Fantasias on a Theme by Walt Disney: Playful Listening and Video Games

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Abstract and Keywords

This chapter investigates listening to music in video games by proposing a model of "playful listening" to show how music creates domains of musical play. The chapter uses case studies of three games all based on Walt Disney's *Fantasia* (1940/1999) films: Atari 2600 (1983), Sega Mega Drive/Genesis (1991), Microsoft Xbox Kinect (2014). Each *Fantasia* game highlights these fields of musical play in different ways. Games like the *Fantasia* titles make obvious how listening to music can be playful (even outside games). When we listen for how music "plays out," we are engaging with the implied possibilities of the music, its "potential to be otherwise"; the music generates a field of potential sounding forms, only one of which is realized and fulfilled in performance. Games, and these games in particular, encourage us to listen playfully, and to enjoy the dynamic relationships of listening, in-game and outside, on-screen and off.

Keywords: video games, Fantasia, hearing, play, ludomusicology, gesture, mickeymousing, synchronization, narrative.

Disney's *Fantasia* (1940), along with its sequel *Fantasia 2000* (1999), are explicitly concerned with cinematic listening. In presenting diverse approaches to visualizing classical music across the program, these films encourage the audience to explore a variety of ways of audio-visually engaging with the music. Like almost all Disney films, the images and characters of *Fantasia* have not been confined to the cinema. Soft toys of Mickey Mouse as the Sorcerer's Apprentice reside in many a child's toybox, while Disney theme parks feature *Fantasia*-inspired statues, bars, gardens, and miniature golf courses. *Fantasia* also frequently supplies materials for the live shows and parades in those hyperreal worlds.

Fantasia's adaptation into video games is both expected as part of Disney's embrace of a huge variety of media, and also particularly apt: since its inception, *Fantasia* has engaged with new developments in audiovisual technology—most notably through the Fantasound surround sound system created for the original film's initial theatrical exhibition.[1] There have been three video games directly based upon *Fantasia*.[2] These games provide a use-

ful site for investigating listening in audiovisual contexts, and in video games in particular, not least because they invite comparison with film. As William Gibbons notes, "To a greater or lesser extent, each of those games depends on players' existing knowledge of *Fantasia*. And since the visual and musical aspects of the film are virtually inseparable, effectively incorporating classical music usually becomes an essential part of the games."[3] Keeping in mind both film and game incarnations of *Fantasia*, this chapter draws on narratology and phenomenology to discuss how modes of listening are configured in the video games. It further suggests what those games might tell us about musical listening more generally.

(p. 691) *Sorcerer's Apprentice* (1983)

The first *Fantasia* video game was produced for the Atari 2600 home console.[4] The game focuses upon the Dukas "Sorcerer's Apprentice" sequence that had been the genesis for the whole *Fantasia* film project.[5] In the game, players control Mickey, in-role as the titular apprentice, who must attempt to stop the enchanted brooms from flooding the cavern.

In the cavern (Figure 34.1a), bucket-carrying brooms appear at the top of the screen and march to the bottom, where they add their liquid consignment to the rising water level. By running into a broom, Mickey can eliminate it before the water can be contributed to the increasing flood. The cavern is one of two main screens of the game. In the other, the mountains (Figure 34.1b), Mickey has further means to combat the encroaching water (occurring concurrently in the cavern).

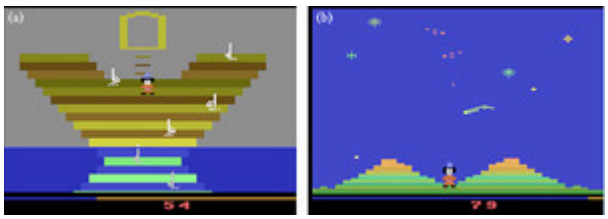


Figure 34.1 Sorcerer's Apprentice (1983): (a) The Cavern; (b) The Mountains.

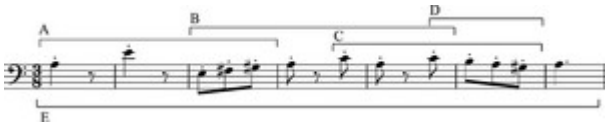
In the mountain scene, stars fall from the sky. Each star that meets the ground between the peaks causes another broom to appear in the cavern. By catching the stars, Mickey can stop the brooms from being formed, and, further, can fire this "caught" star back up into the sky, either to eliminate another star (and potential broom), or to target a comet. Comets are particularly valuable: each comet that Mickey hits conjures two enchanted buckets in the cavern that reverse the action of the brooms. As the game progresses, the speed of the stars increases, making Mickey's task all the more difficult. Points are awarded for activities such as eliminating the brooms, catching stars, and summoning buckets.

Unlike the film, Mickey is doomed to failure in the game. The cavern will flood, and no sorcerer will appear to save him. The question is how long Mickey can last, and how many points the player can accumulate before failure. The game's instructions note: "Remember: What happens in the mountains affects what happens in the cavern. The key to playing in both screens is knowing where to be at the right time."[6] When Mickey is in the mountains, the player cannot see what is occurring in the cavern (and vice versa). However, the sonic output allows players to understand what is happening in the game, beyond that which is immediately visible to them.

(p. 692) The game's instruction booklet guides players on how to listen to the game:

> Use the following sound guide to help you learn the different game sounds. Sounds are especially helpful when Mickey is in the mountains because they let you know what is happening in the cavern.
>
> **Bell tone:** When you hit or catch a star.
>
> **Four rising notes:** When you hit a meteor, creating two empty buckets.
>
> **Swoosh sound:** When a broom is created or stopped.
>
> **Musical tune:** When the water level changes.[7]

The "musical tune," as one might anticipate, is the most memorable musical material of the Dukas piece: the motif that Carlo Caballero calls "the tune representing the trot of the broom,"[8] first heard in the bassoon in the original symphonic poem. Here, it is sounded in A minor and split into four fragments, which are triggered as the brooms reach their destination (Example 34.1). The phrases are heard irrespective of whether Mickey is in the cavern or mountains. As the game speed increases and the player's efforts become all the more frantic, the musical fragments are heard both more frequently and at a faster tempo. The impression is given of overwhelming inescapable repetition.



Example 34.1 The "Broom Theme" in *Sorcerer's Apprentice* (1983). The bracketing indicates the fragmentation of the theme. Fragments A–D are sounded to represent the success of a broom, while the whole phrase (E) is heard when the game starts.

The "four rising notes" that the manual describes (representing buckets) are a rapid ascending chromatic scale starting on C4. This phrase is not characteristically evocative of Dukas's scherzo like the "broom" theme. That said, the ending of the piece in its symphonic and filmic incarnations takes the form of a four-note rising diatonic scale, dominant to tonic (discussed at length by Caballero); it is perhaps no coincidence that the

game should deploy a musical fragment similar to a prominent gesture in the orchestral original.

During the game, players may hear the musical fragments of Example 34.1 as indicators of the rising water level. That might occur through the manual's explanation, or be learned through observation when playing the game. Even without the manual's direction, players are prompted to interpret the music as somehow meaningful, given the sonically stark and distinct qualities of the fragments that sound at irregular intervals: they seem pregnant with meaning, and players are charged to find correlation with the in-game action.[9]

(p. 693) Once players understand the signification of the "broom" theme, they can decisively interpret the music for information about the game state: each phrase indicates another broom has reached its destination. The more brooms that do so, the more water has been delivered, the more urgently the player should take action to combat the progression. In this sense, we can consider that players use what Michiel Kamp calls "semiotic hearing," where "music…provides the player with information about gameplay states or events."[10]

Of course, the game exists in a textual network with the film version. It seems no coincidence that the 1983 game followed a re-release of *Fantasia* in cinemas the previous year. By drawing on the musical materials from the film, the image and world of the film are invoked to project beyond the limited blocky visuals of the game. As William Gibbons puts it:

> [T]he goal here was replicating memorable symbols from the film…sound is central to bridging the gap between *Fantasia* and *Sorcerer's Apprentice*.…we might consider the tune's role…as an abstracted symbol— a memory trigger that invokes *L'apprenti sorcier* without trying to replicate it. Players' experiences fill in the gaps, the same way players understand the abstracted collection of pixels as a symbol of Apprentice Mickey from the film.[11]

The "broom" motif quotation recalls the orchestrated soundings of the music in the film, and along with it, the more detailed characters and visually ornate world of the cinematic version—a process I have elsewhere described as musical "texturing."[12] These enrich the game beyond the immediate technological restrictions of the Atari console.

Carolyn Abbate used Dukas's symphonic poem as a focal point of her bold and influential investigation into musical narrative, arguing that music does not typically narrate, but is instead primarily mimetic in representation.[13] She writes, "Dukas's The Sorcerer's Apprentice is not a retelling of events; it is a *depiction* of events, happening as we listen."[14] The specifics of Abbate's discussion remain contentious, both on musical-analytical and narratological grounds,[15] but its emphasis on music as using an enacted mode of representation is helpful. Ben Winters has more recently drawn upon Abbate's position to suggest that film music should often be heard as the "product of narration not the producer of narrative."[16] Here, the game seems to highlight this critical-sonic perspective, repre-

senting each broom's success with a musical sounding, whether or not the broom is visible on-screen.

How are we invited to listen in this game differently from the parallel episode in the film? As with any game, the interactive nature of the medium prompts us to attend to the music closely, so that we might gain ludically-relevant information to inform our actions. In the words of Karen Collins, "the stakes for players' involvement, interpretation, and therefore attention are much higher in games [than film], so they listen more actively."[17] In the film version, the impetus for active musical interpretation is less keenly felt. Music in the game is interrogated not only for its meanings for what is shown on the screen, but (perhaps especially) for what is *not* seen—that is, what is happening in the broader world of the fiction. In Atari's *Sorcerer*, this is obviously the case with reference (p. 694) to the action in the cavern while viewing the mountains, but this phenomenon is widely observable in video games. I routinely listen to music in games in the hope that it will give me helpful information beyond that which is immediately visible, whether by indicating unseen enemies, alerting me to overlooked puzzle clues, or indicating upcoming obstacles in my avatar's path. In *Sorcerer's Apprentice*, the relationship between music and diegetic event is initially very specific—it not only relates to the brooms, but their success in their mission. In this way, music becomes meaningful in terms of particular ludic events.

As the game round progresses, the rate of the brooms increases, the action becomes more frantic, and the individual fragments are triggered so often they begin to interrupt each other (as Mickey's inevitable failure edges closer). Now it becomes trickier to maintain the distinction of individual fragments, or parse the music for the specific development of gameplay it represents. Instead, the musical accompaniment tends toward a continuity of sonic fabric whose ebb and flow engages with the gameplay in a way less specifically anchored to the individual ludic events. Nicholas Cook, in his analysis of the "Rite of Spring" sequence in the *Fantasia* film, describes the diverse hierarchical relationships between music and image in the episode, from the rhythmic mickey-mousing of the exploding volcanoes, to the hypermetrical organization of the sequence and broad-level narrative structure of the entire vignette.[18] In the game, as the gameplay round tends toward chaos, the conformance between music and screen action begins to operate "further up the hierarchy" (as Cook would put it) on a broader level of organization.[19]

Listening to the game, the enacted musical depictions (the broom fragments), taken together, combine to form the narrative arc of the game round. We understand the musical materials as a higher-order representation of the progress of gameplay, rather than the specific semiotic signification of any one individual broom event. When playing in the mountains screen, it is music that most obviously allows us to understand the broader patterning of the game's progress, and highlights our (degree of) agency as players to affect the ongoing course of that narrative, resisting progression toward the inevitable watery conclusion. Even within this simple sonic deployment, two subtly different modes of hearing are clearly evident.[20]

Fantasia (1991)

The second video game explicitly based upon *Fantasia* was one of a number of Disney games for the home Sega Mega Drive/Genesis console.[21] Like the successful earlier release, *Castle of Illusion Starring Mickey Mouse* (1990), *Fantasia* is a platform game in the mold of *Super Mario Bros*. (1985). William Gibbons has suggested that the choice to use *Fantasia* as the basis of a game likely stems from the concurrent fiftieth anniversary celebrations of the film and the opportunity provided by the subject to showcase the console's sonic capabilities by reproducing classical music.[22]

In the game, players control the famous rodent, dressed in "apprentice" garb, as he collects points, defeats enemies and jumps between platforms. As the game progresses, (p. 695) Mickey explores a variety of stylistically different worlds. In the Sega *Fantasia*, the music does not exhibit the kind of reactivity observed in the Atari game. Instead, each level is accompanied by a repeating cue. Excerpts from the orchestral pieces in the film are rendered in synthesized versions, and programmed to repeat until the game round ends, either by failure or success. As Mickey's adventure progresses, he visits different "worlds" of the *Fantasia* universe. Though the gameplay remains fundamentally unchanged, the enemies and environments draw inspiration from episodes of the film. Each "world" is associated with particular musical cues. The manual details the "worlds" and their musical accompaniments for players, which are encountered in turn as the player progresses through the game (Table 34.1, Figure 34.2).[23] Players may also listen to the musical cues in isolation from the gameplay: the main menu allows gamers to cycle through the game's cues, sounded against the menu screen.

Table 34.1 Descriptions of the worlds and musical accompaniments in *Fantasia* (1991), as explained in the game manual (Sega/Infogrames, *Fantasia Instruction Manual* [NP: Sega, 1991], 42–48), with musical details added by the author.

Stage/ Level	**Musical Accompaniment**	**Cues**
Water World	*The Sorcerer's Apprentice*, by Paul Dukas	Excerpt 1: mm.42 (x 4), 68–100. Excerpt 2: mm. 354–436, 443–470, 3 measures transition, 931–940 (end of piece).
Earth World	*The Rite of Spring*, by Igor Stravinsky	"Adoration of the Earth Introduction," mm. 1–6^{2}, 68^{2}–75. Runs continuously into "The Augurs of Spring, Dance of the Young Girls," mm. 1–27, 18–19 (reprised), 34–38^{1}.
Air World	*The Pastorale, Symphony No. 6*, by Ludwig van Beethoven	First movement, mm. 28–53^{1}.
	The Nutcracker Suite, by Peter Illich Tchaikovsky	"Russian Dance," mm. 1–32.
	Dance of the Hours [from *La Gioconda*], by Amilcare Ponchielli	Complete 45-measure sequence.
Fire World	*A Night on a Bald Mountain*, by Modest Mussorgsky	Rimsky-Korsakov version mm. 14–34^{1}.
	Toccata and Fugue in D minor, by [Attr.] Johann Sebastian Bach	Complete 30^{2}-measure Toccata, omitting mm. $2^{1–2}$ and 5^{3}–7^{2}.

Figure 34.2 Sega's *Fantasia* (1991): (a) Mickey in the Sorcerer's Apprentice stage; (b) Mickey in the Rite of Spring stage.

The second *Fantasia* game prioritizes a broader level of musical hearing over the kind of specific event-music association that the Atari game initially emphasizes. When playing *Fantasia*, even though the looping cues do not directly react to the progression of the game round, gamers can engage with what Kamp refers to as "ludic listening": "moments that invite us to act, move or play in some relation to the musical soundtrack…a recognition and an acceptance of an invitation to do something…a kind of force."[24] Kamp (p. 696) emphasizes "the temporality of ludic hearing" as occurring simultaneously with gameplay.[25] When the lolloping "broom" theme from The Sorcerer's Apprentice accompanies Mickey bouncing across platforms (Figure 34.2a), and the enemies bob and lurch in uneven animation that echoes the musical rhythm,[26] as a player, I feel the urge to respond to the music with my control of Mickey, even if to do so is not the best strategy for succeeding at the game. This rhythmic aspect is particularly notable because of the main way that Mickey defeats threats in the game: by bouncing on them. So powerful is this force that to play in a more strategically efficient, halting, approach to the level seems an act of defiance against the soundtrack. As such, it might be the case that the music makes the game more difficult.

In a film context, I can identify the correspondence between the animated motion of the characters and the musical accompaniment. In game situations like that of *Fantasia*, I am further empowered to influence the game's diegetic action to conform to, or obviously defy, such musical organization.[27] If I wish, I can make my avatar live up to his reputation by "mickey mousing" along with the score. The *Fantasia* film's tightly-synchronized audiovisual aesthetics may serve as a model for a way of playing the game. Even if the music is not directly reactive to my actions (as in the Atari example), I still have agency to influence the overall semblance between the music and other components of the media. I can make the music and gameplay complement or contest each other to greater or lesser extents (to use Cook's terminology), as I explore potential modes of relating them to each other.[28]

Ruth HaCohen uses the Sorcerer's Apprentice sequence from the *Fantasia* film to illustrate her idea of a "dynamic audiovisual combination" she calls "generative," where "the music is perceived as instigating action and change, and in particular, as lending movement."[29] She emphasizes the gestural/kinaesthetic correlation between music and image in this sequence.[30] In a quasi-Wagnerian/Schopenhauerian way, she positions the music as

the fundamental element of the audiovisual sequence, the source that "generates" the fictional world and story, right down to the level of the gestures of the characters.[31] While this is clearly true in terms of the production history of *Fantasia*, HaCohen's (p. 697) argument focuses on the aesthetic result of the finished product, irrespective of the process of the film's creation.

In the case of *Fantasia* for the Mega Drive, HaCohen's notion of music as a generating agent of the audiovisual result is given another dimension. HaCohen describes music (apparently) determining the gestural movement of characters. In the game, by virtue of the interactive dimension of the medium, players become a conduit for this agency when they are invited or prompted to "play along" with the music, in turn, directing the characters to react to the music. In this way, the game short-circuits any ontological questions about the source of the soundtrack (whether it sounds in the diegesis or not, whether it is audible to the characters or not); it is a force for affecting the on-screen action, through the player's agency. No matter where it comes from, the music influences the player, which, in turn, influences the diegetic action of the game. In that way, players facilitate music's "generative" power (in HaCohen's terms), and allow music to explicitly, obviously, impact aspects of the audiovisual output of the medium.

The role of music as influencing in-game movement through the player's actions is evident in *Fantasia* when different "worlds" of the game invite a different playing style, even though the fundamental mode of gameplay has remained unchanged. I feel the force to (try to) bounce along to the Sorcerer's Apprentice with the regularity of the piece's rhythm, but move more slowly and haltingly to the uneven rhythmic profile of the Rite of Spring.

In this model, music's power is facilitated, in part, by mediating between the player's world and the world of the fiction. By nature of the technology, music sonically extends beyond the screen: even when listening on headphones, it appears to "reach out" to the player's environment, unlike the more constrained plane of the screen.[32] That "reaching out" facilitates the player's induction into the audiovisual system of interaction described above.

One of the fundamental differences between the "closed system" of the film, and an interactive medium that introduces player agency, is the indeterminacy of how the player will respond to the audiovisual materials, and, in turn, the results of their actions. "Generation" models often risk presenting a reductive "determining" approach where music produces a specific singular outcome. When, however, the player is inducted into the system of musical agency, the diversity and fluctuations of that relationship are highlighted. Simply put, the player may ignore the music, and refuse the invitation to "play along." Seen one way, that indeterminacy might indicate that music is not as influential as has been claimed. Instead, I would suggest that this very indeterminacy shows the diversity of responses to musical prompts, and this play of possibilities is part of the attraction. My decision to "play along" with the music would mean less if I were unable to choose *not* to "play along."

Of course, in a game the outcome is not just a direct result of the player's planned goals. They have to contend with the gameplay challenge and ludic systems. Part of the fun comes from the continually fluctuating negotiation between music, player agency, and semblance of audio and visual materials. In the specific terms of the *Fantasia* game, (p. 698) in one moment, I may be bouncing with the rhythms of Dukas, in the next, having that attempt at synchrony thwarted by the game's ludic content, and in another moment, I may deliberately defy the musical impetus.

Like the Atari game, I can also understand the audiovisual semblance in the Mega Drive *Fantasia* as operating at different levels of the hierarchy. In the above discussion, I emphasized the correlation with movement, but the musical excerpts of each world can also imply different gameplay parameters. Indeed, as explored in terms of the Atari game, from the experience of playing video games, I have been trained to read music for its potential ludic significance in all sorts of dimensions. For instance, when a level begins accompanied by the fragmented and dissonant musical fabric of the Stravinsky excerpt, it might be thought to imply a more dangerous environment than subsequent levels accompanied by Beethoven's Pastoral Symphony. This impression, however, is misleading: the latter levels are no easier or more sedate than the Stravinsky levels. Nevertheless, the music may project such dimensions of the gameplay challenge. If we "play along" with the music, as I suggested above, the score might also invite different styles of play, or different ways of approaching the same challenges, irrespective of ludic difficulty.

The Mega Drive *Fantasia* game deploys a very different approach to music programming than the Atari game. In using repeated musical cues, rather than music that directly responds to game events, it highlights the ways in which players may choose to react to this music (rather than vice versa, which was more obvious in the Atari game). They may "play along" with the music, or, indeed, choose not to. That play of musical and player agencies, however, is part of the appeal of engaging with such audiovisual interactive artefacts, as we listen and play.

Fantasia: Music Evolved (2014)

The most recent *Fantasia* game was produced for the Microsoft Xbox 360 and Xbox One consoles and required the use of the Kinect motion sensor.[33] The game is controlled directly through the player's physical gestures in the space around them, rather than through a handheld controller (as in the Atari and Mega Drive games). The game was developed by Harmonix, a video game company best known for producing the successful *Guitar Hero/Rock Band* (2005–2015) and *Dance Central* (2010–2019) game series. The influence of both of these earlier franchises on the *Fantasia* game is apparent.[34]

The game clearly takes its cue from two particular elements of *Fantasia*: the "abstract" shapes and patterns of the Toccata and Fugue in D Minor segment,[35] and the moment in the Sorcerer's Apprentice sequence when Mickey dreams of "conducting" the stars and waves, which respond to his gestures in synchrony with the music. The game is introduced by the Sorcerer, who explains that the player is taking on Mickey's mantle as the

new “apprentice.” The majority of the game takes the form of challenging the player to make particular gestures (directed by the game) in time with the music. As musical (p. 699) selections play, gamers accumulate points by following on-screen instructions to move their arms. As one review explained:

> *Fantasia* resembles other rhythm games in the sense that it displays prompts on the screen in time to music. And you perform the appropriate actions within the necessary time frame. In games like *Rock Band*, success involves pressing buttons on plastic instruments. In *Fantasia*, triumph comes from sweeping your arms up and down and pushing them forward and back.[36]

These gestural instructions are represented on screen by geometric shapes and patterns that call to mind the abstraction of the Toccata and Fugue sequence from the film. The game combines the “match the instructions for physical action with the music” gameplay of *Guitar Hero*/*Rock Band* with the “body-as-controller” interface of the *Dance Central* games, in which players are challenged to copy the choreography of on-screen dancers. Like the *Dance Central* games, in *Fantasia: Music Evolved*, gamers earn points by performing the movements accurately and in time with the music.

Despite the technological innovation of *Fantasia: Music Evolved*’s motion controls, gestural responses to musical listening are certainly not unique to the game. Consider the similarity between Ben Winters’s description of his own musical listening, and a review of *Fantasia: Music Evolved* for one of the premier game websites. Winters writes,

> [A]s an orchestral conductor and violinist, I have to admit that my “visualizing” at home when listening to a recording often takes the form of my imagining conducting the symphony in a concert, or playing the string parts…[37]

While Kevin VanOrd, reviewing the game for GameSpot notes:

> It turns the act of pretend conducting into a performance art and lets you bring your own musical energy to the game. To be clear, *Fantasia* does not replicate what it’s truly like to conduct a symphony orchestra. Instead, the game is a flight of fancy, reproducing the kind of gesticulations you might perform when listening to Mahler on the radio or when your favourite pop song shows up on your playlist. …At last, a game has come that gives you permission to sway about in your living room, waving your hands about as if you’re a wannabe Leonard Bernstein while Vivaldi’s Four Seasons blasts from the speakers.[38]

Both VanOrd and Winters describe the fantasy of gestural power over music that they report as already evident in everyday listening. According to the film, even Mickey Mouse has the same dream. *Fantasia* recognizes that gestural-embodied aspect of listening and facilitates it in a real, albeit virtual, musically interactive way. While both Winters and VanOrd invoke the image of the traditional classical music concert, *Fantasia: Music Evolved* includes a diverse selection of music. Pieces by Bach, Mussorgsky, and Tchaikovsky shared with the film stand alongside further “classical selections,” contempo-

rary pop (including songs by Lady Gaga and Nicki Minaj) and (p. 700) older pop songs. The game suggests that listening in terms of bodily gestures is by no means exclusive to clas*sic*al repertoire. VanOrd continues,

> When the a capella [sic] harmonies of Bohemian Rhapsody spill from your television, you naturally understand how your arms and hands must flow, even if you don't know exactly what motions the game will expect of you…It's one of Fantasia's many wonders that those required motions so beautifully complement the melodies and rhythms they accompany.[39]

A detailed study of the relationship between gesture and musical properties is beyond the scope of this chapter. Nevertheless, it is worthwhile noting how the game prompts players to physically manifest gestural interpretations of the music. Naomi Cumming argues that

> The possibility of movement in musical space is presumed in even the most basic descriptions of music…[and is] basic to musical experience…When an element of music is heard as expressively "gestural," it suggests the kind of "energy" or directionality commonly linked with an expressive gesture in a person or animal[40]

This game asks players to directly enact such "energetic" "expressive gestures." Cumming describes how

> Musical "gesture" is a perceived indexing of bodily motion, as carrying a definite direction, weight and degree of impetus, to form a shape felt as "iconic" of gesture in another domain of movement, which may be human and expressive.[41]

The Xbox game realizes these shapes in the service of such expressive ends. The correlation between musical gesture and physical enactment is part of the joy of the game. *Fantasia: Music Evolved* takes steps to develop a gestural dimension of listening beyond one that has a purely reactive or accompanying relationship with the musical material, instead to one that has the power to determine aspects of the musical output.

Fantasia departs from the *Guitar Hero* model in the degree of freedom and agency afforded to players. In the *Guitar Hero*/*Rock Band* games that preceded *Fantasia: Music Evolved*, players are (by and large) restricted to facilitating the sounding of well-known rock hits, either in their original versions, or in covers that are faithful to those originals. Even moments of improvisation on the original records are here often "fixed" as part of the static, canonical recording. In *Guitar Hero*, if the player misses notes, or mis-times their performance, the instrumental part is silenced, and continued transgression means that failure is not far away, and the piece will stop prematurely. There is relatively little opportunity for the player to improvise or suggest an alternative sounding to the piece. As Henry Svec puts it, "[The] player can either conform to the game's logic by reproducing the requisite hits, which are presented as measurable, stable, complete, and eternal (structural), or not play at all."[42]

(p. 701) *Fantasia*, however, takes a different view of player agency. Two dimensions of player musical-performative empowerment are apparent and directly contrast with *Guitar Hero* games. First, unlike *Guitar Hero*, *Fantasia* does not punish players for failing to conform to the directed actions. Players who defy the instructions do not gain points, and the music is filtered to be quieter, but incorrect actions do not result in the complete silencing of parts of the recording, nor the forced abandonment of the performance. One cannot "fail" a piece. This toleration of transgression allows players who favor personal expression over ludic success the opportunity to articulate their gestural response to the music, and to still enjoy the experience, even if that expression deviates from the movements required to win. Secondly, in *Fantasia*, players have the opportunity to make contributions to the musical materials. During some pieces, players may encounter a kind of "bonus round" where they may design a melody or other musical fragment. For example, in one such sequence in several tracks, players are presented with an oscilloscope-style screen, and by making vertical gestures, can outline a melody. This player-created melody is then incorporated into the ongoing sounding of the piece. Out of technological necessity, the opportunities for such user contributions are limited to specific moments and certain aspects of the user-provided materials are pre-determined, such as duration and pitch choices, so as to ensure successful musical integration with the rest of the piece. Those factors recognized, these moments nevertheless provide opportunities for players to make an active contribution to the music emanating from the game. Both the scoring system and opportunities for user contributions are ways of empowering players to respond to, and play with, the music.

One of the main features of *Fantasia: Music Evolved* is the game's capacity for re-arranging the style and instrumentation of the pieces. Using the gestural controls, during the performance, the player has the ability to select substitutes for components of the musical texture. Some of these substitutions represent radically different musical genres than that of the original piece. For example, in *Night on a Bare Mountain,* players may add in electronic dance music parts. Most featured pieces include three contrasting musical styles, the elements and instruments of which can be mixed and matched as the track progresses. To the orchestral version of Liszt's Hungarian Rhapsody No. 2, I might add a rock guitar, but then a flamenco-style rhythm and trumpet section. For the passages at a faster tempo, I might decide to reintroduce the orchestral percussion instead, but use an electric guitar, and so on. Players thus may make "mixes" of pieces, experimenting with different sonic possibilities as the music progresses, by swapping in different musical elements to the performance. This is yet another way in which *Fantasia* attempts to give musical decision-making power to its players. In doing so, it presents the songs as far less fixed than the restrictive presentation in similar games. Instead, the pieces become domains of musical potential, which can be explored (or not) at the players' direction.

Though the user-determined musical elements are limited, they nevertheless represent the opportunity for players to exert musical agency. While players are encouraged to explore different musical combinations, the game does not pass judgement on the players' musical choices: one mix is not rewarded with more points than another, and (p. 702) there is no "correct" solution to the moments of invention. When there is no ludic advan-

tage of one version over another, the decisions become purely musical: players must use their own aesthetic judgement when formulating the musical fabric. In this way, the game prompts players to listen critically to the music. Not all user-determined mixes are particularly aesthetically successful, so players may seek more pleasing mixes by exploring the musical choices that the game presents. As VanOrd explains: "[F]or every mix that doesn't gel, there are two more that have me looking at the music in a new light and finding new ways to perform gestures."[43] VanOrd, then, also finds that the mixes prompt a reconsideration of the musical and kinaesthetic aspects of the performance: they cause him to listen and perform in a different way. Players are also primed to listen for the way that their "bonus round" contributions are integrated into the ongoing musical texture. An icon appears in the corner of the screen when the musical fragments developed by the player are sounded in the song. This allows players to more easily aurally recognize and pick out how their phrase is used in the mix.

Throughout *Fantasia: Music Evolved*, the game revels in opening up alternative musical soundings, and encourages players to hear the potential for difference in the music: different motifs or user-created phrases, different stylistic and instrumental combinations, and different expressive responses to the music. It challenges them to experiment and explore the musical-performative-ludic possibilities, both in the gestural response and musical materials. To understand how this might usefully inform models of listening in audiovisual contexts, we may consider the three *Fantasia* games together.

Playful Listening, or "How will this play out?"

Though these *Fantasia* texts are very different, and even taken together, by no means represent the entirety of the modes of musical engagement in the medium, they may yet betray some valuable insights into listening from the perspective of video games. Many authors, among them Andrew Goodwin, Michael Long, and Peter Franklin, have argued that, even before its combination with on-screen images, music conjures visual associations.[44] In a similar vein, we might suggest that music can harbor ludic qualities.

I would propose that video games, and the *Fantasia* games in particular, highlight how music in its concert, cinematic, and game presentations, can be understood to be implicitly playful, primarily through our awareness of its "potential to be otherwise." That is, we understand that the particular sounding of music that we experience is only one outcome among a range of possibilities within a broader field of potential incarnations of that music. Playful listening is a mode of listening where we consider the alternative possible forms of the musical material.

In games, music typically responds to player action. Such musical response might be as simple as starting and stopping music when the game begins and ends, or it might (p. 703) involve complex interactive music systems. Since the sonic output depends on our actions as players, we become aware of how the music might sound differently—we may

imagine other musical possibilities. Such projected possibilities can take a huge variety of forms. Some simple examples might include:

- "That looping cue has stopped. I imagined it would continue."
- "That looping cue has continued. I imagined it would stop."
- "When will the 'victory' fragment/stinger play? I've nearly won, so it can't be long now."
- "I didn't hear that power-up chime. I must have missed it."
- "That's not normally the cue I hear in this gameplay situation. It's not what I expected."
- "The musical tempo has suddenly increased—that must mean time is running out."
- "The cue has been interrupted. Something has changed in the game, but what?"
- "That cue does not synchronize with the avatar's movement. What if it did?"

Games prompt us to engage with musical possibilities because we listen for how the music can correspond (or not) with the gameplay, and what might happen next. We conceive of other musical alternatives. Playful listening is not confined to games, but the interactive agency of the player makes this aspect of listening, as a dynamic process, particularly obvious.

As noted earlier, Abbate has emphasized an understanding of music as enacted in time, and as such, she characterizes it as primarily mimetic rather than diegetic (that is, showing rather than telling, enacting rather than narrating). Composer and theorist Joshua Mailman suggests that this enactment occurs through "emergent properties" that arise out of the combination of the fundamental elements of music (such as pitch, timbre, and duration) into holistic musical features.[45] Mailman describes some of these "emergent properties" in terms of bodily motion,[46] just as theorists have described musical "gestures" as foundational to the articulation of music. As Naomi Cumming writes,

> To say that a gestural quality "emerges" from the technical features is to suggest that it is something that comes out of the synthesis of elements, but which cannot be understood simply as their combined effect.[47]

Mailman argues that, as these "properties" or "gestures" sound, the musical fabric gives rise to processes and parameters.

Under Mailman's mode of listening, music in its sounding is also a form of worldbuilding—we perceive not only the musical materials in front of us, but also that there are sets of parameters, rules, and procedures that give rise to this music. Much like game theorist Jesper Juul's conception of learning a game's rules through its fictions,[48] Mailman suggests that the "rules" that underpin the worlds of musical pieces are implied (p. 704) by the sounded material.[49] These rules/processes can be established, subverted, fulfilled, and so on. The music plays out within these frames of processes. Robert Hatten similarly argues that "Gestures may encompass, and help express, rhetorical action, as in a sudden

reversal, a collapse, an interruption, or a denial of implication. Rhetorical gestures disrupt or deflect the ongoing musical discourse, contributing to a contrasting dramatic trajectory."[50] Hatten, too, characterizes gestures as playing out within spaces of possibility, negotiating with implied "forces." He writes, "A spontaneous or "willed" individual gesture may be understood as being subject to various forces as it traverses tonal and metric fields, environmental forces which act upon it in various ways."[51] Both Mailman's "properties" within "rules" and Hatten's "gestures" subjected to "forces" imply that we are hearing only one musical articulation within broader spaces of possibilities—the music we hear has the potential to be otherwise.

We can discern the implied organizing processes when listening to the music as it is "enacted" (as Abbate might put it). We do much the same when we listen to music in games. Games ask us to find the correspondence between musical processes and game processes. As Nicholas Reyland has described, recent research on musical narrativity has suggested that "Narrative music…enacts both a tale and its telling, like a film or a play."[52] This is an apt analogy. A film both constructs a narrative world and tells a particular story within it (this is part of the attraction of alternative/deleted scenes and is the basis on which franchises are built). Another similar example might be watching a YouTube playthrough of a video game with which we are otherwise unfamiliar: we can extrapolate some conception of what would happen if the observed player's actions were different to those captured in the video. In these examples, of course, knowledge of the "being otherwise" remains implicit and unverified.

Abbate herself alludes to this experience in her discussion of the Dukas: referring to the moment of the broom's reanimation at which the musical theme associated with the broom begins again, this time in two interlocking parts, she describes it as "repeating again and again, far too many times…This recurring noise threatens—for a few seconds at least—infinite repetition."[53] Abbate here glimpses one potential other incarnation of the piece, another way in which the music might, quite literally, "play out" in the projected world of the symphonic poem.[54] The 1983 Atari game enacts a version of this "threat" of "infinite repetition" directly (translation into bleeps notwithstanding), both in its musical and dramatic incarnation.

Franklin, too, betrays the idea of an implied potential world of narrative possibility generated by music. Differently from Abbate, and writing with a specific concern for music in film, Franklin argues that music, even in mimetic mode, performs a narrative, and that it may operate in terms of reminiscence and foreshadowing. Like Abbate, however, he hears the potential for music to play out differently, and writes of the experience of listening to a film score as "building up a sense of a subject position allied to the music of passionate engagement, signifying a kind of pleasure which is repeatedly confronted, postponed, or actually thwarted by an alternative music, affiliated to external forces."[55]

Recent scholarship has increasingly recognized the significance of playfulness and play to musical practices. Roger Moseley notes that "Music and the techniques that (p. 705) shape it simultaneously trace and are traced by the materials, technologies and

metaphors of play."[56] In characterizing a mode of listening as "playful," I seek to emphasize the notion of a set of rules/processes/conditions and the awareness that we hear one particular outcome within that projected space of possibility.[57] An understanding of the "play of possibility" whether in games or other contexts, leads to a kind of "playful listening," as we cognitively interact with music, "playing with" music as it "plays out" in front of our ears. Video games, such as the *Fantasia* games, make obvious how we engage with the implied potential world of narrative possibility generated by music—those projected domain of play, because of how we engage with the music and the way that the audiovisual combination "plays out."

In the Atari game, we are listening playfully when we listen in anticipation for the Dukas fragments. We know they may appear frequently or sparsely, at a faster tempo or slower. We appreciate the potential range of soundings of the music, within the given parameters —we are listening for how the music is "playing out" to assess the state of the play (whether on the level of individual brooms, or on a higher level of resemblance between game and music). In particular, we desire Dukas to sound less frequently, and slower, for that implies ludic success. However, the game/music does not always sound as we would wish. We use our agency, in tension with the ludic parameters, to alter the output of the music, through our efforts to stop the brooms. The Atari *Sorcerer's Apprentice* might as well be a game about inhibiting the musical phrases of Dukas from playing, so closely are gameplay and musical play linked. By projecting the possible soundings of music, we are engaging with playful listening.

The situation is different in the Mega Drive *Fantasia*, which has a less specific relationship between music and play than in the Atari game. In the Mega Drive game, we engage in playful listening when we listen for the ways in which game and music might relate to each other, whether that be through a complementary relationship, or through identifying a mismatch of audio and game. In either case, players may take action to (attempt to) sustain, or change, that correspondence. Recognizing a way in which music and game match each other, necessarily relies on an awareness of how the music might *not* match the music. Similarly, an appreciation of music that does not fit the gameplay requires some undefined notion of what music that *does* fit would sound like. (Otherwise, how could non-conformance be detected?) If I find that Stravinsky's rhythms appear mismatched to Mickey's movements, I can continue to maintain that mismatch, or take action to make game and music conform to each other, until the ideal of appropriate musical correspondence with action is more closely incarnated. As noted earlier, avatar movement is only one among many ways in which music and game might relate to each other. The variety of ways in which game and music might be seen to correspond is part of the rich engagement of playful listening. Indeed, on a basic level of such correspondence, if the Atari game was about hampering the music from sounding, the Mega Drive might be one about keeping the music playing while Mickey progresses through the level. The music stops if Mickey fails, so players aim to keep the music sounding, avoiding premature silence before the level's completion. Even if we lose mid-level, we can, of course, imagine how the music would have continued, until the level **(p. 706)** end. This projected continuation is particularly strong in the game because, as Gibbons notes, "many players might never

stay in one place long enough to reach the end of the loop—creating the illusion that the game contains even more music than it actually does."[58] When we consider the potential ways that music might sound to correspond (or not) with the gameplay, we engage in playful listening.

It is perhaps the Xbox game that most clearly illustrates the potential worlds of possibilities projected by pieces of music. Here, the game obviously provides new opportunities for interacting with the musical fabric, making those hypothetical other soundings a reality. Players can contribute new materials to pieces, forge new mixes and use new gestural responses to perform the music. In *Music Evolved*, we listen playfully when we consider how we might change the music to sound differently: when playing, we consider the musical adjustments to the ensemble that we might make, how to form a user-contributed fragment to complement the piece, or how to respond gesturally to the music. All these involve engaging with the imagined—and then realized—potential alternative incarnations of the music.

Games encourage a way of listening that I have called "playful" because the interactive nature of the medium explicitly prompts us to engage with alternative forms and possibilities of the music. It gives us awareness of the music's "potential to be otherwise", as we consider the possibilities within the parameters and processes set up by the music as it sounds. We hear only one outcome among a range of possible alternatives. Players are able to explore how these emergent properties and domains of musical play can contribute to, oppose, or enmesh with the gameplay with which they are bound. Clearly, much of this discussion is related to ideas of expectation, but playful listening is a broader concept and asks us to consider alternative forms of the music we are currently hearing, not just anticipating a musical future. Instead, we glimpse alternative musical realities, especially when informed by the experience of repeatedly playing the game. Playful listening is not exclusive to games, but video games highlight this aspect of listening because of the gamer's agency to affect the musical outcome.

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Mark Clague, in his discussion of the film *Fantasia*, emphasizes the movie's educational dimension. He writes, "Fantasia thus teaches its viewers how to listen…In Fantasia image does not simply explicate sound, it introduces a host of associations, ideas, and references to music that bring new meanings."[59] We might make much the same claim with regard to the video games, though perhaps the education in these contexts concerns not only "new meanings" but aspects of musical listening more generally.

Video games are well-suited to emphasizing music as a realm of playful possibilities. By virtue of the interactive quality of the medium, games recognize the dynamic relationship between player/viewer and the audiovisual presentation. In doing so, the games highlight the role of human agency in the creation of musical meaning, and the indeterminacy that such a relationship brings. In essence, then, games highlight different ways of listening, interpreting, performing, and reacting to music. Further, in the *Fantasia* (p. 707) exam-

ples, these are shown to occur as dynamic processes, fluctuating and changing in time as the music sounds and the game develops.

The title of the 1940 film was chosen by its creators because of the way that the word "fantasia" implies freedom from rigid or typical formal concerns.[60] In that sense, these games are more than worthy of the same title, since they also suggest a challenge to static articulations of music and the moving image. Here, they highlight a mode of playful listening that allows us to consider the world of possibilities of music in its sounding, and its relationship with both other elements of media and viewer/player/listener agency.

The *Fantasia* projects thematize the spaces of possibility in musical listening—what I have referred to here as recognizing playful listening—a musical and audiovisual potential "to be otherwise." Games, and these games in particular, encourage us to listen playfully, and to enjoy the dynamic relationships of listening, in-game and outside, on-screen and off. While we might want to interact with music in the way that Mickey appears to command sonic and physical forces in *Fantasia*, we do not need any magical garb or spells to engage in a rewarding dynamic relationship with music: we do that every time we listen. Perhaps, then, like us, Mickey's magic lies not in his sorcerer's hat, but in his ears.

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Notes:

(1.) Charles L. Granata, "Disney, Stokowski and the Genius of *Fantasia*," in *The Cartoon Music Book*, ed. Daniel Goldmark and Yuval Taylor (Chicago: A Capella, 2002), 73–92, 82–86, David Cooper, "'Pictures That Talk and Sing': Sound History and Technology," in *The Cambridge Companion to Film Music*, ed. Mervyn Cooke and Fiona Ford (Cambridge: Cambridge University Press, 2016), 29–50: 34–36.

(2.) There are also significant intertextual references to *Fantasia* in other video games, particularly those of the *Kingdom Hearts* (2002–2018) and *Epic Mickey* (2010–2013) series, though space does not permit exploration of those examples here.

(3.) William Gibbons, *Unlimited Replays: Video Games and Classical Music* (New York: Oxford University Press, 2018), 58. Gibbons discusses the Atari and Mega Drive games of *Fantasia* as part of his exploration of the representation of classical music in video games. He concludes that the two games are not aesthetically successful in their treatment of classical music: "In their eagerness to tap into the universal familiarity of Disney's beloved film, these early game developers underestimated the challenges of using classical music in a way that players find meaningful. Imitating the film, in other words, is not necessarily the same thing as capturing its essence. Like the sorcerer's apprentice, these games bring *Fantasia* to life but without truly understanding the limits of their own power to recreate what animates (pardon the pun) the original." (64) I am very grateful to Gib-

bons for sharing drafts of his research with me when it became apparent we were both conducting concurrent research on the same subject.

(4.) This research is based upon playing the game using an Atari 2600 console and the Stella software emulator.

(5.) Clark Farmer, "'Every Beautiful Sound Also Creates an Equally Beautiful Picture' Color Music and Walt Disney's Fantasia," in *Lowering the Boom: Critical Studies in Film Sound*, ed. Jay Beck and Tony Grajeda (Urbana: University of Illinois Press, 2008), 183–97: 192.

(6.) Game booklet, *Walt Disney Sorcerer's Apprentice* (Sunnyvale: Atari, 1983), 14.

(7.) Ibid., 12.

(8.) Carlo Caballero, "Silence, Echo: A Response to 'What the Sorcerer Said'," *19th-Century Music* 28, no. 2 (2004): 160–82: 162.

(9.) The observations in this chapter as based primarily on the version of the game for the NTSC television system. The version of the game released for PAL television territories exhibits a curious change. Somewhere in the production process, the colour palette of the game was changed and, more significantly, the musical material was altered and the pitches of the "broom" theme no longer resemble the motif from the film. Nevertheless, because the implementation of the music remains unchanged, it still fulfills the sonic functions described above, even if the intertextual connection with the film and orchestral work is weakened.

(10.) Michiel Kamp, *Four Ways of Hearing Video Game Music*, PhD Thesis (Cambridge: Cambridge University, 2014), 15.

(11.) Gibbons, *Unlimited Replays*, 60–62.

(12.) Tim Summers, *Understanding Video Game Music* (Cambridge: Cambridge University Press, 2016), 58–66.

(13.) Carolyn Abbate, *Unsung Voices: Opera and Narrative in the Nineteenth Century* (Princeton: Princeton University Press, 1991), 27.

(14.) Abbate, *Unsung* Voices, 57, emphasis in the original.

(15.) See, among others, Caballero, "Silence, Echo"; Peter Franklin, *Seeing Through Music: Gender and Modernism in Classic Hollywood Film Scores* (Oxford: Oxford University Press, 2011), 85–114, Nicholas Reyland, "Narrative," in *Aesthetics of Music*, ed. Stephen Downes (New York: Routledge, 2014), 203–23: 206–8, and Laura Watson, *Paul Dukas's Music-Text Aesthetic: A Study of its Sources, Theory and Practice, 1891–1907,* PhD Thesis (Dublin: Trinity College Dublin, 2008), 185–214.

(16.) Ben Winters, *Music, Performance and the Realities of Film: Shared Concert Experiences in Screen Fiction* (Abingdon: Routledge, 2014), 185.

(17.) Karen Collins, *Playing with Sound: A Theory of Interacting with Sound and Music in Video Games* (Cambridge, Mass.: MIT Press, 2013), 22.

(18.) Nicholas Cook, *Analysing Musical Multimedia* (Oxford: Oxford University Press, 1998), 174–214: 208.

(19.) Ibid., 208.

(20.) Kamp distinguishes between “listening” and “hearing,” where the former refers to “active searching for or paying attention to sounds, while hearing is experiencing or encountering sounds…But we can hear sounds without having listened for them as well: a sudden noise, or music playing in the background when a conversation falls silent, for instance. Then, once we have heard a sound, we can attend to it actively by listening.” *Four Ways of Hearing*, 14.

(21.) This research is based upon playing the game using a Mega Drive II console and the higan emulator.

(22.) Gibbons, *Unlimited Replays*, 61.

(23.) The measures in Table 1 correspond to the following editions: Paul Dukas, *L’Apprenti Sorcier: Scherzo d’après une ballade de Goethe* (Paris: Durand et Fils, nd. c.1897 [1997]); Igor Stravinsky, *The Rite of Spring* (London: Boosey & Hawkes, 1997); Ludwig van Beethoven, *Symphony 6* (Leipzig: Peters, nd.); Tschaikowsky, Pyotr, *Suite Casse-Noisette Op. 71a* (Leipzig: D. Rahter, nd.); Amilcare Ponchielli, *La Gioconda: Vocal Score* (New York: Kalmus, nd.); Modest Mussorgsky, arr. Nikolai Rimsky-Korsakov, *Une Nuit Sur Le Mont Chauve: Fantasie Pour l’Orchestre* (St. Petersburg and Moscow: W. Bessel, c.1886); Johann Sebastian Bach (Attr.), “Toccata con Fuga in d: BWV 565,” in *Johann Sebastian Bach Neue Ausgabe Sämtlicher Werke, Serie IV: Orgelwerke, Band 6*, ed. Dietrich Kilian (Kassel: Bärenreiter, 1964).

(24.) Kamp, *Four Ways of Hearing,* 56–58.

(25.) Ibid., 58.

(26.) The animated movement of the on-screen characters is not specifically synchronized to the music in any technical way, but the combination of the rhythmically distinct Dukas music and the exaggerated character movement gives the impression of a correspondence.

(27.) For reportage of a similar phenomenon, see William Cheng’s account of his timing of a bomb detonation in *Fallout 3* in time with the music. *Sound Play* (New York: Oxford University Press, 2014), 47.

(28.) Cook, *Analysing Musical Multimedia*, 99.

(29.) Ruth HaCohen, “Between Generation and Suspension: Two Modern Audiovisual Modes,” in *The Oxford Handbook of Sound and Image in Western Art*, ed. Yael Kaduri (Oxford: Oxford University Press, 2016), 36–60: 36.

(30.) Ibid., 46.

(31.) Ibid., 48.

(32.) As Isabella van Elferen puts it, describing music in games, “Music dismantles the borders between virtual and real spaces, undoing the computer interface and replacing it with the 3-D interface of aural imagination. It widens the kinetic magic circle…Computer game music urges theorists not to think of hyperreality in terms of a Baudrillardian dichotomy between real life and virtual reality but as an organically moving alternate universe: the re-creative, intermedial, and yet uncanny virtuality of music is elastic, comes out of the speakers, and envelops the listener in its flow.” Isabella van Elferen, “¡Un Forastero! Issues of Virtuality and Diegesis in Videogame Music,” *Music and the Moving Image* 4, no. 2 (2011): 30–39: 36.

(33.) This research was conducted using an Xbox 360 and Kinect.

(34.) There has been a good deal of excellent scholarship on the topic of *Guitar Hero/Rock Band* games. See, in particular, Dominic Arsenault, “Guitar Hero: ‘Not like playing guitar at all?’” *Loading*…2, no.2 (2008), (http://journals.sfu.ca/loading/index.php/loading/article/view/32/29); Michael Austin (ed.), *Music Video Games* (New York: Bloomsbury, 2016); Kiri Miller, *Playing Along: Digital Games, YouTube, and Virtual Performance* (New York: Oxford University Press, 2012); Roger Moseley, “Playing Games with Music, and Vice Versa: Performance and Recreation in Guitar Hero and Rock Band,” in *Taking it to the Bridge: Music as Performance*, ed. Nicholas Cook and Richard Pettengill (Ann Arbor: University of Michigan Press, 2013), 279–318; David Roesner, “The Guitar Hero’s Performance,” *Contemporary Theatre Review* 21, no. 3 (2011): 276–85; Henry Svec, “Becoming Machinic Virtuosos: Guitar Hero, Rez, and Multitudinous Aesthetics,” *Loading*…2, no.2 (2008), (http://journals.sfu.ca/loading/index.php/loading/article/view/30/28). On dance games, see Joanna Demers, “Dancing Machines: ‘Dance Dance Revolution’, Cybernetic Dance, and Musical Taste,” *Popular Music* 25, no. 3 (2006): 401–14; Jacob Smith, “I Can See Tomorrow in Your Dance: A Study of Dance Dance Revolution and Music Video Games,” *Journal of Popular Music Studies* 16, no. 1 (2004): 58–84.

(35.) On this sequence and the history of the aesthetic ideas it deploys, see Farmer, “‘Every Beautiful Sound’.”

(36.) Kevin VanOrd, “Virtuoso [Fantasia: Music Evolved Review],” video, 6:15 and text *GameSpot*, October 21, 2014. https://www.gamespot.com/reviews/disney-fantasia-music-evolved-review/1900-6,415,918/, accessed March 24, 2018. This quotation is from the video review, and VanOrd expresses the same sentiments in his written version of the review, articulated in a slightly different way.

(37.) Winters, *Music, Performance and the Realities of Film*, 144.

(38.) VanOrd, “Virtuoso.”

(39.) Ibid.

(40.) Naomi Cumming, *The Sonic Self: Musical Subjectivity and Signification* (Bloomington: Indiana University Press, 2000), 15, 92.

(41.) Ibid., 152.

(42.) Svec, “Becoming Machinic Virtuosos,” 6.

(43.) Van Ord, “Virtuoso.”

(44.) Andrew Goodwin, *Dancing in the Distraction Factory: Music, Television and Popular Culture* (London: Routledge, 1993), 57. Franklin, *Seeing Through Music*, 85 ff. Michael Long, *Beautiful Monsters: Imagining the Classic in Musical Media* (Berkeley: University of California Press, 2008), 7.

(45.) Joshua Banks Mailman, “Cybernetic Phenomenology of Music, Embodied Speculative Realism, and Aesthetics-Driven Techné for Spontaneous Audio-Visual Expression,” *Perspectives of New Music* 54, no. 1 (2016): 5–95: 22.

(46.) Mailman suggests that, when we conceive of musical properties in terms of physical reference, musical listening can, in turn, present new notions of bodily experience. Mailman, “Cybernetic Phenomenology,” 75.

(47.) Cumming, *Sonic Self*, 148.

(48.) Jesper Juul, *Half-Real: Video Games Between Real Rules and Fictional Worlds* (Cambridge, Mass.: MIT Press, 2005), 133, 176.

(49.) Mailman, “Cybernetic Phenomenology,” 44. It is no coincidence that Mailman uses the observation of a game, *Go*, to illustrate his concept of implied organizational parameters.

(50.) Robert Hatten, *Interpreting Musical Gestures, Topics, and Tropes* (Bloomington and Indianapolis: Indiana University Press, 2004), 95.

(51.) Ibid., 116.

(52.) Reyland, “Narrative,” 208.

(53.) Abbate, *Unsung Voices,* 30.

(54.) On the structural design of the Sorcerer’s Apprentice, see Everett Vernon Boyd Jr., *Paul Dukas and the Impressionist Milieu*, PhD Thesis (Rochester: University of Rochester, 1980), 109–153.

(55.) Franklin, *Seeing Through Music,* 98.

(56.) Roger Moseley, *Keys to Play* (Berkeley: University of California Press, 2016), 22.

(57.) Much rhetoric strategy in traditional formal structures relies on a particular subset of such projection—the surprising introduction of a new theme, a recapitulation in the "wrong" key, an unexpected second tonal area, and so on.

(58.) Gibbons, *Unlimited Replays*, 64.

(59.) Mark Clague, "Playing in 'Toon: Walt Disney's "Fantasia" (1940) and the Imagineering of Classical Music," *American Music* 22, no.1 (2004): 91–109: 96–97.

(60.) Granata, "Disney, Stokowski, and the Genius of Fantasia," 76.

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