centerpiece was enclosed within a concrete and stucco edifice 600 cubic cm in dimension. (That’s about 20 feet in height, length & width). The muddled white appearance of both the building’s interior walls and facades contrasted the green of the surrounding gardens and the inner black cavity. Consequently, the hollow three-dimensional impression within *Descent into Limbo* can appear to the naked eye as a flat two-dimensional circle. A Looney Tunes *Merrie Melodies* short featuring Wile E. Coyote and Road Runner weaponizes the polymorphic void for comic relief.²⁵ It shows a peel-and-stick portable hole that can change from two-dimensions to three dimensions, depending

²⁴ Homi K. Bhabha, “Anish Kapoor: Making Emptiness,” *Anish Kapoor*, Hayward Gallery and University of California Press, 1998, 11-41.

²⁵ *Beep Prepared*, Directed by Chuck Jones and designed by Maurice Noble, Warner Brothers, 1961.

on need. One person was so disoriented by Kapoor's similarly cartoonish optical illusion that he had to be hospitalized after accidentally falling into its eight-foot abyss.

In the wake of the controversy surrounding Kapoor's involvement with Vantablack, other artists have since been commissioned to use Vantablack for their own projects. For example, architect Asif Khan erected a pavilion sprayed with Vantablack VBx2 for the 2018 winter Olympics in South Korea. French DJ Gesaffelstein, dubbed "the prince of darkness," also showcased a 30-feet high monolith for his Coachella stage performance in 2019.²⁶

Vantablack's defining characteristic is its superlativeness. This innovative substance is unparalleled because it is purportedly the blackest of all black pigments. As a result, "[p]erception of depth and dimensionality disappears into a scotoma of darkness." Vantablack occasions an ocularly perceptible form of negation: "You look at Vantablack, but nothing looks back at you."²⁷ Black holes are allegedly the only things more devoid of light (and so blacker) than Vantablack in the entire universe. A swatch of Vantablack can create a scotoma, which is "an island of blindness in the visual field."²⁸ Scotomas are usually attributed to physiological causes, especially harm to the visual cortex. The sensory information that the visual cortex inputs as blank spots are routinely described in medical literature also as "black holes." However, scotomas often don't register to the afflicted, so their brains *fill in* the missing part of the image so that it seamlessly matches the color and texture of the surrounding area. *Descent into Limbo* demands that we pre-attentively perceive its

²⁶ Deahl, 2019.

<https://www.theverge.com/2019/4/24/18512555/gesaffelstein-coachella-performance-vantablack-monolith>

²⁷ Rogers, "Art Fight!" [italics are my emphasis]

²⁸ Vilayanur S. Ramachandran, "Filling in Gaps in Perception: Part I," *Current Directions in Psychological Science* vol. 1, 1992, 199-205.

dark round shape as indicating a solid surface rather than a potentially dangerous recess. When neuroscientist V.S. Ramachandran frames filling in as “pre-attentive,” he points to the unconscious way our minds infer and speculate unknown sensory information during the early stages of visual processing. Pre-attention relies on spatial memory that enables us to anticipate the full shape of an object without seeing it in its entirety. Blackness functions within this installation as a religiously inflected absence that is paradoxically capable of eliciting sensation.

But what is blackness, in its essences and permutations? How has its significance for the visual field in Western discourse been differently characterized? Johann Wolfgang von Goethe evaluates blackness in physiological terms, interpreting it as the complete absence of light.²⁹ Arthur Schopenhauer subsequently posits blackness or “total darkness” as the “inactivity of the retina” that occurs in the eye when left unstimulated by external illumination.³⁰ Michel Pastoureau clarifies how late medieval Latin offered more nuanced ways of distinguishing blackness by degree of luster in contrast to the way that English collapses it into a single term. Whereas *ater* was used to describe matte blacks, *niger* encompassed a range of glossy blacks.³¹ Through her formulation of the portmanteau *bixel*, Krista Thompson probes how blackness functions as a sparkling surface comprised of synecdochical visual fragments.³² Tavia Nyong'o disputes common-sense understandings of blackness as “the absence or opposite of color.” *Achromatic* describes a lack of hue or saturation along with colorless reflections of light or imperviousness to stains. Nyong'o instead

²⁹ Johann Wolfgang von Goethe, *Theory of Colors* (1810) + Eugene Thacker, “Black on Black.” *The Public Domain Review*, 2013.

³⁰ Arthur Schopenhauer and Philipp Otto Runge. *On Vision and Colors*. Princeton Architectural Press, (1816) 2010, 60 & 73.

³¹ Pastoureau, Michel. “In the Beginning.” *Black: The History of a Color*. Princeton University Press, 2009, 28.

³² Krista Thompson, *Shine: The Visual Economy of Light in African Diasporic Aesthetic Practice*. Duke UP, 2015, 36.

finds blackness to be “the possibility of any color whatsoever,” terming it *uchromatic* after Francois Laruelle.³³ This neologism *uchromia* urges us to “think from the point of view of Black as what determines color...rather than what limits it.”³⁴ Blackness is potential then; it is a vector for variable outcomes. Tina Campt encounters blackness as *omnichromatic* plenitude in a way dissimilar to white, which departs from Goethe’s or Schopenhauer’s privative takes. She observes, “Unlike the “color” white, which isn’t actually a color and only reflects the colors around or proximate to it, the color black consists of *all* colors at once, merged into something that may appear to be a void, yet which is, once again, anything but.”³⁵ While black is said to *absorb* all colors, white is often framed as doing its opposite—comprehensively *reflecting* the entire color spectrum. Rather than confine his assessment of blackness to light or color, Calvin Warren states that black is not simply, “the color black, but is the index of formlessness...”³⁶ The figure of the Negro, for him, has a monstrously amorphous constitution of “formless form” situated at the interstice between “man and animal, property and human,” as well as life and death.³⁷ Consequently, blackness possesses a capacity for entropic disaggregation wherever it manifests. Let us turn now to black holes, which are astrophysical phenomena that epitomize blackness’ singular significance for understanding both the limits of form and color.

Vantablack and other super-black technologies aspire to replicate certain qualities essential to black holes. They emit what was once an imperceptible amount of light or any other material signal, so a “lack of communication with the outside world...is a basic property of black holes.”³⁸ They have long been regarded as

³³ Tavia Nyong’o, *Afro-Fabulations: The Queer Drama of Black Life*. NYU, 2018, 125.

³⁴ François Laruelle, *On the Black Universe: In the Human Foundations of Color*. Ausdruck, 2018, 111.

³⁵ Tina M. Campt, *A Black Gaze: Artists Changing How We See*. MIT Press, 2021, 135.

³⁶ Calvin L. Warren, *Ontological Terror: Blackness, Nihilism, and Emancipation*. Duke UP, 2018, 34.

³⁷ Warren, 35.

³⁸ Tai L. Chow, *Gravity, Black Holes, and the Very Early Universe: An Introduction to General Relativity and Cosmology*. Springer Science & Business Media, 2007, 84.

cloistered supermassive objects. Matter left in the wake of a star's implosion is thought to be their most common cause. Though the gravitational fields of black holes exert influence on their surroundings, potential energetic exchanges at play have been difficult to accurately surmise. Even light trajectories that manage to narrowly escape being captured by a black hole's inner threshold—its *event horizon*³⁹—still curve around its rim.⁴⁰ The centripetal pull emanating from within black holes will eventually cause star orbits to decay if they veer too close and spiral toward the vortex's center.⁴¹ It is possible that a black hole's swallowed contents becomes simpler and the identities of its intake are crushed and homogenized to the point of *singularity*. It is important to keep in mind, however, that though matter and light may vacillate position within a black hole's purview, they don't evade its reach once ensnared.⁴² Black holes then inhere a kind of irreversibility such that, "Anything that goes into the black hole does not come out."⁴³ Black holes are absolute. Relatedly, Evelyn Hammonds observes that a black hole's dense composition is typically misconstrued as a void's vacant space.⁴⁴ Like Kapoor's characterization of *Descent into Limbo*, black holes are not empty, but are instead spaces teeming with darkness.

Vantablack seems to me a chromatic Pillars of Hercules marking an edge of intelligibility. Posited as the quintessence of darkness, it supposedly instantiates blackness at its limit. None blacker, it rivals alchemy's *nigrum nigro nigrius*, the

³⁹ Neil deGrasse Tyson, *Death by Black Hole: And Other Cosmic Quandaries*. WW Norton & Company, 2007, 138

⁴⁰ David D. Nolte, *Introduction to Modern Dynamics: Chaos, Networks, Space and Time*. Oxford UP, 2015, 403.

⁴¹ Nolte, 410–411.

⁴² Chow, pp. 81. However, light echoes have recently been detected behind black holes. Wilkins, D. R., et al. "Light Bending and X-ray Echoes from Behind a Supermassive Black Hole." *Nature*, vol. 595, no. 7869, 2021, 657–660.

⁴³ Shamik Banerjee and Partha Paul, "Black Hole Singularity, Generalized (Holographic) C-theorem and Entanglement Negativity," *Journal of High Energy Physics*, vol. 2017, no. 2, 2017, 15.

⁴⁴ Evelyn Hammonds, "Black (W)holes and the Geometry of Black Female Sexuality." *Differences*, vol. 6, no. 2–3, 1994, 127–45.

blackest black imaginable. It is color's *nec plus ultra* signalling nothing further beyond. I don't view resonances between the ways blackness circulates discussions about this late 21st century invention and early modern alchemy and cosmography as anachronistic missteps. Instead, the tethers signal to me the insistent refrain of some unfinished cosmologically driven imperatives. Akin to synthetic skin, Vantablack illustrates how deeply efforts to scientifically quantify blackness are ensconced with moves to own it and monetize it. Creative and industrial deployments of Vantablack not only evidence desires to render blackness a marketable modernist possession. Moreover, I'm struck by the way blackness is weaponized to signal the looming threat of fallenness and nothingness while also being subject to the psychic demands of possession and ownership. Ultimately, considering *Descent into Limbo* and similar works by non-Black artists affords an opportunity to trouble taken for granted distinctions between racial blackness and (a supposed) abstracted, conceptual non-racial blackness.

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