Minecraft's Atom

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Abstract

Given that the fundamental element of *Minecraft* (Mojang Studios, 2011) is appreciably large, what its players discover is a sandbox-style game in which the ubiquitous block, *Minecraft*'s atom, stands for an unparalleled degree of immediacy. Alongside the seemingly counteractive effort of modding communities to overhaul a videogame with higher-resolution textures and examples drawn from a range of other media, this article reinterprets *Minecraft*'s functionally retrograde look as symptomatic of nostalgia for a mechanically direct conception of reality and what Henri Lefebvre (1974/1991) theorized as any space's continuous "production." Compared with the endless regression of nature—and, consequently, its decreasing comprehensibility—implicit in a materialist worldview, the geo- and biological stratigraphy of a *Minecraft* environment may be thought ontically homogeneous, insofar as a house and mountain will vary principally in their number of 16 px^3 blocks. These issues are motivated toward a consideration of the artificial shortcomings of digital games generally, or their "fictional incompleteness," and the paradoxes that arise from the suggestion of visual depth. After introducing what I describe as the translation from life, or "itemization," of those objects, settings, and events that form the content of digital games, a final discussion of the miniature allows me to revisit *Minecraft*'s appeal at the phenomenological level. In turn, the clean manageability of ludic artifacts is understood as a desire for control in increasingly opaque daily life.

Keywords

Minecraft; atom; Lefebvre; space; phenomenology; incompleteness.

> One has to be able at every moment to place one's hand on the earth like the first human being.
>
> —Rainer Maria Rilke, letter to Clara Westhoff (1907)

A Semiotic Clarification

Partway through *The Production of Space* (1974/1991), Henri Lefebvre's foundational text on the societal and economic underpinnings of visual, urban, and conceptual space, the French theorist claims that, "like energy in a material form such as a molecule or an atom, social energy is both directed and dispersed" (p. 192). Once *Minecraft*'s (Mojang Studio, 2011) algorithms terraform a new "seed" in seconds,[1] all may be chopped down, foraged, or pickaxed and transported; thanks to Markus Persson's programming, today millions of teenage landscapers remove clods of dirt that are volumetrically identical. From a flowering tree to a strabismic cow, nearly everything is shot through with the dimensions of 16 px^3: *Minecraft*'s polygonal atom. Lefebvre's comments on logical spaces and the grid, a "subdivision . . . controlled and dominated by strategic aims" (Lefebvre, 1974/1991, p. 365), seem relevant to Minecraft's ontology, ruled as it is by proficient grasping, material acquirement, and the counting out of tidy sums (see Figure 1); *Minecraft*'s aesthetic, meanwhile, one "that harkens to early childhood math class and building blocks" (Phillips, 2014, p. 117), sells world-involvement—albeit, of the virtual, procedurally generated kind—in its least disguised form. This article attempts to understand how simulated environmental immediacy, the extreme "to-handness"[2] with which *Minecraft* invites players to shape their surroundings, can lead to a euphoric feeling of proximity, almost as though they were manipulating the underlying code.[3]

This is not to deny that blocks of nonstandard height exist. Often additions to the base *Minecraft* game are reminiscent of the themed accessories found inside specific Lego sets. They include chests, fencing, and lily pads, while half-block slabs and three-quarter stairs may be thought of as partial blocks with the same footprint. Importantly, "block" does not necessarily refer to a stackable building material. A number of

[1] See Amanda Phillips's (2014) breakdown of procedural generation in *Minecraft* as it relates to "algorithmic ecology."
[2] Perhaps obviously, I have nominalized Martin Heidegger's "ready-to-hand." Vella (2013) helpfully restricts the applicability of this term to *Minecraft*'s engagement in the spatial practice of dwelling (p. 9), while "present-at-hand" is said to better apply to videogames like *Proteus* (Ed Key and David Kanaga, 2013), which foster a sense of Romantic-esque receptivity through willed philosophical disinterest (p. 12).
[3] Not, however, actually bypassing the software, like when *Super Mario Bros.* (Nintendo R&D4, 1985) speedrunners glitch a stage in real time through a series of hyper-precise inputs. See the free-to-play *I Overscoped* (NitramiuZ, 2023) and *Making the Game* (kindanice, 2023), which teasingly simulate changing a game's code on the fly.

items which appear to be synonymous with the block form that constitutes them may in fact be composite, such as iron and wooden doors consisting of two one-meter-tall blocks. It follows, as a sort of limit case, that in a literal sandbox game any "grain" could be selected; after all, "sand is also a medium, an elemental substrate" (Kirschenbaum, 2023, p. 138). Along this line, it is difficult to resist quoting the second of Immanuel Kant's (1781/1998) four antinomies, from the *Critique of Pure Reason*, which offers for its thesis the idea that "the world consists of simple parts, and nothing exists anywhere except the simple or what is composed of simples" (p. 476). In contrast to Kant, and while noting Lefebvre's view of space as organized by and for the "gestures" of their active inhabitants, Graeme Kirkpatrick (2011) uses Henri Focillon's (1992) definition of an artist, as one "who possesses the touch that cleaves form from the darkness of matter" (p. 99), to identify a

> tension . . . between, on one side, movement of the hands to wring something out of the dark matter of the computer and, on the other, feelings of exhilaration and of pleasure associated with the game as a kind of spectacle. (p. 102)

Touch, in Focillon's terms, is synonymous with structure itself: like the *Minecraft* player laying down the foundation of a house or hollowing out a tunnel, our involvement with both real and virtual spaces means enjoying that which is agreeably external to us yet authorized by our involvement.[4] So "the hand," writes Lefebvre (1974/1991), "endows her creations with a seeming permanence and solidity" (p. 98).

Blocks vary not simply in number but also in each type's respective qualities, some of which are emergent in behavior (e.g., conductivity). The ontological discreteness of glass or iron is never subsumed within what we might characterize as molecular combinations (or "a set, with specific internal relations, at once interlocking and in tension" [Williams, 1977/2015, p. 23]). Despite its elemental complexity, a *Minecraft* world's actionability remains insuppressible, and "this dualism supplies the materials for the realization of a very great variety of projects" (Lefebvre, 1974/1991, p. 192). Children playing in a real sandbox, for instance, "occupy the box but also transcend it, colossi looking downward upon their domain. . . . This posture no doubt helps give rise to the pleasures of world making, the 'low, shallow' box of wood opening

[4] Raymond Williams (1977/2015), with what he termed "structures of feeling," identifies just such a tension—"an unease, a stress, a displacement, a latency"—between our engagement with "the specificity of present being, the inalienably physical" (p. 22), and what has solidified as (ideologically, artistically, socially) past, the formal indeterminacy of which can remind us of nearly all activity in *Minecraft*. Attending to one's own thinking-through is thus "an embryonic phase," a transfer of the available world prior to it becoming "fully articulate and defined exchange" (p. 22).

onto wide vistas in the imagination" (Kirschenbaum, 2023, p. 138–139). In his article "*Minecraft* and the Building Blocks of Creative Individuality," Josef Nguyen (2016) helps us understand how third parties dedicated to modifying the game's appearance (see Nelson, 2023; Christiansen, 2014) through downloadable add-ons adopt *Minecraft*'s spirit of intuitive creation toward extra-ludic ends:

> Building with the pixelated blocks of *Minecraft* primes players to modify the game's existing code as they acquire hacker literacy, often by implementing new items and blocks. The game's crude visual aesthetic reinforces a desire to reduce the world down to functional pixels and blocks to be spatially manipulated and mixed together. (pp. 493–4)

Efforts intended to give *Minecraft*'s original visuals a facelift, substituting its purposively retrograde pixelation with high-resolution retextures,[5] do not augment the game's flagship divisibility. Unlike how displacement mapping transforms in-game models to match their textures, in *Minecraft* the natural granularity implied by a photorealistic texture will far exceed its corresponding polygon's number of triangles resulting in stocky canopies and boulders appearing to have been dipped in a film. Here, one further distinction remains to be made between player ingenuity that aspires to a certain true-to-life naturalism, as when a variety of blocks is expertly masoned together (e.g., a tower constructed from an admixture of different stones, making it somewhat dilapidated in appearance) and photorealism, in which *Minecraft*'s textures are simply replaced. What is unchanged is that Microsoft, which acquired the franchise in late 2014, still abandons players to varying biomes (see Bonner, 2021, 15n), the natural contents of which are quantifiably capturable.

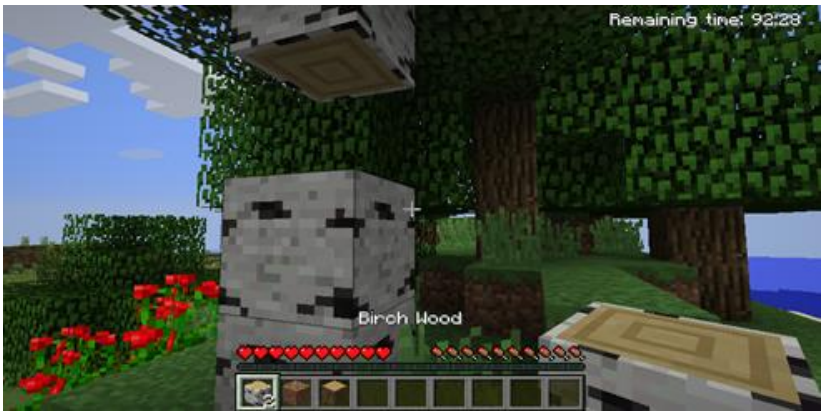

Figure 1. Hewing the trunk of a birch tree in the Java edition of *Minecraft*. Screenshot by the author.

[5] Interestingly, the official Super Duper Graphics Pack, a cross-platform suite of cosmetic upgrades created by Mojang, was canceled at the last minute, supposedly for being too ambitious of an undertaking for the company.

Beautification of *Minecraft* is thus subject to one thoroughgoing limitation. Ironically so, for its vintage get-up would seem to have been meant by Persson less as unspecific nostalgia for adults, a fedora tip to the glorious 8-bit era of consoles, than pursuant to a style of gameplay. Apparently simulating the lower resolutions of before, except with vaster draw distance and a wealth of effects, this overworld blooms at object scale. The finest resource is volumetrically there; nothing slips through one's "fingers" for being too minute, such that a microscope would be useless in *Minecraft*. Given a cursory inspection, the whole dynamo pours forth in a self-consistent, mechanical lucidity. This is not to forget that the game, amid an ever-growing list of craftable recipes, features several plug-and-play technologies approximating a layperson's idea of industrial engineering but which, nonetheless, are capable of performing actual work.[6] Yet while Bart Simon and Darren Wershler (2018) are careful to remind us that *Minecraft* itself, as a piece of manipulable software, is "an emulation running on top of another emulation" (p. 290), the joy with which *Minecraft* was met, its sale numbers eventually surpassing that of *Tetris*, suggests that players find its intuitive gameplay just right (or "thoroughly ergonomic" [Verran, 2022, p. 14]), triumphing through forests and craggy badlands in a spirit approaching that conception of reality promulgated by seventeenth-century philosophers and the Romantic poets of the eighteenth, with their emphasis on introspection and an emotionally heightened appreciation of nature.

A social as well as artistic movement devoted to the insights born of direct experience, Romanticism shares with Enlightenment thinkers, most obviously Isaac Newton, a religious enthusiasm for all that is revealed through the principles inherent in a deterministic worldview. It is, in fact, a common misconception that the great personalities of European Romanticism were irrational and the opposite of classically rigorous in their methods (see Beach, 1940). But if Newton's endeavor was to peer behind the face of nature as though it were a ticking clock, England's poets had the habit of reading themselves *into* nature while also inhabiting it for blissful stretches of time. Daniel Vella (2013), for instance, identifies the lonesome avatar of single-player videogames—those controlled in *Proteus* (Key & Kanaga, 2013) as well as *Minecraft*, to a qualified extent—with the peripatetic William Wordsworth, who on long walks with his sister Dorothy through an unspoiled landscape went in search of "objects of perception for the Imagination to work upon" (p. 6). (Ed Key, one half of *Proteus*'s development team, continues to live in Cumbria, the region located in northwest England that is home to the Lake District.) Another figure worth mentioning at this point is John Keats for his concept of "negative capability" (Poetry Foundation, n.d.). In anticipation of the literary critic William Empson, negative capability

[6] Such projects have included a large-scale graphing calculator with over a dozen functions, as reviewed by Craig Pearson (2020).

argues for a kind of artistic compartmentalization that welcomes ambiguity, even contradiction, gumming up the very logic of a text. This attitude would then seem to be a long way from the minute appreciation of a God-ordered world. With emotional ownership over reality alternately handed down by one intellectual epoch then retracted by the heady discoveries or moody obfuscations of another, the foregoing century has ushered in a darkness that, between cutting-edge physics' latest conjectures and the "stunning" sensory innovations most entertainment aspires to, would appear to be total. What the expensive complexity of modern life lacks is a human nearness, while its products usually result in further mystification. Like, as Matthew Kirschenbaum (2023) illustrates, "war dioramas were conceived first and foremost as pictorial media," while a "sand table, by contrast, is meant to be touched," *Minecraft* promises a *knowable* world, one so bluntly Edenic that it may be availed of as easily as water from a stream. One can simply "reach into its interior and rearrange the elements" (p. 147).

Daniel Dooghan's (2019) article, "Digital Conquerors: *Minecraft* and the Apologetics of Neoliberalism," interprets *Minecraft*'s utopian ethos as fundamentally neoliberal, given the single-player mode's focus on unfettered acquisition and control; ludologically, this arrangement "necessitates both continuous resource extraction and the perspective necessary to see the game world unfold as uniformly available to players" (p. 69). Likewise, in a discussion of Martin Heidegger on the anthropocentrizing effect technology has on independent, situated life's panoply of stuff, Vella (2013) sees the basic exigency of *Minecraft* as inherently about getting and spending:

> the things we encounter in the world are no longer perceived as things, but as sources of raw material and reserves that can be stockpiled in order to be put towards some use: "everywhere everything is ordered to stand by, to be immediately on hand, indeed to stand there just so that it may be on call for a further ordering" [Heidegger, 1953/2004, p. 322]. (Vella, 2013, p. 8)

The notion of space as produced, as set apart and thereafter maintained for human use, again finds its theoretical summation in Lefebvre, whose work on twentieth-century life has previously been discussed in the context of videogames. Garry Crawford's (2015) article "Is It in the Game? Reconsidering Play Spaces, Game Definitions, Theming, and Sports Videogames," for instance, argues that the majority of ludic spaces would be more accurately described as thematized (or genre-specific) locations capitalizing on players' need for individuality and the drama of authority.

As Jean Baudrillard warned, this contemporary lack of ours comes down to physical reality's ceaseless replacement with technological proxies, from the green desktop of the Apple II to push-to-start autonomous vehicles. Adding insult to injury, that one's fingers cannot,

at least at the level of vibrating atoms, come into contact with a keyboard or steering wheel is by this time settled science,[7] having to do with the repulsive forces that hold nuclei together. No doubt the emergence of tactility in videogames[8] is a symptom of the industry's breathless pursuit of greater verisimilitude, which has come, in first-person scenarios, to include the unique affordances of virtual reality. Echoing such peripheral equipment as the Nintendo Entertainment System's Power Glove, which claimed to offer consumers a more human apparatus for interacting with what was on their televisions (ultimately, with far less practical use compared with the standard wired controller), in *Half-Life: Alyx* (Valve, 2020) the normatively-bodied player with a compatible VR headset can use their hand to pick up a marker or adjust the dial on an old radio. Where gamepads typically allow players into a storyworld via control of an avatar, virtual reality is providing both visual involvement and a truer occupation of diegetic space as bolstered by haptic feedback and spatial tracking.

While cozily engrossing, the space of *Minecraft*'s malleable pathways and dwellings, in Espen Aarseth's (2001) "Allegories of Space: The Question of Spatiality in Computer Games," only ever amount to "metaphors of space, and not space itself," because it

> refers to an incomplete copy or an ontologically deviant "image" of the real world. It is "only" a representation; games can never depict space as it is perceived, completely, as it exists "in real life." (as cited in Günzel, 2010, p. 170)

Stephen Günzel's synthesis of Lefebvre with the American philosopher Nelson Goodman's distinction between symmetrical and symmetrical representation allows him to say that videogames in fact "constitute 'symbolic' space, which is lived," wherefore ludic spaces "are not about a 'true' or 'false' *representation of nature*,[9] but rather, they are the *expression of culture*" (pp. 173–174, emphasis in the original). As Eric Hayot and Edward Wesp (2009) note in their article on virtual geographies, "the first thing everyone does in *The Sims* is make a copy of their own house or apartment" ("The World in Miniature" section, para. 4). What I would like to suggest in this article is that the motivation behind a pictorial art form's idealizations can be understood as the recuperation of a certain domestic orderliness, to say nothing of the characterization of middle-aged gamers escaping into wifi hovels. I have in mind the calm tangibility that attends to built spaces; whether

[7] See, for a typical example, Jaime Trosper (2014).
[8] Compare David Parisi's (2018) discussion of "haptic realism."
[9] Yet consider the nearness of *Minecraft* to what Kirschenbaum (2023) calls *granular media*: while "we might say," he posits, "that the digital offers us its ontology *despite* its underlying materiality, . . . granular media have the capacity to mediate *through* the particulars of their materiality, which is to say the particulars of their particulates" (p. 140, emphasis in the original).

they are a baseball field or hotel lobby is less relevant, a question of genre. But this need not show us the interior of a house. Suffice it to say that a fictional environment—along with the innumerable things players encounter there—undergoes what might be called a process of "itemization" after it is encapsulated under a player's management. For Vella (2013), this denotes the transformation of abstract space into a specifically meaningful place (p. 3). My take is the more objectively aesthetic: an object is copied from real life through the clarification of its semiotics[10], reduced mimetically to the lesser complexity of a ludic artifact (see Verran, 2022).

Take, for a pictorial example, the mundane contents of a *Saturday Evening Post* cover as compared with its preparatory photograph. Based on Norman Rockwell's carefully composed study for *The Runaway* (see Figure 2), one can see how he declutters the classic Fifties diner, with its assortment of glassware and tin cans stacked within a wall of cabinets, down to a display case, transistor radio, ceramic coffee pot, and hopper for the beans. It is a sort of accidental minimalism where out of necessity one includes less; art's itch for consolidation scratched through the ethos of the market, transforming the world around us for its better consumption. While for an illustrator like Rockwell this is exemplified by his prodigious output of life studies based on photographs of the neighbors he posed, things are little different in the case of videogames, which

> can only hold up the appearance of a phenomenologically rich world within a narrow experiential bandwidth. As soon as we exceed that bandwidth, the illusion wavers and players are once again reminded that they are interacting with an incomplete construct that merely alludes to the experiential richness of the actual world. (Van de Mosselaer & Gualeni, 2022, p. 83)

Artistic representation has always involved slimming civilization's messier condition into hedged synopses. Mimesis does not seem able to do otherwise, paring the fat from always more corpulent models. These

[10] This phrase, along with certain other philosophical considerations in this article, first appeared in a previous article of mine, which I excerpt here: "Videogames, which have no choice but to dilute the actual objects, psychology, and employments they draw upon, thus ingeniously trade on our generalized disgust for what is perceived to be visually or practically unnecessary as the excuse for limited representational and experiential capabilities. Much of the ire directed at gaming as mere escapism is flatly contradicted by big-budget endeavors to recreate the quotidian alongside epic realism and the fantastic in games like *Red Dead Redemption* and *The Witcher*. However grand a developer's ambitions might have been, translation of anything for the sake of a videogame inevitably leaves behind a tidy polygonal copy free of static" (Verran, 2022, p. 13).

histories, ricocheting between everything and nothing, are thus better characterized as cyclical practices rather than races to graphical bottom.

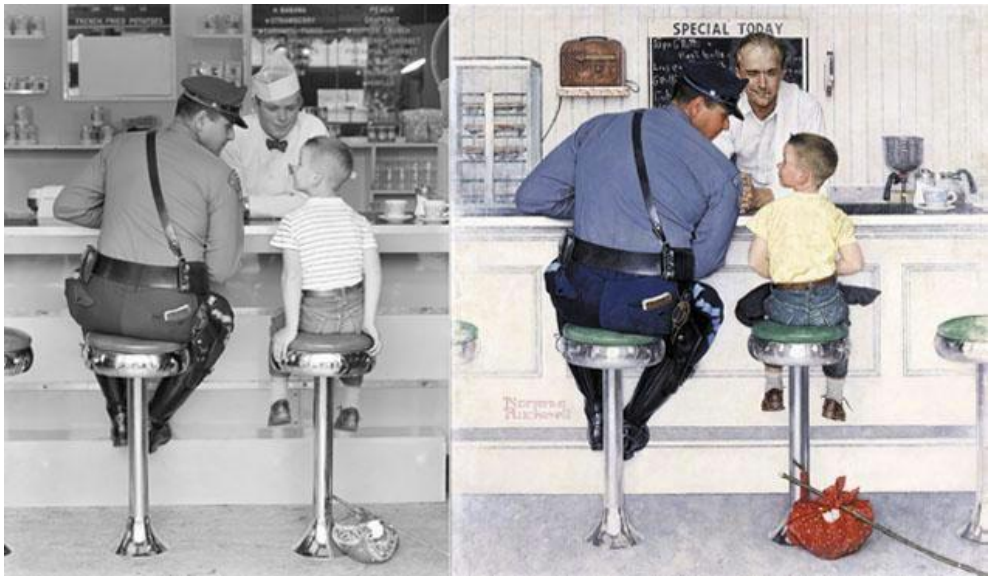

Figure 2. The preparatory photograph (left) for Norman Rockwell's 1958 illustration *The Runaway*.

Following a gloss of Marshall McLuhan's usage of the Greek word *narcosis*, Emiliano Chirchiano (2016) confirms for us that retrogaming, borne out of the culture industry's insistence on techno-novelty as a societal constant, is as much about aesthetic orderliness as it is dusting off old memories. Gamers "are therefore witnessing a return to origins, where pleasure and playability are achieved with simplicity" (p. 141). McLuhan (1964) similarly noted of the fatiguing quality of modernity that its constant self-displacement backfires by creating in us a reciprocal need for transparency and unfragmented forms of knowing: "The aspiration of our time for wholeness, empathy and depth of awareness is a natural adjunct of electric technology. . . . We are suddenly eager to have things and people declare their beings totally" (p. 5). Supposing that the impulse behind *Minecraft*'s purposive as much as visual simplicity is somehow innate to representation per se, its earliest application would be found in the Stone Age. The taut grace of Lascaux's wall paintings was surely informed—in a counterfactual sense, admittedly—by lack of graphite and sketch paper. Upper Paleolithic art, esteemed as the earliest known to us, is also the most possibly rudimentary while remaining decidedly non-abstract. The designs of these first artists have a dominant tendency to acknowledge human anatomy piecemeal, based on a sort of visual tallying not seen again in Europe until Henri Matisse. No differently than in a retro-style title like *Minecraft*, here one finds configuration instead of content, let alone three-dimensional modeling, in which the depiction of totemic avatars borders on the schematic. In the following illustration (see Figure 3), notice how the limbs of each anthropomorph attach to their body abruptly, without the interstices of actual hips and shoulders.

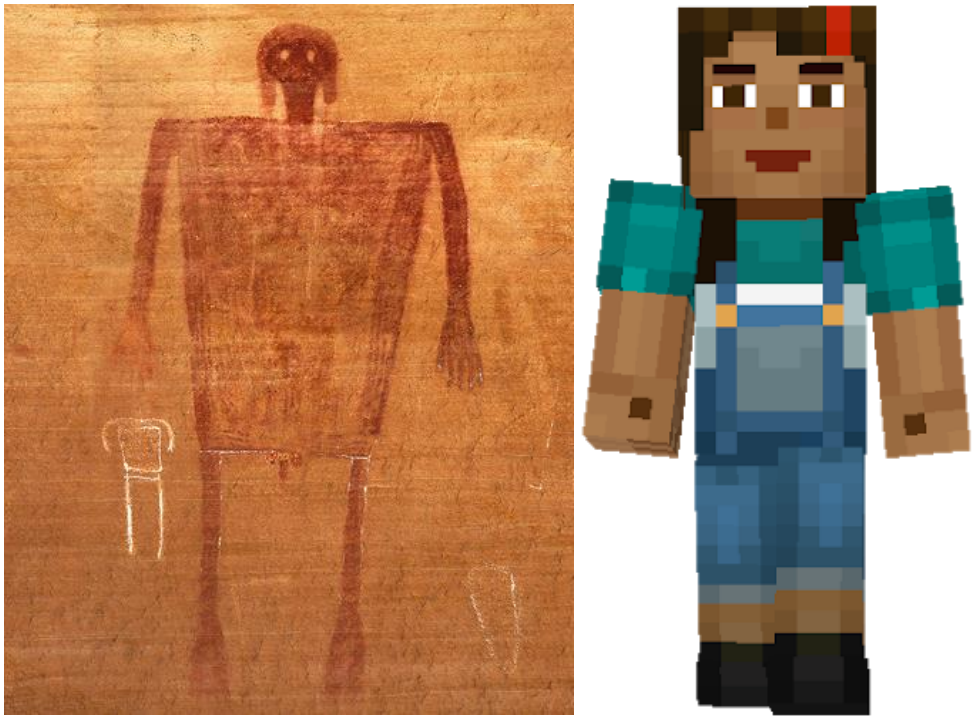

Figure 3. Detail from the *Big Man Panel* in Grand Gulch, Utah, and a custom *Minecraft* avatar.

As much as in the cheap figurines marketed to children and manufactured overseas, whose appendages easily dislocate from the torso, there is a partitioned discreteness to the anthropomorphism of *Minecraft*'s block body, as though its most obvious parts were assembled from memory after the fact. Or, for the sake of rote distinguishability, no segment is allowed to overlap.[11] Is this not the way in which children generally approach the drawing of themselves and other people, through ticking off the various physiological necessities? In recollecting the human body's assemblage mnemonically, they know that a bulbous head belongs above the torso, which then sprouts pairs of legs and arms haphazardly, while ankles and wrists are assumed to exist within the respective zones of hands and feet, like the meeting of two perpendicular lines manifesting a corner out of nothing. While Andrew Reinhard (2017), in a critical appropriation of Manuel DeLanda's "assemblage theory," defined as "the idea that independent, unrelated things when combined with each other can create something new with new functionality" (para. 5), gives the parenthetical example of the five robotic lions that combine to form the body of Voltron, the concept of assemblage would seem equally applicable to videogame avatars. Like the figures of Upper Paleolithic art, daubed and spat onto a flat wall,

[11] As Polygon's Patrick Gill (2019) observes, "when a character's limbs are long and thin they rarely overlap with their own body, so it kind of turns them into these glyphs, and you can use the different shapes they make to read their intent" (1:26).

Minecraft's controllable bodies stand for depiction checked against knowledge.

Informational Rock Bottom

Early in *SteamWorld Dig 2* (Image & Form, 2017), while en route to the hub area of El Machino, a signpost with the text "MINERS WANTED" points eastward. Unlike others in the game, which are textured with nearly unreadable and otherwise irreverent, Easter egg-style messages, this signpost is legible without the player bothering to engage with it. Doing so, however, activates a speech bubble of quoted text (see Figure 4). Curiously, this additional text which had been latent "within" the signpost, awaiting the player's touch like the genie in Aladdin's lamp, is semiotically quite unlike the poststructuralist distinction between signifiers and what they signify, or even the literalness of any denotation against its many possible connotations. When new players encounter the MINERS WANTED signpost, the experience is likely not that one text nests inside the other, but that the latter is felt to supplant the former hierarchically. Though categorically dissimilar, the hermeneutical question as to how multiple, varying iterations of the signpost's content could finally represent one text may be compared to the way in which objects in an open-world videogame gain in geometrical sophistication as the player pushes forward into space, with low-polygon models gradually replaced with high-quality ones and both denoting the same landmark in the distance, a technique known as level of detail (see Bonner, 2021, p. 71). In the case of *SteamWorld Dig 2*, the signpost as found within the mise-en-scène and its receipt in the form of a speech bubble happen to be equal in legibility. The speech bubble should be understood as the signpost's lexical magnification, with the player asked to agree that the player-character's report as to what the sign "actually" says is diegetically superior to that which is plain to read.

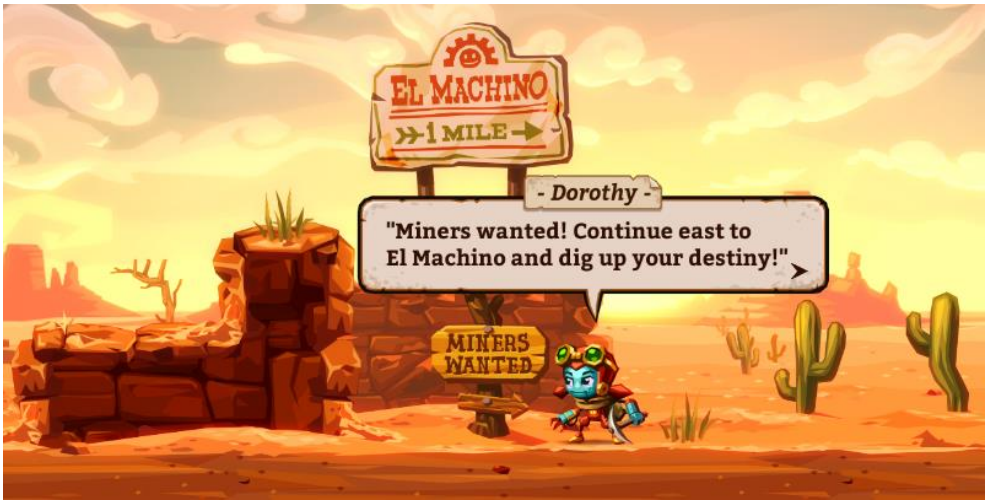

Figure 4. A signpost is interacted with during the exposition of *SteamWorld Dig 2* (detail). Screenshot by the author.

I am reminded of how the illegible fantasy script on every signpost in *The Elder Scrolls III: Morrowind* (Bethesda Game Studios, 2002) was quickly replaced by the game's online modding community, such that the names of near and distant cities could be read without the extra step of clicking. Most applicable may be Gilles Deleuze's (1988) understanding of the virtual, a concept he drew from the writings of another French philosopher, Henri Bergson, in which virtuality is thought to oppose, not reality, but that which is actual (pp. 96–98). Like an attribute or possibility, the speech bubble above *SteamWorld Dig 2*'s signpost must be granted by players to have an equal degree of reality within the mise-en-scène; the former, however, which exists as a report made by the player-character, is thus the actual site of the virtual message, since the game's developers might have written in any number of texts. I am inclined to believe that the rather unintuitive wish of many players is for a less gated relationship to those objects and phenomena already belonging to a digital world, which is, of course, a representational layer cake; from a carved sign to the ground under an avatar's invisible feet, the ephemera of videogames seem all the nearer when they are within reach of a glance.

This practice of aesthetically backfilling what is judged by a studio's marketing team as a shortfall, like a subtler type of retroactive continuity, seems to me perfectly analogous with Simon and Wershler's (2018) description of how the industry freshens up technologically surpassed entertainment for adult buyers, re-presenting it as having always been quite otherwise:

> The perfectly square pixels of an emulated Mario bear little resemblance to the way that analog video games looked in the 1970s and 1980s, because the mediating technologies are entirely different. *Minecraft* is not merely nostalgic for our lost toys; it insists on presenting an impossibly sharp simulation of our lost toys—a version that did not actually exist in the moment when the toys themselves were new. (2018, p. 292)

As Mark J. P. Wolf (2003) explains in his essay "Abstraction in the Video Game," "the boxes and advertising were eager to help players imagine that there was more to the games than there actually was, and actively worked to counter and deny the degree of abstraction that was still present in the games" (p. 59). In other cases, however, "these gaps cannot be 'filled in' by the fiction appreciator with any authority, as the information is simply lacking" (Van de Mosselaer & Gualeni, 2022, p. 63). For example, when zooming out in a real-time strategy game like *Supreme Commander* (Gas Powered Games, 2007), individual units disappear at a certain distance and are replaced by a cluster of reticules. Fictionally, the units are still there, though they cease to be rendered at all, not miniaturized beyond our seeing them but removed from the player's screen. While studios' budgets have soared, developers are narrating their stories more economically than in the past, when

bespoke sets of models and fluid animation stood authoritatively for the in-game cast's points of comparison (see Van de Mosselaer & Gualeni, 2022, p. 73).

Graphically overhauling a purposefully nostalgic videogame with third-party modifications and the leg up of a good graphics card can indeed appear counteractive, especially when loading dozens of these modifications together requires a high-end computer to run at maximum settings. Perhaps more dramatically than anywhere else, the convergence in videogames between the latest technology and cross-genre trends frequently brings together mutually exclusive impulses. For Chirchiano (2016), this circularity is "simply a visual expression" responding to what is newly possible, when "the 'block' aesthetic, forced by technical limits, returns with the invention of the *voxel*" (p. 145, my translation). Once formal austerity becomes sufficiently widespread, no longer retroism but a stylistic given, realism itself may become an object of nostalgia; an ebb and flow of what was once new lapsing into familiarity. In particular, Chirchiano's interest lies with pop culture's stylistic back-and-forth as driven by the consumer economics of nostalgia. But another disagreement can be found in the foreignness of a re-issued videogame's now lost familiarity, in which one may have invested many hours years prior. The retrogaming pipeline monetizes this sense of loss through embedding "references to what 'was' in absolutely current products" (Chirchiano, 2016, p. 144).

Phillip Lobo (2019) helps us understand *Minecraft*'s fertile biomes as a kind of territorially limited excess that "denotes reality by virtue of its seeming to do nothing besides report the real, in all its structurally uncalled-for plenitude" ("World Enough" section, para. 3). In today's more photorealistic videogames, bump mapping and parallax mapping, which suggest visual depth where there is none, at least in terms of actual geometry, serve as a technical example of meeting what Nele Van de Mosselaer and Stefano Gualeni (2022) call the "fictional incompleteness" of digital games halfway. This collaboration between players and the relative shallowness of videogames' fictions, like with the examples drawn from *SteamWorld Dig 2* and *Morrowind*, dependent as they are on our willing belief, is further clarified by Jonathan Erhardt (2013), who differentiates "the representation (factual element)" from "the thing represented (fictional element)" (p. 2). While what is factual for Erhardt is the real equipment that presents a videogame to us, we might adapt these terms strictly within the limits of the diegesis: in a discussion of the unrepresented joints (fictional) holding together a *Minecraft* avatar's body (factual) or the painted signpost (factual) compared with its speech bubble (fictional). For yet another case, Erhardt's binary distinction could respectively be applied to the true flatness of a texture meant to indicate depth. Merely reskinning a videogame can be philosophically risky if a modder's wish is to improve

the verisimilitude of what is, for better or worse, volumetrically insubstantial just beneath the surface.

As Van de Mosselaer and Gualeni (2022) write, "works of fiction are always incomplete, in the sense that they do not offer all the information about the world that they prescribe their audience to imagine" (p. 63). Conversely, Karim Nader (2022) believes that choice-dependent incompleteness within the context of an interactive narrative "is importantly different from the kind of incompleteness that results from a lack of information" (p. 2). Suspending disbelief for the benefit of some fiction usually refers to a form of mediation, either a feeling of goal-oriented temporality or that one is contingently "emplaced," the term Vella (2013) ultimately settles on (p. 14). Hence Theodora Ward's (2023) contention, in a blog post about *Final Fantasy VI*, that,

> like theater, experiencing the game requires a particular kind of suspended disbelief. You know there is a gap between what you are seeing and what is happening, and it is up to your imagination to close it. . . . But the purer, imagined version of the game does not, as one might expect, render the real game worse: it *enhances* it, drawing us, by means of the fake, closer to the real—or at least the possible—in the way that all good art does. ("IV" section, para. 8)

Upon swapping out *Minecraft*'s vanilla textures (see Figure 5), a symbolic order is reconstituted that its developer originally depleted on purpose. As parched as dirt looks, the drip infusion of megapixels is densifying; and while these modifications do not change *Minecraft*'s operant phenomenology, insofar as the physical volume of nearly any block handled by a player remains dimensionally cubic, a sudsy depth is thereafter implied.

As stated, px^3's ubiquity, abided everywhere, is not then fractally granular due to modding.[12] Yet "in strategic spaces," writes Lefebvre (1974/1991), "resources are always localized. Estimates are made in terms of units" (p. 365) produced or consumed. *Minecraft*'s mixed appeal—in tandem with the occasional "mode-of-production aesthetic," (p. 59) to borrow Fredric Jameson's (2005) phrase for steampunk and historical fantasy—becomes one reminiscent of a mechanistic philosophy vouched for by an exceedingly futuristic rationalism, that which animates science fiction's roped-together airships and subterranean utopias. To this extent, "*Minecraft*'s 'analog' technologies, replete with pistons and Redstone circuitry, render it all visible and comprehensible, as long as you accept the terms of the metaphor" (Simon & Wershler,

[12] But see *Chisels and Bits*, the third-party *Minecraft* modification that allows players to chip away at full blocks to create more nuanced sculptural effects. Arguably, the same questions arise, namely why a storyworld deliberately chosen for its lesser affordances should afterward be found wanting.

2022, p. 290). "The trick," in other words, "is to figure out that a game is being played without grasping after the real world that supports this game" (Lain, 2011, para. 15). At one extreme there is the opportunity, in an empathetic bond with the avatar, to cup the atomic between one's orthogonal hands, while drawing back to a farther vantage soups up the aesthetic of *Minecraft* without actually changing its DNA as the funnel of linear perspective blends together each pointy vertex.

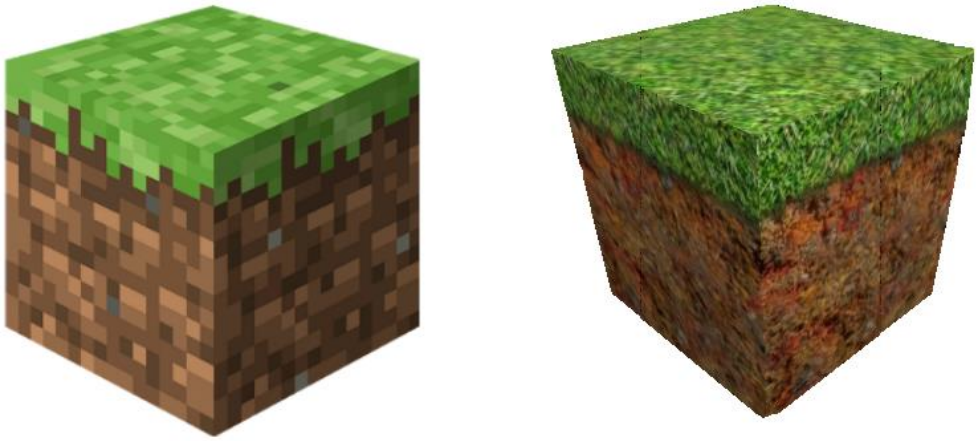

Figure 5. The dirt block in vanilla *Minecraft* compared with a higher-resolution retexture.

Paradoxically Shallow and Cavernous

Exploration in *Minecraft* of vast cityscapes, say those created by the online collective BlockWorks, whose pointillist metropolises range from a fictional Gotham City to an historically informed Campus Martius, captivates for the freedom to fly outward at a moment's notice (the player as all-traveling eye) until a sultry blur engulfs St. Paul's Cathedral: the team's commission by the Museum of London to build an enormous, fully navigable map chronicling the Great Fire of 1666. But these spectacular builds, while fun to marvel at from a distance or walk around, are effectively unlivable with respect to the scale of players. With resource-hungry modifications and textures bogging down gameplay, as realism in *Minecraft* ratchets upward playability has a tendency to slump. This inverse relationship between beautification and use, the effort to remain involved in the visuals, is an interesting one. By contrast, it may be the plasticity of *Roblox* (Roblox Corporation, 2006—present), the fact that its player base, like in the tiered, seasonally produced *Overwatch 2* (Blizzard Entertainment, 2022) and *Fortnite* (Epic Games, 2017), is limited to predesigned toy-like weapons, costumes, and tools, that is responsible for the game's reputation as decidedly adolescent. Unless what *Roblox* lacks is *Minecraft*'s reputation as vaguely educational, partially at odds with this article's discussion of nostalgia would be Simon and Wershler's (2022) contention that "what we long for in *Minecraft* is not a lost connection to a particular time and place in history but a connection to earlier consumer products" (p. 292). Lefebvre (1974/1991) comes to a similar conclusion about

"representational spaces, which are limited to works, images and memories whose content, whether sensory, sensual or sexual, is so far displaced that it barely achieves symbolic force. Perhaps young children can live in a space of this kind" (p. 50).

What Lobo (2009) calls "sovereign selfhood" relates to the manner in which open-ended survival games like *Minecraft* center themselves on a castaway maker, or vagrant (Vella, 2013, p. 6), struggling to rough out a little kingdom using the materials freely at hand, while in the case of BlockWorks' empty seventeenth-century London we are made the sole witness to a catastrophic event in European history. Lobo (2009), citing the aforementioned article by Nguyen, reads *Minecraft*'s predicament through the lens of Daniel Defoe's *Robinson Crusoe*, in which the player finds themselves marooned in a truly random setting nonetheless disposed to their whim. It is the algorithmic generation of each overworld, created with the onset of a new game, that

> Better answers the demands made of Defoe's text: its subject appears more bare than Robinson Crusoe, the world more capacious and, by the standards of realism itself, more representative of the "natural" by dint of its randomness, a randomness that, itself, guarantees the unique character of the subject and their experience. ("World Enough" section, para. 9)

Vella (2013) is among the first scholars to have made this connection to *Robinson Crusoe*, though he does so within a broader, carefully delineated consideration of the relation between virtual space and the first-person perspective's "embodied subject-position" (p. 4). Amanda Phillips (2014), however, disagrees that *Minecraft* is inherently about ecological domination, writing that the game "makes it quite easy to turn away from the capitalist expansion narrative that so many finds on its surface" while noting its "precious few sentient creatures and no industrial communities"; *Minecraft* can in fact be played "with minimal impact on the natural world, coexisting rather than conquering" (p. 113). What it achieves is a kind of metaphorical, if not quite visual, ontological equalization, akin to when in the mid-twentieth century linear perspective itself briefly collapsed with the emergence of abstract expressionism's utter flatness. Sandstone, leather, cactus: all is enlarged to be perceivable, then foliated through volumetrically identical layers.

Like with the representation of three dimensions on a two-dimensional plane, a textured polygon, with its many-sided planarity, attempts the impossible: between that simplest element (reminiscent, too, of Gottfried Leibniz's indivisible "monad") underfoot and a canopic skybox looming overhead, the diminutive and expansively large are brought face-to-face. When in *The Legend of Zelda: Breath of the Wild* (Nintendo EPD, 2017) Hyrule Field is occasionally flooded, at least as far as the Switch's GPU is concerned water does not pool *on* the ground; rather, it

rises from under the grassy surface up through it. As vloggers who clip through terrain have demonstrated, that submerged body of water is already there, waiting for a rainstorm. In "The *World-Shaped Hall*: On the Architectonics of the Open World Skybox and the Ideological Implications of the Open World Chronotope," Marc Bonner (2021) identifies a similar epistemological disagreement, between how certain three-dimensional ludic spaces appear to us and the truth of their construction, in the design and uses of skyboxes: "Although the *skybox* is constructed as a cube or sphere, it is experienced as a seemingly undefinable vastness by the players' point of view within the game world" (p. 66). It follows that what *Minecraft* players spend their time carving up is a universe paradoxically shallow, with regard to the block's irreducible immediacy, and cavernous. The usefulness of that which is minute harkens back, not to classical science's love of reduction, wherein life on earth is lead down a chain of vanishingly short linkages, but a sort of blandifying across categories (blocks all the way down), with the player asked to pick up the slack in their minds. As Nader (2022) phrases it, "we imagine that distinctly incomplete content when playing a game[;] . . . the constant requirement to imagine an incomplete fictional world gives us a great sense of agency" (pp. 6, 13).

Even when Lego is adapted for big-budget films and console spinoffs (see Thibault, 2015), the brand chooses to retain its trademark snapping brick, altering the foot of a stegosaurus or Indiana Jones to ensure that the recognizable injection-molding design stays in the limelight. *Minecraft*-themed building sets hit store shelves years ago, and at first glance it is difficult to believe that the synthesis of these homologous products, sold as Lego *Minecraft*, could sport much in the way of a tertiary visual style. Lego's iconic stud pattern, ingrained from the beginning as a feature and later yielding to market forces, that which was essentially a byproduct of technical necessity has intentionally been kept, due to popular demand and for the purposes of self-homage. Blockification of the Star Wars or Batman filmography might likewise be seen as symptomatic of a culture-wide disdain for extraneity, in which characters and sets are slimmed to their characteristic essentials. In comparison with Lego's easy constructability, *Minecraft* offers "easy sensibility," an almost tactile apparency on par with real-life uncomplicated objects viewed up close. A useful juxtaposition may be drawn with YouTube channels dedicated to miniature cuisine: prepared in copper pots more appropriate for a dollhouse on stovetops heated by tea candles, this is another example of worldly life shrunk to its optimal anthropic dimensions. Hayot and Wesp (2009) argue that the aesthetics of scale have precisely to do with just this variety of comparative difference. Like in the sublimity of a *Minecraft* city considered from afar,

> miniatures are not simply "small" things; rather they are representations of the large *inside* the small. And though the

> miniature may perfectly reproduce the large, though in fact the objects may be identical, save for a difference in scale, the difference in scale the miniature produces means that it creates a completely different phenomenological experience from something that is just small. ("The World in Miniature" section, para. 2, emphasis in the original)

Ideally, the food prepared in this subgenre of demonstration videos lies just beyond our ability to notice crumbs or a splatter of grease—to put it more analytically, a kind of noise—while being large enough to make out the different items that are signified: tomato slice, wooden spoon, hamburger bun, a "process of . . . aesthetic depuration" (Verran, 2022, p. 12). Our delight over miniscule cookware is like that of, say, the Animal Crossing series' (Nintendo, 2001–present) tiny livelihoods; again and again, the implication is that late capitalism's plethora of chores and niche consumer products means an awful lot to us, seeing how inclined our entertainment is to drum up surrogates. This clean manageability,[13] either in the case of real bite-sized food or that which has been itemized to videogame-scale, necessarily reduced in terms of appreciable detail while retaining a flattering degree of useability ("a virtual depiction," write Van de Mosselaer and Gualeni (2022), quoting Grant Tavinor, "is a 'depiction that preserves some functional aspect of its target, and so allows for an interaction of the kind one might have with the target object'" [pp. 66–67]), none other than a collective nostalgia, the desire for control in an increasingly opaque world (Crawford, 2015, p. 2). While this article's position is that *Minecraft* is foremost about aesthetic orderliness at the level of ontology, that direct, to-hand relationship can, however, thrill players just the same in their exploration of the ruins of abandoned builds as a library. "Insofar as it offers the ability to possess the large in a small space, to dominate or surround or hold the world," claim Hayot and Wesp (2009), "the miniature can be understood as an attempt to give its owner power over those buildings or animals, people or whole geographies, . . . reduced to something that can be held in the palm of a hand, or played out on a screen" ("The World in Miniature" section, para. 4).

The creation of videogame artifacts seemingly comes down to flipping nature's messy complexity for its best ipseity, which is the "sheen or appearance of independent life" (Kirkpatrick, 2011, p. 98). Given that the fundamental element of *Minecraft* is appreciably large, players discover a space in which the smallest fragment is as directly prehensible as an apple. While Van de Mosselaer and Gualeni (2002) argue convincingly that simulated gaplessness (if, taking the phenomenological point of view, we bother to categorize the experience of playing *Minecraft* in such terms) is antithetical to fiction itself—

[13] What is satisfying about washing away an oily puddle in *Super Mario Sunshine* (Nintendo EAD, 2002) or vacuuming a room in the Luigi's Mansion series is of course how completely the debris is removed.

indeed, "minimiz[ing] incompleteness in the representation of fictional gameworlds need not have an impact on a game's success" (p. 88)—this obsessive yoking of objects to the game-player's active attention extends well beyond simulated grasping and tool-wielding to actual keystrokes and a trackpad's clicks. This is why Simon and Wershler's (2018) insightful account of the ideological function of *Minecraft*'s pervasive omnidirectional grid, into which every block finds itself aligned, soon arrives at a critique of the relationship between intentional control and whatever amount of ghostly programming is imagined to be its effect. With the exception of software glitches and bugs, because their actions generally correspond to the game's mathematical underlayment with near parity "it is easy for players . . . to feel 'closer to the code' in [this] low-resolution voxelated world" (p. 299). Kirschenbaum (2023) agrees, stating that "it is tempting to compare individual grains [of sand] to other basic media elements, like bits or pixels" (p. 153). Hollowing out a mountain block by block has a demiurgic quality to it as the all-capable player manipulates *Minecraft*'s atom into and out of place.

If videogames are by definition incomplete, ontologically reliant on our willingness to supplement what little they show with the enormities they constantly hint at, supposedly latent in every textured polygon and skybox, to what extent (spatial as well as metaphorical) centrality and sharply rising degrees of world-involvement make up for such narrative and aesthetic deficiencies would seem to deserve wider study by ludologists. Abstraction from infinitely richer life—the synthesis of artistry and medium-specific technological limitations—for the salability of managed play has led developers to find a host of ways to make up that difference, as it were, from destructible environments (a hallmark of the Battlefield [2002–present] and Rainbow Six [1998–present] franchises) to the opportunity to roleplay as a legendary hero. Yet surely these diegetic compensations, however much they flatter any sense we have of ourselves as valued consumers, enchant us all the more. At the level of belief, one is no closer to virtuality's objectness, the nondiegetic glue instantiating the entertainment as a whole, for having the firepower to down a skyscraper or being crowned Elden Lord. Or does a *Minecraft* player who uses a gratuitous amount of dynamite to crash their own gameplay session (see Verran, 2022) truly "believe" in that storyworld? With its bundle of affordances, the standard videogame is like a flexible toy that can be admired per se or messed with, as emotional investment is ambiguated by the interested detachment of free play. Especially in adventures less dependent on noninteractive scripts, that complementary, half-credulous mode of engagement is thus one in which, though pleasantly estranged, we still elect to pick up a shovel.

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