Navigating Haptic Space in Video Games

EDDIE LOHMEYER

With a release date of August 2016, considerable hype within the last year has been situated around the space exploration-survival game *No Man's Sky* (2016) by indie developer Hello Games. The game allows players to explore an open-ended, procedurally-generated universe with approximately 18 quintillion planets that each includes native plant and animal life. This type of free play in which a player could roam the gamespace for years and never land on the same planet twice, demonstrates how certain operations of gameplay allow for possibilities of interaction to unfold. In *No Man's Sky*, this describes when a player navigates, explores, trades, and combats with alien species across self-generating galaxies. Yet, this free play is also inhibited by mechanics and rules embedded in the game system that determine, for instance, the physics of flying spacecraft, firing weaponry, or how and when a player can harvest certain mineral resources to build items.

Drawing upon Gilles Deleuze and Felix Guattari's concept of smooth and striated space to examine these uninhibited and

constraining modes of play, this essay considers how smooth play works as *a resistive force outside of normative configurations of play conditioned by operations of striation that work on the body.* As a gaming intervention, I look at my own art installation *SmoothSketch* which uses a microprocessor to create a controller that functions as a "canvas" allowing players to draw freely while simultaneously controlling in-game agents. I argue for a non-representational approach to rethinking gameplay as the push and pull of various operations of play, or rather smooth forces that resist and de-territorialize beyond striated configurations of power through a continuum of affective intensities. Using *SmoothSketch*, I explore this through the installation's spatial assemblage of play in which a continuum exists between the smooth space of the game and its transference of affective energies onto an analogical control peripheral whose continual generation, through the energy of drawn lines, unfolds simultaneously with the player's actions. Here, smooth play can be understood as a synthesis of visual and haptic sensations that resists striation by working on a player to rethink presupposed ideologies and gestures associated with gameplay. This installation and essay consider the significance of affective sites of play that move beyond representational models in game scholarship by examining how play works on and organizes our bodies through relationships between power and resistance.
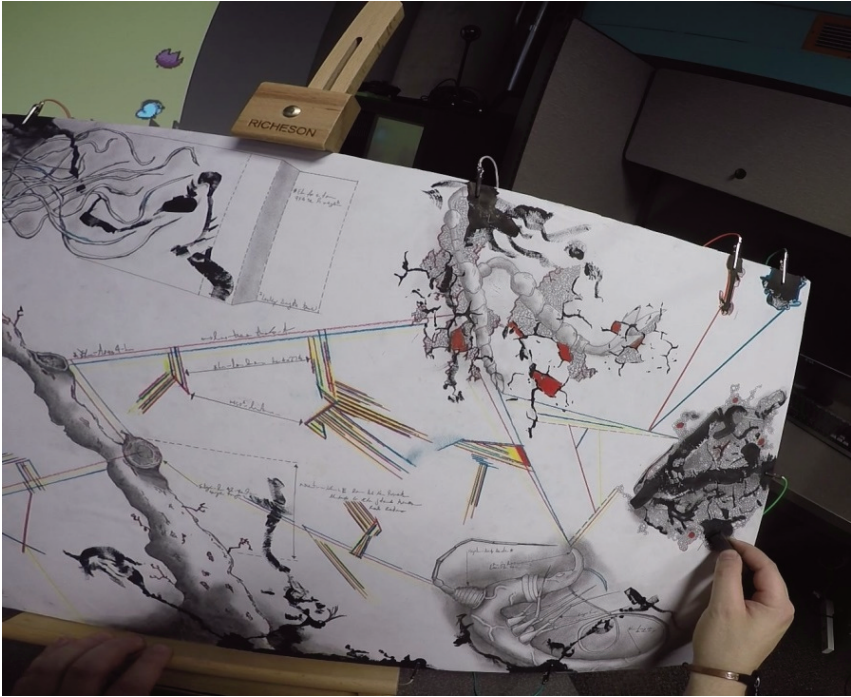
WHAT IS SMOOTHSKETCH?

The initial idea of building *SmoothSketch* came to me while playing through the 2006 game *Ōkami* for the Playstation 2 during October of 2015. In *Ōkami*, the player moves through landscapes from Japanese folklore and interacts with the game using a calligraphic brush controlled using the analog stick on the PS2 controller. The

player can essentially turn the cel-shaded environments of the game into a canvas where their digital brushstrokes perform specific actions. As I continued to use this gesture-based system, I began to think what it would feel like to play through *Ōkami* using a control system that allowed the player to physically draw onto paper instead of merely using a joystick to replicate the strokes of a calligraphy brush. This begged the question of what other games might provide a unique gameplay experience if controlled by drawing on a surface.

SmoothSketch consists of a Makey Makey microprocessor that utilizes resistive sensing to turn a drawing into a control pad connected to *Super Mario World 2: Yoshi's Island* (1995), which is projected onto a wall. Utilizing alligator clips, the microprocessor is programmed so that each control for the game is assigned to an individual drawing located on a large paper surface. On this surface I have composed various drawings of rhizome-like organisms and creatures in dark graphite pencil, whose offshoots spread across the surface yet never touch. These drawings are accented with areas of black conductive paint that extend to the edge of the drawing board and provide a conductive point of contact with each alligator clip that functions as a control output from the microprocessor. Once the player wears a conductive copper bracelet that grounds their body, they are able to draw upon the existing drawings with heavy sticks of graphite that act as natural conductors, as a means of controlling the avatar in the game. The drawing board itself is secured into a wooden easel in front of which the player is poised, blending the manner in which an artist sits and sketches *en plein air* with the way a gamer is positioned at a game console.
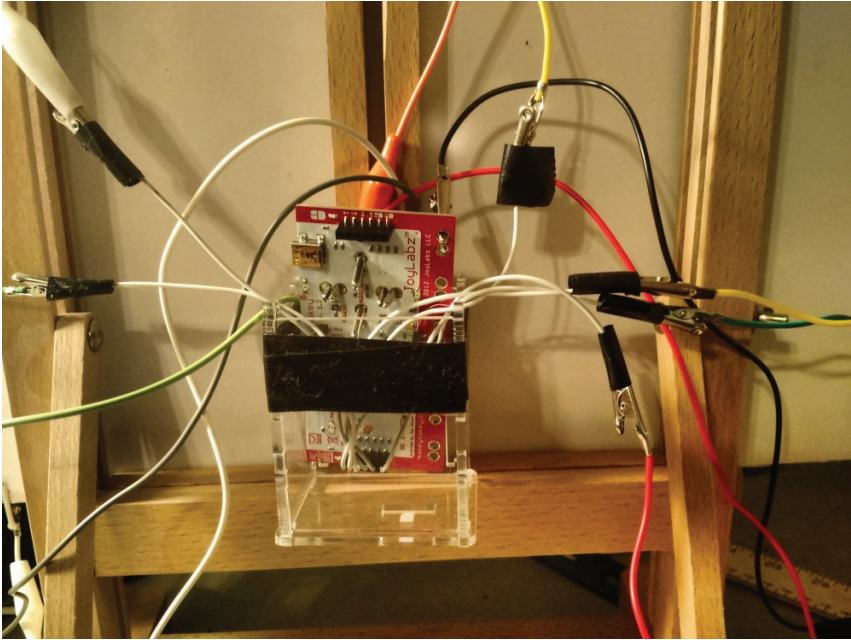
Reverse view of SmoothSketch canvas and microprocessor. Photo by Eddie Lohmeyer and used with permission of the author.

A player interacting with SmoothSketch in the Circuit Research Studio at North Carolina State University. Photo by Eddie Lohmeyer and used with permission of the author.

Of importance here is the analog set-up of *SmoothSketch* that uses graphite and a drawing surface as a controller. The inclusion of this analogical drawing controller in which player interaction is expressed as scribbles and lines, resists normative structures of play through a visual and tactile awareness of the materiality of drawn lines on a surface. Instead of using fingers to pressing buttons on a typical controller, the drawing of lines produces a continually generated animation that evolves with each play session. This analogical relationship between player actions and line introduces new visual and tactile sensations with the perplexity of moving the eyes and hand across both the projected game and drawing surface. I

specifically use *Super Mario World 2: Yoshi's Island* because its colorful graphics, animated worlds, and game physics provide an appropriate vessel for the analogical transference of affective forces onto the drawing surface as abstract line.

PLAY AND RESISTANCE

The non-representational philosophy of Gilles Deleuze lends itself well to an analysis of video games and in particular, the relationship between possibilities of interaction and play conditioned by rules and mechanics. One such concept that can help articulate these forces at work during gameplay is Deleuze and Felix Guattari's notion of smooth and striated spaces. In *A Thousand Plateaus* (1987), they suggest that a smooth space resembles an environment in which affects and intensities are generated freely through sensory encounters and events. Conversely, they refer to striated space as the organizing and controlling effects of institutions of power in which free movement is partitioned and affects are captured and worked into social and political configurations.[1] Here, we can think of smoothness and striation as forces of resistance and power that are constantly at work on each other.

Akin to Deleuze and Guattari's smooth/striated spaces, other theorists have positioned resistance as a form of self-expression that pushes back against cultural hegemony. In their work on youth groups in British culture, Stuart Hall et al. argue that the solidarity of certain subcultures (e.g. mods, rockers, skinheads, and rastas) expressed through stylistic rituals—fashion, music, and speech—allow people to adapt to and live with their oppositions to dominant culture by creating imaginary relationships to the social conditions in which

---

1. Gilles Deleuze and Felix Guattari. A Thousand Plateaus: Capitalism and Schizophrenia. Translated by Brian Massumi. Minneapolis: University of Minnesota Press, 1987. See Plateau 14: 1440: The Smooth and the Striated, pp. 474–500.

they reside.[2] As an example of this resistance through ritual, Dick Hebdige examines the styles of the "mod" subculture, particularly the way they appropriate and semantically reconfigure mass commodities such as "sharp" clothes, scooters, and amphetamines, in order to parody and to cause rupture with the parental social groups from which they emerged.[3] Similarly to the way these cultural theorists consider stylistic expression as a ritual of resistance, Stephen Duncombe considers the underground publication of fanzines by punk subcultures in the 1980s as an expression of authenticity that worked against dominant culture. These zinesters, who published for and within a network of other self-identifying punks, used fanzines as a way to resist mainstream society by providing critiques of it while also building their identity and an understanding of what it means to live authentically.[4] Just as these theorists provide us with ways to consider resistance as cultural expression, Deleuze and Guattari's concepts of smooth and striated space likewise observe how resistance works within existing hegemonic formations. Yet, in this essay I specifically draw on Deleuze and Guattari's concepts because they better articulate how the material and affective capacities of these expressive forces might operate within existing social structures and particularly within operations of conventional gameplay.

As Deleuze and Guattari's concepts relate to gameplay, smoothness unfolds through the affective potentialities of play and the possibilities for what a player can do within the space of the game, whereas striation is the capture and transference of this latent potential back into the fixed programming and constraints dictated by the system.

2. Stuart Hall, John Clarke, Tony Jefferson, and Brian Roberts. "Subcultures, Cultures, and Class." In Resistance Through Rituals: Youth Subcultures Through Post-War Britain. Edited by Stuart Hall and Tony Jefferson. New York: Routledge, 2006, pp. 35, 54–57.
3. Dick Hebdige. "The Meaning of Mod." In Resistance Through Rituals: Youth Subcultures Through Post-War Britain. Edited by Stuart Hall and Tony Jefferson. New York: Routledge, 2006, pp. 73–77.
4. Stephen Duncombe. Notes from Underground: Zines and the Politics of Alternative Culture. London: Verso, 1997, pp. 40-42.

The emergence of smooth play can be thought of as certain precepts, affects, and intensities that flow throughout the striated grid of the game system when a player is taken up with the game. For the importance of this essay, the smooth space of a video game describes an operation of resistance that works around, between, and outside of the controlling forces of striation in which technical constraints determined by the game system channel and modulate affects into the socio-cultural organization of a player subject. Striated play operates through relations of power between player, developer, and the gaming industry that govern the player within a homogeneous, coded site of play that communicates social ideologies embedded within the game. This disciplining of the body also bleeds into social structures within our everyday lives: how we work, manage time, stay productive, and move throughout capitalistic regimes. In other words, smooth play functions as a resistance to striation that conditions the player to operate within the confines of a rational, representational, and predominately occularcentric space of play. The game system disciplines the player to adopt certain embodied gestures to strategically advance, to continue to play, and to continue to be worked upon by power at large.

AFFECT AND GAMEPLAY

In spaces of play that resist dominant culture, an understanding of affect allows us to consider how smooth space works around striated forces through the emergence of new sensory-perceptual experiences that intervene in the normative disciplining of the body by the game system. Recent theory in game studies has taken interest in affect as a way to examine the embodied experiences of games and look at how play resists discursive formations of power that shape a player's body in both gameplay and everyday life. I use the concept of affect

as it is explained by Brian Massumi through the work of Baruch Spinoza and Gilles Deleuze as an intensive force that cannot be framed through representational, linguistic, or semiotic frameworks. Instead, affect as a sensory experience is socio-culturally coded and qualified as particular emotions (e.g. fear, anger, joy, sadness) through the resonation of action-feedback circuits; an experience impacts a body and affect imprints itself upon the psyche, conditioning the body through a process of becoming.[5] The body is in continual transformation through the way affects build up and change its capacity to act and be acted upon. Affect is an embodied, felt experience that emerges from the spaces between something acting upon the body and the mind's conscious rationalization of it.

Working within Massumi's understanding of affect, Eugénie Shinkle suggests that affect describes the "feel" of a video game and the bodily sensations that "make a game come alive" when the player experiences a blending of the haptic and visual in a synesthetic event.[6] To Shinkle, this synesthesia withstands certain ideologies that are concealed within the Cartesian perspective of the game space, which constructs player perceptions of socio-political reality and "invites a particular spatialization of power".[7] Just as Shinkle considers the affective *feel* of a game as a site of resistance, Aaron Trammell and Anne Gilbert also consider specific dispositions of play as resistance and power through their terms *scheme* and *slack.* The authors suggest that *scheme* relates to the technical components of the game system that engineer the player's experiences and how they perceive social structures in their day-to-day lives, while *slack* is an uninhibited mode of play "without aim or activity, and without

---

5. Brian Massumi. Parables for the Virtual: Movement, Affect, Sensation. Durham: Duke University Press, 2002, pp. 26-27.
6. Eugénie Shinkle. "Corporealis Ergo Sum: Affective Response in Digital Games." In Digital Gameplay: Essays on the Nexus of Digital Game and Gamer. Edited by Nate Garrelts. Jefferson, NC: McFarland, 2005, pp. 22-23, 25-26.
7. Shinkle, pp. 30-31.

allegiance…which collapses and works around the 'Powers That Be.'"[8] In this sense, we can think of the intensities experienced within certain moments of play as operating around the schematic processes that condition player understanding of the game and real life.

Similar to Trammell and Gilbert's disposition of *slack*, Aubrey Anable looks at the affective rhythms of casual games as a type of free play, or zaniness without productivity that works "outside of the discursive boundary lines of work, home, or our social lives—say, the moment of the commute between work and home, on public transportation, daydreaming, tapping at our mobile phone screens playing a game to pass the time."[9] As Anable makes clear, free play also works around temporal flows that dictate the organization of bodies within social infrastructures. Just as Anable positions play as a site of resistance to living within a capitalistic economy, Anne Allison argues that in Japan's current "J-cool" economy, branded on immaterial labor and consumers' affective relationships with video games and toys, youth obsession with playing Pokémon games collapses the social logic of familial and corporate institutions inherent to post-war Japan. As Allison suggests, play within this post-industrial economy functions as both a palliative cure for stress, job insecurity, and social withdrawal experienced by youth in this new economy, yet simultaneously reinforces these social structures through negative affects.[10] Where Trammell, Gilbert, and Anable see uninhibited play, slack, or zaniness as a countermeasure to the opposing forces of society, Allison conversely indicates that these affects can be channeled and actualized with negative repercussions that prompt activist responses in return. Following the work carved

8. Aaron Trammell and Anne Gilbert. "Extending Play to Critical Media Studies." Games and Culture 9.6 (2014), pp. 397, 400.
9. Aubrey Anable. "Casual Games, Time Management, and the Work of Affect." Ada: A Journal of Gender, New Media, and Technology 2 (2013). http://adanewmedia.org/2013/06/issue2-anable/.
10. Anne Allison. "The Cool Brand, Affective Activism and Japanese Youth." Theory, Culture & Society 26.2-3 (2009), pp. 100.

out by these theorists on affective modes of play as forms of resistance, I use *SmoothSketch* as a case study to explore affective processes of play as they unfold in an intervention that works outside of normative gaming practices which schematically arrange player experience through novel sensory experiences that emerge from a non-conventional drawing controller.

SMOOTH-STRIATED PLAY: THE SYNESTHETIC ENCOUNTER

As I have mentioned, smooth space emerges within the installation through a visual–haptic sensory encounter that works to reorder the player's body and resist forces of striation as impositions of power that condition a player toward rational, strategic, and productive modes of play. To return to Deleuze and Guattari's explanation of the smooth and striated, both spaces are always in coalescence with each other. Smooth space is transposed and converted into the striated, while striated space is overtaken and transformed back into smooth. Deleuze and Guattari mention types of smooth spaces—the ocean, the desert, the icy tundra—filled with affective potential that circulates freely. However, these spaces are also continually territorialized by striation—trade and navigation routes, metropolises, exchanges of capital—that organize and limit affective potential into an enclosed grid.[11] As an example, they discuss the city whose traffic grid, architecture, planning, and commerce resemble striation, or ordered social structures. Yet, smooth space still flows throughout the organization of the city as affective possibilities generated from the nomadic movement of bohemians, artists, criminals, and pockets of the homeless that work around these power structures.[12] Or, take for instance a simple game of hide and seek where the ordered rules of

11. Deleuze and Guattari, p. 480.
12. Deleuze and Guattari, p. 500.

play—the seeker counting to ten, their ability to tag someone out, or the spatial boundaries and time limits for where and for how long one can hide—function as forces of striation. Conversely, the possibilities for where and how players can hide within an environment and their free, unconstrained movement within the rules of play become a smooth space.

Relational bodies at work during gameplay also exhibit this imbrication of smooth and striated space. In his work on the mechanics and rules of play, Miguel Sicart describes a mechanic as a particular action carried out by a player, while rules describe technical attributes of the system itself. A game mechanic is constrained by the system rules that govern the properties of the game, yet mechanics employed during gameplay also dictate possibilities of interaction within the gameworld.[13] The possible range of intensities that a player experiences through the mechanics of play suggests a smooth space, while the limitations imposed by the game rules describe striation. In *Super Mario World 2,* smooth spaces are the sensations experienced when a player calls upon Yoshi and Mario to flutter, fly, jump, swim, stomp, and launch eggs at enemies. Striation is composed of the technical boundaries of the gameworld programmed by Shigeru Miyamoto in which these mechanics can be performed. These are the places Yoshi–Mario cannot navigate within or the actions they cannot perform within a certain part of game. Yoshi–Mario can only transform into a mole tank and dig through specific sections of dirt when the player has interacted with a morph bubble. Striation also takes the form of time limits or player health. When Yoshi takes a hit, baby Mario floats away in his bubble and he must be collected within ten seconds or he is kidnapped by toadies and the player's life ends.

13. Miguel Sicart. "Defining Game Mechanics." Game Studies 8.2 (2008). http://gamestudies.org/0802/articles/sicart.

These striated forces are the flows of power that attune the player to a prescribed way of playing established by the developer and industry.

When a player uses graphite in *SmoothSketch* to draw onto the peripheral and control Yoshi–Mario, they enter into an affective topology through which smooth space is emitted in a blending of the visual and haptic that resists and works around the striation of the system. The drawings of creatures and rhizomes on the controller's surface provide anything but an intuitive interface. The placement of drawings in graphite and conductive paint, through which the player interacts, comes as an initial sensory-perceptual shock as they scramble to assess where they must draw to make Yoshi–Mario jump across a crevasse or launch eggs at enemies. The player moves through what Deleuze and Guattari refer to as *haptic space* that forgoes the use of rational, Cartesian perspective to assess Yoshi–Mario's movement in the game space and suggests that the eyes may work through a "nonoptical function"[14] This haptic space works beyond the striation of the game system when synesthetic intensities present during play are transferred to the controller surface as abstract line. The eyes and the gestures of the drawing hands work in a sensory crosswiring; the eye becomes the expression of the fingers, hands, and line onto the paper as the player navigates the smooth space of the game.

14. Sicart.

The emergence of the synesthetic encounter in SmoothSketch. Photo by Eddie Lohmeyer and used with permission of the author.

In his work on the painter Francis Bacon, Deleuze discusses haptic space felt through the sensation of viewing a painting "by reaching the unity of the sensing and the sensed."[15] To Deleuze, the spectator experiences Bacon's paintings in varying domains of affects that exist within the same "pathic" instance of sensation and communicate among the sense organs.[16] This unity of the senses is relayed through a sensory domain experienced by way of a vital *rhythm* that undulates

15. Gilles Deleuze. *Francis Bacon: The Logic of Sensation.* Translated by Daniel W. Smith. London: Continuum, 2003, pp. 35.
16. Deleuze, pp. 41–42.

freely throughout each sense.[17] To the viewer, Bacon's paintings express the *visual* domain of sensation felt through a rhythmic unity in which the senses harmoniously partake in the qualities of each other. In this way, Bacon's paintings are experienced through a *seeing-feeling* in which colors, line, and shape become tangible, exuding sensations of volume and density explored through a synthesis of eye and hand. Instead of disciplining the player to identify and measure an avatar's movement through Cartesian space, *SmoothSketch* considers how this optical perception is disrupted through a rhythmic unity of the senses. Similar to Bacon's paintings, the spatial assemblage of player, Mario-Yoshi, graphite sticks, copper ground, and conductive paper surface work through a vital rhythm that emerges between bodies and through multisensory involvement. When the player frantically launches eggs at a boss or glides around with a cape as Superstar Mario, the intensities experienced through the interaction with game mechanics transpose themselves onto the controller surface as an affective residue of marks and lines, an expression of a haptic, "nonoptical" perception of the eye-hand working in unity. In their discussion of smooth and striated spaces as an aesthetic model, Deleuze and Guattari suggest that abstraction "is what draws smooth space. The abstract line is the affect of smooth space, just as organic representation was the feeling presiding over striated space."[18] In *SmoothSketch*, the abstract line presents itself as the rhythmic unity of the senses generated from drawing onto the controller. Each mark becomes an intensive tracing of gameplay as affects are produced from the cooperation of the eye and hand through seeing-touching from which smooth space emerges. This synesthetic experience allows the player to "go smooth" within the gamespace, simultaneously collapsing striated forces that work to

17. Deleuze, p. 42.
18. Deleuze and Guattari, p. 499.

discipline a player toward a coded space of play. Yet it is also how smooth space evolves and moves freely within spatial configurations of play that push back on striated operations.
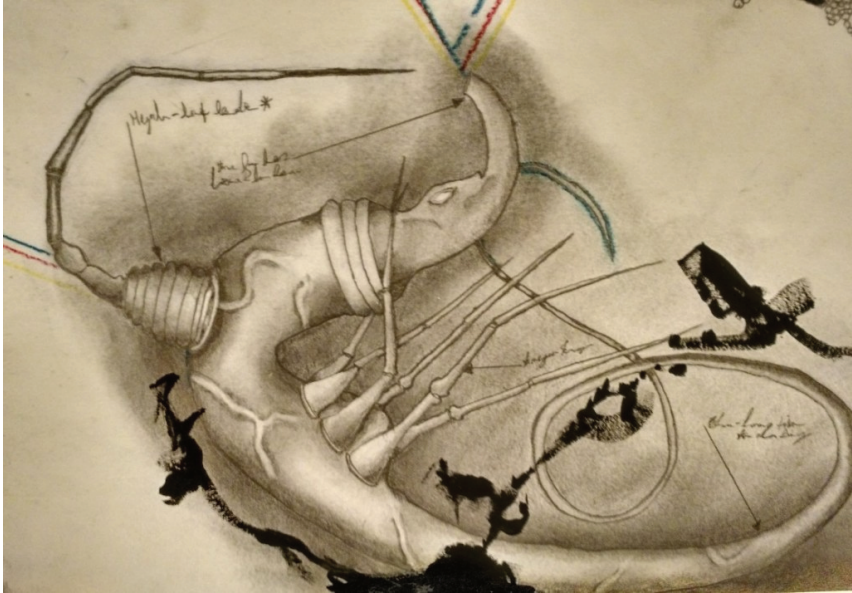
A drawing on the surface of the controller. Photo by Eddie Lohmeyer and used with permission of the author.

A CONTINUUM OF SMOOTH SPACE: THE SPATIAL ASSEMBLAGE OF PLAY

In *SmoothSketch,* smooth space works around the striation through a synesthetic encounter in which intensities flow freely throughout an affective topology of bodies at work on each other. When a player is taken up in an assemblage of gaming bodies—Yoshi-Mario, graphite, interface, Boo Guy, power-up—smooth space is produced within a field of affective possibilities that emerge from the gestures of play that resist an understanding of three-dimensional, Cartesian space and the scalar and perspectival relationships between objects

in the physical world. Felicity Colman has referred to this intensive formation of space as the *play-place*: an area composed from the spatial modalities of play, woven together by the continuous unfolding of affects. In the *play-place* the player is always in becoming through sensory possibilities, dissolving the concept of the player–subject as possessing a well-constituted cogito.[19] In *SmoothSketch*, the spatial formation of the *play-place* results from the generation of abstract lines onto controller surface by the becoming player. The lines that grow through squiggles, marks, and dots from the player reflect an unraveling of intensities that continually alter the haptic dimensions of play. Each new mark is a continuation of a circuit through the conduction of new graphite that is drawn onto the surface. This is apparent when the player draws new circuits for each control, adding to the composition and expanding the possibilities of play. As Colman notes, the affective dimensions of the *play-place* are also transformed through physical gestures imprinted upon the body from previous gaming experiences that the player brings to the act of play.[20] In *SmoothSketch*, these previously learned gestures are seen in the way new circuits are drawn closer to each other so as to minimize the distance a player has to reach across areas of the drawing surface to operate the controls. The player expects the installation to work based on their coded experiences of play with a Super Nintendo console, or other Mario games that operate by tapping buttons mapped closely together on a small controller. Yet when *Smoothsketch* initially shocks the player through a novel sensory-perceptual experience, they are prompted to re-coordinate the eye and hand, resisting these coded gestures of play. As the player continues to play

19. Felicity J. Colman. "Affective Game Topologies: Any-Space-Whatevers." Refractory: A Journal of Entertainment Media, 13 (2008). http://refractory.unimelb.edu.au/2008/05/21/affective-game-topologies-any-space-whatevers-felicity-j-colman/.
20. Colman.

and their coded gestures are taken up in the *play-place* as they draw new circuitry, we can consider these striated forces that have shaped their previous experience of play *as transforming into the smooth space of the game by opening up new possibilities by continually altering the affective dimensions of the installation.* Thus striation is resisted through its very transference into the smooth space of play.

Of importance to *SmoothSketch* and the circulation of smooth space is Colman's use of Deleuze's term *any-space-whatever* drawn from his philosophy of cinema, or what Deleuze refers to as an affective site for possibilities to emerge, a "virtual conjunction" that in gameplay describes a player's navigation of smooth space through the free play of a game.[21] Colman proposes several operations of play as *any-space-whatevers* that point to the possibilities present within the uninhibited free movement of play that I apply to playing *SmoothSketch*: *Surfaces, Thresholds,* and *Passageways*. *Surfaces* form the interface of *Super Mario World 2* and the surface of the paper that acts as a continuum between player interactions and their transitions into abstract line. *Thresholds* in *SmoothSketch* refer to the sensations produced from the hand and graphite that make contact with the conductive points on the controller and relay affects between surfaces. *Passageways* take shape through the possibilities of directions lines can take as new circuits are drawn and the act of play is continually changed. These *any-space-whatevers* assembled from the possibilities of play, allow us to think about the experience of playing *SmoothSketch* as working around and traversing the striation of the system through an unconventional arrangement of gaming bodies from which smooth space emerges.

---

21. Gilles Deleuze. Cinema 1: The Movement Image. Translated by Hugh Tomlinson and Barbara Habberjam. Minneapolis: University of Minnesota Press, 1986, pp. 105. See also "The construction of any-space-whatevers," pp. 111-122.
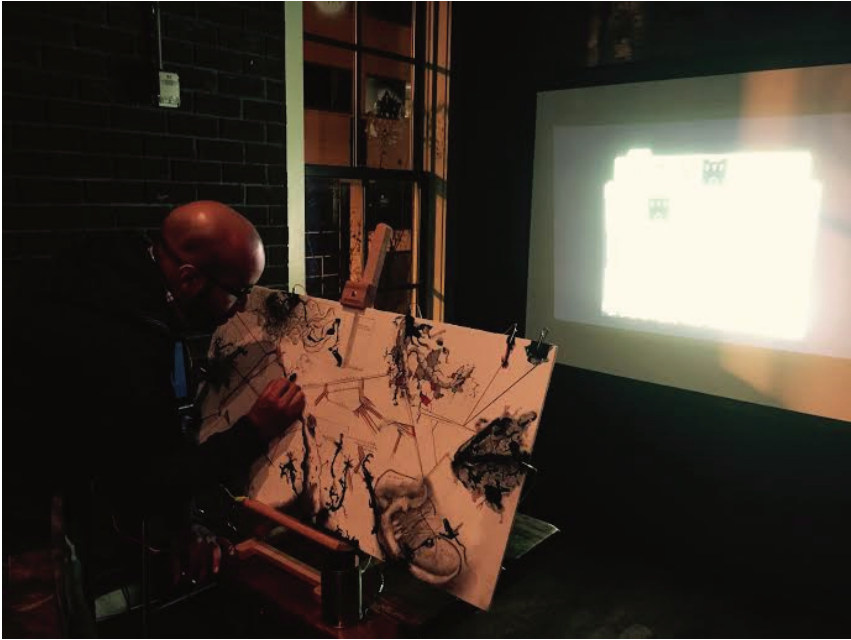
The emerging play-place through thresholds and surfaces. Photo by Nick Taylor and used with permission of the author.

CONCLUSION

As I have discussed in this essay theorizing *SmoothSketch,* resistance operates within the installation's space of play through the generation of smooth space via a sensory-perceptual shock that prompts the player to interact with a game in novel ways using a drawing peripheral. It is this synesthetic encounter that unfolds through the affective possibilities within the space of play that collapses a striated disciplining of the body by reordering the player's visual and haptic involvement with the system toward a type of sensual, carefree, fanciful play void of strategic aim or mastery.

As a final consideration of smooth space as a resistance to the dynamics of striation that discipline a player's body, I would like to reinforce that these forces are not a binary construction. As Deleuze

and Guattari tell us, they are always asymmetrically expanding and contracting, blending, and giving rise to each other. Even *SmoothSketch* as a gaming intervention produces striated forces through the procedural nature of play. Game rules in *Super Mario World 2* still pre-determine when a certain mechanic can be employed. After the initial sensory shock of interacting with *SmoothSketch,* striation does impose itself on the player's body as they attempt to proceed through the game space more efficiently and are territorialized into a productive gaming subject that plays with the purpose of mastering the game. Yet, the significance of *SmoothSketch* as an intervention is the way in which operations of play, as both resistance and power, act upon a player's body within a spatial assemblage. As Deleuze and Guattari note, the importance of examining the relationships between smooth/striated spaces is in the transitions, continuations, and combinations between the two.[22] In game studies, it is this focus on the imbrication between smooth and striated space that allows us to think about not what a player is, but *the possibilities for what a player can do* when navigating the haptic space of a video game.

---

22. Deleuze and Guattari, p. 500.