

## Finding *Untitled Goose Game's* Dynamic Music in the World of Silent Cinema

**ABSTRACT** There are three unusual things about *Untitled Goose Game's* music. First, for an independent video game produced by a small studio, the music is dynamic and reactive to a high degree. The game uses pre-recorded, non-generative musical performances and yet will respond to onscreen events within a buffer of only a few seconds at maximum. Second, the music takes inspiration not from other dynamic music systems in video games but from the varying practices of musical accompaniment for silent cinema and early comedy, aiming to replicate affect rather than process. Finally, the music for *Untitled Goose Game* takes the unusual step of adapting pre-existing classical music from the public domain—in this case, six of Claude Debussy's *Préludes* for solo piano—rather than creating an original score intended from its conception to be dynamic. Accordingly, this article outlines the dynamic music system at work in *Untitled Goose Game* and the influence drawn on for this system from non-video game approaches to musical accompaniment. The article discusses the varying practices for music for the silent era of cinema, the theoretical frameworks used to conceptualize these many divergent approaches, and how closely we might recognize their legacy at work in *Untitled Goose Game's* soundtrack. Ultimately, this article argues that by looking to approaches beyond more familiar debates about dynamic music for video games, *Untitled Goose Game* helped shortcut familiar problems that confront developers and composers when working with dynamic and reactive music. **KEYWORDS** dynamic music, *Untitled Goose Game*, musical adaptation, silent cinema, Mickey-Mousing, Claude Debussy

Observing the response to a video game you made music for is a uniquely strange experience, one made even stranger when critics seem to agree that the music in question sounds very little like a video game. “The game’s composer, Dan Golding, recorded the music and then chopped it up to create phrases that react to gameplay, as a live piano player might have done to Charlie Chaplin’s slapstick,” wrote Tacey Rychter in the *New York Times*.<sup>1</sup> For Patrick Lum in the *Guardian*, the music “brings to mind classic Looney Tunes cartoons,” while for Tom Marks in IGN “it lent an air of Benny Hill-style ridiculousness to chases.”<sup>2</sup> Chaplin, Looney Tunes, Benny Hill—this is indeed a wide variety of comparisons (and a variety that would only widen, including Buster Keaton,

1. Tacey Rychter, “This Video Game Fulfills Your Fantasy of Being a Horrible Goose,” *New York Times*, September 27, 2019, accessed August 28, 2020, <https://www.nytimes.com/2019/09/27/world/australia/untitled-goose-game.html>.

2. Patrick Lum, “Untitled Goose Game Review—A Honking Good Time,” *Guardian*, September 24, 2019, accessed August 28, 2020, <https://www.theguardian.com/games/2019/sep/23/untitled-goose-game-review-a-honking-good-time>; Tom Marks, “Untitled Goose Game Review,” IGN, April 21, 2019, accessed August 28, 2020, <https://au.ign.com/articles/2019/09/20/untitled-goose-game-review>.

*Pink Panther*, George Gershwin, and *Mister Rogers' Neighborhood*<sup>3</sup>). Yet these comparisons also make a certain amount of sense, and others have already remarked on the non-video game backgrounds and formal education of the four key members of House House, the studio that made *Untitled Goose Game*.<sup>4</sup> I am myself also an academic by both training and profession rather than, strictly speaking, a video game composer, which leaves me uniquely placed—and perhaps also awkwardly placed—to write this article as a researcher both singularly close and also possibly far too close to the work in question. The game's reviewers and their imaginative comparisons to Chaplin, Looney Tunes, and Benny Hill are both right and wrong; it was indeed music beyond video games that most directly influenced how the music of *Untitled Goose Game* works, and it was pre-existing, already-written music that was, for the most part, adapted and implemented in the game itself. Yet on another level, *Untitled Goose Game*'s music is, of course, not actually at all a work of cinema, cartoons, or television: though inspired by the music of other media, it is still nonetheless music enabled by the particular constraints and opportunities offered by the medium of the video game.

*Untitled Goose Game* was made in Melbourne, Australia, by the small game studio House House and released in 2019. The game is well encapsulated by its tagline: "It's a lovely day in the village, and you are a horrible goose." Players control this fairly disagreeable goose on its journey through a small English-style village, which is rendered in clear colors reminiscent of animation or children's television. The goose has a list of tasks to achieve ("Rake in the lake" and so on) that generally inconvenience the resident villagers. The game has a dedicated honk button and no title. Much of the game's appeal comes from the lightly mean-spirited pantomime of seeing the goose cause disgruntlement by upsetting a town square market, causing a young boy to trip on his shoelaces, or fueling discord by fooling a villager into cutting off their neighbor's prized rose.

There are three unusual things about *Untitled Goose Game*'s music. First, for an independent video game produced by a small studio, the music is dynamic and reactive to a high degree. The game uses pre-recorded, non-generative musical performances, yet it will respond to onscreen events within a buffer of only a few seconds at maximum. Second, the music system takes inspiration not from other dynamic music systems in video games but from the varying practices of musical accompaniment for silent cinema, and it aimed to replicate affect, rather than to explore technological process. Finally, the music for *Untitled Goose Game* takes the relatively unusual step of adapting pre-existing

3. James O'Connor, "Untitled Goose Game Review—Saved by the Bell," Gamespot, October 2, 2019, accessed August 29, 2020, <https://www.gamespot.com/reviews/untitled-goose-game-review-saved-by-the-bell/19006417308/>; Nic Bunce, "Untitled Goose Game Review," The Sixth Axis, September 22, 2019, accessed August 28, 2020, <https://www.the-sixth-axis.com/2019/09/22/untitled-goose-game-review-switch-pc/>; CJ Andriessen, "Review: Untitled Goose Game," Destructoid, September 21, 2019, accessed August 28, 2020, <https://www.destructoid.com/review-untitled-goose-game-566853.phtml>; Michael Andor Brodeur, "Untitled Goose Game Achieved Hit Video Game Status by Unleashing Our Inner Jerk," *Boston Globe*, October 10, 2019, accessed August 28, 2020, <https://www.bostonglobe.com/arts/art/2019/10/10/untitled-goose-game-achieved-hit-video-game-status-unleashing-our-inner-jerk/XdzmMo3S1foqkiokoSrSKN/story.html>.

4. Hannah Reich, "Forget Pokémon, Video Games Like Untitled Goose Game Are Part of a New Outsider Wave Drawing in Non-gamers," ABC News, February 15, 2020, accessed August 28, 2020, <https://www.abc.net.au/news/2020-02-15/video-games-design-untitled-goose-game-indie-games-development/11962590>.

classical music from the public domain—in this case, six of Claude Debussy’s *Préludes* for solo piano, from 1909 to 1912—rather than working with an original score intended from its conception to be dynamic. This unusual step, combined with the other factors, created a unique practical problem to be solved: how can music never conceptualized to be reactive or subject to interactivity be made to perform in a responsive context?

This article outlines the dynamic music system at work in *Untitled Goose Game* and the influence drawn on for this system from non-video game approaches to musical accompaniment. In particular, I will discuss the varying practices to music for the silent era of cinema, the theoretical frameworks used to conceptualize these many divergent approaches, and how closely we can recognize their legacy at work in *Untitled Goose Game*’s musical soundtrack. Ultimately, I will argue that by looking to examples beyond the more familiar approaches to and debates about dynamic music for video games, *Untitled Goose Game* helped shortcut persistent problems that confront developers and composers when working with dynamic and reactive music. The net result was the creation of an in-game music system with near-infinite theoretically possible performances of each of these century-old pieces of music. Despite this technical complexity, the game’s reception is also clearly tied up in expectations about what a video game musically sounds like, as well as an effective “borrowing” of the aesthetic language of what might be presumed to be silent cinema in a specific sense and, in a broader sense, the musical style of comedy and the moving image.

## ORIGINS AND INFLUENCES

The story of *Untitled Goose Game*’s reactive music begins with the game’s first trailer, released on October 3, 2017. The game’s developers at House House commissioned a performance of Debussy’s twelfth *Prélude* from Book I (“Minstrels: Modéré”) to be used in this trailer as diegetic music that would be heard from the gardener’s radio upon being stolen by the goose. Ultimately, House House developer Jake Strasser edited the trailer so that the radio’s music segued from diegetic to non-diegetic, with much of the goose’s subsequent antics cut in sympathy with the music. A significant number of viewers of this trailer took the interaction between the goose’s actions and the *Prélude* as an indication for how the music would work for the final, released game: “Please tell me the musical score is dynamic and situational aware, and not just in the video?” asked one comment on the trailer.<sup>5</sup> Thus, the impetus to create a dynamic soundtrack for the game was created.

Debussy’s *Préludes* were written between 1909 and 1912, and to our inexpert ears in 2017 they sounded reminiscent of what might have accompanied a silent film around that same period. I want to give no allusions as to the level of research undertaken at this point: what we heard in associating the *Préludes* with the slapstick comedy of *Untitled Goose Game* was the imaginings, possibly mediated, of an assumed pianist in

5. Dami Lee, “How *Untitled Goose Game* Adapted Debussy for Its Dynamic Soundtrack,” *The Verge*, September 23, 2019, accessed August 28, 2020, <https://www.theverge.com/2019/9/23/20879792/untitled-goose-game-nintendo-switch-debussy>.

a nickelodeon or similar in the first decade or two of the twentieth century, extemporizing accompaniment for a silent comedy. In particular, as a cinema researcher, I immediately noticed similarities between the game and Louis Lumiere's *L'arroseur arrosé* from 1895, which is thought to be a film of firsts: possibly the first narrative film, the first comedy, the first film with a promotional poster, and even the first cinematic adaptation of a comic.<sup>6</sup> In the film's forty-five seconds, filmed in a single, static camera take, a man in overalls and a straw hat hoses his garden. A boy creeps up behind the gardener and stands on the hose, blocking the flow of water; the gardener peers in confusion at his newly wilted hose, just in time for the boy to release his foot and blast the gardener in the face with a jet of water. The gardener chases the boy and lightly spansks him in chastisement. Though House House didn't know of this film until I alerted them to the similarities, it speaks to the affinities between *Untitled Goose Game*'s slapstick naivete and the vaudevillian humor popular across the early years of film. The visual similarities between *L'arroseur arrosé*'s gardener and *Untitled Goose Game*'s, though entirely coincidental, are striking: his overalls, his straw hat, his soon-to-be-wet face.

What kind of music might accompany such a film? Contrary to our early assumption that a soundtrack might have sounded something like Debussy's *Préludes*, it is difficult to know with any kind of certainty. In his book *Silent Film Sound*, Rick Altman highlights four common misconceptions about silent film music: that silent film constitutes a single, homogenous period; that the 1920s serve as a privileged model of silent film sound; that silent film music derives from nineteenth-century theatre music; and finally, that silent film practice is universal.<sup>7</sup> In other words, in relying on popular imaginings of what "silent film music" might sound like, *Untitled Goose Game* likely pivots on a mistaken understanding of silent film music as a holistic concept that is at all comprehensible or in any way similar across time and geography from 1895 to 1927. Obviously, many different sound practices were enacted throughout this variegated period: film lectures, including itinerant exhibition and sound effects; synchronized sounds, including actors performing behind the film screen, or linked phonograph recordings; the complex film-sound practices of the Picture Palaces, which included early film scores written for ensembles as large as orchestras, or new techno-gizmos as automatic pianos or Wurlitzer organs.<sup>8</sup> Yet silent film sound, as Altman confesses, "is a maddening topic": the performances, the practices, and often their traces are lost forever.<sup>9</sup> What remains of the silent era's music, in terms of original scores and cue sheets, are, in the words of Gillian B. Anderson, "remnants of a vast music-making machine that took over thirty years to develop, but only two years to wipe out."<sup>10</sup>

6. Andre Gaudreault, "Film, Narrative, Narration: The Cinema of Lumieres Brothers," in *Early Cinema: Space Frame Narrative*, ed. Thomas Elsaesser (London: BFI Publishing, 1990), 68–75; Liam Burke, *The Comic Book Film Adaptation: Exploring Modern Hollywood's Leading Genre* (Mississippi: University of Mississippi Press, 2015), 3.

7. Rick Altman, *Silent Film Sound* (New York: Columbia University Press, 2004), 5–13.

8. Altman, *Silent Film Sound*, 119–26.

9. Altman, *Silent Film Sound*, 8.

10. Gillian B. Anderson, *Music for Silent Films 1894–1929: A Guide* (Washington, DC: Library of Congress, 1988), xiii.

Clearly, then, the association between the sound of Debussy's *Préludes* and early silent cinema most likely comes from the sound practices of nickelodeons, popular from around 1906 onward, where a pianist was most often (though far from exclusively) found. Yet even this also remains ambiguous and prone to common misconception. Given that "the nickelodeon era was overwhelmingly characterized by mixed programs," including short films, lantern slides (including advertisements for local businesses), and most popular of all, illustrated songs, even when a pianist was present it is not always clear when they would play.<sup>11</sup> There is evidence to suggest, for example, that in some cases a musician in a nickelodeon would play not during a film but between these many short film attractions on a single bill, or that the entire program would be experienced in silence while musicians played raucously outside the nickelodeon in order to attract business.<sup>12</sup> As the culture surrounding nickelodeons became more standardized and homogenous, however, by the 1910–11 season an expectation had solidified that music should be performed to projections and that exhibitors should, as an editorial in *Moving Picture World* from April 1910 put it, try to "fit the music to the picture."<sup>13</sup> This is still not to say that this was the moment when the stereotypical view of the pianist industriously pottering away at classical hits in the corner of a darkened theatre came into actuality: evidence for what music was played and the logic behind such performances is also varied. Musical cue sheets, which contained lists of onscreen action, intertitles, and suitable musical compositions, were distributed by movie companies, music publishers, and the trade press.<sup>14</sup> But sound effects were sometimes prioritized over music, and of course the capabilities of the local nickelodeon's musician (or musicians, as piano and drum duos became an increasingly popular option) or their access to sheet music often meant that the early 1910s saw complaints of mismatched or seemingly random musical performances.<sup>15</sup> This in turn led to various campaigns for standardization in trade magazines and film music manuals, and even the demand for cue sheets to be used only when they were prepared by the seemingly premier compiler of the day, S. M. Berg.<sup>16</sup>

To return to Debussy, music by noted composers was an important part of this process of standardization. Debussy's music has certainly made an impact on the world of cinema (indeed, perhaps the less said about the many uses—or abuses—of "Clair de Lune" from the *Suite bergamasque* in films, television, and trailers, the better), and it is clear that his music was a popular choice to accompany silent films. Actress Geraldine Farrar, in an example of these standardization campaigns, selected Debussy's "L'Après-midi d'un faune" as the recommended music of choice to reflect scenes of contentment in her catalogue of music and emotion from 1921, while his "Arabesque No. 2" turns up in a 1926 Carl Fischer "Motion Picture Music" catalogue, classified as a recommended piece

11. Altman, *Silent Film Sound*, 186–87.

12. Altman, *Silent Film Sound*, 193.

13. Altman, *Silent Film Sound*, 206–8.

14. Gillian B. Anderson, "The Presentation of Silent Films, or, Music as Anaesthesia," *Journal of Musicology* 5, no. 2 (Spring 1987): 283.

15. Altman, *Silent Film Sound*, 213–26.

16. Anderson, "Presentation of Silent Films," 283.

under “*Agitatos*.”<sup>17</sup> But as a counterexample, Debussy’s work does not appear at all in the list of “overtures” played at the upmarket Rialto Theatre in New York between January 1918 and July 1921, where instead work of the likes of Wagner, Tchaikovsky, Verdi, and Beethoven was preferred.<sup>18</sup>

Unlike his contemporaries Erik Satie and Camille Saint-Saëns, there is no evidence that Debussy himself, who died in 1918, wrote any music for cinema. Debussy was, however, very clearly interested in film, which, according to Richard Langham Smith, he saw as “an agent of renewal for the musician who has tried to parallel the painter’s ability to portray nature.”<sup>19</sup> It is also likely that Debussy played piano for Henri Rivière’s shadow theatre, one of the many pre-cinematic moving image practices, in Montmartre in the 1890s.<sup>20</sup> Rebecca Leydon goes as far as to suggest that Debussy’s interest in cinema, as well as the form’s growing cultural power, is reflected in the composer’s late style (which the *Préludes* are from)—in other words, Debussy’s “mosaic-like designs” from this period of composing are analogous to cinematic techniques like the “fade,” the “dissolve,” and the “cut-in.”<sup>21</sup> Certainly, the *Préludes* largely conform to this “mosaic” style, and they frequently shift tone and energy, moving about and sometimes repeating in modular blocks that could be heard as similar to the techniques of montage (or indeed, the modular blocks of dynamic video game music).

There are crucial differences, however, between the music performed to accompany silent cinema and the music of a synchronized film score, particularly when it comes to the imitation of onscreen action. This is significant when understanding the influences of *Untitled Goose Game*’s music: to what extent do the Debussy *Préludes* actually mimic what is occurring onscreen, and to what extent is it simply a musical reaction? Altman is careful to make this distinction when it comes to silent film and the practice of “Mickey-Mousing,” a sound-era film scoring practice where music emulates what is occurring onscreen (ascending pizzicato strings accompanying a character sneaking up a staircase, for example). As Altman argues, “Early silent film practice is thus precisely the reverse of what has since the thirties been called ‘Mickey Mousing.’ When music imitates the movements of sound film actors, it is perceived as clearly outside (and after) the image, whereas early film sound instead emulates sound effects, seeking to appear internal to the image.”<sup>22</sup> The question of whether *Untitled Goose Game*’s reactive music is an emulation of a sound effect or an imitation of onscreen movement is a complex one. I suggest that given the music is intended to be an impression of a live score experience, it is in fact neither—and also both—given that it follows this shared tradition of the imitation of sound and the emulation of movement.

17. Altman, *Silent Film Sound*, 368; Altman, 357.

18. Anderson, “Presentation of Silent Films,” 274–76.

19. Richard Langham Smith, “Debussy and the Art of the Cinema,” *Music & Letters* 54, no. 1 (January 1973): 64.

20. Smith, “Debussy and the Art of the Cinema,” 64–65.

21. Rebecca Leydon, “Debussy’s Late Style and the Devices of the Early Silent Cinema,” *Music Theory Spectrum* 23, no. 2 (Fall 2001): 217–18.

22. Altman, *Silent Film Sound*, 89.

Due to the complicated and somewhat misguided assumptions that underpin *Untitled Goose Game*'s silent film inspiration, it is important to delve a little further into Mickey-Mousing as a post-silent film musical technique. This is in part because of its associations with animation—and indeed, the comedic animation of animal movement, for which there are obvious implications for *Untitled Goose Game*—and also because some of the game's musical antecedents might be found there. Mickey-Mousing as a term is applied to all forms of film music including live-action, often pejoratively, in part “because of the implication that exact illustration is a rather tedious and silly way to relate music and image,” but also because of its origins in Disney's early cartoons.<sup>23</sup> The key figure here is composer Carl Stalling—himself an experienced silent cinema organist—who was recruited by Disney to score the studio's early animations, including both the Mickey Mouse and the Silly Symphony series, before leaving for Warner Bros. and the Looney Tunes and Merrie Melodies series. Stalling's approach to music was a defining one for animation and, particularly, the tight relationship between each animated frame and note of music. Animation was perfectly timed across frames (which were sometimes repeated) to match music, or vice versa, depending on the series and its prevailing logic on the hierarchical split between image and sound.<sup>24</sup> In practice this is revealing, as with Stalling's score for *The Skeleton Dance*, the first Disney Silly Symphony film (a series that prioritized music in the image-sound hierarchy), from 1929. A skeleton arises from the grave, watched on either side by two black cats: as it does so, the woodwinds run upward, ending in a plink of percussion on the exact frame the skeleton draws into a seated position. The two cats, stricken, literally shed their fur in a gesture of animated horror before it returns to their bodies. This movement is scored by a rapidly panicked up-and-down glissando on strings that has its apex and return matched frame-by-frame by the arc of the cat's fur. This is, roughly speaking, around six seconds of animation and music. Later the skeleton and three more of his boney compatriots perform an elaborate dance, again timed perfectly to Stalling's illustrative music—an adaptation of Edvard Greig's “March of the Trolls.” “Stalling took a building-block approach to his scores,” argues Daniel Goldmark, in relation to both his frame-by-frame method and also his voracious usage of popular music in his scores (particularly intense once he arrived at Warner Bros: his soundtrack for the seven-minute 1948 cartoon *Bugs Bunny Rides Again* contains Rossini, Schubert, Beethoven, Wagner, and pop songs such as van Alstyne and Williams's “Cheyenne,” among others).<sup>25</sup>

It is a compelling thought to see Stalling's Mickey-Mousing style as one of the most direct inspirations for *Untitled Goose Game*'s music. Not only is his music well-documented in comparison to that of the silent era (indeed, the fact that it largely survives to this day is already a substantial difference), but Stalling, as a silent-era musician himself, seems not so much a point of discontinuity from that mode of screen music but

23. Scott Curtis, “The Sound of Early Warner Bros. Cartoons,” in *Sound Theory, Sound Practice*, ed. Rick Altman (New York: Routledge, 1992), 201.

24. Curtis, “Sound of Early Warner Bros. Cartoons,” 195.

25. Daniel Goldmark, *Tunes for 'Toons: Music and the Hollywood Cartoon* (Berkeley: University of California Press, 2005), 17, 40.

instead something of its apotheosis. “I just imagined myself playing for a cartoon in the theater, improvising, and it came easier,” Stalling said of his animated scores.<sup>26</sup> As a talented silent-era organist, Stalling arrived in the world of sound animation with a mental catalogue of Tin Pan Alley tunes and classical greats, ready to be bent to the will of every frame. These techniques were already well-honed in the silent era, and Goldmark argues that Stalling “remained—for his entire career—in the practices of his first job as a musician.”<sup>27</sup> It is not hard to imagine our malevolent goose and its attendant Debussy following in a similar mindset.

Stepping back to video games directly for a moment, *Untitled Goose Game* is also far from the first video game to be drawn into comparisons with the music of silent or early sound cinema and animation. Many of the earliest video games used pre-existing classical music in a similar manner to those attempts to standardize musical performance for silent cinema, for example. William Gibbons points to this inherited logic in the use of music like Grieg’s “In the Hall of the Mountain King” in *Manic Miner* (1983), or Beethoven’s “Moonlight Sonata” in *Jet Set Willy* (1984), while Neil Lerner, in particular, has gone so far as to claim that the music for early video games “mirrors several of the characteristic functions of early film music, even sometimes borrowing the harmonic and melodic vocabularies of the music associated with that era.”<sup>28</sup> This is particularly the case for the music for the *Donkey Kong* and *Mario* games of the 1980s, which Zack Whalen, in one of the earliest scholarly analyses of video game music, directly compares to Stalling’s score for *The Skeleton Dance*, positing composer Koji Kondo’s score as “a ready example of musical functions borrowed from animation.”<sup>29</sup> When Mario jumps, the game plays an upward glissando; when animator Ub Iwerks’s skeleton jumps in the Disney cartoon, Carl Stalling’s music does much the same. Lerner argues that both the music for the original *Donkey Kong* arcade machine, with its references to silent-era serials like *The Perils of Pauline*, and Kondo’s music for *Super Mario Bros.* are empowered through a nostalgia for earlier eras of cinematic music making.<sup>30</sup> Part of the appeal of the music, argues Lerner, “comes from Kondo’s use of an existing set of signifying codes that ranged back through cartoon music to early twentieth-century cinema practices.”<sup>31</sup>

These arcade games and early console and microcomputer video games, however, at least in part adopted the familiar and nostalgic language of older film music as a way past technical and creative constraints, and as a way to introduce a new cultural form in familiar terms. Today the various frameworks for what video game music might sound

26. Kevin Whitehead, “Carl Stalling, Improviser & Bill Lava, Acme Minimalist,” in *The Cartoon Music Book*, ed. Daniel Goldmark and Yuvai Taylor (Chicago: A Capella Books, 2002), 141.

27. Goldmark, *Tunes for Toons*, 16.

28. William Gibbons, *Unlimited Replays: Video Games and Classical Music* (New York: Oxford University Press, 2018), 54–56; Neil Lerner, “The Origins of Musical Style in Video Games 1977–1983,” in *The Oxford Handbook of Film Music Studies*, ed. David Neumeyer (New York: Oxford University Press, 2013), 345.

29. Zach Whalen, “Play Along—An Approach to Videogame Music,” *Game Studies* 4, no. 1 (November 2004), accessed August 28, 2020, <http://gamestudies.org/0401/whalen/>.

30. Neil Lerner, “Mario’s Dynamic Leaps: Musical Innovations (and the Specter of Early Cinema) in Donkey Kong and Super Mario Bros.,” in *Music in Video Games: Studying Play*, ed. K. J. Donnelly, William Gibbons, and Neil Lerner (New York: Routledge, 2014), 3.

31. Lerner, “Mario’s Dynamic Leaps,” 26.



like are rather more complex, and so the video games that continue to use either classical music or a deliberate aesthetic of silent cinema music are a different equation. Accordingly, a video game like *Stacking* (Double Fine, 2011) stands out. Set in a turn-of-the-century fantasy world, *Stacking* uses intertitles for dialogue, features a sepia tint on the gameworld, and of course an array of nineteenth-century classical works on the soundtrack. For Gibbons, *Stacking* “aligns itself with cinema in search of a real or imagined shared heritage.”<sup>32</sup> It is a self-conscious and totalizing aesthetic.

Nonetheless, and despite its intriguing similarity to *L'arroseur arrosé*, *Untitled Goose Game* makes no direct allusions to silent cinema, and the use of Debussy was not intended to give the game a connection to a “real or imagined shared heritage,” or as Gibbons elsewhere puts it, an “allusion of grandeur” that hopes to align the game with the same taste profile as culturally esteemed classical music.<sup>33</sup> It was not intended to be homage, it was not intended to be genealogical. It was intended to be funny.

### MAKING DEBUSSY DYNAMIC

We did not know how dynamic music worked, and possibly still do not. At the outset, after the need to at least try to create a dynamic music system became apparent, I was reminded of a speech that composer Bernard Herrmann had given about film music at George Eastman House in 1973, describing it then as “completely unstudied territory, like how in the old days there used to be atlases of the world with unexplored regions marked in white and labelled ‘unknown.’”<sup>34</sup> Dynamic music was similarly unknown on our maps, but, I assumed at the time, probably totally filled in with great detail on the maps of others. The sum total of experience between House House and myself in this area was the music for their previous game, *Push Me Pull You*, which featured eight 1:46-long variations on the same original piece of music for the game’s eight menu screens. All eight tracks played simultaneously, with only the featured track for each menu page unmuted, ensuring smooth musical transitions as the player browses. It worked well for that purpose, but a simple trick like that would not suffice for *Untitled Goose Game*.

Indeed, creating dynamic music for video games is frequently seen both as desirable and also notoriously difficult. “The fact that music exists in time is an essential problem when composing music for computer games,” argues Jesper Kaae.<sup>35</sup> Normally, composers for media are able to write with supreme confidence about the temporal progression of their work. The composer for a film, for example, will know that their music has eight seconds to transition from a romantic mood to a suspenseful one because cinema, like music, also exists in time; duration for the moving image can be counted in both seconds and frames, and under most circumstances it will play for the same duration for all

32. Gibbons, *Unlimited Replays*, 57.

33. Gibbons, *Unlimited Replays*, 55.

34. Steven Smith, *Fire at Heart's Center: The Life and Music of Bernard Herrmann* (Berkeley: University of California Press, 1991), 360.

35. Jesper Kaae, “Theoretical Approaches to Composing Dynamic Music for Video Games,” in *From Pac-Man to Pop Music: Interactive Audio in Games and New Media*, ed. Karen Collins (Aldershot, England: Routledge, 2008), 91.

viewers and equipment. This is not usually the case for the video game, which has a different relationship with time. A composer may have to consider both the player who speeds from romance to suspense in a heartbeat and the player who gets stuck and performs the same move across the course of an hour, creating music that will at least theoretically work for both durations and play experiences. Karen Collins locates the moment of transition as a key difficulty for composing video game music: “While scoring cues for specific gameplay events is fairly straightforward, predicting how these cues may have to connect with other cues . . . can be very difficult.” Methods identified by Collins for papering over unpredictable transitions include a fade out, a crossfade, a more subtle (and complicated) transition between cues through instrument layering, or the use of a blaring musical stinger to drown out any disjointedness.<sup>36</sup> Many more complicated and advanced techniques also exist today, including the use of generative and algorithmic composition methods.

Despite our total unfamiliarity with how any of these systems might be implemented, work on the music system for *Untitled Goose Game* was helped by two clear limitations. First, House House and I were not faced with the daunting possibilities of an empty page, as the music was a set of pre-existing compositions. Debussy’s *Préludes* were not composed for *Untitled Goose Game*, or any video game at all, and therefore compositional strategizing of the likes identified by Collins were out of the question. The challenge was applying reactivity to the music post-hoc. Secondly, and perhaps most importantly, we were not exploring the possibilities of a new technical system or game music engine. We had a very specific goal in mind, and that was to create a music system that would sound like a pianist watching and Mickey-Mousing the player’s actions. The question was not what we could do but how it could be done. In short, despite the possible historical shortcomings of our plans, having such a clear goal—and the creative and technical limitations it brought with it—made things significantly more achievable.

In implementing this system, very quickly it became clear that Debussy’s *Préludes* should be played linearly in *Untitled Goose Game* in the sense that, the occasional liberty of arrangement aside (for example, I removed the opening quotation of “God Save the Queen” from Book II’s ninth *Prélude*, “Hommage à S. Pickwick Esq. P.P.M.P.C.: Grave”), the notes that Debussy wrote more or less should follow the order that he wrote them to be played. I briefly considered selecting individual phrases from each *Prélude* and associating them with particular game states: a “creeping” phrase, a “triumphant” phrase, and so on. This approach was unworkable for several reasons, including basic compositional problems like Debussy’s frequent use of modulation (despite many of the *Préludes*’ seemingly modular structure, there is little guarantee that any two phrases selected will sound together without awkwardness). Clearly, the pieces would have to play throughout the game more or less as written. A little arrangement aside, the incorporation of musical dynamism could therefore not be done through composition.

36. Karen Collins, “An Introduction to the Participatory and Non-linear Aspects of Video Games Audio,” in *Essays on Sound and Vision*, ed. John Richardson and Stan Hawkins (Helsinki: Helsinki University Press, 2007), 272.

Once again, this appealed to a sense of film history. In cinema, images are given meaning through their contextual relationship to other images, a point illustrated early in the twentieth century by Soviet filmmaker Lev Kuleshov. Kuleshov took one piece of footage of an actor and intercut it with food, an attractive woman, and a deceased child. Kuleshov claimed that audiences raved about the subtle differences in the actor's expression to denote hunger, lust, and sorrow, respectively—but the footage, and thus the expression, was the same, and the audience's perception was instead shaped by context. Playing Debussy's music linearly in *Untitled Goose Game* was an approach with the same principle. Players, shaped by the context of the game's action, would detect stealth, menace, humor, triumph, and much more in the same notes. Thus, the game's cinematic influences extend to serendipitous matching of image and music being “read” by the player as containing greater correspondence than is necessarily intentional. As Michel Chion argues, the “added value” of sound “engages the very structuring of visions . . . by rigorously framing it.”<sup>37</sup> In the same way that some people hear the narrative of *The Wizard of Oz* (1939) in Pink Floyd's *Dark Side of the Moon* (1973), perhaps players could be enticed to hear the affective moment of their *Untitled Goose Game* action in Debussy's century-old music. In the process, this changes not just the music but the game moment as well. For Kathryn Kalinak, film music “reinforc[es] one meaning out of many possible meanings, anchoring the image to specificity.”<sup>38</sup> Video game music undoubtedly works in a similar way, helping anchor the game moment to suspense, or slapstick, or triumph. Players of video games are just as likely to see what they hear as the cinema spectator. This was the first vital lesson for implementing *Untitled Goose Game's* dynamic music.

The player could still be given a few nudges toward hearing narrative in *Untitled Goose Game's* music, however. If not the notes themselves, then the vibrancy, energy, and frequency with which they were played could certainly be shaped. There were many possibilities. A silent film-style effect might have been wrangled through an algorithmic performance using a programmed MIDI pianist in an audio engine (stemming from the work of *Untitled Goose Game's* sound designer, Em Halberstadt, the game uses Fmod) with variables for performance intensity. Not only was this a technically daunting prospect, but it was an aesthetically unsatisfying one, as the “human” element of a finessed musical performance would have been removed. Instead, the solution was relatively simple but rather more individualized in terms of performance. I created two different interpretations of each *Prélude*. The first was a “high energy” performance that would broadly sound like what a Debussy fan might expect to hear at a concert or on a recording. The second was a “low energy” performance that incorporated often quite dramatic and unconventional interpretations of Debussy's music, including changes in tempo, articulation, note velocity, dynamics and dynamic range, sometimes the register of notes, and, very rarely, the notes themselves. To illustrate the difference simply in terms of time, the complete high energy performance of the twelfth *Prélude* of Book II, “Feux d'artifice:

37. Michel Chion, *Audio-Vision: Sound on Screen*, trans. Claudia Gorbman (New York: Oxford University Press, 1990), 9.

38. Kathryn Kalinak, *Film Music: A Very Short Introduction* (New York: Oxford University Press, 2010), 18.

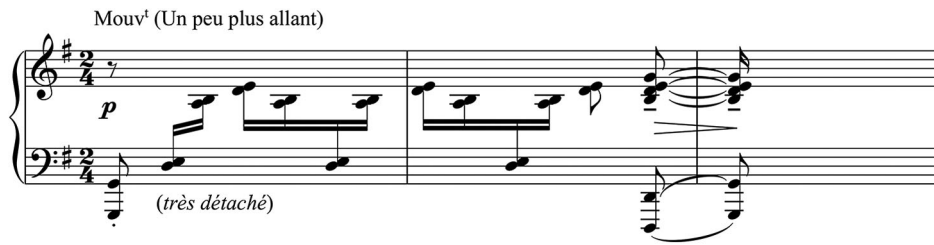


FIGURE 1. Bars nine and ten of “Minstrels.”

Modérément animé,” runs as a standalone performance for 4:25; the low energy performance runs for a length approaching double that time, at 7:48.

Each of these performances was subsequently broken up into subsections that we called “stems.” As already noted, Debussy’s late compositional style featured a “mosaic-like” approach to structure. In some ways, this structure was helpful for devising the logic that underpins *Untitled Goose Game*’s music system—almost immediately, it seemed logical to try and cut up the *Préludes* into discrete phrases that could make the music feel more like a direct commentary on player action. If each stem could be cut as matched across both performances, then we would essentially have two different versions of each that the game could select from according to what the player was doing. In other words, stem sixteen in the high energy performance should be interchangeable with stem sixteen from the low energy version. House House’s Nico Disseldorp, who did all the music programming for the game, created a system whereby the game tracks the villager’s “interest level” regarding the goose. The interest level translates to three musical moods for the game: silence, low energy, and high energy. In silence, no stem will play, but in either low or high energy moods, stems from the respective performance will trigger in linear order until the player returns the game back to silence.

With this logic in mind, the question then became one of implementation: specifically, how the *Préludes* could be divided into stems short enough to convincingly respond to the player’s actions. The illusion of a pianist commenting on the action would be best served by the closest Mickey-Mousing possible, with music that lifted in intensity the moment an aggressive act was performed, and fell as the goose’s boldness shifted to diffidence. Debussy’s style seemingly offered some obvious pathways. For instance, when looking at “Minstrels” in theory, it seemed like a reasonable idea to create one such discrete phrase from bars nine and ten, as it marks a clear and short junction between the *Prélude*’s opening moods (Figure 1). In practice, however, while Debussy’s unusual structure might have helped form the reasoning behind the system, it did not aid at all in the actual creation of the stems. This is because even the most diligent analytical division of phrases always created stems that were far too long in length to respond to the in-game action. For example, taken together in my first performance of the *Prélude*, the phrase that runs across bars nine and ten will play for around three seconds, not counting any audio tail or piano decay for the notes. Three seconds was on the shorter side of the stems created analytically, and yet still not short enough for effective dynamism (in this original attempt, many stems run as long as eight or nine seconds, with one running an indulgent sixteen).

TABLE 1. Total numbers of stems per *Prelude*.

Prelude	Total number of stems	Length of 'high energy' performance
Book I, No. 12, <i>Minstrels</i> : Modéré	347	2:28
Book I, No. 5, <i>Les collines d'Anacapri</i> : Très modéré	196	3:14
Book II, No. 9, <i>Hommage à S. Pickwick Esq. P.P.M.P.C.</i> : Grave	249	2:00
Book I, No. 9, <i>La sérénade interrompue</i> : Modérément animé	425	2:54
Book II, No. 19, <i>Feux d'artifice</i> : Modérément animé	424	4:25

Prototyping went some way to proving the concept's validity, but not this method of stem splitting. With stems of this length, the goose would steal villager's possessions only to have the low energy music linger for several seconds too long. By the time such a long stem had transitioned to the appropriate high energy mood, the game's mini-narrative might have concluded and the goose returned to defiant bashfulness, a wholly inappropriate moment for the music to lift in intensity. The initial attempt at analytically dividing the first *Prelude* had produced just twenty-seven stems, though after some deeper tinkering I increased that to around sixty. Yet in prototyping, this still was obviously not enough to create a responsive music system. The effect of musical chunks this size was similar to some of the composers of the Golden Age of Hollywood, who, in the eyes of a composer like Bernard Herrmann, were "putting handcuffs on yourself" by working with leitmotifs that were far too long; "once you start, you've got to finish," he rebuked.<sup>39</sup> In either case, a musical mood necessarily lingered longer than was wanted.

Accordingly, generating the requisite number of short stems from Debussy's music required abandoning any kind of analytical musical division of the *Préludes*. In fact, I began by splitting the *Prélude* into a new stem for every single beat and then redrafted stems only to correct musical awkwardness where a split was created over the length of single notes. This approach resulted in the total numbers of stems outlined in Table 1.

To give a sense of the granularity achieved by this system, let us return to the two bars of music (bars nine and ten from "Minstrels" in Figure 1) originally considered as one phrase and therefore one stem that was too long in the original implementation. In this final system, that same phrase has become eight individual stems, splitting the music every two notes or so, or the length of a quaver (the piece is in 2/4). The longest of these eight stems is just 478 milliseconds long. It is one thing to talk of Debussy's mosaic or even modular compositional style; it is another thing entirely to divide up the music four times every bar. This approach also meant that changes in intensity can be achieved even over the course of a single phrase, and these eight stems can be any combination of high or low energy in performance. In practice, the number and frequency of stems means for all reasonable purposes an infinite amount of possible variations of performance. Take, for

39. Royal S. Brown, *Overtones and Undertones: Reading Film Music* (Berkeley: University of California Press, 1994), 291–92.

example, the first *Prélude* in the game, with its 347 stems. Given that this is 347 stems multiplied by two (for the two different performance levels), the number of different possible performances, without even taking silence into account, is  $2^{347}$ , which is a very large number indeed and really should be considered equivalent to infinity.<sup>40</sup>

## PRELUDE'S END

The net result of this work was a music system for *Untitled Goose Game* that was capable of close Mickey-Mousing using pre-existing music. This is, broadly speaking, similar to van Geelen's "branching" understanding of dynamic music, if perhaps to a more granular degree than previously imagined, where changes in gameplay trigger branching substitutions of music.<sup>41</sup> While not quite the exacting, frame-by-frame music-and-animation synchronization of a Carl Stalling work, splitting the *Préludes* into such granular and short stems means that for the above illustrative example, the player will only wait a maximum of 478 milliseconds rather than 3 full seconds (or 16 seconds in the most indulgent of my original attempts) for any musical shift in intensity. Judging by the response to the game and its music, this seems close enough to achieve the desired effect. Given the responses and variety of comparisons to Chaplin, Looney Tunes, Benny Hill, and others quoted at the beginning of this article, the music system, along with Debussy's *Préludes*, also appears to have worked in conjuring up a sense of the music practices of either silent film or moving image comedy.

The combination of cultivating a sense of dynamism in the music with pre-existing pieces was an unusual problem for the game to approach. Music never conceptualized to be subject to interactivity—or even written in an era when digital interactive music was a possibility—meant that some of the more usual options for creating a dynamic soundtrack were not open to us. But perhaps the world of dynamic music is not quite yet the filled-in map that I expected it to be. Part of the solution to this problem involved looking beyond video games to other traditions of music and the moving image, which helped set the parameters of the project and guided our approach. The traditions we looked toward—what music was played during the era of silent cinema, and when—were perhaps more complicated than we had initially expected, but for practical purposes that didn't matter too much. Nonetheless our expectations are interesting when tracing those influences and attempting to place the game in a brief historical context as I have tried to do here. *Untitled Goose Game's* music may have found inspiration and a practical framework in moving image history through adapting and implementing pre-existing, already-written music. Yet all of this is very much enabled by *Untitled Goose Game's* present. This is a musical soundtrack informed by the practices of cinema and animation, but enabled by the possibilities of the video game. ■

40. To illustrate this point, if you could go back to the Big Bang and set up *Untitled Goose Game* to play a new possible variant of the first *Prélude* every second, by the time you reached the present day you would still only be about one-fifth of the way through.

41. Tim van Geelen, "Realizing Groundbreaking Adaptive Music," in *From Pac-Man to Pop Music: Interactive Audio in Games and New Media*, ed. Karen Collins (Aldershot, England: Routledge, 2008), 96.

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