

Survival Interventions in *GTA*: on the Limits of Performance in Virtual Environments

Forthcoming in *Video Game Art Reader Vol. 2* (Ed. Tiffany Funk)

Survival, in the networked, late capitalist, post-democracy anthropocene, is a difficult undertaking, and a struggle that is powerfully gendered, racially marked, and speciesist. This holds true also for many virtual game worlds simulating life and death in contemporary times. The existence of death in a game world might be interpreted as indicative of its ‘authenticity,’ yet virtual, simulated death is rarely authentic, except, perhaps, in how it perpetuates and exaggerates real-world inequities and conflicts. Regardless of how virtual death in game worlds is regarded, for player avatars and non-player characters alike it is intimately tied both to ideological and to algorithmic rule systems governing the environments within which they exist. Given that game worlds like those found in the *Grand Theft Auto* (*GTA*) franchise are full of death and killing, shouldn’t there be, in deadly virtual localities such as San Andreas and Liberty City, some room – or, indeed, a powerful need – for meaningful critical discourse of survival?

‘Survival’ is often understood plainly as a more or less instinctual struggle against death, and thus is closely linked to the self-preservation drives of sentient creatures. However, the concept goes significantly beyond struggles to stay alive. For example, survivalism, as a life style organized around survival struggles, is frequently linked to political perspectives, such as libertarianism, which focus on self-reliance and an individual’s struggle for independence from (or resistance against) domineering political structures. Particularly in contemporary socio-political and cultural contexts, ‘survival’ has thus taken on a wide variety of broader meanings: in cinema, it has become a dominant narrative trope of dystopian ‘battle royale’-type films and films dealing with near-future environmental disaster; in television, it is a prevalent premise for reality television shows focused both on the mastery of difficult-to-attain skill sets (survival skills) and on specific lifestyles (survivalism); in videogames, survival functions similarly, and may provide, for example, the underlying theme for horror games, or the operational logic of games foregrounding the simulation of survival struggles in open-world wilderness environments.

Overall, ‘survival’ invokes a complex bundle of existential struggles, political convictions, and cultural experiences. What ties these together is that survival usually tends to indicate the opposite of ‘death,’ regardless of whether that concept is understood in its biological, social, professional, or political permutations. To survive, in this sense, is to act or exist persistently within a system, struggling against the systematic constraints and obstacles encountered. Beyond simply ‘staying alive,’ the ongoing struggle to survive thus also serves to identify gaps and limits within the systems that are encountered. In other words, survival can, ideally, become a critical tool, a way of highlighting problematic aspects of the natural, political, social, or cultural systems with which the survivor interacts.

Resisting death in virtual worlds – a struggle that manifests in death’s other, survival – has the potential to emerge as key site of critical intervention in the cultural and computational logic of video games. This essay surveys a number of artistic experiments that pick up traditions and concerns of performance art (in particular the critiquing of socio-political power systems through the radical, performative use of bodies) in order to address conflicts at the intersections between the individual and the system(s) that frames its existence. In doing so, my aim is to explore the performative affordances of *GTA* game worlds specifically, and those of virtual worlds more generally. Contemporary video games

now often feature sophisticated built-in content creation and capturing tools, and are thus among the most complex simulation environments ever to have been easily available to artists, for whom they can serve as research tool, subject of critique, or theatrical stage. How do struggles of survival become manifest in these simulation environments? How are political problems of survival taken up within the simulated spaces of game worlds, both in response to the prompts of game mechanics and game narratives, and in explicit resistance to them? What critical purpose might the virtual performance of survival seek to adopt in broader socio-political discourses on life and death, living and dying? And finally, can performance art, with its fundamental reliance on liveness and the connection between performer and audience/participant, survive transposition into virtual environments? As I will argue, survival as a subject is difficult to address successfully in virtual interventions. In my discussion, the trope of survival will instead emerge as an object towards which virtual performance can be directed, in order to mobilize it as a vehicle for addressing problematic limits and constraints dictated by the algorithmic systems that frame such performances.

In sketching some answers to the questions outlined above, my discussion will largely sidestep game-engine-prompted survival strategies. Bracketing what might be called survival-by-design (such as mastering battle techniques, or avoiding accidental environmental death), the focus will be instead on critical invocation of survival in ways that are not anticipated by the algorithmic systems within which they occur. My discussion of artistic experiments that problematize staying alive in algorithmic environments references works by Joseph DeLappe, Brent Watanabe, Jim Munroe, Clint Enns, Georgie Roxby Smith, and COLL.EO. The artworks considered pursue different strategies and different aims of survival; overall, in this essay the chosen corpus of *GTA*-specific game art interventions will frame a consideration of the limits of performative action in highly structured algorithmic systems, and will allow me to address concerns with algorithmic survival in ‘human-occupied’ virtual spaces, which, I will suggest, can become the focus of a new type of virtual, non-human performance art.

Over the years, the *Grand Theft Auto* franchise has become a popular framework for the realization of digital artworks that engage with performance art traditions. Among the more well known ones is Jim Munroe’s *My Trip to Liberty City*, created within *GTA III* as part of the artist’s *Pleasure Circuit Overload* series, completed in 2006.[1] This *machinima* piece takes the form of a short travelogue that humorously chronicles the visit of a Canadian to Liberty City. His touristic exploits there include exploring back alleys and rooftops, taking souvenir photographs, and performing a pantomime busking act on a street corner. Edited from in-game footage, the piece features a voiceover that invokes casual ‘Let’s Play’ video commentary. Posited as an implicit critical engagement with Liberty City’s notoriously violent environment, Munroe’s piece attempts to steer away from all brutality. Given the work’s emphasis on environmental exploration, enjoyment of scenery, and (attempted) non-violent interaction, it might be tempting to describe *My Trip to Liberty City* as a successful subversion – or ‘surviving’ – of the game’s pro-violence prompts. This would be an incorrect interpretation, however, since the in-game footage used for the creation of the *machinima* was (and could only be) created in conscious and direct relation to the violent themes and mechanics of the game, which, as Ian Bogost has pointed out, “constantly structures freeform experience in relation to criminality.”[2] What Munroe’s travelogue achieves instead is a foregrounding, by proxy, of the structural, systemic violence of *GTA III*. For example, the Canadian tourist’s visit to the hospital (made necessary after he falls into the water on the shore) narrativizes a game mechanic directly connected to the game’s life-death-spawning cycle. To give a different example, the player character’s street-busker pantomiming (which consists of the enactment of pretend-fistfights) may initially also seem like a peaceful refusal of the game’s violent tendencies. But again, the refusal is unsuccessful and would be better

described as the reshaping of an incomplete act of aggression (the content of the busking act) into a forced performance of actual virtual violence when the game engine, relentlessly focused on detecting and responding to violent action, registers the pantomiming as an actual attack on a NPC pedestrian. Munroe's piece does not successfully subvert the violence encoded in *GTA III*, but instead, enacting a literal performance in the form of a busking act within the game space, highlights that this violence exists in the game's computational fabric on an insurmountable granular level. Even in acting non-violently, the artist constantly gestures towards this violence, which cannot, in fact, be negated. Here, attempted non-violent survival in Liberty City forever proceeds by provoking inevitable death.

Like *My Trip to Liberty City*, the next artwork under consideration stages a struggle for survival that clashes with a hard-coded algorithmic system seeking to enforce constant violent interaction. *Fair Game [Run Like a Girl]* (2015), a *GTA*-based *machinima* by Georgie Roxby Smith, is strongly oriented towards performance art traditions. Described by the artist as a performative intervention, the work was created in *GTA V Online*, and is roughly fourteen minutes in length. For the entire duration, the artist, embodying the franchise's prototypical male player character, pursues a female NPC on foot. The NPC screams in horror, and is chased first through the city, then through a more rural area, and finally along a busy highway. As Smith explains, her intervention seeks to critique the male chauvinism inscribed in the game at code level by amplifying it: in the narrative and computational logic of the game world, whenever a male player character 'encounters' female NPCs through simulated touch (such as bumping into them), the NPCs are designed to respond initially by giving the player some "attitude," and then to "screech and 'run like a girl.'" [3] This hardcoded behavior cannot be changed or counteracted by the player. It is sexist in multiple ways: the 'sassy-terrified' reaction is established as normative and many players will likely experience it as standard behavior once it has been triggered/witnessed repeatedly; additionally, the only way for the male player character not to behave in an intimidating and threatening fashion towards female NPCs is not to approach them at all, which suggests that in the game's register of male/female encounters, nothing outside of the predatory is possible. While the hardcoded 'survival' instinct of *GTA V*'s female NPCs should be offensive to all players, regardless of their gender politics, arguably it enables Roxby Smith to performatively inhabit some of the game's sexist (and racist) stereotypes, so that they may be re-contextualized and at least implicitly critiqued. Smith, who describes her work as feminist, has called this approach "teasing out societal glitches that perhaps go unnoticed in the everyday." [4] An important corollary to the artist's critical role inversion here is that Smith's insistent and disturbing foot chase is also a search for the 'exit condition' of the female NPCs' hardcoded behavior: did the game designers include a computational scenario in which a female NPC can get away, can 'survive' on her own volition? Unsurprisingly, this is not the case. The "end point" [5] for which the artist searches does not exist. While *Fair Game [Run Like a Girl]* feels more like a confirmation of this fact, rather than a discovery, it nevertheless demonstrates quite powerfully that unless the player character 'releases' their victim (an act that in itself would be a performance of a problematic power differential), there is no survival for the female NPC – at the end of Smith's intervention, she is run over by a car. Again, it might be argued that the key subject of the artist's performance here is not constituted by the narrative content of the piece; the body with and through which Roxby Smith's performs is the source code substrate of *GTA V*, which systematically dictates specific (and highly problematic) modes of survival.

Another *GTA*-based *machinima* foregrounding the impossibility of eliciting specific reactions within an algorithmic system is Clint Enns' 2011 video *747*, which reenacts a 1973 Chris Burden performance of the same name. Where Roxby Smith shows the player

character's inability to break out of game-dictated violent interactions, Enns' piece is based on provoking a violent response from *GTA*. However, the *machinima* performs a provocation which the game's AI cannot understand, and the violent response is therefore never issued. In Burden's original, the artist spectacularly fired a handgun at a passenger plane taking off from LAX, and documented the performance photographically. The reenactment is staged in *GTA IV*'s Liberty City, where Enns' player character fixes a passenger plane in the crosshairs of a shotgun (sharing the perspective with the viewer) and fires at it. Burden's original Quixotic gesture helped foment the artist's position as a radical artist-terrorist. It simultaneously performed power and powerlessness in the face of rigid rule systems, and problematized the ways in which life under the rule of law flattens the critical difference between agency and futility of action, to the point where it becomes difficult to distinguish between aggression and inertia. Reenacting (and mocking) art historical traditions of radical intervention, Burden provoked the rule-enforcing legal apparatus (shooting at flying planes is a crime virtually anywhere in the world). At the same time, he safely remained in a speculative domain, since his action failed to yield any 'results' beyond unverifiable photographic documentation. As Daniel Cottom has noted, Burden's pistol is pointed critically at the concept of performance art itself, and at the simulacrum of 'high' art.[6] In Enns' piece, the shotgun that has replaced Burden's pistol is additionally pointed at the algorithmic regime that enforces the rule system to which Liberty City adheres. While in many regards, this regime appears to strive for realism, and while it is designed to punish violations of its order (often with a player character's death), it simply cannot recognize Enns' intervention. The aggressive act of shooting at the plane remains unacknowledged and, one might say, unreified – it is not completed by the violent response at which it seems to aim. Following on from the way in which audiences and critics have doubted that Burden's intervention was 'real,' one might ask about the meaning of Enns' in-game gesture in relation to the algorithmic system at which it takes aim. The system cannot recognize it, and it fails to trigger in-game reification-through-violent-death. Does this mean that algorithmic logic is outsmarted through the performance of a gesture that cannot be meaningfully interpreted, and if so, is this a successful virtual survival tactic? Enns has suggested that he is hesitant to characterize his version of 747 as a performance work.[7] I would propose that such a description is at least a fitting approximation: use of an avatar that serves as a surrogate for the artist represents a strong dramatic stance and gestures towards an embodied performance (with all the associations attached to such a designation). In this sense, it is important to consider Enns' 747 as a performance work at least because it points to the potentially limited operability of performance art concepts as part of critical interventions staged in highly structured algorithmic game environments which, by design, will only permit predetermined sets of interactions.

Like Enns' *machinima* adaptation of Burden's 747, COLL.EO's *Liberty City Crawl* series (2017) restages performance art within a virtual environment to explore the extent to which subversive action can provoke (or fail to provoke) specific responses. In doing so, this work specifically foregrounds a convergence of ideology and computational logic encoded in NPC behavior.[8] Colleen Flaherty and Matteo Bittanti, the duo of media artists behind COLL.EO, created their recent series *Liberty City Crawl* to reenact seminal performance pieces by William Pope L. in *GTA IV*. The series extends Roxby Smith's attention to gender to an exploration of the critical positions a player character might take *vis a vis* systemic racism. The original performances, in which William Pope L. crawled through parts of New York City without contextualizing his activity as 'art' or 'performance,' were celebrated for the unsparing immediacy with which they allowed the artist to face off with inequalities and racism of contemporary NYC, highlighting the survival struggles of black

citizens. COLL.EO's reenactments clearly invoke these sentiments, but it is somewhat uncertain what they achieve beyond the translation of William Pope L.'s gesture into a different medium. Ultimately, this translation represents a modal shift that inevitably recedes from the original's radical performative stance. The reactions that *Liberty City Crawl* manages to elicit from the virtual environment in which it takes place are a far cry from the shock and anger triggered by William Pope L.'s performance work, and registers more as bafflement, or even indifference.[9] As in Enns' version of 747, here, too, the *GTA* game world cannot be provoked to elicit an adequate response to the intervention, since the recontextualized crawl remains illegible to its responsive environment and the NPCs that inhabit it. And again, this begs the question of what kinds of performance interventions virtual environments are useful for.

If the impact and effectiveness of performance work carried out in virtual spaces is inevitably restricted by the algorithmic constitution and rule system within which it occurs, should it have to be concluded that the performative gesture itself cannot survive transposition into virtual environments? What the artworks discussed so far share, to my mind, is that they force viewers to recognize the cultural logic of the 'real world' in the complex, AI-driven simulations of the *GTA* game worlds, but also that these algorithmic environments are rarely designed to facilitate critiques of this cultural logic. When the NPCs of Liberty City remain indifferent to the simulation of a black man crawling through violence-ridden virtual urban space, this is decidedly different from the indifference William Pope L. faced in his IRL performances. The pieces under discussion serve to emphasize and foreground the cultural logic as it is reflected in the code systems of virtual game worlds, but it is not so clear how effectively they can critique or even challenge it. Put differently, the artworks discussed draw our attention to a struggle with the limits of performativity in simulated environments. When neither a critique nor its recipients are 'embodied,' when an intervention is performed for an algorithmic system that cannot perceive it, or when the (simulated) action is entirely contingent upon a horizon of possibility and parameters of permission that are prescribed by the game logic, then one might wonder what meaningful critical element typically associated with performance art can remain. Can we adapt a familiar Internet adage and state that 'In *Grand Theft Auto*, nobody knows you're a performance artist'?

One answer to this problem is that when artists begin to perform in and through embodied, simulated characters in virtual environments, we must reconsider both the object and the subject of the resulting performative act. In a brief discussion of two further *GTA*-based artworks, Brent Watanabe's *San Andreas Deer Cam* (2016) and Joseph DeLappe's *Elegy: GTA USA Gun Homicides* (2018), I want to conclude by asking whether (and how) virtual performance work can overcome the challenges identified in the works previously discussed, to recuperate some of the critical valence of performance in virtual environments. Watanabe's piece *San Andreas Deer Cam* was conceived as a real-time, long-term video broadcast based on a custom *GTA V* mod in which the player-controlled protagonist is replaced by a virtual automaton taking the form of a quasi-autonomous deer freely roaming San Andreas.[10] Watanabe designed the deer to respond fairly realistically to its environment, with the important exception that it appears to be immortal. The deer thus might have run-ins with gang members, be mowed down by highway traffic, get involved in police chases, witness a variety of NPC interactions, arrive at random picturesque locations, topple off cliffs, or get stuck in the landscape. Throughout all these encounters, the deer appears to exhibit basic instinctual behaviors (such as fleeing from harm), while overall displaying a profound disinterestedness in its surroundings. Over the course of the artwork's broadcast, the game world's responses to the deer's presence often took the form of a hysterical frenzy of violent pursuit or panicked evasion; but ultimately, San Andreas could not touch it and its

uncanny survival skills.

In its original iteration, *San Andreas Deer Cam* was generated in real time in the game engine, and was live-streamed on Twitch.[11] This meant that the deer ‘lived’ in a continuous, persistent timeframe that preceded any viewing of the broadcast, and continued beyond it. The deer thus existed not only in a strange ‘narrative’ disregard for the virtual environment it inhabited, but also as detached from the material world for which it appeared to perform its continued survival. These characteristics are noteworthy because they facilitated the emergence of *San Andreas Deer Cam* as what might be considered a new type of algorithmically determined performance art. In 2016, Watanabe’s *San Andreas Deer Cam* was shown at the Toronto-based Vector Festival.[12] The work was included in the festival flagship exhibition at InterAccess Gallery, where it showed in a black-box setup on a wall-mounted monitor, as well as in a large-scale off-site screening at a suburban public square, on two massive, 30-foot LED screens on Celebration Square (see **Figure X**).[13] The screening took place on a mid-July weeknight, with a large audience of mostly unsuspecting members of the public (holding picnics, playing in the fountains, practicing parkour routines, throwing footballs, racing along on scooters, and so on). The screening began before darkness fell, so the massive screens were framed by the towering silhouettes of central Mississauga’s faceless condominium towers. On the massive screens, the deer roamed San Andreas beyond the reach of players and NPCs alike, enacting feats that no player could ever hope to achieve, and doing so across and beyond the time and space constraints normally imposed by the game engine. While some in the audience may have been uncertain whether or not the deer was controlled (and its actions thus performed) by a human player, for the most part it seemed clear that the real performance consisted of the deer’s quasi-autonomous interpolation of a resistance to the algorithmically enforced violence and the constant cycle of virtual dying that characterizes *GTA*. While the game footage was still violent, depicting countless attacks on the deer, death remained conspicuously absent. Even to viewers unfamiliar with *GTA*, it was clear that the algorithmic substrate framing the deer’s activities was unsettled by its presence, in a doubling of the effect the deer also tended to have on human audiences. The perceived liveness and realtime-ness of the roaming deer functioned both as an extension and as an incarnation of its inviolate survival skills, adding up, in the context of the public event, to an immersiveness and immediacy approximating an experience traditionally associated with performance art.

On a final note, Joseph DeLappe’s recently completed *Elegy: GTA USA Gun Homicides* (2018) offers a good example continuing this line of thought.[14] Created in collaboration with Albert Edwin (coding) and James Wood (consultant), DeLappe’s piece is designed to stream on Twitch, and is conceived as a critical data visualization tool that transposes statistical data on US gun violence into the virtual environment of *Grand Theft Auto*. I would argue that like *San Andreas Deer Cam*, the real-time *GTA machinima Elegy* critically reworks established performance art conventions against the background of explicitly addressing issues of violence and survival. Restarting at midnight every day, and set to run for a full year until July 4th, 2019, DeLappe’s mod shows a first person view of the *GTA V* game world, with the viewer’s vantage point tracking backwards slowly, receding through the streetscapes of the game environment. What unfolds on the screen, day by day, is the killing of NPCs at the hands of an unseen shooter, who appears to share the viewer’s approximate position in the game space. The number of daily shootings of NPC inhabitants corresponds to daily updated statistics on US gun-related deaths.[15]

Importantly, viewers cannot interfere with the action, and cannot escape the gruesome spectacle (unless they choose to look away). In other words, viewers are here forced to inhabit a first-person perspective which, in video games, is generally associated with the ability to

assume agency and to trigger controlled interactions in the game world (which might include the choice of *not* to shoot NPCs). In *Elegy*, this ability is removed at code level, and is replaced by a forced witnessing of mass shootings. Like *San Andreas Deer Cam*, *Elegy* plays itself, a key aspect of the piece that is further reinforced in the daily repetition of the mass shootings occurring across the US every year. I would argue that this fact – that the artwork plays itself and is repetitive – is among *Elegy*'s most powerful aspects. While *Elegy* is disturbing and chilling even if seen simply as a visualization of raw statistical data, contextualized in the video game that is probably invoked more frequently than any other in discussions of violent (and supposedly violence-inducing) games, it is in the artwork's self-playing and repetitive nature that its critique fully unfolds. In *Elegy*, gun violence is experienced as inescapable and unpreventable, even though the artist's argument, surely, must be that it is not. Like the first-person perspective assumed by the viewer, this seeming inescapability is algorithmically enforced, building on pre-existing affordances of the *GTA* game-world, namely its ability to enforce violent behavior. *Elegy* thus achieves more than merely visceral, immersive visualization of statistical data. The deadly algorithmic system designed by the artist should be read as a complex, extended analogy critiquing the very rule systems that enable gun violence in the real world – laws and policies put in place to ensure that guns can be bought, traded, concealed, used, etc. Like the algorithmic system of *Elegy*, these laws and policies can (but should not!) be experienced as insurmountable and inviolable, an insight made powerfully clear in DeLappe's piece. Ultimately, it is thus precisely because *Elegy* is self-playing, because its computational logic executes shocking and undesirable events without allowing for human interference and agency, that this artwork functions so well as a contemporary piece of performance art that challenges preconceived assumptions regarding our ability to survive gun violence in the US.

As I suggested above, 'embodied' virtual performances that are enacted by human performers for algorithmic environments can be problematic because they generally can not transgress the computational rule systems functioning as their frame and stage. In the artworks I discussed, such embodied performances appear successful mostly insofar as they critically emphasize and foreground this limitation, effectively addressing the futility of certain attempts at communicative, critical human-computer interaction. By contrast, the focus of *San Andreas Deer Cam* and *Elegy* is not simply to simulate a human-controlled intervention in the violent simulated environment of *GTA*. Instead, non-human agents here act autonomously, to engender algorithmic behaviors which fork and deviate from established expectations in unexpected ways. In *San Andreas Deer Cam*, this serves to frame a meditation on algorithmic agency and survival that defies the personal experiences of player-audiences. The seeming alive-ness of the deer, paired with the unusual live-ness of the artwork itself, allows for a powerful performative quality to reemerge. In *Elegy*, the self-playing nature of the artwork forms an analogy to what is sometimes perceived as the 'inevitability' of real-world gun violence, which, in truth, is of course a function of human-designed legal rule systems and policy conventions that enable gun violence in the first place. As *Elegy* powerfully reminds us, the lack of agency we as individuals experience in the face of rampant gun violence, expressed here through the seemingly inviolable algorithmic agency of DeLappe's mod, is not at all inevitable.

I would argue that works such as *San Andreas Deer Cam* and *Elegy*, because they deviate so strongly from preconceived assumptions regarding the conventionally embodied and live nature of performance art, constitute a new type of virtual performance art. Thanks to their focus both on survival in 'hostile' virtual environments and their exploration of algorithmically driven, quasi-autonomous virtual interactions, the traditionally embodied nature and liveness of the performance work has shifted, and now extends to the (re-)coding

of an algorithmic matrix that serves not merely to render a representation of the ‘performer’ (the simulated deer, the simulated shooter), but through which, more fundamentally, the virtual performer comes to life. In this sense, the cultural logic within which *GTA* operates, and which is encoded in the game’s computational logic, becomes both object and subject of artworks that thematize survival as such, while also rethinking the conceptual survival of performance in virtual environments. If the computational environment of a game world restricts (or even makes impossible) effective critical intervention, as suggested with regard to some of the examples discussed in this essay, then virtual intervention may have to expand traditional parameters of performance to include disruption of the algorithmic logic of the performance environment itself. As I suggested, such an extension of traditional performance concepts can be experienced both in *San Andreas Deer Cam* and in *Elegy*. Here, the quasi-autonomous algorithmic protagonists (deer and invisible shooter) become new kinds of performers: by encoding novel and unforeseeable interactions with the virtual environment that frames the action, they help us reconsider virtual survival and the virtual violence to which it relates more effectively than many other works, while also updating conventional assumptions regarding ‘embodiment’ in performance art. In this sense, what we can glean from these new kinds of performance works is that in algorithmic contexts, ‘survival’ must perhaps not be approached as an achievement (to use the conventional terminology of gamification), but rather as a kind of chronic condition, evident both in the stoicism with which Brent Watanabe’s wandering deer endures the violence inflicted upon it, and in Joseph DeLappe’s NPCs who endlessly respawn only to be shot to death again.

Endnotes:

1. See VTape, ‘My Trip to Liberty City’, online at <http://www.vtape.org/video?vi=6496>.
2. Ian Bogost, *Unit Operations: an Approach to Videogame Criticism* (MIT Press: 2006), 156-157.
3. See Georgie Roxby Smith, *Fair Game [Run Like a Girl]* (2015), credit notes, online at <https://www.youtube.com/watch?v=e7dyWORKnnE>
4. See Gamescenes, “Interview: Georgie Roxby Smith,” online at <http://www.gamescenes.org/2016/06/interview-georgie-roxby-smith.html>.
5. *Op. cit.* note 3.
6. See Daniel Cottom, “To Love to Hate,” *Representations* 80.1 (November 2002): 119–38.
7. Email correspondence with the author, March 7, 2018.
8. See, for example, their series *The Fregoli Delusions*, a *machinima* video installation that trains its attention on the NPCs of *Forza Motorsports 2* (<https://vimeo.com/153661614>). Non-narrative racing games rely on NPCs for their simulations of realistic game environments. However, little attention seems to be paid to designing NPC behavior. *The Fregoli Delusions* focuses on “the behaviours of algorithmic beings that are never meant to be observed,” and shows us that “they seem plagued with an existential boredom, their legs twitching impatiently when they sit down, the trajectories of their short strolls [caught] in endless repetitive circles.” See Martin Zeilinger and Skot Deeming, “Rendered Visible: Exploring the Limits of Algorithmic Agency,” curatorial essay, Vector Festival 2016. Online at https://www.academia.edu/28331116/Rendered_Visible_Exploring_the_Limits_of_Algorithmic_Agency.
9. Among many other incidents and troublesome encounters, William Pope L. was famously arrested when an African-American pedestrian complained about the artist’s

- improper behavior to a police officer (and insisted on his complaint even when the artist attempted to explain). In Liberty City, no such response could occur.
10. See Brent Watanabe, *San Andreas Deer Cam* (2016), online at <http://www.sanandreasanimalcams.com/>.
 11. The Twitch stream is now offline. Additional footage and documentation is available through the artist's website at http://bwatanabe.com/GTA_V_WanderingDeer.html. Coverage ranged from sites like Hyperallergic (<https://hyperallergic.com/286837/the-immortal-deer-an-artist-set-loose-in-grand-theft-auto/>) and Wired (<http://www.wired.co.uk/article/ai-deer-wandering-gta-5>) to BBC (<http://www.bbc.co.uk/news/technology-33521984>) and New York Magazine (<http://nymag.com/selectall/2016/03/grand-theft-auto-deer-cam-is-mesmerizing.html>).
 12. I was co-curator of the events with Skot Deeming. See vectorfestival.org, and the Vector Festival 2016 curatorial essay cited in note 8.
 13. Celebration Square is a large, very well used public space in Mississauga, one of Toronto's most populous suburbs. Information about Celebration Square can be found at <https://culture.mississauga.ca/celebration-square>.
 14. See Joseph DeLappe, *GTA: USA Gun Homicides* (2018) <http://www.delappe.net/play/elegy-gta-usa-gun-homicides/>
 15. The piece has quickly received significant amounts of critical and popular attention. See, for example, <http://www.gamescenes.org/2018/07/game-art-joseph-delappes-2018.html> and <https://www.rockpapershotgun.com/2018/07/08/joseph-delappe-uses-gta-to-call-attention-to-gun-violence-statistics/>.

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