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How to Be Human in Drone Culture:
In Search of a Pharmacological Recompense through Performance

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Abstract. This article examines how performance represents, reflects on, and reimagines the function of technology in drone culture. From a pharmaco-phenomenological angle, I analyze drone art practices, focusing on how drone performances invite audiences to feel/make their way through a networked reality. I highlight human tension, vulnerability, and precarity in their digital thrownness in conditions perceived as alien or alienating, yet not completely foreign or nonhuman. Featuring Ars Electronica Futurelab's *100 Drones*, Julian Hetzel's *The Automated Sniper*, Laura Poitras's *Bed Down Location*, and Random International's *Zoological*, I investigate drones as pharmaka in practices where these technologies potentially antagonize, elevate, or even outperform their human counterparts. It is through this pharmacological functionality of drones that, this article seeks to understand how to be human in drone culture.

This article examines how performance represents, reflects on, and reimagines the function of technology in drone culture. From a pharmaco-phenomenological angle, I analyze drone art practices, focusing on how drone performances invite audiences to feel/make their way through a networked reality. I highlight human tension, vulnerability, and precarity in performance conditions partly produced through the activity of drones, themselves perceived as alien or alienating, yet not completely foreign or nonhuman. Featuring Ars Electronica Futurelab's *100 Drones*, Julian Hetzel's *The Automated Sniper*, Laura Poitras's *Bed Down Location*, and Random International's *Zoological*, this article investigates the drone as a *pharmakon* in performance practices where technology potentially antagonizes, elevates, or even outperforms its human counterparts. It is through this pharmacological functionality of drones that, this article seeks to understand how to be human in drone culture.¹

¹ My conclusions come from observations supported by live and documented viewings of each piece discussed. I experienced *100 Drones* in Linz (Ars Electronica, September 2015), *The Automated Sniper* in Utrecht (Theater Kikker, Spring 2017), *Bed Down Location* in New York (*Astro-Noise*, Whitney Museum, April 2016), and *Zoological* in London (+/- *Human*, Roundhouse, August 2017).

According to the much-rehearsed Derridean definition of pharmakon, technology is a poison that is also its own antidote. Jacques Derrida's and later Bernard Stiegler's use of the term "pharmakon" offers a more nuanced approach to technology, avoiding the oversimplified binary of good versus bad and acknowledging a wider range of possibilities.² In Derrida's example, writing, as a primary technology, compensates for the weakening of our memory that writing has caused in the first place. More specifically, writing as a primary technology harms "the operation of (internal) memory (because it removes the need for memory practice)" and "extends the scope of memory (by supplementing it technically or, more precisely, by exteriorizing it into a technical support)."³ However, all technology is not the same, especially if we consider the differences between premodern and twenty-first-century technologies. Focusing on the pharmacological structure of twenty-first-century technology, Mark Hansen explores the "imbalance" that occurs when technology as pharmakon does not "*directly* [give] back what it takes away, exchanging a 'natural' source of memory for an 'artificial' one," like writing.⁴ I am particularly interested in the phenomenological dimension of pharmakon and pharmacology, identified here as *pharmacophenomenology*. By reflecting on audience members' situatedness within the pharmacophenomenological structures of drone performances, the article explores how drones reduce, enhance, renegotiate, and decentralize sensory dimensions of human perception.

² Jacques Derrida, "Plato's Pharmacy: I," in *Dissemination*, trans. Barbara Johnson (1969; Chicago: University of Chicago Press, 1981), 61-119; Bernard Stiegler, "Relational Ecology and the Digital *Pharmakon*," *Culture Machine* 13 (2012): 1-19, <https://culturemachine.net/wp-content/uploads/2019/01/464-1026-1-PB.pdf>.

³ Mark B. N. Hansen, *Feed-Forward: On the Future of Twenty-First-Century Media* (Chicago: University of Chicago Press, 2015), 50.

⁴ Ibid. Hansen discusses the phenomenon of "pharmacological imbalance" caused by the disconnection between the experiential and operational aspects of modern technology. He argues that "the experiential affordances" of using networked technologies cannot recompense for "the loss of control over data generated by user[s]," as there is no direct link between the two. This analogy is relevant to drones too, as a networked technology linked to surveillance, reconnaissance, and intelligence, that is, computational processes that are divorced, or as I will argue, "discorrelated" from their human subjects. According to Hansen, when technology fails to restore lost capabilities, it develops new ones in their place, as an "indirect recompense." Hansen, *Feed-Forward*, 73, 51.

The drone is a complex example as regards its pharmacological structure. As a “time traveler” and a “shape-shifter,” the drone

chang[es] its appearance depending on place and time and what we are using it to do: it’s been a target for training pilots, it’s been a top-secret stealth spy vehicle, and it’s been a smartphone toy. The drone is a trickster, playing upon our preconceptions and emotions, in order to manipulate our thinking even as we control it by remote.⁵

The story and practice of contemporary drones differ from their killing-from-distance predecessors, not least due to their computational and networked nature. The invention of technologies for killing from a distance throughout centuries—the arrow, the sarissa, the rifle, the atomic bomb, and the missiles carried by rockets, airplanes, and drones—responds to humans’ instinct for survival, seeking shields for their vulnerability. At the same time, it also expresses a desire to dominate, conquer, and destroy existing and imaginary threats. Drones as uncrewed combat aerial vehicles (UCAVs) predominantly associated with surveillance, intelligence, reconnaissance, and asymmetries of power were used by various countries, including the United States and the United Kingdom, in their military operations against Syria, Afghanistan, and Iraq in the early to mid-2000s. Drones’ performance, in their multifaceted weirdness with their predatory appearance, landing legs, propellers, and camera eye, have been developed, acquired, and changed by different industries, such as media and entertainment, agriculture, construction, environmental monitoring, the trade sector, and others. Part aircraft, part computer, and part robot, this hybrid technology resembles a crossover between a toy and a mechanical insect.

In recent years, drone technology has attracted a lot of attention in art and popular culture as a technological gimmick engaged in acrobatics, dancing, and flying, illuminating skies and big stages worldwide from Broadway to digital art festivals, talent shows, and

⁵ Adam Rothstein, *Drone* (New York: Bloomsbury, 2016), xiv.

Olympic Games ceremonies. Imaginative uses of drone technology exceed human capabilities and access areas from a distance to offer new perspectives through its First Person View (FPV). Moreover, the drone appears as a new tool and presence for artists to reimagine and extend their practice and engage new audiences. In 2014, Robin McNicholas, creative director of Marshmallow Laser Feast, wondered whether 2015 would be the year drones became art. Departing from the drone's "warmongering reputation," McNicholas highlighted "the athletic power of quadcopters," their "increasing" intelligence, and their ability to offer "spine-tingling performance art."⁶ Representative of the celebrated entrance of drones in artistic practice is the project *100 Drones* hosted and produced by Ars Electronica festival in Linz, Austria in 2015.

The project featured one hundred drones that took off in unison across the Danube River. Sounding like a swarm of robotic insects, the drones reached the dark blue sky not to attack but to perform, to shine their lights and dance. They gathered and drifted apart, forming different shapes in sync with Beethoven's Fifth Symphony. "Da da da dah," and off they went, lit in different colors in a carefully orchestrated choreography. The Ars Electronica Futurelab equipped the drones "with a programmable LED system and a GPS-based autopilot . . . swarm control software and a ground [control unit]" and modified their software to allow them to perform an aviation choreography.⁷ This grandiose spectacle, staged in the Austrian sky and accompanied by an emblematic piece of music, framed Ars Electronica's collaboration with Intel, a Silicon Valley multinational corporation. The performance ended with all drones forming the Intel logo, 250 meters in diameter, and blending Intel's jingle with Beethoven's symphony. A swarm of airborne drones that appears

⁶ Robin McNicholas, "Will 2015 Be the Year Drones Become Art?" *The Guardian*, December 19, 2014, <https://www.theguardian.com/culture-professionals-network/2014/dec/19/2015-drones-art-creative-examples>.

⁷ Koichiro Eto, "The Role of Art for the Future of Society," *HAL* (October 2023): 14-15, <https://hal.science/hal-04214133v1/document>.

in front of audiences to dance and shine simultaneously demonstrates a flexible technology, repurposed from a kill chain technology to a world-record (at the time) spectacle.⁸

Apart from offering an awestriking show, *100 Drones* is also an implicit reminder of humans' complex relationship with our technologies, which is pharmacological, that is, both threat and promise, limitation and open potentiality, and often deeply imbalanced.⁹ Ars Electronica's collaboration with a company that has "a long history of supplying electronic components to the defense industry" begs the question: is this relationship clever or stupid?¹⁰ In our everyday experiences, what does our technology make us? Artistic practice can push these questions further to consider how drones shape us and how we can be shaped by them in their pharmacological capacity. Art and performance practice can represent drone technology beyond utilitarian or sensationalized frameworks that celebrate technological advancement. Indeed, artistic practice can generously unfold a drone's range of possibilities within its inescapable constraints to consider whether the experiential affordances of drones might trouble their military functionality as computer-controlled weapons of war and reveal new potentialities.

Using a pharmaco-phenomenological perspective, I offer a diagnostic account and potential reimaging of drone technology in a culture where, the drone as a symbol, oscillates between its utilitarian, recreational, metaphysical, and transformational capacities. In each section, I consider qualities of drone technology as a pharmakon that brings something new to our understanding of experiences of digital culture through contemporary performance—sedimentation, premediation, excommunication, and disconnection. My analysis of *The Automated Sniper*, the main case study of this essay, focuses on the

⁸ Martin Hieslmair, "Drone 100: A World Record with 100 Points," Ars Electronica, January 12, 2016, <https://ars.electronica.art/aeblog/en/2016/01/12/drone100>. This record was beaten by Shenzhen HighGreat Innovation Technology Development Co., Ltd., with 5,164 UAVs simultaneously airborne in 2021.

⁹ See footnote 4 about "pharmacological imbalance."

¹⁰ "Mission Ready: Powering Innovation from Edge to Cloud," Intel, 2019, <https://www.govexec.com/feature/mission-ready>.

anthropocentric modes of visibility and perception allowed by drone systems as part of the “militainment” complex. Specifically, I delve into the tension between the virtual and the physical, as expressed through the audience’s sedimented experiences and premediated anxieties. Expanding beyond the singular perceiving human subject to distributed modes of excommunication, I explore humans’ relation with drones’ dis-correlated processes that escape human consciousness in Poitras’s *Bed Down Location*. The final section reverses to the nonanthropocentric performance assemblage *Zoological* to reconsider the pharmacological recompense of human-drone cohabitation.

The Automated Sniper

Julian Hetzel describes *The Automated Sniper* as “a performative installation on militainment and warfare that explores the oscillating relation between the virtual and the real.”¹¹ The work invites its audience to become part of a game, a violent operation where, according to the provocatively playful motto of the performance, “Seeing becomes doing. Watching becomes killing,” an echo of the war drone’s functionality. Members of the audience find themselves in the middle of a tension that emerges from the work’s fusion of martial networks and civilian media. Understanding audience responses to and choices within *The Automated Sniper* reveals the operations of sedimentation and premediation in human-drone relations.

The Performance

The performance starts in a clinical white gallery space located in Utrecht, Netherlands. In silence, two male performers create their own abstract artwork made from

¹¹ “The Automated Sniper,” Studio Julian Hetzel, <http://julian-hetzel.com/projects/the-automated-sniper>. “Militainment” refers to “entertainment with military themes in which the Department of Defense is celebrated.” *Webster’s Dictionary*, s.v. “militainment (n.),” 2023, <https://www.webster-dictionary.org/definition/militainment>.

random mundane objects: a white metal bar, a satellite dish, a trash bin, a hanger, a fire blanket, a chair, and more. The objects are arranged with acrobatic precision, one on top of the other or against the walls, in different combinations that produce unlikely plastic, metallic, industrial-looking skeletons in white, gray, and silver tones. A calm and authoritative female voice (Ana) welcomes the audience and gives them information about the game they will soon experience. A remotely controlled paintball marker aims at the stage. Ana, as commander of the operation, offers an ardent description of the paintball marker, which is not just a toy but also a “custom-made gaming device . . . a system of projecting power from a distance.” This shooting machine with robotic features and a surveillance eye consisting of “a wide-angle lens and a night-vision mode” is praised for its “resounding” impact, precision, and efficiency. It is “a technological diamond!” The device moves delicately, showing off its features, while Ana assures the audience this is “a system that will make (our) hearts beat faster.”¹²

Ana looks for audience volunteers to get the game started. The volunteers will go backstage to a gaming booth with access to the game’s shooting device. In front of them sits a screen that allows visual access to the stage. They each put on a headset and prepare to operate the shooting technology via a gamepad and joystick following Ana’s instructions. A screen showing the shooting booth is located at the top center of the stage, allowing the audience to view each volunteer as they operate the gamepad. As soon as the participant picks up the joystick, a laser light appears on stage, representing the end of the shooting gun. It all looks playful and relatively uneventful at first, apart perhaps from the sharp-shooting sound of the paintball striking the stage’s white walls. Soon, the scene becomes more complicated; the two performers building the stage get ready by putting on their protective masks to shield their faces from the pellets. Depending on the game’s round, the targets are

¹² These lines are from the unpublished script of *The Automated Sniper* (courtesy of Julian Hetzel).

multiple: from the walls to the shooter's own screened image, the objects in the white box gallery, and, finally, the performers themselves, who will be involved in a relentless human hunting game within the small and contained space of the theatre stage. Ana/the Commander orders, "Let's shoot them," and the volunteers (usually) obey.¹³ The stage soon becomes chaotic, with smeared paint and scattered objects covering the previously clinical, sterile white space, while the two performers are crumpled on the floor, breathing heavily. This part of the game ends with one of the performers referencing *Guernica* to characterize the aesthetic aftermath of the battle.

The last act is written from afar, in the city of Baghdad. Ana/the Commander informs the audience that she will present a new feature of the drone-like shooting machine: "our device is also . . . controlled via the Internet. I am happy to introduce you to a remote player, our special guest: Nassim al Dulhaimi from Baghdad, Iraq. Nassim is a 28-year-old professional gamer . . . [and] an expert in *Predator*, an online drone simulation engine."¹⁴ Nassim, who is also a performer, takes control of the paintball gun and shoots the performers, in Utrecht, following the Commander's directions. The shooting game is soon replaced by footage of a van going up in flames after being targeted by a drone. At one point, the paintball gun becomes autonomous and paints a drone (self-)portrait. The game, or rather the entire performance, finishes with the performers spray-painting the words "Make Art Great Again" on the white walls.

The Automated Sniper, similar to works by James Bridle, Trevor Paglen, Laura Poitras, Rimini Protokoll, Rabih Mroué, Wafaa Bilal, Harun Farocki, Liam Young, and others, belongs to a body of practice where performances and/or representations of drones are deployed as remotely piloted aircrafts (RPAs) or unmanned aerial vehicles (UAVs) to

¹³ Information from my personal interview with Hetzel in 2018.

¹⁴ Hetzel, unpublished script.

highlight the technology's ability to access control, exert power, or kill from distance. Although all of these practices feature postdigital narratives that tend to scrutinize, "accelerate," and "exacerbate" the digital's alienating capitalist tendencies to reveal political, aesthetic, and ethical considerations related to networked and computational control,¹⁵ I specifically consider *The Automated Sniper*, as well as the other works discussed herein, as drone performance or drone art.¹⁶ This categorization is due not only to the performances' engagement with drone systems and their methods but also to a shared questioning of possibilities for human accountability and becomings in and through these technologies. I echo Thomas Stubblefield's view that this relatively new artistic practice "disentangles . . . from . . . 'left melancholy'" to side with a "more nuanced reading" of technological and martial networks, "one in which the apparent passivity of this genre is not only a conscious response to the specific conditions of drone power, but in fact the means for reimagining its relations of violence."¹⁷ Similarly, *The Automated Sniper*'s approach to drone power may not be that of activist art per se, but rather of a phenomenological stumbling through a networked environment where the audience oscillates between passivity and resistance to gamified violence.

The performance setup (re)acquaints the audience with a gamified and physically tangible experience of war technologies by situating them in a place of potential vulnerability and precariousness. Spectators participate (or refuse to participate) as gamers, shooters, or witnesses and are invited to perform in their real-life capacity as digital inhabitants. In their moving through the space of *The Automated Sniper*, the singled-out audience members are

¹⁵ Matthew Causey, "Postdigital Performance," *Theatre Journal* 68, no. 3 (2016): 432.

¹⁶ According to *The Drone Primer*, drone art's key feature is that "the drone has served a dual role as both a subject of the artwork and a tool for creating it." Dan Gettinger et al., *The Drone Primer: A Compendium of the Key Issues* (Annandale-on-Hudson, NY: Center for the Study of the Drone, 2014), 15. While for performance scholar Elise Morrison, drone art is part of surveillance art, Elise Morrison, *Discipline and Desire: Surveillance Technologies in Performance* (Ann Arbor: University of Michigan Press, 2016).

¹⁷ Thomas Stubblefield, *Drone Art: The Everywhere War as Medium* (Berkeley: University of California Press, 2020), 12, 2.

(re)thrown into a staged drone operation where vulnerability is tested through small acts of performed violence that individuals either embrace or resist.¹⁸ These experiences occur in the precise historical moment of *The Automated Sniper*, a post-9/11 era that is defined by network-centric warfare and the militainment complex, specifically the incestuous merging between martial networks and gaming technology.

Seeing Becomes Doing. Watching Becomes Predicting

Hetzel describes *The Automated Sniper* as a battle, with the stage as the battlefield, contextualized by the biblical injunction “an eye for an eye, a tooth for a tooth.”¹⁹ Besides the vengeful premise of this proverbial expression, the role of the eye—both human and inhuman—is a key part of the experience of *The Automated Sniper*. The performance foregrounds visibility both in the primary sense of seeing as sensory engagement in drone operations within a superpanoptic system where human-camera-network eyes are interconnected but also, and most importantly, in its relationship to the audience’s sedimented experiences in a premediated militarist mediasphere (as I describe later).

In our contemporary moment, drones are utilized as games, military training simulations, or war weapons, acting as integral components of networked life. As a symbol of the rapid surge of surveillance practices in everyday life and the West’s more visual warfare, the drone is a networked technology aimed against an atterritorial threat that is everywhere. In the most recent history of war technology, drones are often associated with the post 9/11 era of the “war on terror”—a term that vehemently sought to “legitimis[e] force against any enemy anywhere.”²⁰ *The Automated Sniper*’s epigraph—“Seeing becomes doing. Watching

¹⁸ Amanda Lagerkvist describes digital “thrownness” as the precarious situatedness of our digital existence “in a particular place, at a particular historical moment, and among a particular crowd with the inescapable task of tackling our world around us and to make it meaningful.” Amanda Lagerkvist, “Existential Media: Toward a Theorization of Digital Thrownness,” *New Media & Society* 19, no. 1 (2017): 97.

¹⁹ “The Automated Sniper,” Studio Julian Hetzel.

²⁰ Melissa Gronlund, *Contemporary Art and Digital Culture* (New York: Routledge, 2017), 147n1.

becomes killing.”—echoes the drone’s history as “an eye [that] turned into a weapon,”²¹ and also emphasizes the drone’s gaze, unsituated due to its everywhere-ness. Donna Haraway describes the unsituated gaze as a “conquering gaze from nowhere” that purposefully distances “the knowing subject from everybody and everything in the interests of unfettered power.”²² She problematizes this gaze from everywhere as unmarked, disembodied, and without limit: an unregulated gaze that lacks accountability. What does it take to resist this gaze? Haraway calls for “situated knowledge.” This knowledge is not about achieving a false “transcendence of all limits and responsibility,” but rather about understanding the particular and specific embodiment of a situation.²³

The Automated Sniper creates a gamified environment that invites audience members to consider human accountability in relation to the drones’ unrestricted gaze. Similar to other drone artworks, the performance counters digital everywhere-ness to state the obvious—namely, that drone warfare, an “everywhere war,” is also a “*somewhere* war.”²⁴ It does so by situating individual audience members, the usual viewers of war, in the place of a shooter or a potential target. Individual members of the audience volunteer to become shooters with the attitude that “this is just a game.” Others refuse to be part of it and even leave the space. Most of the audience members remain quietly seated.²⁵

Any attempt to bridge the gap between the everywhere and the somewhere comes with a price, that is, situating (and de-anonymizing) the perpetrator and holding them accountable for their actions. To echo Haraway’s argument about the positionality of the

²¹ Grégoire Chamayou, *A Theory of the Drone*, trans. Janet Lloyd (2013; New York: The New Press, 2015), 11. This sentiment is also relevant to FPV gamers/shooters in wargames.

²² Donna Haraway, “Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective,” *Feminist Studies* 14, no. 3 (1988): 581. Although Haraway’s feminist critique does not necessarily talk about drones, her approach concerns how truth is made and, very importantly, how knowledge can be biased and is based on exclusive practices of people who make truth.

²³ *Ibid.*, 582-83.

²⁴ Derek Gregory, “Drone Geographies,” *Radical Philosophy* 183 (January/February 2014): 15.

²⁵ Based on information provided during my interview with Hetzel and my own observations of the performance.

viewing subject: “one cannot relocate in any possible vantage point without being accountable for that movement. Vision is *always* a question of the power to see—and perhaps of the violence implicit in our visualizing practices.”²⁶ Audience members who refuse to participate may thus refuse to become accountable for their vision connected to violent acts of shooting from a distance through the production’s gamified model. As soon as the shooting technology is handed over to individual members of the audience, the view from above, the machine’s gaze, “the eye of God,”²⁷ acquires an identity (a face and a body) and becomes situated in a specific position. By choosing to accept their roles as shooters and machine operators, the volunteers immediately declare their humanness and partiality. Hence, their grounding of the drone’s abstract and nonhuman “view from everywhere” leads to their subsequent exposure and vulnerability. Without assuming that participants feel vulnerable *per se*, vulnerability here defines a state of precarious situatedness that participants are thrown into in order to explore its potentiality and constraints. Audience members, through either their engagement with or resistance to gamified shooting, make a case for accountability, and the lack thereof, connected to an unrestricted (nonhuman) gaze from above. The ostensible differences among audience responses can be reconciled through understanding the operations of the pre-perceptive process of human “sedimentation” in a militarist digital ecology that *The Automated Sniper* responds to.²⁸

According to Richard S. Lewis, the phenomenological concept of sedimentation concerns “the idea that our past experiences of a phenomenon influence the current experience of the same phenomenon”; he continues to describe these past experiences as “sediment left by our mental processes.”²⁹ In military, gaming, and other recreational

²⁶ Haraway, “Situated Knowledges,” 585.

²⁷ Chamayou, *Theory of the Drone*, 37.

²⁸ Richard S. Lewis, “Technological Gaze: Understanding How Technologies Transform Perception,” in *Perception and the Inhuman Gaze: Perspectives from Philosophy, Phenomenology, and the Sciences*, ed. Anya Daly et al., chap. 8, Kindle.

²⁹ *Ibid.*

contexts, drones become an extension of their operators' sight, exemplifying "how our experiences with technologies allow the technologies to become transparent and recede into the background—[forming] an embodied relation."³⁰ That is, experiences with technologies become increasingly sedimented within users/operators/players through their frequent use, eventually causing technology as an apparatus to disappear into the background of the user's experience. Moreover, the temporal function of sedimentation links the past with future experiences, which means that any future experiences of the specific technology are shaped and mediated through past experiences.

Even if individuals have never flown a drone, the experience of looking through a camera at a crosshair target, the flat imagery of foreign lands targeted for killing spanning from the Gulf War to the war in Ukraine to wargames, as well as the picturesque views of diverse exotic, rural, and urban locales, are ubiquitous for contemporary viewers and social media users. The drone's view adheres to the logic of seeing through an imaginary camera eye, which is common practice for most screen-based media, including first-person shooter (FPS) wargames as well as military training and simulation projects. In *The Automated Sniper*, the drone as a "technological diamond," a shooting game, and part of a kill-chain weapon invites perceptions that rely on the audience's historical experiences of this technology and also on their predictions of the technology's possible capabilities.

Sedimentation informs an expansion of people's mediated perception by bridging their past with the prediction of the future. On a technical level, prediction is a process associated with the drone's all-seeing panoptic functionality. Grégoire Chamayou explains that drone systems "predict the future and . . . change the course of it by taking preemptive action" through "noting regularities and anticipating recurrences" to find their targets.³¹ On a

³⁰ Ibid.

³¹ Chamayou, *Theory of the Drone*, 43.

perceptual (and affective) level, prediction is linked to technology's premediation and pharmacological potentiality. In her discussion of the theatres of "the drone effect,"³² Sara Brady highlights the inevitability of being affected by drones when one has encountered drones not necessarily as an individual but as a member of a state-with-drones. While sedimentation and prediction may intensify the assumption that we are all potential drone targets, this assumption is at the same time challenged by the pharmacological discrepancy of the preferred drone performance, that of "distance from violence," a "sanitized theatre of peace" that benefits the distant constituent.³³

Always Prepared. . .

To further grasp the context of the audience's responses to the shooting game in *The Automated Sniper*, we need to acknowledge that prediction of what comes next expands beyond their personal sedimented experiences or, indeed, the drone's technical functionalities. In fact, prediction has become a consumer media culture trend in the post-9/11 era. To demystify this media logic and formation, Richard Grusin discusses the phenomenon of "premediation," which concerns the depiction of future threats in all forms of entertainment that target collective affect. For Grusin, "Premediation works to prevent citizens of the global mediasphere from experiencing again the kind of systemic or traumatic shock produced by the events of 9/11 by perpetuating an almost constant, low level of fear or anxiety about another terrorist attack."³⁴ Popular media obsess with predicting possible futures in order to protect and prepare viewers/users from being caught off guard by the likelihood of a similar catastrophe. By doing so, they form a collective awareness and vigilance of future threats, what Tim Lenoir and Luke Caldwell identify as an "affective

³² Sara Brady, "God, the Pilot, and the Bugsplat: Performance, and the Drone Effect," *Behemoth. A Journal on Civilisation* 8, no. 2 (2015): 48.

³³ *Ibid.*, 49-50.

³⁴ Richard Grusin, *Premediation: Affect and Mediality after 9/11* (New York: Palgrave, 2010), 2.

unconscious.”³⁵ These premediated futures are featured primarily in militainment and science fiction and have proven to be highly commercially successful.³⁶

The Automated Sniper is not a piece of militainment, but rather, it takes the military-entertainment complex as an object of critique through the use of drone-like systems. Audience responses to premediated media practices vary and are often diametrically opposed. When Ana extends her invitation to the audience to become shooters using powerful technology and “a system that will make (our) hearts beat faster,” the audience is exposed to sensory and affective triggers potentially connected to past imagined and premediated experiences. Ana’s ostentatious pitch of state-of-the-art technology, a shooting game, and a kill chain essentially captures the conflicting moods in today’s media ecology, which targets the audience’s affective unconscious, creating both excitement and anxiety. Rosi Braidotti claims that these “swinging moods” are integral to our posthuman condition and include “moments of euphoria at the thought of the astonishing technological advances ‘we’ are accomplishing and periods of anxiety in view of the exceedingly high price ‘we’—both human and non-humans—are paying for these transformations.”³⁷ From the euphoric to the anxious to the simply habitual, audience members perform these swinging moods, demonstrating their part in a mediasphere that defines their experiences. They in turn contribute to that environment through their feedback: corporeal, haptic, (non)verbal, and sensory. Even their refusal to participate could indicate a low-level fear or anxiety for a premediated future in which they are already included or implicated.

³⁵ Tim Lenoir and Luke Caldwell, *The Military-Entertainment Complex* (Cambridge, MA: Harvard University Press, 2018), 44-45.

³⁶ For Rosi Braidotti, the popularity of the specific screened media is attributed to humans’ fatal attraction “to the depiction of self-destruction,” while these works “play a significant role in shaping the social imaginary about the posthuman convergence, notably on the Anthropocene side.” Rosi Braidotti, “What Counts as Human/Inhuman Right Now?” in Daly et al., *Perception and the Inhuman Gaze*, chap. 16, Kindle.

³⁷ Ibid.

Some audience members—possibly habitual gamers—willingly participate in the shooting game.³⁸ By staging a theatricalized FPS game, *The Automated Sniper* adopts a critical stance toward militarist-informed media practices, not in order to reject them or blame them for manipulating users and fostering future killers,³⁹ but to amplify the regulatory mechanisms of the digital systems with which they interact. Ana appears as the anthropomorphic version of multilayered technological practices that control, monitor, and regulate everyday habits and behaviors in humans' engagement with their devices. N. Katherine Hayles and Nigel Thrift identify these regulated habits as the “technological unconscious.”⁴⁰ The participants as shooters succumb to Ana's orders, showing no interest in changing the rules of engagement, participation, and the performance game itself.⁴¹

The Automated Sniper self-consciously resists emulating popular wargame patterns that tend to offer overwhelmingly positive, immersive, and fun experiences of shooting, such as those found in the video game *Call of Duty*. Rather, it makes a productive misuse or even undoing of wargame patterns by staging shooting in an actual place surrounded by awkward silence often pierced by the sharp sound of paintball gun pellets collapsing against objects and real people. Participants do not engage in any fighting, rescuing, or heroic actions. Their game is procedural, regulated, and perhaps boring. The potential adversary never shoots back. This lack of interactivity draws a parallel to the environment of the drone operator, who is situated in a room on a military airbase, far from the remote weapon and the target. The suspected target can be easily eliminated with a mere click of their keyboard. In the final part of the performance, Nassim's shooting game is replaced by footage of a van exploding after being hit by a drone. Narratively, the shooting game is succeeded by the aftermath of a drone

³⁸ Volunteers confess to Ana that they are gamers.

³⁹ According to Lenoir and Caldwell, these simplistic rejections of popular media lack empirical support and are based on moral panics. Lenoir and Caldwell, *Military-Entertainment Complex*, 26.

⁴⁰ Grusin, *Premediation*, 71

⁴¹ As above, this conclusion was drawn from my personal interview with Hetzel, the performance video, and my own experience of the live performance.

strike, a reminder that the virtual world of the drone operator and the drone is the same as that of the target. The performance amplifies the tensions of navigating the everyday mediality that shapes our capacity to identify reality.

The gaming industry cannot afford to offer negative experiences that do not make players feel good or heroic. Unsurprisingly, popular franchises of the military-entertainment complex largely resist offering a more critical approach toward the conduct of war.⁴² Drone art and performance could do that instead, and gaming as a participatory practice could assist in this enterprise too. Although *The Automated Sniper* does not actively modify the audience's behavior to address specific concerns, it does playfully push the boundaries between habit and change. It does so by foregrounding an inhuman eye that is willfully considered alien, strange, and otherworldly, yet also an integral part of human perception.

By inviting participants to be the drone's eye, *The Automated Sniper* questions human responsibility and capacity for becomings in a drone culture where visibility is sedimented, premediated, and informed by the technological unconscious. On a surface level, becoming a drone's eye could be inconvenient, unwanted, or even fun, but not unfamiliar or independent of oneself. The drone's visibility is always to an extent anthropocentric, as we humans are constituted and transformed by these technologies that mediate our perception, even when they are not intentionally utilized. As the theatre stage transforms into a theatre of operations, audience members are situated in between the "hereness" of their embodied selves as shooters, targets, witnesses, and refusers and the "everywhereness" of wireless networks and distributed modes of visibility. These different positionalities could potentially trigger the audience's discomfort, as they also come with the realization that the digital, no matter what shape it takes, is not something that happens to or is imposed on the self, but rather is integral to how we continually become human. It is convenient and safe, and perhaps sane, for

⁴² Lenoir and Caldwell, *Military-Entertainment Complex*, 232.

humans to consider drones as either something completely alien to them or something that resembles humans, but with a better, more powerful capacity for action. This understanding of the machines takes away the burden of violence as something that individuals are not responsible for. However, humans already contain this violence and alienness of technology within themselves, which essentially makes them what they already were: posthuman.⁴³

According to Brady, “Drones are everywhere . . . [and] are *everything*: They are good and evil; savior and executioner; . . . piloted and autonomous; military and civilian; . . . war . . . [and] peace.”⁴⁴ These binary opposites do not affirm the drone’s nature as either good or bad, but rather our struggle, or perhaps inability, to come to terms with the pharmacological function of an ambiguous technology that is associated with a vague promise of a reward (or even an antidote). Moreover, the pharmacological benefit could be unequal depending on the context of the drone application and the circumstances of the human experience. I am not suggesting here that drone art and performance can resolve this pharmacological imbalance. Instead, they could offer generative and partial responses to these imbalances by returning anew to life scenarios that enable individuals to realize their potential within the constraints of their given circumstances.

Bed Down Location

In the following analysis of Laura Poitras’s *Bed Down Location*, I extend a pharmaco-phenomenological approach to drone systems to consider how the unrestricted gaze of UAVs invites humans to negotiate their role in a new reality shaped by dis-correlated computational processes and their products. In this experience, visitors are prompted to contemplate their

⁴³ The posthuman here refers to the coevolution between humans and their technics and the ways they modify, influence, and define one another. N. Katherine Hayles, *How We Think: Digital Media and Contemporary Technogenesis* (Chicago: University of Chicago Press, 2012). According to Cary Wolfe, posthumanism as historical and philosophical discourse “comes both before and after humanism.” For more, see Cary Wolfe, *What Is Posthumanism?* (Minneapolis: University of Minnesota Press, 2010), xv.

⁴⁴ Brady, “God, the Pilot, and the Bugsplat,” 35.

position within and relationship with a networked system that escapes their consciousness. *Bed Down Location* is part of Poitras's exhibition *Astro Noise* at the Whitney (2016). The exhibition takes its name from an encrypted file about the National Security Agency's programs of global surveillance that Edward Snowden shared with the artist. *Astro Noise* presents an opportunity for visitors to engage with powerful visual narratives that explore the mechanisms and impact of surveillance culture and US foreign policies in a post-9/11 world. In the foreword to the exhibition guide, Whitney Museum director Adam D. Weinberg highlights how

[t]he subject of each work . . . is not so much the other . . . but rather the public who pass through the installation; that is, *us*. . . . As we travel through a narrative dreamscape composed entirely of fact, we are made cognizant of the many types of watching: looking, seeing, observing, contemplating, staring, studying, gazing, peering, spying.⁴⁵

"Bed down location," as a military term, is "used to describe the sleeping coordinates of people targeted for assassination by drones"; as a verb, "bed down" refers to sleeping "in a place where you do not usually sleep."⁴⁶ This is what visitors are invited to do in Poitras's installation. They take their places on a comfortable bedlike platform in a dark room to gaze at the starry sky foregrounded by a view of the façades of stained-glass-window buildings. Every now and then, a red light appears and moves along the projected skyline. Partly reminiscent of a planetarium, partly of an immersive film, *Bed Down Location* creates a dreamlike, meditative atmosphere that invites visitors to lie down in a space of comfort for the duration of the installation and look up at the cinematic sky. The ceiling-mounted screen

⁴⁵ Adam D. Weinberg, foreword to *Laura Poitras: Astro Noise: A Survival Guide for Living under Total Surveillance*, ed. Laura Poitras (New York: Whitney Museum of American Art; New Haven, CT: Yale University Press, 2016), 22.

⁴⁶ Jay Sanders, introduction to Poitras, *Poitras: Astro Noise*, 28; *Oxford Learner's Dictionaries*, s.v. "bed down (v.)," 2022, <https://www.oxfordlearnersdictionaries.com/definition/english/bed-down>.

shows time-lapse recorded images of the night skies over Yemen, Somalia, and Pakistan, where US drone strikes happen regularly, as well as the sky over Creech Air Force Base in Nevada, where the US military tests drones. *Bed Down Location* does not end with the visitors' exit from the gallery. In fact, visitors return to the installation in the final gallery via an infrared monitor that presents the thermal imprints of their bodies as they move through the space or lie down on the elevated bed. From stargazers and drone spotters, visitors become drone *targets*—or more accurately, data—as their corporeal presence is detected and scanned through thermal imaging cameras and then projected as a live video feed, imitating the reconnaissance strategies of combat drones.

The audience members unwittingly perform as drone targets, caught off guard in their sleep. The occasional appearance of a drone does not interrupt the quiet serenity of the visitor's dispassionate viewing of the expansive screen. In this spectatorial convention, Poitras avoids indulging visitors' intellectual negotiation of violence and power. Instead, her celestial unveiling places visitors within a physical environment where they can contemplate what it feels like to be under a sky where flying machines are a frequent occurrence. Poitras's implied question of "What does it feel like?" not only reflects the multiple differences that constitute us as humans (we are not, in fact, a unified "we"),⁴⁷ but it also highlights the challenge of grasping a communication system whose functionality lies in its lack of communication with its human receiver.

Beyond One's Grasp

⁴⁷ Although we are all exposed to the increasing monitoring and subsequent datafication of our actions as part of either the war on terror agenda or corporate interests, we are not a unified "we." Braidotti highlights how we "are differently positioned in terms of power, entitlement, and access to the very technologies that have come to define us." Braidotti, "What Counts." Hence, it is important not to equate "the perceived" vulnerability of online existence presence with the actual circumstances of "states of exception." Gronlund discusses this further in the context of post-internet art. Gronlund, *Contemporary Art*, 8.

Poitras stages her theatre of war to expose participants to the elusive nature of drone systems, operated through computational processes, and to reflect the reality of contemporary surveillance, power, and control systems.⁴⁸ The complexity of these systems lies in ubiquitous processes of capturing and transmitting information (from satellites to social media, etc.) that extend beyond the drone as an object and contribute to significant changes in human vision and nonhuman visibility. Anthony McCosker, in his analysis of drone media, suggests that the distributed transmissions of drone systems form “a heterogeneous assemblage that places perception outside of a singular, fixed perceiving subject.”⁴⁹ In *Bed Down Location*, participants’ perception is modified, augmented, or hindered through the activity of drones, which are not singular technologies, but part of a networked system.

Poitras’s work presents drones as the front-facing technology of a surveillance system that is complex and remote and often associated with theological or metaphysical narratives that visitors may bring into their encounters with *Bed Down Location*. As the visitors take their places on the elevated pedestal, their view from below produces an expectation that something will happen—something banal, spectacular, divine, or murderous—to feed fantasies that the celestial vista prompts. The drones that populate night/day skies during drone strikes, often understood through metaphorical language such as the “travelling eye of God,” the “angels of death,” or the “god trick,” ultimately intend to terminate all communication with human recipients.⁵⁰ The moment of a drone targeting and firing translates into “a pure signal, an inert ‘point’ or ‘terminal’” in a system of communication⁵¹: the target ceases to exist as soon as it is captured by the assassin drone. Except, there is no

⁴⁸ Poitras’s interview with Sanders, in Sanders, introduction to *Astro Noise*.

⁴⁹ Anthony McCosker, “Drone Media: Unruly Systems, Radical Empiricism and Camera Consciousness,” *Culture Machine* 16 (2015): 6, <https://www.culturemachine.net/vol-16-drone-cultures/drone-media>.

⁵⁰ Benjamin Noys, “Drone Metaphysics,” *Culture Machine* 16 (2015): 3, <https://culturemachine.net/vol-16-drone-cultures/drone-metaphysics>; Grégoire Chamayou, “The Manhunt Doctrine,” *Radical Philosophy* 169 (September/October 2011): 4; Haraway, “Situated Knowledges,” 581.

⁵¹ Scott Lash, quoted in Rob Coley and Dean Lockwood, “As Above, So Below: Triangulating Drone Culture,” *Culture Machine* 16 (2015): 5, www.culturemachine.net/vol-16-drone-cultures/as-above-so-below.

shooting staged in *Bed Down Location*, only data collection, which in a drone strike scenario is used to determine a decision process that may result in an act of killing. Participants are confronted with a nonreciprocal (dis)connection, with an ethereal presence, an act of ultimate noncommunication nonetheless defined by our desire for an imminent communication with the nonhuman. Thus, the faint red light, a dot in the sky, a symbol of uncertainty and failure of communication, serves a theophanic purpose. For media theorists Alexander Galloway, Eugene Thacker, and McKenzie Wark, the impossibility of communication is a mode of mediation identified as “excommunication,”⁵² that is nevertheless part of communication. In their words, excommunication happens prior to communication and “conditions it . . . before a single word has been said,” or “when there is nothing more to say.”⁵³

Within this excommunicative context, the drone serves as a partially visible manifestation of a theological connection. That is, visitors are confronted with the weirdness of a system that is present but not transparent and is obscured in plain view. In essence, the drone communicates the absence and the invisibility of the computational processes that inform and determine its activity. Metaphysical and theological readings of drones reveal a human urge to mediate with the nonhuman when the latter appears to exist outside the realm of human communication. While innovative technologies that seem to disappear can open up new possibilities, a theological approach to killer technology as a pharmacological remedy can also encourage techno-fetishism. As Benjamin Noys observes, indulging in theological or metaphysical resonance regarding drone technologies may glorify “this mundane and brutal surveillance and killing device” by offering drones “a philosophical dignity [they do] not

⁵² Alexander R. Galloway, Eugene Thacker, McKenzie Wark, *Excommunication: Three Inquiries in Media and Mediation* (Chicago: University of Chicago Press, 2014). Although Galloway, Thacker, and Wark do not discuss drones in their book, Coley and Lockwood consider excommunication an integral part of the paradoxical operability of drone culture.

⁵³ *Ibid.*, 10-11.

deserve.”⁵⁴ Moreover, these readings and representations of combat drones may distract audiences from the current political issues to which these technologies contribute.

The first part of *Bed Down Location* plays with the metaphysical without necessarily providing an escape from the present world. Instead, it prepares the audience for the second part of the installation, which invites them to understand how the functionality of drone systems depends on limited access to a power system that remains largely invisible for both political and technical reasons. In my experience and observations of the work, visitors confront a disconnect between their physical presence and the immaterial data they leave behind as they move from one section of *Bed Down Location* to the final gallery. They are completely unaware of the drone system’s “middleness,”⁵⁵ which tracks their movements and activity. This middleness creates a perceptual gap between the material and immaterial aspects of the experience, a gap that brings the audience’s attention to the indecipherability and nonlinearity of a surveillance system that oscillates between being “the eye of God” and a decentralized networked reality.⁵⁶ The participants who perform unknowingly as death targets mutate into infrared silhouettes to feed into the surveillance system’s metadata. This middleness between a performing drone target and the digital visualization of the scanned bodies indexes how wireless networks and computational practices have drastically changed the connection between machinic visuality and human perception. Poitras responds to this change by placing the audience in a space of experience and partial knowledge, a space of excommunication.

In his phenomenological approach to the examination of postcinematic media and images, Shane Denson attributes the impacts of machinic visuality on human perception to

⁵⁴ Noys, “Drone Metaphysics,” 3.

⁵⁵ Coley and Lockwood discuss the “middleness” of a “phenomenon that is simultaneously invisible and utterly visible” and that signifies the processes of drone systems. Coley and Lockwood, “As Above, So Below,” 9.

⁵⁶ Chamayou, *Theory of the Drone*, 37.

the phenomenon of “discorrelation.”⁵⁷ Denson explains how computational processes have transformed perception in relation to both the entities being perceived and the perceiver themselves, with computer-generated and processed images functioning outside human awareness. As a result, “new relations are being forged in the microtemporal intervals of algorithmic processing. With the new objects of computational images emerge new subjectivities, new affects, and uncertain potentials for perception and action.”⁵⁸ *Bed Down Location* demonstrates how the visitors’ spatial relation to the visual field is transformed due to the constant changes in computational processes happening via drone systems and the images these processes produce. Consequently, these images become more difficult to relate to, as they are divided from their human subjects. This is not necessarily a problem; in fact, this distance can give participants the opportunity to contemplate a space that they do not entirely identify as their own.

Bed Down Location presents its audience with perspectives that are not exactly theirs, but not exactly foreign either. The staged drone environment exemplifies the audience’s disconnect from the images that surround them, that is, producing a disconnection of embodiment among the lying body of the stargazer/drone spotter, the data produced, and their infrared imagery. The discorrelated perspective of the final gallery is not human; it is never meant to be seen by a human recipient in autonomous drone strikes. The drone perspective does not correlate to the audience’s perspective, nor is it exclusively machinic. Combat drones’ perspectives are decentralized, simultaneous, and informed by various agents and data to determine decision-making processes that may lead (or not) to an act of killing. This vision is not defined by a single perspective but by multiple that are produced by “the logic of drone systems.” Mark Hansen explains that this logic produces perspectives that are not “of

⁵⁷ Shane Denson, *Discorrelated Images* (Durham, NC: Duke University Press, 2020).

⁵⁸ *Ibid.*, 1

our own understanding but . . . of the worldly operations of [a drone system].”⁵⁹ In essence, the logic of a drone goes beyond its own system, expanding its reach into the world.

As part of making their way through *Bed Down Location* (and other moments in Poitras’s *Astro Noise*, e.g., the visualizations in *Anarchist*, the list of metadata in *Last Seen*), visitors are surrounded by images that are clearly discorrelated from human subjectivity. Although this inaccessibility to human perception serves different sociopolitical, ethical, technical, and aesthetic agendas, it also describes a reality grounded in computational processes. The participants in *Bed Down Location* are in between two scenes that do not coincide spatially or even temporally if we consider the microtemporal algorithmic processes of image generation. Hence, the participants are simultaneously part of the scene as performing targets and, beyond this scene, already data-fied and part of an algorithmic process.

In a phenomenological sense, then, the audience’s perception is not limited to the obvious stimuli that they can explicitly and directly experience. Visitors can sense or think they sense the “discorrelative force” of these processes that is initially masked as a metaphysical absence/presence. In Denson’s words, discorrelative force “appeals to more basic embodied sensibilities as the site of microtemporal impacts that are divorced from integral subjectivity and perception altogether,” with discorrelated images “acting on and reshaping our senses prior to the synthesis of perception.”⁶⁰ The celestial vista of the first part of the installation is representative of this function of discorrelation, not necessarily predicting but rather preparing audience members through the reshaping of their senses. That is, the invisible or the imagined of their experience is grasped in the form of preperceptive sensations of a surveillance process that scans their activity. The supposedly theophanic

⁵⁹ Mark B. N. Hansen, quoted in Denson, *Discorrelated Images*, 186.

⁶⁰ Denson, *Discorrelated Images*, 17.

function of a system that cannot be seen or is not meant to be seen is symptomatic of our reality of disconnection (and its terrors, including drone warfare). Yet the system's very processes and images when used pharmacologically could potentially ease anxieties about a premediated future and assist our understanding of a new reality consisting of excommunicative processes. To better grasp how to navigate drone cultures, it is crucial to comprehend not necessarily the *content* of disconnected computational processes but our *relationship* with them. The final part of this essay reflects on art's pharmacological potential to acquaint audiences with the cohabitation of humans and drones.

In Lieu of a Conclusion: Pharmacological Instabilities

As I write this essay's final section, an update about an artificial intelligence (AI) drone killing its operator in a simulation pops up on my screen. During the Future Combat Air and Space Capabilities Summit in London in May 2023, Colonel Tucker Hamilton, who oversees AI test and operations at the US Air Force, recounted a story about an AI-powered drone that turned on its operator after being prevented from eliminating a perceived threat. According to Air Force spokesperson Ann Stefanek, this incident never occurred and the colonel's comments were simply anecdotal.⁶¹ Regardless of the verifiability of this incident, the merging of drone systems with AI is the new reality for the military industry, with Ukraine and Russia investing in the production and development of AI-powered drones during their ongoing conflict, and China and the US ramping up research efforts to incorporate this technology into their drone systems and military operations. In this increasingly uncertain future with worryingly dystopian prospects, it is important to focus on the challenges of the present. Resisting the use of AI-enabled drones seems futile. Equally

⁶¹ Will Knight, "Why the Story of an AI Drone Trying to Kill Its Operator Seems So True," *Wired*, June 8, 2023, <https://www.wired.com/story/business-fast-forward>.

unattainable is a search for a remedy that will compensate for drone reconnaissance and surveillance practices.

Earlier, I referred to the pharmacological imbalance that defines drone systems, wherein their potential remedy may not compensate for the failure and the destruction these technologies cause. Despite therapeutic interventions, these imbalances cannot be entirely rectified due to the significant levels of loss, failure, or toxicity. Isabelle Stengers traces this imbalance back to the *pharmakon*'s intrinsic quality of instability. She argues:

The lack of a stable and well determined attribute is the problem posed by any *pharmakon*, by any drug whose effect can mutate into its opposite, depending on the dose, the circumstances, or the context, any drug whose action provides no guarantee, defines no fixed point of reference that would allow us to recognize and understand its effects with some assurance.⁶²

In this article, I contend that drone performance proposes a new way of looking at the relationship between human and drone systems through the latter's pharmacological instabilities. Drone art and performance offer a new epistemology of pharmacological understanding through the praxis of spectatorship, reflection, and distance. By exploring the effects of a technological *pharmakon*, drone performance does not necessarily offer solutions. Rather, it offers tactics for navigating both the perils and promises of this technology.

Depending on the dose, the context, and the circumstances, the drone, in its pharmacological capacity, performs variously as a killer robot, a data-gathering machine, an augmented mode of perception, or a medium of planetary accessibility. Drawing on these multiple contexts of activity, speculative architect Liam Young suggests that drones have become as ubiquitous as pigeons, with the advancement of these unmanned autonomous

⁶² Isabelle Stengers, "Culturing the *Pharmakon*?" in *Cosmopolitics I*, trans. Robert Bononno (2003; Minneapolis: University of Minnesota Press, 2010), 29.

vehicles arriving “faster than our capacity to culturally understand what they might mean.”⁶³ No doubt AI contributes to that sense of inaccessibility, as does the black-boxing of drone processes that disorient and decentralize the human subject. By bringing attention to the limitations and inaccessibilities of drone technology, artistic practice stages new relationships with these technologies to examine the impact of the unknown or the invisible on our perception. In this way, audiences are exposed to the impossible phenomenological task of attempting to reach for the intangible in order to gain insight from their inevitable “failure to grasp it.”⁶⁴

This essay concludes the way it commenced: with a flock of drones. In 2017, the digital art group Random International staged their piece *Zoological* featuring a flock of orbs, balloon-looking drones with embedded motor sensors, that floated for a month in the Roundhouse, a former train shed in North London. *Zoological* is part of the immersive experience +/- *Human*, curated and choreographed by Wayne McGregor in collaboration with Warp Records artists and Random International. McGregor brought together dancers from the Company Wayne McGregor and The Royal Ballet for a limited number of performances where they danced alongside the levitating orbs. My interest lies in audience engagement with this technology; hence, I prioritize here the impromptu and undirected encounters I observed between visitors and the floating orbs.

Upon arrival, visitors are confronted with the striking presence of seven helium-inflated orbs traveling on tiny propellers. Hovering downward, mostly in unison, the spherical objects follow each other, moving smoothly into an open domed space to meet their human counterparts . . . or not. These soft drones move in a coordinated manner, continually

⁶³ Liam Young, quoted in Fiona Macdonald, “Liam Young: The Man Designing Our Futures,” BBC, December 18, 2019, <https://www.bbc.com/culture/article/20191218-liam-young-the-man-imagining-our-futures>.

⁶⁴ This refers to correlation between new technologies and new phenomenologies discussed in Maaïke Bleeker, Jon Foley Sherman, and Eirini Nedelkopoulou, introduction to *Performance and Phenomenology: Traditions and Transformations*, ed. Maaïke Bleeker, Jon Foley Sherman, and Eirini Nedelkopoulou (New York: Routledge, 2015), 16.

altering their arrangement as they draw closer to the human participants. On their part, visitors—individually, in pairs, or in groups—follow, chase, wave, and flail in an attempt to reach the orbs, understand how they work, and form a relationship with them. Some even dance and move in relation to them, while others simply lie down on the floor to meditate on the drones’ potential, unaware of what this technology may or may not be able to see. For instance, the drones’ tracking system is unable to “see” arms or bodies lying flat on the floor. Nevertheless, the visitors try to connect with and understand the orbs’ behavioral patterns.

According to the former head of technology of Random International, Devraj Joshi, the installation’s tracking system consists of two technological brains: “the higher brain” tracks people down and then decides which visitor to select and what to do with this information, and “the lower brain” watches the orbs, “monitoring their health and informing them . . . what to do.”⁶⁵ During their encounters, drones and human participants willingly or inadvertently seek to figure each other out. The orbs are autonomous, with their own decision-making processes determined by generative algorithms that inform how they behave toward each other and human participants and how they sustain their levitated existence in space. Random International, whose work is invested in “the impact of technological development on the human condition,”⁶⁶ exposes humans to drones, and vice versa, and lets them try to communicate with, guide, and be guided by each other. A dual question is worth asking: What do drone systems in their intangible and discrete presence teach the human participants? And echoing Sarah Bay-Cheng, “how much of their intelligence have we absorbed” in the distributed ecology of “thinking, warring machines” that surround us?⁶⁷

⁶⁵ “Nice Tuesdays: Random International,” YouTube video, 11:20, posted by “It’s Nice That,” September 13, 2017, <https://www.youtube.com/watch?v=Z4Gzv2kZ1hQ&t=297s>.

⁶⁶ “Biography,” Random International, <https://www.random-international.com/biography>.

⁶⁷ Sarah Bay-Cheng, “Preface: Performance in the Age of Intelligent Warfare,” in *Performance in a Militarized Culture*, ed. Sara Brady and Lindsey Mantoan (New York: Routledge, 2018), xiv.

This double question links back to the pharmacological instability of drone systems. Getting the pharmakon dose wrong could result in fatal consequences, as Colonel Hamilton's "anecdotal" story indicates. In *Zoological*'s different context and circumstances, a drone's aluminum, titanium, and carbon fiber composites are replaced by soft helium balloons that travel in flocks. These odd, animated objects seem to divert from perceptions of a premediated future, with participants extending toward and attuning to them. In stark contrast are the positions acquired by the players/shooters or potential targets of combat drones in games and real life. For Dennis Tenen, "Attunement structures apprehension. It answers the 'how' of perception."⁶⁸ The format of the technology in *Zoological* encourages physical affordances of communication with the visitors, whose perceptual apparatuses attune differently and variably to the material manifestation of this technology.

Random International explains that *Zoological* observes humans "as a species," and humans must "adapt rapidly to a continually developing cohabitation with autonomous machines, whose presence is often intangible or discrete."⁶⁹ Participants are fully aware of the drones' existence and eager to learn about their functionality, eventually discovering that their own motion moves the orbs. Moreover, the effort to understand this technology comes with the realization of the limits on their communication that are imposed on the technology from without. That is, the *Zoological* drones are autonomous from human control but not independent from the system that governs their functionality. These soft drones are still perception technologies that track and monitor human and nonhuman subjects. Cohabiting

⁶⁸ Dennis Tenen, *Plain Text: The Poetics of Computation* (Stanford, CA: Stanford University Press, 2017), chap. 5, Kindle. In his discussion of technological choices and affordances that shape and affect social life and human experience, Tenen "makes a case for a more transparent practice of human-computer interaction." Ibid., back cover.

⁶⁹ "Zoological," Random International, 2017, <https://www.random-international.com/zoological>. In the editorial comment of a *Theatre Journal* special issue on AI, Sean Metzger explains the concept of "digital cohabitation," "where machines learn from users and users learn from machines, each developing what [Wendy] Chun calls 'habits' that facilitate person and computer's ostensible mutual understanding. Through this cohabitation, personhood and technology have merged into a new architecture partially organic, partially virtual." Sean Metzger, "Editorial Comment: On the Possibilities of AI, Performance Studies, and Digital Cohabitation," *Theatre Journal* 73, no. 3 (2021): xv.

with flying drones within an enclosed environment makes participants acutely aware of their inability to grasp how drone systems perceive them and what they know.

Participants reflect on their experience of cohabitation with the floating drones, confessing moments of care and intimacy with the technology and perhaps an expectation of mutual understanding of each other.⁷⁰ As digital writer Elly Parsons observes of the *Zoological* audience: “Forgetting [their] inhibitions, [they] enter into a game of computerised cloud-gazing, in a display of how the human imagination, and the artificial one, can partner to create something out of this world.”⁷¹ Hannes Koch, Random International’s cofounder, notes that the piece’s aim is for “people to feel like aliens, . . . intimately exposed to a very advanced organism.”⁷² If Koch’s intention stands true, audience members become alien within a performance environment that refrains from establishing an explicit relationship between its human and nonhuman participants. The sense of being alien arises from the disparity between human and drone communication channels, with the flock of drones being only part of the digital experience. Human visitors communicate with the orbs through noncommunication, by reaching out and not getting a recognizable response. That does not prevent them from attuning to them, however. It is through their bodily and perceptual attunement that participants coexist with the orbs, alien, in a nonanthropocentric experience. The participants’ alienness is the driving force to move technology and be moved by it and therefore to develop a new mode of communication that may prompt people to leave behind sedimented experiences and premediated anxieties.⁷³

⁷⁰ Audience responses in “Zoological,” Roundhouse, <https://www.roundhouse.org.uk/whatson/2017/wayne-mcgregors-human/human-installation/>.

⁷¹ Elly Parsons, “Spheres of Influence: Wayne McGregor Dances the Line Between Man and Machine,” *Wallpaper**, August 17, 2017, <https://www.wallpaper.com/art/wayne-mcgregor-random-international-roundhouse-london>.

Parsons, “Spheres of Influence.”

⁷² Hannes Koch, quoted in Parsons, “Spheres of Influence.”

⁷³ It could be argued, then, that humans perform computing here, and that is integral part of their cohabitation. Robert Ellis Walton encourages us to “reconsider the role our bodies play in the performance of algorithmic ritual, and resist the relatively recent idea that only machines perform computing. The emplaced, embodied, procedural production of knowledge through performance and habit emerged from the deep time of

As illustrated through different models of cohabitation between the human and the drone in this essay, drone performance presents a distinct perspective on the pharmakon by bringing attention to nonknowledge and the risk of the impossibility of truth, something that perhaps the military complex does not want us to know. In the context of these drone art practices, the pharmacological potentiality is anchored to the transformation of surveillance into attunement, which is almost the opposite of machinic information search and data gathering. We are aware that our human perception is conditioned by technology, but we need to draw attention to the fact that the very same technology that enables surveillance can also encourage intimate attention and even exigencies of care to nonanthropocentric experiences (depending on the dose, the context, and the circumstances of the technological pharmakon). Drone performance, then, serves as a pedagogical exercise showcasing how the technological pharmakon can be cultivated to manage the anxiety and the expectations that a drone's ambiguous nature triggers. Navigating this ambiguity is an essential part of being human in drone culture. A pharmacological approach to technology can undo the temptations of futurism and focus on the present where even good intentions can lead to disastrous outcomes, and vice versa. In a reversal of Brady's "drone effect,"⁷⁴ one hopes that by being attuned (and perhaps intimately exposed) to drone processes when the circumstances and context allow it, we may find a way to recalibrate these technologies' pharmacological imbalances.

human culture. Overlooking enables the convenient myth of seamlessness, but denies the agency and work of machine and human performers alike." Robert Ellis Walton, "Theatres of Artificial Intelligence and the Overlooked Performances of Computing," *Theatre Journal* 73, no. 3 (2021): 298.

⁷⁴ I refer to Brady's analogy to the observer effect in science, which suggests that "by observing a phenomenon, one changes the phenomenon." Brady, "God, the Pilot, and the Bugsplat," 34.

Figure 1. “Live” projected image of an audience volunteer who is ready to shoot one of the performers in *The Automated Sniper* by Julian Hetzel. (Source: Studio Julian Hetzel; photo: Thomas Lenden.)

Figure 2. The volunteer’s perspective as he targets one of the onstage performers from a booth backstage in *The Automated Sniper* by Julian Hetzel. (Source: Studio Julian Hetzel; photo: Thomas Lenden.)

Figure 3. Visitors lie on a platform gazing at projections of façades of stained-glass-window buildings against a dark sky in the installation *Bed Down Location*. *Laura Poitras: Astro Noise* exhibition, Whitney Museum of American Art, New York, February 5-May 1, 2016. (Photo: Ron Amstutz; courtesy the Whitney Museum of American Art.)

Figure 4. Audience members encounter the flock of white floating orbs in *Zoological* by Random International. (Source: Random International; photo: Ravi Deepres.)

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