ERICK VERRAN

Negative Ecologies, or Silence's Role in Affordance Theory

ABSTRACT Through critical appropriation of J. J. Gibson's theory of ecological affordance, this speculative article broadens our understanding of ludic ecology as that which virtual environments offer players in anticipation of their use: a sort of inside-out niche. Adapted to a study of diegetic and nondiegetic sound, this adjacency of ecology to video games is applied to an understanding of silence as *negative* affordance; that is to say, as a nondeterminative opportunity for the player to express themself aurally as well as kinetically against a soundtrack's absence. Whether included by a video game's creative director as dramatic segues "inside of" the traditional, top-down soundtrack or as part of the industry's shift away from film-esque sound design toward one that has begun to approach the ambience of naturalist theater, the role of silence in digital entertainment is argued to be strictly a dramatic one that allows body- and environment-related noise to be appreciated *in vacuo*. On the basis of these assertions, I claim that the player's magnified ability to puncture the auditory equilibrium of a storyworld with a shout or offensive lunge at monsters, a form of manual intervention symptomatic of cultural products in general, is newly emboldening. As the musical fullness of the soundtrack age is replaced by a diegetic soundscape equal in sonic lushness, the autonomous game player is thrown into all the greater phenomenal relief.   KEYWORDS affordance, silence, music, ecology, space, autonomy

ISOLATING THE LISTENER

As Michael Liebe points out, "The very first computer games, *Tennis for Two* (1958) and *Spacewar!* (1962), were silent."[1] The commercial failure of the Magnavox Odyssey, recognized now as the original home console and also soundless, is attributed in Liebe's essay "Interactivity and Music in Computer Games" to the Odyssey's lack of even rudimentary sound, while the popularity of *Pong* (Atari, 1972) in arcades came down to the machine's hollow *pong* sound as the ball ricocheted from a paddle. The haptic nature of *Pong*, as with many of the hand-eye games released in its wake, emphasizes an important fact: sound is the primary desideratum of realism, functioning as a kind of phenomenological proof for causal relationships. Roland Barthes called this the "grain" of a singer's voice or violinist's limb.[2] While the truth of phenomena in ordinary life is generally taken at face value, we know the situation in televisual media to be a composite one. In a choreographed onscreen duel between knights, an audience's gaze is hijacked by

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1. Michael Liebe, "Interactivity and Music in Computer Games," in *Music and Game: Perspectives on a Popular Alliance*, ed. Peter Moormann (New York: Springer, 2013), 41.
2. Roland Barthes, "The Grain of the Voice," in *Image-Music-Text*, ed. and trans. Stephen Heath (New York: Hill and Wang, 1977), 188.

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audio, allowing the knights' swords to be convincingly steel, and deadly at that. Combined with video, the appropriate effect of sound is that it gets the observing party to feel, though without overly scrutinizing the medium's artifice, that metallic contact is made, a luxury that theater usually pulls off at half strength. In his essay on the concluding knock in *Macbeth* that follows Duncan's murder, Thomas De Quincey tells us how this seemingly unrelated event in fact symbolically redoubles upon the culprit's guilt: "The knocking at the gate is heard; and it makes known audibly that the reaction has commenced."[3] Although your eyes could lead you to believe those prop weapons *have* touched when the blades are millimeters apart, the high-pitched rasp of one parrying the other is the mightier determiner, compared with audioless footage that showed a couple of fencers actually connecting.[4] It's what makes Hollywood's retellings of King Arthur profitable as well as basically logical, the generosity of coordinated noises compensating as it does for the lackluster reality behind the camera.

On film, abrupt silence has the effect of drawing attention to the actor, who appears willfully dynamic rather than controlled by post-processed effects and the composer's handiwork, standing in for an ex-machinal force. In video games, suspension of music grants the player a limited variety of directorial autonomy; such lulls turn the mic over to the player controlling an avatar, who has become solely responsible for the lion's share of diegetic sound, to the conspicuous degree that goes with fending off shadowy demons or through the same old ambience's heightening. Think how parks large and small afford urban dwellers much-needed respite from a city's din, many of the activities specific to them being so out of a need for quiet (e.g., a nap on the grass, listening to birdcalls). The truth is not entirely that people seek out green spaces in order to *do* nothing, unless one wants to describe relaxation precisely in those terms, but that tennis courts and a good-enough walking path afford us a partial escape from noise, fireworks in July and the occasional cookout notwithstanding. Parks are thus where urban life quits *getting in the way*. Churches happen to be the perfect setting for a respectful lull in a video game's soundtrack—not to forget classical temples and other buildings dedicated to worship—due to their adjacency to high fantasy and status as places set apart from the chaotic goings-on outside. Any strenuous activity performed inside a religious building carries a certain gravity, and this combines nicely with the sonorous quality of church architecture, with its vaulted ceilings and resonant stone. Construed in the negative, what silence affords is a situated absence against which we're invited to entertain ourselves. If studio leads are forcing ever wider voids into their sound designers' tracks, to stand about in the open is also to court lightning, or to attract entropy's notice, rushing as always into an

3. Thomas De Quincey, "On the Knocking at the Gate in Macbeth," in *Selected Writings of Thomas De Quincey*, ed. Philip Van Doren Stern (New York: Modern Library, [1823] 1949), 1095.

4. Zach Whalen, "Play Along: An Approach to Videogame Music," *Game Studies* 4, no. 1 (2004), accessed May 27, 2021, http://www.gamestudies.org/0401/whalen/. See also the up-to-date discussions of "kinesonic and kinevisual congruence" in Michiel Kamp, "Playing Along to What? Video Game Music and the Metaphor Model," in *Remixing Music Studies: Essays in Honour of Nicholas Cook*, ed. Ananay Aguilar, Ross Cole, Matthew Pritchard, and Eric Clarke (London: Routledge, 2021), 37.

emptied place. Easily do we imagine the throne room of some medieval queen, her dropped crown clattering to the floor.

Zach Whalen cleverly inverts the musical repetitiveness of a video game's many stationary environments with the leitmotif of Wagnerian opera, to the extent that the latter amounts to characters passing before a stationary audience, while in video games it is the spectating player who is at liberty, traveling as they do through individually loaded stages yoked to recurrent themes.[5] Alternatively, we can view silence's magnifying effect as yet another obstacle the player must deal with, a hallmark of the *Thief* franchise, whose larcenous hero keeps to the shadows and carpeted floors in order to evade the detection of guardsmen. The situated risk of noisemaking, along with what it seems to imply about the player-character, turns up in a variety of video games that, on their face, would seem to have little to do with the phenomenal nakedness, as it were, of sneaking around. Running through Hyrule Castle Town's market during the daytime, with its hurdy-gurdy song and waltzing lovers beside the fountain, one feels borne along in the melody's current. Soon, however, that music "fades at dusk and stops altogether during the night," as Karen Collins notes in a discussion of "the types of dynamic activity as they relate to the diegesis and to the player."[6] This overnight quietude built into *The Legend of Zelda: Ocarina of Time*'s (Nintendo, 1998) micro-diurnal cycle casts the player's movements in a suspicious light, with Link's every step and somersault reverberating against the cobblestones, the scamper of stray dogs tossed in for good measure. Action films as well as video games tend to behave similarly for moments when the tension needs ratcheting, withholding the soundtrack so that audiences *better hear* the creak of floorboards, letting it flood back in once a horde of zombies has been alerted to our presence and at which point treading lightly is no longer important. One metaphor that is useful for a discussion of video game music's affecting omnipresence is indeed the cinema, as much scholarship from the past decade suggests.[7] Compare the strategic withholding of video game music to the impassivity with which performances of classical music and film screenings are generally met, a phenomenon Rob Bridgett calls "listening etiquette" or

> a cleanly and culturally established designated attention space, . . . meaning that they are designed and expected to be listened to in isolation and given the audience's undivided attention; they are not expected to compete simultaneously with other sounds—in fact any extraneous sounds to the performance or film are considered as a woefully distracting noise and irritation, no matter how tiny.[8]

5. Whalen, "Play Along," footnote 13.

6. Karen Collins, *Game Sound: An Introduction to the History, Theory, and Practice of Video Game Music and Sound Design* (Cambridge, MA: MIT Press, 2008), 125–26.

7. See Neil Lerner, "The Origins of Musical Style in Video Games, 1977–1983," in *The Oxford Handbook of Film Music Studies*, ed. David Neumeyer (Oxford, UK: Oxford University Press, 2014), 319–47; Doru Pop, "The Gamification of Cinema and the Cinematization of Games," in *Transmediations: Communication across Media Borders*, ed. Niklas Salmose and Lars Elleström (New York: Routledge, 2019), 52–74.

8. Rob Bridgett, "Dynamic Range: Subtlety and Silence in Video Game Sound," in *From Pac-Man to Pop Music: Interactive Audio in Games and New Media*, ed. Karen Collins (London: Routledge, 2016), 129.

Like De Quincey, their literary counterpart, European composers of the nineteenth-century Romantic tradition understood that at the heart of drama lies a paradox, which may even be thought responsible for the genre's drive: the psychological relief obtained through summoning up and dialectically canceling out a hidden "grievance"—the music's repressed subject, found out like a body responding to infection—leaves behind a blissful cavity, the abscess lanced and drained. This emotional tug-of-war between opposed states of calm and agitation invites the traumatic to reemerge.[9] It is a cycle broken through the annihilation of the host by exhaustion, as the adagio finale to Tchaikovsky's *Pathétique* Symphony bears out. Players who find themselves thrown into a hostile landscape, one that ceaselessly identifies them as its allegorical focal point, become compelled to fight in the open.[10] More than a cheap jolt, conceding large swaths of full-blown orchestral backing is another trend that suggests movies and video games remain in sync.[11] Consider the way that film scores have grown interestingly austere and single-player games more reliant on sound determined by some action, from the explicitly ambient to diegetic music. *Grand Theft Auto*, for instance, has always let players switch on and control the radio in whichever boosted car they're driving, a feature that sees us dialing in music suited to our play style.[12] While *The Blair Witch Project*'s (1999) exclusive reliance on diegetic sound was due to its presentation as found documentary footage, twentieth-century directors known to eschew the traditional movie soundtrack include Michael Haneke (e.g., *Caché* [2005]) and Asghar Farhadi (e.g., *About Elly* [2009]). As Haneke and Farhadi suggest, austerity in films is most commonly seen in the psychological thriller. However likely to be dismissed as the trickled-down influence of postminimalism (one example being Hans Zimmer's infinitely stretchable vamp), the ecological back-and-forth between these polestars of entertainment—how cinema and gaming mutually intimidated as much as informed one another—is nonetheless compelling. It is reminiscent, one might add, of the fraught relationship between painting and photography in fin-de-siècle Europe, a battle for art-historical legitimacy that saw both imitating the other's aesthetic at different societal junctures.

The practical considerations of function are beginning to steer for form. After a century of shoring up what the moviegoer sees onscreen and hinting at everything they don't,

9. Perhaps exemplified by Alexander Scriabin's Étude in D-sharp minor, where the abrupt tranquility beginning at this short composition's eighteenth measure inevitably descends, less than twenty later, back to the opening's disturbed fury.

10. While the Coleridgean suspension of disbelief a gamer undergoes bears some resemblance to Martin Heidegger's *Geworfenheit* ("thrownness"), which refers to the arbitrariness of human circumstance, of course every player *chooses* to boot up their console or, say, log into a battle royale. But see Stefano Caselli, "Thrown into the World: Transformative Aesthetics of Avatars' In-Game Awakenings" (paper presented at the 13th International Philosophy of Computer Games Conference, St. Petersburg, Russia, October 2019), https://www.academia.edu/40764284/Thrown_into_the_world_Transformative_aesthetics_of_avatars_in_game_awakenings.

11. See Andrew Boyd, "When Worlds Collide: Sound and Music in Film and Games," Gamasutra, February 4, 2003, accessed May 14, 2021, https://www.gamasutra.com/view/feature/131310/when_worlds_collide_sound_and_.php.

12. See Kristine Jørgensen, "Left in the Dark: Playing Computer Games with the Sound Turned Off," in *From Pac-Man to Pop Music: Interactive Audio in Games and New Media*, ed. Karen Collins (London: Routledge, 2016), 163.

the highest-earning maestros seem to be innovating largely in terms of serviceability. Rather than marrying score and film together, such that both benefit equally (ecological complementarity on the scale of an artwork per se), what today's composer offers a director is sheer Bach-esque motivic divisibility. While music of the German baroque, with its perpetual motion and which reemerges as the nineteenth century's transitory fits of ecstasy, is reluctant to pause for any length of time, the ceaseless looping typical of video game soundtracks has no trouble fading out and restarting whenever creatively necessary—namely battle music, which galvanizes us instead of explaining very much in particular, though without which a player could find themself motivationally adrift.[13] Before delving into the transformative effect cinematic minimalism and perhaps, too, theater[14] have had on game design, it will be worthwhile to test the digital applicability of Martin Heidegger's concept of nature as a "standing reserve,"[15] which involves a postindustrial society's material orientation toward the world. Inanimate matter appears ripe for rational extraction and management. Seeing as virtual space is almost by definition an environment understood through technology, it's no wonder that the video game industry shot up by leaps and bounds in technical sophistication to become at last musically *flexible*, one unscripted movement at a time. To take the example of *Banjo-Kazooie* (Rare, 1998) where this is done with exceptional fluidity, the game's colorful starting area makes subtle instrumental changes to the same track as one ventures between bordering locales and even depending on whether Banjo is underwater.[16] In the Heideggerian sense, the responsiveness of nondiegetic music that so impressed us in late-nineties video games had everything to do with its new utility, as what was formerly a pretty veneer—that is, the inflexible soundtrack—begins to side with the player.

AN INSIDE-OUT NICHE

To the extent that a video game's world, or its multiple confined areas of play activity, linked together as kingdoms, levels, and so forth, is designed with the intention toward meaningful use, that which is ludically available falls roughly under the idea of affordance.[17] Players' awareness of and receptivity to this facilitated outlay of in-game objects and beings contributes a form of meta-dimensionality, which has come to be known as "decision space," to the video game's overall experiential depth.[18] Partly recalled in John Sharp's essay on dimensionality in *The Routledge Companion to Video Game Studies*, the

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13. On significance of battle music in video games, see Stephen Armstrong, "Sounding the Grind: Musicospatial Stasis in JRPG Battle Themes," *Journal of Sound and Music in Games* 2, no. 2 (2021): 1–21.

14. Mark Grimshaw, "The Acoustic Ecology of the First-Person Shooter," PhD diss., University of Waikato, 2007, accessed July 15, 2021, https://hdl.handle.net/10289/2653, 319.

15. Martin Heidegger, "The Question of Technology," in *Basic Writings*, ed. David Farrell Krell (New York: Routledge, [1936] 2004).

16. Collins, *Game Sound*, 71.

17. Scott Rogers, "Hell, Hyboria, and Disneyland: The Origins and Inspirations of Themed Video Game Design," in *Level Design: Processes and Experiences*, ed. Christopher W. Totten (Boca Raton, FL: CRC Press, 2017), 102.

18. John Sharp, "Dimensionality," in *The Routledge Companion to Video Game Studies*, ed. Mark J. P. Wolf and Bernard Perron (New York: Routledge, 2014), 161.

history of affordance begins with its coinage in American psychologist J. J. Gibson's *The Senses Considered as Perceptual Systems*, followed by "The Theory of Affordances," an essay that Gibson collected in *The Ecological Approach to Visual Perception*. A natural environment's affordances "are what it offers the animal, what it provides or furnishes, either for good or ill. . . . It implies the complementarity of the animal and the environment."[19] As specifically concerns game-playing, one case of affordance Sharp gives is the iconic crowbar in *Half-Life* (Valve, 1998), the way it conveys to a player in desperate need of any weapon at all a supreme amount of user-friendliness. Gibson borrows the concept of each species occupying a niche, to say nothing of its habitat, when he goes on to suggest that niches are sets of affordances; with regard to video games, while in nature "the environment as a whole with its unlimited possibilities existed prior to animals,"[20] a game player always precedes the newest game. This allows us, in turn, to think of video games as *inside-out niches*, seeing as how players don't fit themselves to this entertainment so much as a game anticipates, through the development team's finite number of beta-tested challenges, obtainables, and pathed landforms, a limited range of options and engagement styles.

This article advances a slantwise interpretation of what has long amounted to ecologies of the ludic,[21] which I go on to apply to an idealistic understanding of video game spaces as designed wholes, or what is afforded players in sum by the developer. Both sheltering the disclosure of all gameplay and limited to its scope, affordance as something one is dimly aware of during a session of vigorous play amounts formally to a type of selfsame quality, with affordance lying outside the video game proper and, simultaneously, conforming exactly to its dimensions.[22] As a licensing encouragement toward every player's basic experience, implicit in a video game's graphical content as appreciated over a continuous length of real time, this givenness seems to me compatible with the notion of the virtual-world-as-proffered. In other words, that total affordance we routinely take for granted, as opposed to the polygonal artifacts carefully planted with the intention of filling an environment. By contrast, we cannot be so enamored of a virtual world that we forget how it originates as a product retailed to consumers on purpose. If one is willing to entertain a mild paradox, affordance can also be thought of as inside-out; like the riddle of the barrel, which asks what could be put into a barrel that would make it *lighter*, through the exclusion of nondiegetic music a video game provides us with an

19. J. J. Gibson, *The Ecological Approach to Visual Perception*, classic ed. (New York: Psychology Press, 2015), 127.

20. Gibson, *Ecological Approach to Visual Perception*, 120.

21. See Grimshaw, "Acoustic Ecology"; Michiel Kamp, "Musical Ecologies in Video Games," *Philosophy & Technology* 27 (2013): 235–49; Julianne Grasso, "Video Game Music, Meaning, and the Possibilities of Play" (PhD diss., University of Chicago, 2020).

22. Concerning the most nuanced usage of afforded space, further scholarship on the topic might be inclined to draw finer distinctions between integral video game stages and the way constitutive parcels are seamlessly loaded into the memory in tandem with a player's movements—like those triggered events when multiple gates raise and Link finds himself trapped inside a chamber of the Deku Tree, with the key to his freedom being the defeat of an outpouring of monsters. Because this sort of ontological hair-splitting can easily appear more reductive than is useful, I have tried to excuse myself from it for the remainder of this article, although other inquiries based around users' software-mediated relationships to hardware no doubt remain unbroached.

amount of phenomenal room inversely proportional to that exclusion, at least in principle. The fact is that traditional backing music has always told players what to do: a jagged, up-tempo rhythm in any *Final Fantasy* title asks us to hone our attention on the double, while the floaty "Dire, Dire Docks" track in *Super Mario 64* (Nintendo, 1996) "eradicates any sense of grounding or calculation."[23] Through its use of the term "negative affordance" this article therefore attempts to characterize a secondary effect of nondiegetic music's retreat from mainstream video games, albeit in the sense of a positive absence. Empty space becomes analogous to a lack of music, while the ludic ecology of audio looks rather lopsided in today's video games.

Almost philosophically symmetrical with affordance and decision space's collaboration toward the unified dimension of play characterized by Sharp are the pockets of greater resonance that silence carves out for a player when silence is durationally finite or otherwise limited to a small area, as distinct from the circular, floating platform upon which Mario's final matchup with Bowser takes place or a brawl in *Street Fighter*; those arenas have rather to do with the teleological nature of level design and how gameplay can be made proportional to a story. Nooks within a video game that strike us as set apart, as though cleared of obstacles and decorative miscellany in anticipation of the looming showdown between the stage's boss and the player, can be fruitfully compared to lacunae within a video game's soundtrack; while no matter how much an alleyway or crusty lair means to signify danger, it would be flatly contradictory for a unique area to be both essential to the story and forever untraversable, notwithstanding cases in which the player finds themself locked out of certain areas for need of a key or paraglider. Along these lines, what is afforded players should be thought to include both the inhabitable storyworld per se and these visually cordoned-off spaces. Like our distinction between a virtual stage understood as the developer's total affordance and emptier chambers designed into that stage, which can have a marked effect on tension and even determine the mode of play, it is analogous to say that brief cutouts on a soundtrack's tunes give the player greater emotional as well as temporal leeway to contemplate the awesome fact of their diegetic centrality. In his essay on *Shadow of the Colossus* (Japan Studio and Team Ico, 2005), William Gibbons notes that "without direct technical challenges occupying their thoughts, players are given an unusual opportunity to consider the impact of their actions (via the protagonist) on this fictional world."[24] Gibbons's observation, which comes in regard to "the sense of isolation created during the lengthy travel times"[25] as players traverse *Shadow of the Colossus*'s enormous desert on horseback, has a certain obvious applicability to this article if we substitute "direct technical challenges" for "music." But while the heightening quality of no music absolutely could lead one to contemplate the moral ambiguity of a plot, silence also helps one's quietest deeds be

23. Connor Winyard, "The Magic of *Super Mario 64*'s Soundtrack," Decade, February 11, 2020, accessed August 3, 2021, https://www.decademag.com/decade/2020/2/11/the-magic-of-super-mario-64s-soundtrack.

24. William Gibbons, "Wandering Tonalities: Silence, Sound, and Morality in Shadow of the Colossus," in *Music in Video Games: Studying Play*, ed. K. J. Donnelly, William Gibbons, and Neil Lerner (New York: Routledge, 2014), 123.

25. Gibbons, "Wandering Tonalities," 123.

heard. By ostensibly withholding nondiegetic music, which the players of other video games might feel is imparted to them by the developer, *Shadow of the Colossus* allows us to hear the sounds that properly belong to the player-character and our thoughts to drift; this, too, is a provision, albeit one that comes in the form of space, in the metaphorical sense—room to take a breath and, ludically speaking, stretch out. Conversely, the worst music distracts us, as Stefano Gualeni says of the kind that fills elevators: "The *raison d'etre* of this music is to impede, or at least delay, the onset of the realization that one does not want to be there, let alone stay there."[26]

The affordance, then, of the modern video game space is twofold.[27] Wide enough for the avatar to move about more or less freely, relative to a title's slow disclosure of its story and various rewards, environmental space is equally a means of "helping to make the player aware of operating within a resonating space."[28] In setting his thesis partially against Mark Grimshaw's dissertation, "The Acoustic Ecology of the First-Person Shooter," with its assertion that nondiegetic music does not belong to a game's environment, Kamp argues in turn that music piped in from outside the narrative can be thought constitutive of the player-character when understood holistically as "the incorporation of the player into the environment, which at the same time results in the phenomenological incorporation of the environment in the player's perception."[29] Certainly the plentiful diegetic sounds in first-person shooter games, from the crack of a rifle to the softer tones that tell us ammunition or a health pack has been acquired, are affordant cues through close attention to which we get the drop on opponents.[30] A linear, nondynamic soundtrack's inclusion could do little in a shootout besides level the aural playing field, disadvantaging both teams with its inescapable drone. One finds virtually none of it in *Call of Duty: Modern Warfare*'s (Infinity Ward, 2019) single-player campaign—the game's abundant cutscenes will emphasize one or another line of dialogue with growling basses—and yet plenty in *Doom Eternal* (id Software, 2020). Because *Doom Eternal*'s audio is as gory as its visuals, which go big on the eye-popping, skull-busting effects, sounds that carried a hugely meaningful (as opposed to entertaining) amount of information would likely be felt ludically gratuitous. From the series's inception nearly two decades ago, multiplayer in *Call of Duty*, on the other hand, has placed a high premium on what we might call "tactical clarity." The more subtle the gameplay, the less room there becomes for hellish synthesizer distortion. Grimshaw's interest in the first-person shooter's affordances seems all the more apt when we consider the extent to which much of the video game industry now does freely what for Infinity Ward has been aesthetically necessary. As studio heads are wont to say, the emphasis is always on gameplay; it just happens that *Call of Duty*'s grenade blasts and semiautomatic fire need a spatial

26. Stefano Gualeni, "On the Existential (In)Significance of In-Game Music," *Matrise*, accessed July 5, 2021, https://www.matrise.no/2021/04/on-the-existential-insignificance-of-in-game-music/.

27. Michiel Kamp refers to "the 'twofoldness' of ecological perception." See Kamp, "Musical Ecologies in Video Games," 5.

28. Grimshaw, "Acoustic Ecology," 105.

29. Kamp, "Musical Ecologies in Video Games," 9.

30. For an explication of sound cues beyond the first-person shooter genre see Grasso, "Possibilities of Play," 20–31.

environment conducive to their apprehension. This makes the more straightforward first-person shooters, such as *PlayerUnknown's Battlegrounds* (Krafton Inc., 2017), almost a game of ecological telephone.[31] Furthermore, it is a pattern European art has repeatedly born out, as when historically determined failings in Gothic artists' work reemerged as the stylistic hallmarks of Henri Matisse. If the shooter subgenre got a running start on austerity, for a console generation or longer we have watched that lead shrink.

In *The Legend of Zelda: Breath of the Wild* (Nintendo, 2017), whose deeply contextual scoring comes and goes like the breeze with tinklings of piano or an uptick in threatening violin chords, Nintendo's soundtrack has an altogether accentual character. It makes everything richer without succumbing to gaudiness—that is, while not also *getting in the player's way*. Steven Reale's "Barriers to Listening in *World of Warcraft*" tracks the varying degrees of accessibility players have to *World of Warcraft*'s (Blizzard, 2004–) audiovisual content, irretrievably lost and replaced as it may be between each development cycle, with the permeability of in-game barriers, categorized metaphorically on a scale of fine to coarse, having largely to do with players' willingness to remain in a comfortably gloomy forest or set out for far-flung dungeons crossed with their ability to do either.[32] *World of Warcraft*'s exploration and character-related growth is staggered, with respect to level caps, quest progress, and the obtainment of gear; and although none adversely modifies the core gameplay, Reale's argument rests on the "instability" of persistent online role-playing games, how subsequent updates to the game have repeatedly changed the geography of Azeroth as well as the loot and monsters specific to the continent's interlocking zones aligned to competing factions.[33] Although pay-to-play storyworlds like *World of Warcraft* routinely bar one's path, as when I haven't completed some necessary errand and my night elf's level is too low to join a raiding party, they do so merely in keeping with the types of affordance specific to them. Last year's psychedelic kill-a-thon *Post Void* (YCJY Games, 2020) is able to pair lightning-fast gameplay with a blaring soundtrack because that gameplay is utterly, feverishly straightforward. In like manner, with the continued rise of realism, which has determined how games handle as much as look, it follows that the traditional music score has undergone reciprocal changes of its own in order to suit the action; the nondiegetic guitar music in *Post Void* might be relentless, but so is the player's forward momentum. Although expansion packs tend to obviate older content, the ins and outs of which take up much of Reale's essay, effectively cutting us off or at least altering the whole of what we're afforded, *World of Warcraft*'s mutability is a feature inherent to subscription-based online multiplayer games, while we expect the original *Legend of Zelda* (Nintendo, 1986) on the Nintendo Entertainment System to remain unchanged; this, too, is essential to its ludic identity. In like manner, *Persona 5* (Atlus, 2016), another example of that subgenre of melodramatic single-player games, is no greater or lesser the video game for its toe-tapping backing tracks, just as *Call of Duty* isn't for its absolute focus on the acoustics of drywall and hot shell casings.

31. See Grimshaw, "Acoustic Ecology," s.v. "telediegetic sound."
32. Steven Reale, "Barriers to Listening in *World of Warcraft*," in *Music in the Role-Playing Game: Heroes and Harmonies*, ed. William Gibbons and Steven Reale (New York: Routledge, 2020), 5.
33. Reale, "Barriers to Listening," 13.

No doubt the vocabulary for talking about a game's environments has not been standardized to any dependable extent: *stage*, *zone*, and *level* are used quite interchangeably to mean "a unit of place (and time) in the progression of a game," or "simply a recognizable subspace inside the more general game world."[34] At the same time, *world* has stood for the sum of these spaces as much as their separate parts and even within a single canon, from the hyphenated worlds of *Super Mario Bros.* to *Super Mario Odyssey* (Nintendo, 2017), in which various themed kingdoms form the dots on a traversable globe. Instead of just pockets of kinesonic freedom situated throughout a video game's levels, maybe designated as such in a recognizable fashion, I offer that *Ico*'s (Japan Studio and Team Ico, 2001) sparsely populated castle, for instance, is the game's affordance per se. The ability of the player to meaningfully explore the castle's labyrinthine setting varies in accordance with its changing spatial as well as interactive microaffordances, one moment sloping helpfully and the next resulting in a dead end. Each self-contained, player-facing ecology has to be judged by its own contours and blind alleys, the graphical outer bounds of which may be ignored as *Ico*'s immaterial backside (virtuality's homologue to the philosophical real) and disclosed to us accidentally, as through glitching or an awkward pivot by the in-game camera. Here these critical distinctions change their focus as this article's understanding of affordance, requisite to playing within space, now transitions to playing without music.

AN ECOLOGICAL ONE-WAY STREET

More so than at any time since, the first decades of video game history prioritized music as a top attraction. Recall the catchy premillennial tracks that blanketed each *Super Mario World* (Nintendo, 1990) level like snow, with an uptick in the tempo as the time limit ran down, "adding a sense of urgency to the specific mood of the game space,"[35] or the sensorium that was quarter arcades in their prime. AAA studios' steady disaggregation of what eighties kids thought of as a truly linear soundtrack constitutes a from-all-sides advance into the territory of foreboding ambience while tying every last scrap of music to in-game musicians if not car stereos; here the sound designer's consultations with indigenous instrument-makers and a plethora of live-recorded samples has its place. At one point in a promotional video for *Shadow of the Tomb Raider* (2018), Rob Bridgett, as Eidos-Montréal's audio director, tells us how his team worked with the company's animators to make sure nonplayer characters themselves could be observed creating the music one hears upon entering the hidden city of Paititi.[36] Straying from the codependency of real-life ecologies, increasingly it seems that a video game's programming is willing to cater to the player's wide-ranging disportment as they tread and retread its multidimensional world. Fiercely individualist gameplay collapses player versus

34. Martin Picard, "Levels," in *The Routledge Companion to Video Game Studies*, ed. Mark J. P. Wolf and Bernard Perron (New York: Routledge, 2014), 166.

35. Whalen, "Play Along." See also Grasso, "Possibilities of Play" 73.

36. Tomb Raider, "Shadow of the Tomb Raider - Sound and Music [PEGI]," YouTube, August 29, 2018, accessed August 19, 2021, https://www.youtube.com/watch?v=Y6LRk7SXaE8.

environment to a one-way street. Or what does a sounding board get in return for its support? The less obvious psychological aspect to this asymmetrical flip is what we might describe as feigned intuition, a call-and-response in which the player "answers" themself in the affirmative the instant after they pose the question as to whether they really *can* dash through the air or stomp a pacing Goomba. Without a soundtrack's nonstop goading from on high, the notion of gamified space as congested with airy decisions spoils twenty-first-century players into believing themselves cut loose from constraint altogether, with the only choice that matters becoming when to press which buttons.[37] Internalization of such a thought pattern among players would appear to be based on the simplest kind of pseudo-prediction: supposing that they might perform an action, the player does so and feels clever, no differently than when a tier of elevated platforms is successfully crossed. Control via input of commands and a tilted analog stick is additionally pleasurable for its resemblance to cyberkinesis, a bodily involvement flowing between the head and hands. According to J. D. Schmalzer, for the average game player with the expected amount of bodily dexterity and whose interfacial mastery can seem to verge on instinct, "the minutiae of the videogame's software and hardware affordances . . . become embodied or unconscious, and thus unexamined. The player's body is a noiseless channel, through which information flows to create gameplay."[38] Likewise, nonverbal sounds that arise from a player's actions in the storyworld confirm that those actions, in the epistemological sense, were effective—*that* they have taken place, for which the player deems themself wholly to blame.

Such a game player's new privilege is to alter the state of things by the whim of their own autonomy, as we (almost) believe ourselves to do when following the rise and fall of an energetic rhythm in our mind. Music, both high- and lowbrow, keeps our attention through its ethos of inclusivity, or what Theodor Adorno appositely referred to as the average listener's "socially manufactured predisposition."[39] If we agree that experience necessarily implies participation in the form of comprehension, attentiveness might then be said to depend on anticipation. Correctly guessing that the chorus will show up again before a song ends and waiting for the proverbial beat to drop are instances of the flattery that critical theorists pinpoint as the culture industry's nicotine.[40] Invited to try, and with the fake humility of a customer, the listener is surprised to be right. Operating the silly, diminutive crank of a *carillon à musique*, stacked there with the other knickknackery one resists buying in a concert hall's gift shop, is no less glorifying. The affordance in this case is a masturbatory one: the staged opportunity to congratulate oneself, for aren't *we* responsible for that picked flutter of notes? Although one makes no decisions in the matter of pitch, the rotation of the cylinder's pace is variable, intoxicatingly so. What

37. See Sharp, "Dimensionality," 162.

38. J. D. Schmalzer, "Janky Controls and Embodied Play: Disrupting the Cybernetic Gameplay Circuit," *Game Studies* 20, no. 3 (2020), accessed May 7, 2021, http://gamestudies.org/2003/articles/schmalzer.

39. Theodor Adorno, *Philosophy of New Music*, ed. and trans. Robert Hullot-Kentor (Minneapolis: University of Minnesota Press, [1949] 2006), 9.

40. See the selection of Adorno's writings that comprises *Essays on Music*, ed. Richard Leppert (Berkeley: University of California Press, 2002).

follows is the suggestion of intermechanistic engagement as "Libiamo ne' lieti calici" emerges uncannily from a contraption not half as clever as Verdi's duet. Automatic music, specifically that wanting a modicum of manual intervention—think of Betty Crocker's requirement of a single egg, the shaking a Polaroid is thought to need for its development, or how a Ouija board works—lends the faintly occultish appearance of willpower innervating a closed system at the level of its innermost being.[41] Ludwig Wittgenstein noted this very behavior in himself as the seldom articulated feeling that it is within one's power to help along a musical progression:

> When I imagine a piece of music, as I do often every day, I always, so I believe, grind my upper and lower teeth together rhythmically. I have noticed this before though I usually do it quite unconsciously. What's more, it's as though the notes I am imagining are produced by this movement.[42]

In her essay on the practices of maker communities that grow up around classic video games, Melanie Fritsch documents how this desire to literally involve ourselves in the objects of our consumption shows up in highly iterative remixes of original chiptune music and playable demos that build on familiar visual assets.[43] While this kind of extra-ludic play might be expected, Fritsch also delves into fans' modifications to proprietary code and tweaking Nintendo's motherboards.

Autonomous, self-directed play continues to be elevated alongside cost-intensive design, a trend that Will Wright, who originated the *SimCity* franchise in 1989, has championed in conference appearances and interviews with magazines. At a talk organized by the Vancouver Art Gallery, Wright "raised the importance on the part of the designer of compelling the player to explore the depths of broad experiences like *The Sims* or *GTA4*, saying such games need 'clear alternate goal structures that motivate the player to achieve in a variety of ways. Make players aware of the possibility space.'"[44] The tail end of Wright's comment, moreover, with its nod to "possibility space," alludes to Salen and Zimmerman's *Rules of Play: Game Design Fundamentals* (MIT Press, 2003).[45] The game player's experience now ranges from watching oneself star in a slick, big-budget production while more or less sailing through challenges at a fun backing track's instigation to the bare physicality of a theatrical role, with its footfalls and labored

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41. As when, with the last syllable of "But I'm a creep," Johnny Greenwood lays into his guitar or like Superman will let a kid believe that they have incredible strength, slyly leveraging the car with his foot. See, too, the slow movement of Mozart's Concerto for Flute and Harp where, after the flute's entrance, at the fifth measure the whole orchestra is seemingly "amplified" into vivacity by the soloist, while obviously the other instruments do no more than cooperate.

42. Ludwig Wittgenstein, *Culture and Value*, trans. Peter Winch (Chicago: University of Chicago Press, 1984), 28e.

43. Melanie Fritsch, "'It's A-Me, Mario!'—Playing with Video Game Music," in *Ludomusicology: Approaches to Video Game Music*, ed. Michiel Kamp, Tim Summers, and Mark Sweeney (Sheffield, UK: Equinox, 2016).

44. James Huck and Chris Remo, "Exclusive: Will Wright—Video Games Close to 'Cambrian Explosion' of Possibilities," Gamasutra, June 9, 2008, accessed May 2, 2021. https://www.gamasutra.com/view/news/109886/Exclusive_Will_Wright__Video_Games_Close_To_Cambrian_Explosion_Of_Possibilities.php.

45. See Sharp, "Dimensionality," 161.

breathing.[46] That video games should finally venture into the unmusical sounds of *embodiment* must be perfectly correlate with each passing decade's gargantuan investment in physics engines. A panoply of body noise has become supremely prevalent, a trend proportional to game studios learning to convincingly map Foley effects onto the player's merest action, along with those of their targets and what's underfoot. It is safe to assume, then, that the catalyst for this massive priority shuffle in the first place, say as evidenced by the split between the operatic bop of Japanese developers (e.g., Atlus, creator of the *Persona* series), and *Shadow of the Tomb Raider*, with its crumbling pillars and ominous coming-and-going of death whistles, lies with the market's demand for verisimilar gameplay, compared with last year's crop of games—better leaf rustle and the needling thuds of a downpour to go with all the ray tracing, the material nuances of which would be smothered by a wall of strings. Commercial entertainment products make do until newer technology slithers down the pipeline, like nature documentaries needed helicopters and lithium batteries to really hit their artistic stride. If one has any familiarity with the look and sound of adult films produced during the seventies and eighties, one possibility is that an overall lack of tactual noise, attributable to the comparatively inferior quality of the era's microphones, accounts for the industry's ubiquity of light music then and current absence of it among professional directors, substituted by significantly greater pickup. Every medium has its pendulum, to which even pornographers are sensitive; and with the addition of top-40 electronic dance and pop hits to themed compilation videos uploaded by third parties, a trend enabled by porn's transplantation to the internet distribution model, a certain technological gaudiness is obtained that one also recognizes in the dazzlingly adroit work of magazine illustration. In *Listen to This*, Alex Ross describes how the same technological change-over happened in the sound booths of American record companies, in which "a marked drop-off in surface noise meant that vocal murmurs could register as readily as Louis Armstrong's pealing trumpet."[47]

NOISES ON

When applied to what is given players through or by virtue of nondiegetic sound, ecologies based around the nondeterminative sounds of live gameplay are easily distinguished from the ludomusical. The latter is concerned with a video game's full-length score and basically coterminous with its story—the selfsame quality of affordance but temporal. While it's true that a musical idea, endlessly repeated, increases the likelihood that a particular startup screen or surprise character death will be remembered, the question is whether a soundtrack facilitates much of anything, in terms of the player's existential determinations across real time and virtual space. Bridgett makes an extended argument for the necessity of plotting a video game's dramatic ebb and flow at the outset, where the efficacy of ambient sound within digital space, as in horror movies, depends on

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46. "The player, with kinaesthetic control, is an active participant in the drama being played out on screen," writes Mark Grimshaw. "In effect, the player is a performer and 'all the game's a stage.'"

47. Alex Ross, "Infernal Machines," in *Listen to This* (New York: Farrar, Straus and Giroux, 2010), 59.

a certain dynamic cooperation between soundtrack and avatar.[48] To that end, when called for by the story, each lapses into a *contrasting* role for the other: "In order to make an event seem really big, it makes sense that immediately preceding that event is a drop in action and a drop in sound levels; this will make the subsequent sonic barrage perceptually seem so much louder, even when in measured decibels it is not."[49] Oppositely, however, video game soundtracks of past generations, like *Super Metroid*'s 16-bit samples and female chorus or the rich textures of hammered dulcimer that waft over *Diablo II* (Blizzard, 2000), had a top-down, dampening effect that lensed gameplay through somber or romantic hues, which felt oppressive or barely noticeable depending on the creative director's needs. What ancillary noise the avatar and nonplayer characters may be producing, say through direct contact with their surroundings, is folded quite arbitrarily into the game's auditory dough. By default, a player-character's yell or jostling of boot spurs can appear to exist *in spite of* the traditional score's comforting familiarity and key changes clueing us in to something of significance. Upbeat melodies and military fanfares, in a rather hand-holding sense, inform us of what oftentimes we already know— that the shopkeepers are going about their idyllic business, or that a dangerous foe has engaged one's band of adventurers. Equally dramatic are the soundtrack's blind spots, those unusually acoustic sewers and hallways that a video game didn't incorporate into its score. What allows sounds for which the player is directly responsible to happen,[50] or be noticed when they do, is least of all music but lengths of near silence, a fact that is applicable right up through the introduction of vaguely minimalist austerity and non-diegetic music's disuse.

Aside from what legitimating effect a short instrumental flourish or the steady pulse of a war drum has, whose emotional import one learned over childhood's long weekends, how often are the stories of our electronic media communicated sans images? Audio games, which convey action through sound alone and typically have visually impaired users in mind, range from "interactive radio dramas" to reengineerings of classic first-person shooters, such as *AudioQuake* (Agrip, 2004–2007), that trade spatially distributed visuals for stereophonic cues and identificatory readouts of items, as discussed in Alexis Kirke's essay on this underappreciated genre's varied history.[51] Although true of mainstream releases, which almost without exception are tailored to a mean of physio-normative ability,[52] a good deal of the audio found in non-narrative titles marketed to blind gamers would seem to be contextual in nature. Musical rhythm games that adhere to *Guitar Hero*'s model, evaluating the player's decisions with sonic feedback, tie in progression ladders and a light backstory, but admittedly these efforts don't begin to approach the deep subplots of today's role-playing games. This is not to suggest that what I perceive to be the shortcomings of audio games is due to their lack of aural

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48. See Kamp, "Musical Ecologies in Video Games."
49. Bridgett, "Dynamic Range," 130.
50. See Grimshaw, "Acoustic Ecology," s.v. "kinediegetic sound."
51. Alexis Kirke, "When the Soundtrack Is the Game: From Audio-Games to Gaming the Music," in *Emotion in Video Game Soundtracking*, ed. Duncan Williams and Newton Lee (New York: Springer, 2017), 66.
52. See Schmalzer, "Janky Controls and Embodied Play."

comprehensiveness. Instead, the difficulty lies with sound's inherent limitations. Because the goal of an audio-only video game is, after all, "to perceptually immerse the player in the acoustic ecology (and, therefore, the game world), it is not necessary to provide an acoustic ecology that emulates real-world acoustic ecologies."[53] How ironic, then, that role-playing games' branching dialogue trees have increasingly been narrated by professional voice actors, as in the "final cut" edition of *Disco Elysium* (ZA/UM, 2021). In place of superficial fiction, original audio games that have accessibility at the core of their design philosophies, a vanishingly small footprint on the indie circuit, tend to flatten decision space, such that the gameplay is reduced to an obstacle course of binarily opposed outcomes—steer left or right, hit versus miss. But Kirke also names *Papa Sangre* (Somethin' Else, 2013), a horror listening game that utilizes smartphones' internal gyroscope; like *A Blind Legend* (Dowino, 2015), which is based around a puzzle-solving knight, *Papa Sangre* showed that audio-only games are more than capable of redefining the paradigm of the navigable virtual space, set down by sighted developers for sighted players, such that items and clues are physically turned toward and their locations recollected in the dark.

AAA video gaming's endless hunt for realism is driving the industry closer to all-out simulation. In other words, releases like *Cyberpunk 2077* (CD Projekt Red, 2020) would seem disinclined to handicap kaleidoscopic visuals for the audio's sake, however hyper-coordinated their relationship. Low-budget games, which possess neither the funding nor the motive to incorporate truly granular diegetic soundscapes, invariably come with simple, quickly looping music baked in: for example, Adam Robinson-Yu's *A Short Hike* (2019), with its adaptive soundtrack that changes in accordance with weather and the player's behavior, and *Undertale* (Toby Fox, 2015), whose optionally pacifistic combat system is rhythm-based. On the other hand, a soundtrack definitely adds to an independently produced game's modest offering, bumping up its perceived value for the purchaser with a load of Spanish flute or maybe some noirish jazz harmonies (see *Backbone* [Egg-Nut, 2021], a detective narrative that stars a private-eye raccoon). While charming, the music in these third-person games at best amplifies—or slightly complicates, in *Undertale*'s case—equally charming gameplay, which handles alright on its own. An auditory channel can be helpful, just the same. Kristine Jørgensen immediately sets her defense of the importance of sound in video games against Michel Chion, whose *Audio-Vision: Sound on Screen* is founded on a synesthetic, video-forward analysis of films; although Chion "describes the relationship between sound and image in films as an audio-visual contract in which sound always will transform the meaning of the image to a certain extent,"[54] Jørgensen still assigns sound in video games a confirmatory role. While hitting mute on a video game should, in many if not all cases, lessen a player's total sensory experience, I'm unconvinced that this amounts to more than a loss in resolution, as it were, like an oil painting that has faded in the sun; some context may be lost, but usually not the one that is essential. Blindfolded playthroughs of *Super Mario 64*, which are

53. Grimshaw, "Acoustic Ecology," 339.
54. Jørgensen, "Left in the Dark," 164.

popular among the speedrunning community, require participants to navigate by attending carefully to the shouts and high-pitched whoops that indicate Mario is either dangling from a ledge or has bumped into a wall, not dissimilar to the beeps of a metal detector swept from side to side. At the same time, it can be argued that this manner of extra-ludic play is also video dependent, since these sounds have the function of jogging the blindfolded player's memory of the visual layout of whichever stage they happen to be working through. As a corollary, we might swap "aurally" for "visually" in the following quotation from Jørgensen's controlled foray into muted game-playing, in which the reactions of two sets of volunteers were recorded for analysis by the author: "the most experienced players already have a very close relationship to the game as system, and know that the system responds even when they do not receive the information aurally."[55] Of course, each stage's unique theme music identifies it at once if there were any doubt.

Negative affordance straddles the classic distinction between a gift experientially predetermined for us, dictating how it is to be used by the recipient, and those we tend to think of as conducive to experiences, which can often be as simple as the freedom to do as one pleases, like a gift certificate to the local cineplex. Alternative, nonrealist video games probably find it unnecessary to demote the soundtrack to a kind of sounding-board nullity in order to let a minutiae of body- and environment-related effects be appreciated *in vacuo*, as a dramatic actor walking across a stage or when they slam a telephone into its receiver.[56] Beginning with a cinematic first half, video games are indeed approaching, if asymptotically, the natural physicality of theater. As the musical's antithesis, a stage play will frequently include a bit of interstitial cello or otherwise brief orchestral excerpt in order to signal the close of each scene; likewise, then, the firefights in *Call of Duty* let their combatants do all the sonifying. What in *Ico* was for years appreciated as an exercise in artful asceticism has become the norm among major studios, except infinitely more robust. Ecological affordance, as the spatiotemporal opportunity for the player to better hear themself double-jump or send enemies flying, eventually assimilates its opposite: in place of so much obtrusive music, layer upon layer of minor diegetic sounds, related to the main character's stock of cries within a dynamic playground, is slowly refilling that negative affordance in a manner that appears, from the player's point of view, organic rather than imposed from without. Many adventure games with static background art, across which characters are animated, such as *Baldur's Gate* (BioWare, 1998) and *The Curse of Monkey Island* (LucasArts, 1997), did make use of ambient soundscapes to enhance an outdoor or indoor setting. These, too, are overlain, from the howl of wolves to a tavern's clink of mugs and inaudible chatter; that is to say, much of the audio is both atmospheric and nonrandomly acousmatic,[57] being attributable to the business of imaginable persons and offscreen phenomena. Insofar as video game soundtracks loop and mix discrete records of sound, it is true enough to say that point-and-click computer games

55. Jørgensen, "Left in the Dark," 175.
56. Grimshaw, "Acoustic Ecology," 328.
57. Jørgensen, "Left in the Dark," 168. See also Grimshaw, "Acoustic Ecology," 148.

tend to eschew the contiguity of regular music for ambient tracks that are laminated onto each loaded area.[58] Naturally enough, each selection of an item or dialogue path by the user interface's silver gauntlet carries a satisfying *click*, as though in imitation of the mouse or trackpad, firming up the mechanical efficacy (as well as legitimacy, in the more diegetic sense) of a player's controllings across the slipstream of their display.

GRATIFICATION AND *ICO*'S CASTLE

Interludes of hushed seriousness, all those unskippable dilemmas and mob-filled bottlenecks tied to one's further progression through a storyworld, often stipulate that a video game's music should abruptly lower in volume. These moments amplify noise—the longsword drops and rebounds twirling, wind-blown newspaper claps a telephone pole—as though commenting on the clash-by-night ignorance of life all around. In hindsight, the sound-track that enjoys its own limited-edition CD, consisting of polished low-fi numbers if not a hired philharmonic, stands for an invigorating gloss that enjoys monster hunting for us; with noise's rise to become a cornerstone of game design, while pushing out the lyrical mood pieces of old-school composers, one might say the executives at Microsoft and Sony are now dislodging the sonic cotton they've been stuffing into our ears for decades, albeit less so Nintendo, whose obsession with functional excellence limits its aesthetic to the determined, clean-cut aspect of cartoons and theme parks. Permitting *Ico*'s club-wielding eponymous hero to wander through an echoic castle with little music to speak of indulges the player as a demiurge of sound as well as onscreen kinetics, a loud barrage of acrobatics totally responsive to controlled input, as with Mario's star power-up, which renders the overalled plumber temporarily invulnerable. Impulsive thought finds gratifying every iso-lated lunge, being no longer at the mercy of Nobuo Uematsu's wistful score. Music's underbelly has begun to show itself, but this is only half true: justified, scalable noise is also being *invented* in the studio for the first time. That players' sense of ownership throughout this auditory Cambrian explosion is on an upward trajectory seems likely, although survey data could turn up a variety of conclusions. Nondiegetic music's effect on virtual storytelling is that it continues to redefine the meaning of role playing, which always boiled down to conformation and rewards. The diagonal away from ludomusicality I have attempted to trace is one that leaves the player seeming especially active, at least in contrast with their environment; but then the last decade has seen the grandiosity of the soundtrack age replaced by a soundscape nearly equal in sonic lushness. Jungle vines clatter hollowly as what is heard radiates outward from where it's rooted. ∎

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58. There are exceptions, of course. *The Curse of Monkey Island* contains a banjo-wielding buccaneer, for instance, whose fingers, if one squints hard enough, can be thought correspondent to the plucking one hears—"the musical cues and non-musical sound effects instill objects with even more life than the simple appearance of figures in motion," explains Whalen, such that "the music provides a synchronized, aural imitation of what is happening on the screen." Whalen, "Play Along."

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