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99 Exercises in Play: Oulipian Games and Serial Players

[IMAGE of Mario's 25th Anniversary] Last year Nintendo's Mario franchise turned twenty-five. The original *Super Mario Bros.*, first released in Japan in 1985, has since appeared on almost every Nintendo console, sometimes remade and sold with updated graphics, sometimes included in another game as a kind of easter egg. Today you can emulate the original *Super Mario Bros.* on a number of platforms including the home computer and most smartphones. The game has sold over 40 million copies and was the best selling videogame of all time until very recently, with *Wii Sports* finally outpacing it in 2009. [IMAGE of World 1-1 Animation] Over the past twenty-five years thousands of thumbs have piloted millions of Marios over goombas and green pipes before sending the plumbers to their collective doom down the first pit of World 1-1 (a childhood frustration of mine and one of my earliest memories of videogaming). Despite the ubiquity of this software and its millions of annual players, the quarter-century long, daily flurry of button tapping and joystick tilting has remained largely hidden, isolated in the homes of countless users. Upon pulling the plug or pressing reset the ephemeral events that constitute the history of, or, more accurately, the history *in Super Mairo Bros.*, are erased as the task of rescuing the princess begins again.

In terms of history, videogames offer a unique challenge. For one thing, the temporality of computational processes are almost imperceptibly small while the amount of information generated is vast beyond comprehension. Furthermore, the information itself and the rhythm at which it is produced is repetitious beyond the tolerance of most humans. If players have been collectively assembling in World 1-1 for twenty-five years, how do we even begin to write the

history of this kind of play? Is it possible to monitor the mass, repetitious occurrences within game-spaces and, if so, are the micro-temporal and computational distinctions between each in-game moment meaningful on a human scale? What is a history of chess minus the biographies of the players or a history of solitaire told from the perspective of the cards? In my talk today, I'm going to explore some of the ways in which player's have begun to write this speculative history by discovering new ways of metagaming *Super Mario Bros*.

Considering a similar problem, Italo Calvino once noted the similarities between the game of chess and what he called "the electronic brain" writing, "[j]ust as no chess player will ever live long enough to exhaust all the combinations of possible moves for the thirty-two pieces on the chessboard, so we know (given the fact that our minds are chessboards with hundreds of billions of pieces) that not even in a lifetime lasting as long as the universe would one ever manage to make all possible plays." And Calvino's estimate is not far off. [IMAGE of Every Icon] A small Java applet, running at 60 frames a second since 1997, has been tirelessly rendering all possible combinations of black and white cells within a 32 x 32 pixel grid. Inspired by Susan Kare's original Mac icons, and after flickering faster than the eye could see for what seemed an eternity, John Simon's *Every Icon* blackened the first cell of the second row 4.5 years after being launched. The software will take over 19 billion years to reach the third line, well beyond the expected lifetime of the sun. Attempting to calculate the total life expectancy of *Every Icon* requires some serious computation on its own--despite being a discrete number, denoted as 2^{1024}, in practical terms it is incalculable. What would that rendered number even mean (if, as with Carl Sagan's hilarious example in *Cosmos*, "a piece of paper large enough to contain [such a number] couldn't be stuffed into the known universe.") In light of these challenges, it is even more difficult to imagine the durational quality of either the macro or micro

processes of Simon's artwork not to mention the recombinory potential of language which drove Calvino's original inquiry. However, it was not Simon's work Calvino was inspired by, but Raymond Queneau's *Hundred Thousand Billion Poems*.

Both Queneau and Calvino were members of the Oulipo, the French experimental literature collective whose practice of incorporating mathematical systems with literary production, writing under constraints, and making use of combinatory poetics is now widely regarded as a precursor to the aesthetic strategies commonly seen in digital media production. [IMAGE of Every Icon and Queneau's Poems]. *Hundred Thousand Billion Poems* is a sonnet generator capable of producing 10^14 unique poems. Though the book-form of this project is only ten pages long with fourteen lines per page it is impossible for a single individual (or even a million individuals) to read every iteration of Queneau's program. Like Simon, Queneau produced a highly constrained system with a potential for output that greatly exceeds individual human scale. Encountering every poetic or programmatic combination is humanly impossible, and yet it is exactly those hidden patterns and unconscious repetitions that both Calvino and Queneau explore in their writings. While these avant-garde experiments in art and literature critique popular forms of industrial production by featuring those forms of serial repetition typically taken for granted, most computer and videogames are designed to resist the strange effects of digital media and obfuscate these conditions of repetition. Players do not experience the multiplicity, but rather the singularity of each play as past playthroughs vanish, disappearing to human history.

This is a kind of serialized isolation that Jean-Paul Sartre described in *Critique of Dialectical Reason*. I don't have time to go into too much detail, but his critique of seriality was based precisely around the idea of an individual's actions being alienated and isolated from a

group. Although he was writing in the 50s, his model of seriality functions as a kind of proto-network theory forecasting many of the arguments made by digital media scholars like Sherry Turkle and Steven Shaviro. Turkle argues in her most recent book *Alone Together* (2011), that despite the rhetoric of enhancing community engagement (and even the social media successes of recent political movements), there is an even greater sense of isolation and alienation, particularly among adolescents, despite this culture of connectivity. Steven Shaviro echoes Turkle's criticism of networks, writing: "[i]ndeed, our being each alone, rigidly separated from one another, is a necessary condition for our being able to log on to the same network."

Despite the fact that most games are marketed as First Person Shooters or Run and Jump Platformers, titles which reflect algorithmic rather than stylistic or narrative content, in the past twenty-five years we've witnessed the game industry's naive pursuit of the fantasies of immediacy, filmic realism, and immersivity [IMAGE of Graphic Realism]. By focusing almost exclusively on these more and more advanced mimetic techniques, the graphics industry continually attempts to occlude those repetitive, procedural, discrete elements—what Ian Bogost calls "unit operations"—that drive computational media. Echoing Calvino, Bogost writes "[t]he Internet, the brain, human genetics, and social fads are examples of complex, unit-driven networks." Like the readers of *Hundred Thousand Billion Poems*, computer game enthusiasts engage in vast networks of patterns that make up the aggregate histories of virtual worlds. The sudden realization that one's circumstances are part of an ineffable network in which countless other participate disrupts the serialized isolation on which not only games, but the conditions of modern life are built around. From the minor jolt of arriving at a party to find another guest wearing the same dress to the major shock of the Pacific Trash Vortex, these moments of disruption provide networked antidotes to serial stupor. The phenomenology of seriality in

videogames is one which requires a kind of complicity on the part of the player in her own deception. Critics like Tom Bissell have noted how certain kinds of console games create these intensely private experiences that trick you into thinking you are experiencing unique gameplay within vast open worlds. [IMAGE of Skyrim] Bethesda's recent release of the fifth version of the Elder Scrolls series, Skyrim is a great example. Despite its lush graphics and pretense of open-world emergence, the procedural and repetitious elements of videogaming return in the form of repeating assets and mechanical glitches disrupting the game's narrative causality. Strange physics, procedural exploits, and the serial story of "an arrow to the knee" that every guard seems to repeat across this otherwise seamless fantasy world.

Since the late 90s, experimental gaming practices have emerged which do not simply rely on serial structures, but they critically engage the conditions from which so many games are designed and consumed. In this presentation, I want to look at two categories of metagaming practices which begin to historicize the serial logics intrinsic to videogames. After playing the same games for twenty-five years, like Bill Murray in *Groundhogs Day*, players have begun to stretch Mario to his limits, finding new ways to engage with the level designs and game mechanics of Nintendo's flagship title.

[IMAGE of Quadrun] My first example is called a "Quadrun" and is based on the techniques of tool-assisted speedruns in which standard play is augmented with various recording techniques, time expansion, and even artificial intelligence to produce precise instances of play (usually, superhuman speedruns). However, in this "Mario Quadrun," the first four Super Mario titles are played at the same time with a single controller, a practice that converts Mario's genre-defining run and jump gameplay into a kind of parallel dimension puzzle game. Rather than keeping these games in serialized isolation from one another, a quadrun

reveals the fundamental similarity between iterations of the gaming franchise. These games are so invested in a core platform of repeating code that the button presses of one controller can play four of them at the same time. Quadruns, Hexruns, and even Octoruns are becoming more popular among tool-assisted speedrunners and each new, higher order suggests the possibility that a single series of linear button presses could viably navigate every videogame ever made at the same time. Like Cantor's set of all sets, these games conjecture that there is a universal series of button presses that might function as the key to all videogames. [IMAGE of Mashup] "Mario Mashups" achieve a similar effect by displacing Mario into other 8-bit era videogames or transferring other game mechanics into *Super Mario Bros*. In this example by Jay Pavlina, players are allowed to navigate World 1-1 and beyond via a large selection of 8-bit heroes. Although these types of mashups do not explicitly allow players to control multiple games at once as with the multi-runs mentioned before, the recombinations of familiar game mechanics and intellectual property inspire gameplay strategies which resemble the cognitive multitasking prompted by multi-game tool-assisted speedruns. Players must imagine playing each level with a variety of abilities migrated from other games.

While these two examples tend focus on how a single instance of play translates across multiple situations, the next examples conflate and collage many playthroughs into one comparitive space. [IMAGE of Quantum] Andrew McClure's "Quantum Mario" is an emulator used to explain the Everett-Wheeler "Many Worlds Interpretation" of quantum physics where the struggles of one hundred playthroughs are collaged within the same frame. These renderings produce a cubist-like overlaying of temporalities as the real and the possible converge and invite us to imagine how our own actions fit into a pattern of wave-particle duality—our individual choices represented as both unique events and part of a larger system of relations. The layering

of thousands of mechanically-mediated playthroughs draws attention to the serial conditions under which all games are played, but here the once-anomistic, individualized activity is collectively visualized. [IMAGE of Mario AI] Since 2009, "Mario AI" competitions have been held at the Ph.D. level in many computer science departments. This is Robin Baumgarten's elegant solution based on the A* Algorithm, a pathfinding heuristic using what is called a best-first search. Alongside a zipping, seemingly infallible Mario, Baumgarten's algorithm renders webs of red pixel vectors—tendrilized feelers shooting out in front of the plumber, cataloging every possible path second to second.

Beyond these four examples, there are "Mario Speedruns" exploiting glitches to complete games in seconds while "Infinite Mario," a Java application featuring randomly generated levels, stretches out as far as the thumb can play. Dozens of automatic "Mario Sequencers" convert custom *Super Mario World* levels into j-pop beat machines by automatically propelling Mario across each level like a bouncing ball set to synthesized music while "Asshole Mario" mods make it difficult for the player to do anything at all. Even Cory Archangel's *Super Mario Clouds* (2002), one of the first game mods exhibited in contemporary art museums like the Whitney Museum of American Art, modifies *Super Mario Bros.*, evacuating the game of all content except the blue, monochromatic sky and a few blocky, leftward floating cloudforms. From remakes of romhacks to speedruns of sequencers, Super Mario has been manipulated, duplicated, generated, appropriated, and aggregated. In the examples we have collected, the player-programmers have found a way to engage in a critical practice expressed through the medium of software itself. These critical practices have developed naturally as players grow bored with in-game challenges and begin to "game" the limits of the software itself.

Based on this short history of meta play-styles I am interested in developing new types of software that imagine an alternative history of the game industry dedicated to these questions and curiosities. Rather than pursuing advanced forms of visual representation, I propose building serial software based on the mass, invisible repetitions governing player performance. My "Oujeupo" project, *99 Exercises in Play*, titled after Queneau's *Exercises in Style*, begins with the idea of replaying a single game *ad infinitum*. As I said earlier, in the past twenty-five years thousands of thumbs have piloted herds of Marios over goombas and green pipes. What kinds of meta-games evolve when constrained to the first level of this game? *99 Exercises in Play* first translates World 1-1 from the original *Super Mario Bros.* into the Unity game development engine and then uses Mario's mechanics as a constraint for producing ninety-nine meta-games. I would like to conclude my talk by demoing this software. [PLAY 99 Exercises]