CHAPTER

30 Virtual and Visceral Experience in Music-Oriented Video Games

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Abstract

This article appears in the *Oxford Handbook of Sound and Image in Digital Media* edited by Carol Vernallis, Amy Herzog, and John Richardson. This chapter investigates the digital games *Guitar Hero*, *Rock Band*, and *DJ Hero*, all of which aim to integrate kinesthetic engagement with audiovisual experience. Game designers have long understood that mutually reinforcing audio and visual stimuli set the stage for immersive gameplay. These music-oriented games go a step further by making physical engagement with the game controller meaningful and viscerally persuasive: whereas most games draw players into the on-screen gameworld, allowing them to master and forget the controller in their hands, these games draw attention to the controller as instrument and the living room as performance space. Through a comparative analysis of game reception, this essay shows how compelling gameplay experiences rely on prior musical and cultural knowledge.

Keywords: digital game, performance, immersion, music, video game, instrument, guitar, DJ, virtual, ethnomusicology

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"VIRTUAL frets, actual sweat": the title of a *New York Times* article on *Guitar Hero* summed up the core appeal of the rock-oriented video games that captured a huge portion of the digital game market from 2006 to 2010.[1] Before *Guitar Hero II* became a breakout hit in 2006, "rhythm games" had been considered a niche category; by the end of 2010, the *Guitar Hero* and *Rock Band* franchises had sold over 46 million game units and brought in over $3 billion in revenue.[2] In 2011, *Guitar Hero III* was declared the top-selling video game ever released, after it grossed $830.9 million in less than four years.[3] The games offered a new platform for digital music distribution, as labels vied to place their artists in new game editions and players paid millions of dollars to download additional songs that had been transcribed and coded for gameplay. As of spring 2011, the *Rock Band* series had generated over 100 million downloads of additional game repertoire from a catalog of 2,700 songs—as well as driving sales of recordings by artists featured in the games, purchased for listening rather than playing.[4]

Guitar Hero and *Rock Band* created a parlor music renaissance, with plastic instrument controllers and downloadable content (DLC) replacing the pianos and sheet music of the nineteenth and early twentieth centuries (see Figures 30.1 and 30.2).[5] In mainstream media outlets and the digital public sphere, commentators seized on the question of the games' musical authenticity and the players' moral fiber: to some, this instant-gratification route to rock heroism seemed emblematic of "everything that's wrong with pop culture."[6] Debate often centered on whether the games were facile fantasy-enablers or potential stepping-stones to "real" music making: might they foster genuine musical skills, inspire players to pick up real instruments, or otherwise prove themselves socially valuable? Meanwhile, exasperated fans asserted that the games were *just games* and should be evaluated on their own terms rather than on the basis of their musical authenticity, realism, or educational potential.[7]

Figure 30.1

Rock Band guitar controller.

(Photograph by the author.)

Figure 30.2

Rock Band drum controller.

(Photograph by the author.)

This values-oriented reception discourse often precluded inquiry into how these games work and what it feels like to play them: how do virtual frets lead to actual sweat? Because the games relied on the "guitar hero" trope and revolved around virtual rock concert performance, many commentators assumed that players were seduced by fantasies of stardom: the thrill of commanding the adulation of the games' screaming crowds. Game advertising encouraged this assumption, dwelling on the stylized bodies of the rock-star avatars who model players' living room performances. Live rock performance is both spectacular and familiar, a genre with established conventions and associations; the "guitar hero" model

offered an easy way to telegraph an appealing core game concept to consumers. However, when I undertook qualitative research on *Guitar Hero* and *Rock Band* gameplay, I noticed that few players referred to rock-star fantasies or to identifying with the avatar musicians. Instead, players described getting lost in the music, feeling like they were improvising guitar solos, seeing the games' streaming musical notation in their heads when songs from the games came on the radio, feeling responsible for the games' musical output, and experiencing a profound sense of mastery when difficult musical passages suddenly felt effortless and natural under their fingers. In other words, their "actual sweat" derived from visceral musicality at least as much as from virtual stardom.

Guitar Hero and *Rock Band* encourage players to explore what it means to be a live performer of a prerecorded song, a phenomenon I refer to as "schizophonic performance."[8] They exemplify and exploit "the inherent tensions at play between the live ontology of performance arts and the mediatized, non-live, and simulacral nature of virtual technologies."[9] These music-oriented video games offer a distinctive, generative model for considering the nature of digital audiovisuality because they build on the long cultural history of technological mediation and virtuality in musical production and reception: from acoustic musical instruments to recording, amplification, multitrack editing, electronic instruments, turntablism, digital sampling, karaoke, lipsyncing, and air guitar.[10] I draw here on Marie-Laure Ryan's exegesis of "the virtual," which includes both "the largely negative idea of the fake, illusionary, non-existent, and the overwhelmingly positive idea of the potential, which connotes productivity, openness, and diversity." Ryan argues that the human body "is virtualized by any practice and technology aiming at expanding its sensorium, altering its appearance, or pushing back its biological limits."[11] In this sense, all musical technologies are intrinsically virtual: they allow for sound production or reproduction that extends the capacities of the human body, channels sensory and temporal experience, cultivates empathy (virtual emotional response), and generates "relational infrastructure" across communities of practice.[12]

Although sound plays the starring role in most Western definitions of musical experience, music is always already multisensory—

audiovisual, unfolding in time, and physically engaging, whether one is singing, playing an instrument, dancing, listening with a still body, or imagining music.[13] All of these aspects of musical experience are culturally mediated; in contemporary Western culture, they are often mediated by the notion that some people are "musical" and others are not. As technologists have worked on developing music production software, new musical instruments, digital games, and other innovative musical interfaces, some have adopted the credo that new technologies might not only create "new social modalities for listening to music," but also "reintroduce casual social contexts for making music...offer[ing] an empowering experience to those who would not otherwise participate in making music."[14] The fact that so many people identify as "not musical" has created an opening for technologically mediated solutions: platforms for musical practice that are accessible to novices, nonintimidating, anonymous, private, or otherwise low stakes—sometimes because they are presented as "just games" or "not really musical" at all. This means designing interfaces around aspects of musical experience that haven't been stigmatized as "musical." For instance, as Tina Blaine and Sidney Fels suggest, designers might focus on "movement, gesture, touch, and physical interactions such as dancing with strangers in highly customized environments," rather than "highly complex single player instruments developed for experts." As Blaine and Fels observe, "These design strategies lay the foundation for developing intimate personal connections with other players and their instruments over relatively short periods of time, and also help foster a sense of community."[15]

The guitar, bass, and drum controllers included with the *Guitar Hero* and *Rock Band* games have been by far the most widely distributed and commercially successful of these novice-friendly "alternate controllers" to date.[16] This chapter explores the reasons for that success, focusing on the tightly integrated multisensory experience afforded by these games. I also address the less-successful *DJ Hero* games, which were designed to extend the purview of the "Hero" franchise beyond rock into the realm of hip-hop, house, and other club music genres. Despite a holiday marketing push, celebrity tie-ins, and generally excellent game-industry reviews of the gameplay experience, *DJ Hero* did not achieve hit status. I analyze player reviews

of the game—particularly reviews that make comparisons to *Guitar Hero* and *Rock Band*—to shed light on this outcome and its implications for virtual musicality. Throughout the chapter, I make generalizations about gameplay that are drawn from five years of qualitative research on these games, including surveys, gameplay/interview sessions with players, interviews with game designers, media reception analysis, and fieldwork at gamer bar nights and tournaments.[17]

Guitar Hero and *Rock Band*: Designing Virtual Musicianship

When the game developers at Harmonix Music Systems began work on the first *Guitar Hero* game, they did so with the specific aim of developing a game that featured a guitar-shaped controller—a "peripheral," in industry terms. "Peripherals" are devices that aren't part of the standard game-console set-up; they require players to buy new hardware in addition to the game software, which means potentially higher profit margins for game publishers, as well as opportunities for innovative gameplay design. RedOctane, a company that made dance-pad controllers for the *Dance Dance Revolution* games, wanted to branch out into selling guitar controller peripherals, so they commissioned Harmonix to create a guitar game. The electric guitar is a powerful cultural symbol, with built-in associations for both musicians and nonmusicians—it indexes rock music, masculinity, American youth culture, innovation, creativity, electricity (literal "power"), spectacular live performance, and the "guitar hero," an improvising, virtuosic, rebel genius who has mastered the instrument and bends it to his will in front of an adoring crowd.[18] As Steve Waksman notes, musical instruments are valued not only for innovations but for "the stability they offer, for the ways in which they connect with 'traditional' sounds and practices." Musicians are never simply playing instruments according to their basic physical affordances; they are also "engag[ing] with the techniques, the gestures, the sounds, and the meanings to which the instrument has given rise."[19]

The electric guitar thus offered a rich, robust organizing principle for the new game. The designers at Harmonix had the luxury of building on an archive of associations, counting on players' intuitive grasp of what the electric guitar meant. As long as they developed a controller that was visually recognizable as a guitar, could be physically associated with the guitar repertoire through gameplay, and that incorporated (or left room for) some of the physical gestures of rock guitar performance, they could dispense with strings, frets, a pick, and other fundamental elements of actual guitar construction and playing technique. Since the game was explicitly intended to bring the feeling of playing music to nonmusicians,[20] the controller did not have to meet the authenticity standards of guitarists; it needed to look and feel *just enough* like a guitar to make the player using it look and feel *just enough* like a musician.[21] The indisputably authentic rock music coming out of the speakers, the rock-star avatars on screen, and the cheering virtual crowd that provided real-time feedback on a player's performance would fill the gap. As lead designer Rob Kay put it, "It just seemed right to us to make it about balls-out rock guitar. That's the iconic thing that bringing a guitar game to America should be all about….Often in video games, it's those clichés that are easy to hold onto and get into….Even though I wouldn't necessarily identify that American guitar rock as being my favorite thing, I know what it is and I know how to get into it."[22]

At the same time, Harmonix faced the core design challenge of balancing musical control and accessibility.[23] If gameplay simply consisted of pushing buttons in time with a prerecorded track, the game would not feel interactive, and players would not feel responsible for the musical output—but if players were given too much control over the sound, the results would not be rock hits and the promise of "guitar heroism" would be broken. Rob Kay told me that the company initially tried to develop a guitar "freestyle" system, "which was going to give you creative, musical control by triggering samples and creating your own guitar solos," but they weren't satisfied with the results:

> **rob kay:** It was too difficult to make it sound good, and feel sure that it would be learnable, and all the things that we'd want for a fully creative game.

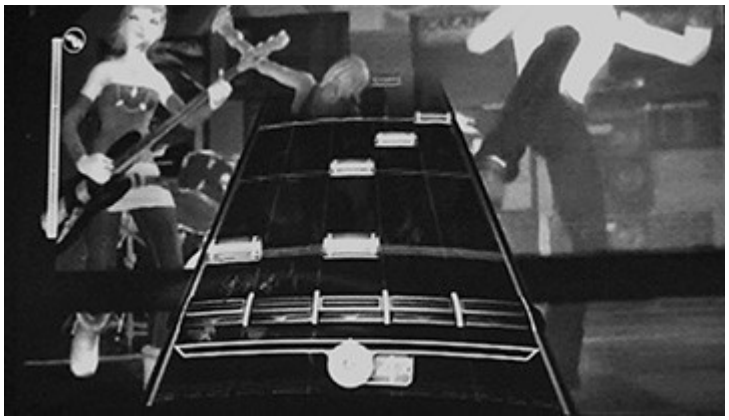
> **km:** So you got the sense that people would only be able to play kind of bad-sounding solos on it?
> **rob kay:** Yeah, because even we could only play bad-sounding solos on it.

Players would need visual instructions to lead them through the prerecorded music: a musical notation system. Experienced gamers would also expect a series of goal-oriented tasks and a responsive evaluation system: audio, visual, and/or tactile feedback related to successful or unsuccessful play, and cumulative, quantifiable rewards in the form of points, energy, or some other familiar metric. Moreover, as Rob Kay noted, the designers aspired "to make the simulation more than just a clinical recreation of music. We had this ambition…to bring some showmanship, as well as musicianship to the experience." They wanted players to draw on their visceral understanding of the pleasure and excitement of rock performance, rather than on their preconceptions about the difficulty of reading music or the tedium of practicing an instrument. "If the whole mindset was too much about a music simulator it would just turn people off, you know. We don't have little notes [i.e., standard music notation symbols]. You never see a little note in a Harmonix game….If someone saw a sheet of music, and that was their intro to *Guitar Hero*, they would run."

The resulting basic design characteristics remained consistent across all the *Guitar Hero* and *Rock Band* games (as well as *DJ Hero*, created later by another developer). A notation track streams down the screen, much like the roadway in a driving game (see Figure 30.3). Colored "gems" on this track represent musical notes. As the gems pass the bottom of the screen, guitarists have to press specific fret buttons while simultaneously hitting the strum bar on the guitar controller; drummers have to strike specific drum pads or step on the kick-drum pedal. When they play accurately, players accumulate points and build up "star power" or "overdrive energy" (depending on the game), which can be periodically deployed for a burst of bonus points and rewarding audiovisual feedback: the screen lights up with electric effects and the crowd goes wild. On the guitar controller, players activate "star power" by raising the neck of the guitar into the air—an iconic rock performance gesture that was intended to invite players to "put themselves in the shoes of a rock star," in Rob Kay's

words. He explained, "We were always keen to get people doing that move, because once you give people this cue that their physical performance has got something to do with the game,…you're suddenly in the mindset, and thinking about all of those rock star moves that you see people do, and then [you'll] just jump around and do the rest."

Figure 30.3



Rock Band notation.

(Screenshot by the author.)

While this "star power" feedback system models the buildup of live performance adrenaline and encourages players to adopt a rock star identity, negative feedback plays a crucial role in training players' ears and making them feel responsible for the game's musical output. When a player doesn't hit the right notes at the right time, the game provides audible and visible mistake indicators (e.g., the missed gem turns red, the notation track shakes, there is the sound of a flubbed guitar strum). Most important, the music associated with those gems drops out of the audio track. Matt Boch, creative designer of hardware at Harmonix, explained the impact of this feedback system:

> You get all this musical knowledge that you would have to grind so long for otherwise, in an instant.…There are a lot of people who turn on a song, and it's a song. And they couldn't tell you what the bass player's playing, versus what the guitar player's playing, versus the synthesizer in the background, or any of those elements.…And playing this

> game does a really easy trick, which is deciding that the success of one event determines the muting of one track. It equates two things which are actually not equal, and does this great trick to your brain which is hugely pleasurable, and educates you in a way by pulling [the track] away. It's this simple, "One of these things is not like the other."...And bang, it's there right in front of you.[24]

Guitar Hero and *Rock Band* require players to learn a notation system, translate its symbols into specific physical techniques, integrate aural and visual cues to anticipate the next set of required actions, and do it all while keeping up with the temporal flow of a song. For novices, it's as though one's very first guitar lesson required sight-reading sheet music while sitting in with a professional band. The game designers made this task possible by notating each song at four different difficulty levels (easy, medium, hard, and expert), as well as by presenting the song list in each game as a graded repertoire, from the simplest to the most challenging. When players attempt a song on the "easy" setting, a single on-screen gem and corresponding button on the guitar controller might yield a long guitar riff on the audio track; on "expert," there are gems for each note in the riff. As players improve, they go back and play through the same repertoire again at higher difficulty levels. The audio output is exactly the same, but it's much more difficult to produce.

In the world of digital gaming, this is a curious design feature. In a shooter game, for instance, it would seem very strange if players were encouraged to go through the same assassination mission several times, using increasingly complex button combinations on the controller with each iteration. It is a compelling pursuit in these music games because the player is bringing the distinct audio, visual, and kinesthetic elements of gameplay into closer alignment with each new difficulty level. Players often find the "easy" version of songs disconcerting because of the mismatch between the simplified on-screen notation and the more complex musical track coming through the speakers; this sensory clash offers constant reminders of the gap between the players' actions on the controller and the musical performance of the recorded musician.[25] Players who already know a song by ear often find themselves trying to play more notes than are presented in the notation. But on the "expert" level, when there is

note-to-note correspondence between the on-screen notation, the player's actions, and the musical track, players experience a satisfying sense of coherence. One player told me, "From a very instinctive point of view, like as a human, it just feels *right* and it feels like I am doing something worthwhile."[26]

Guitar Hero and *Rock Band* gameplay cultivates a focused, intimate, immersive, multisensory relationship with music—something that is increasingly unusual in contemporary musical reception contexts, where multitasking is so common. As Harmonix co-founder Alex Rigopulos observed in a published interview, "When you need to move your body in synchrony with the music in specific ways, it connects you with the music in a deeper way than when you are just listening to it." In the same article, Paul McCartney described *The Beatles: Rock Band* as "'a natural, modern extension' of what the Beatles did in the '60s, only now people can feel as if 'they possess or own the song, that they've been in it.'"[27] The hundreds of players who completed my online survey or participated in gameplay/interview sessions often expressed the same sentiment, describing how they would "get completely caught up in the visceral 'feel' of a particularly gripping song."[28] One player broke down his experience this way: "Hitting the right notes, taking in the music, kind of isolating the different sounds you're hearing, working through the song, listening, kind of dissecting it, seeing how well the game is relating to the song and you're relating to the game's relation, and whether or not those align with what you expect."[29] Many people recounted the process of laboring over certain playing techniques until the day when they suddenly became effortless. As a *Rock Band* drummer told me, "Sometimes I'll be really into the rhythm, and I'll notice my foot is doing the two taps at the right time [i.e., double-kick patterns on the kick drum pedal], but it feels like I'm only telling it to do one, but it does two anyway. That's what it's supposed to do."[30] In general, players' accounts support Grodal's observation that video games "allow 'the full experiential flow' by linking perceptions, cognitions, and emotions with first-person actions. Motor cortex and muscles focus the audiovisual attention, and provide 'muscular' reality and immersion to the perceptions."[31] Players' experiences also point to the intrinsic affinities between playing video games and playing musical instruments.

DJ Hero: When Virtual Falls Short of Visceral

The first *DJ Hero* game was released in 2009, with considerable marketing fanfare. It was meant to capitalize on the market dominance of the *Guitar Hero* name while also reaching out to a new group of players: fans of hip-hop, techno, house, and other sample-based dance music genres, rather than the rock, punk, and metal at the core of the *Guitar Hero* and *Rock Band* repertoires. Since *DJ Hero* revolved around mashups and remixes, it also offered a new angle on digital music distribution: the game could bring exclusive, original musical content to market while still drawing on the name recognition of celebrity artists. Endorsements from hip-hop luminaries like Eminem and Jay-Z played up the "hero" theme, helping to bridge the awkward conceptual gap dividing lead rock guitarists from club DJs—although these stars are in fact MCs, not DJs. Perhaps to compensate for this discrepancy, the venerable turntablist Grandmaster Flash did the voice-over work for the game's tutorial system, lending it subcultural capital and a connection to hip-hop history. DJs rarely achieve the mainstream celebrity of MCs, but they continue to play key roles as cultural gatekeepers, archivists, arbiters of cool, and engineers of transformative dance floor experience; in contemporary youth cultures around the world, it's not uncommon to hear that "everyone wants to be a DJ."[32]

Nonetheless, only about 300,000 people bought *DJ Hero* in the month after its release, and the game was regarded as a commercial flop.[33] Sales surpassed a million units only after bargain-basement discounting (from an initial price of $120 to around $40). *DJ Hero* 2 was released in 2010. Just a few months later Activision, the publisher of all the *Hero* games, announced that they were discontinuing the entire franchise due to declining sales.[34]

What happened? Industry writers pointed to market saturation in the music/rhythm game sector, as well as to the simultaneous economic downturn; consumers might be unwilling to pay $120 for yet another peripheral-oriented game. But the *DJ Hero* gameplay experience suggests other reasons for its weak performance. When I first sat down to play the game, I was perplexed by the controller: a peculiar hybrid of a record player, a mixer, and a *Guitar Hero* guitar (see Figure 30.4). Color-coded buttons reminiscent of a guitar controller's fret

buttons are superimposed on a turntable platter—and there is only one turntable, although the game is purportedly all about mixing records. A cross-fader switch provides the mixer element, but where is the other sound source that the player is supposed to be mixing? (See Figure 30.5.) My initial gameplay notes on *DJ Hero* reflected on the implications of this design choice:

> I have no DJing experience myself—indeed, I still get nervous about actually setting a needle down on a record, on the rare occasions that I attempt such a thing. But I've spend a lot of time with DJs, and I've taught a lot of classes that revolve around post-turntablism music. When I'm teaching a unit about hip-hop, I often begin by asking the class, "Why are two turntables better than one?" And when I watch a DJ at work with two turntables and a mixer, I'm often awed by his/her ambidextrous virtuosity. Of course club DJs today use all kinds of equipment, but given that *DJ Hero* features a turntable at all (vs. any of the myriad other interface possibilities for simulating real-time remix production), it seems peculiar to just use one. Especially when the game tutorial voiceover is by Grandmaster Flash (who starts things off by emphasizing his own turntablism pioneer status). There's something surreal about having Grandmaster Flash explain that each of the three buttons on the single turntable represents a different sound source, as though *this* had been his pioneering innovation. Someone unfamiliar with record players might conclude that all records come broken into three concentric rings, which you can mix and match on your single turntable and manipulate individually as you play your set. And of course this implies the presence of three invisible tonearms/needles (the controller doesn't include any representation of the tonearm/needle at all).

Figure 30.4

DJ Hero controller.

(Photograph by the author.)

Figure 30.5

DJ Hero controller versus typical DJ turntables and mixer.

(Photograph by the author.)

When I actually started to play a *DJ Hero* set, I discovered the satisfying click of the cross-fader. This click has strong associations for me; at a club the music would be way too loud for me to hear it, but it's a big part of the sound when my DJ spouse is mixing in the living room. It helps me distinguish what he's doing with his mix vs. what was already part of the mix on each record (because the clicking cues me that he's shifting between the two sources). I also just like the sound—the crispness of it, and the way that it makes a rhythmic pattern of its own that interlocks with the rhythm of the musical mix in interesting ways. So while the

> turntable part of the controller packed more associations visually, once I was playing the game it was the cross-fader that made me feel more aligned with a DJ's kinesthetic experience. The *DJ Hero* turntable doesn't even spin around during gameplay, except when you briefly spin it backward yourself on "rewinds." I certainly wasn't imagining a record was under my right hand. Maybe some kind of track pad, but not a record.[35]

Like *Guitar Hero* and *Rock Band*, *DJ Hero* certainly cultivates a physical relationship to the musical material. However, that relationship is built on a weak foundation. Players have trouble forging a visceral connection between their actions on the controller, the music they are hearing, and their preconceptions about the physical techniques and affective "feel" of DJing—that is, if they have such preconceptions at all. Consider these player reviews posted on the game's Amazon.com product page:

> There is nothing intuitive with this game. A guitar, drum, singing. we all know how to do that, even if we can't play a tune in real life. But DJing is a different concept. (Tim E Robertson, posted November 15, 2009)
>
> I have to say that the player who liked the game the best was the four year old, although he did have some questions—ranging from what is a record player to why would you want to scratch a record?…He was the one who played the game the longest, well after the teenagers left. He was intrigued by what a record player was. Intrigued and confused. (iGertrude, posted November 22, 2009)
>
> What I loved about Rockband was the connection between you, the controller, the game and the music. When you make an action on the controller you see it both on the notes, the actions of the avatars and you hear it. This is the first mistake of DJ Hero, you don't feel like you are actually the musician. On Rockband you do. (M. Radcliffe, posted November 1, 2009)

> In Rock Band, Guitar Hero and even Karaoke Revolution, you could listen to the background music and get into the rhythm and know when you'd hit the next key or sing along. In this game, you don't know what the predetermined mixes will choose to do, how they'll choose to mess with the songs. So you are at the mercy of your visual senses. I think people enjoyed the other games because they really felt like they were making the music, they felt musically connected. (Shannon B Davis, posted November 1, 2009)
>
> The very nature of the gameplay also leaves something to be desired. That thing is "fun." As a huge hip-hop fan, I actually expected the more relatable music to add to my experience, but the experience wasn't nearly as visceral as banging out a song on the drums or even strumming through one on a plastic guitar. In the end, pressing buttons is pressing buttons unless you feel in tune with the music, and the poor "beat-charting" in DJ Hero leaves no room for that visceral feeling. (Akash, posted October 20, 2009)[36]

Players who lacked DJ experience had trouble understanding how their physical motions related to the complex remixes coming out of the speakers:

> DJ Hero lacks the 'campy fun' that you experience when someone thrusts a plastic guitar in your hand or sits you down infront of some plastic drums in Rock Band—DJ Hero simulates an experience that very few of us know exist and even less of us want to try. (Riyad Kalla, posted November 19, 2009)
>
> It isn't so different from its predecessors, so why does it fail to rock? It really lacks the visceral feeling of picking up a guitar and playing it. Also, I think most of us grew up seeing Rock Gods on MTV. We understand how the guitar is played and we see the Rock God (or Goddess, as the case may be) rocking out on the stage. DJs are unsung heroes, often behind the scenes. We boogie down to what they play—but do we understand how they do it? (Shannon B Davis, posted November 1, 2009)

> The group with whom I played were equal part intrigued and intimidated by the turntable controller—everyone wanted to try, but quickly got frustrated at how unnatural it felt. Face it—most of us have had momentary fits of air guitaring or drumming, but not so many have had that for DJing….Another issue is the mixes themselves. Each one is a mash-up of two tracks….At one point someone commented that you can barely even tell if you're doing well or not because your ears don't know what the end result is supposed to sound like. (D. R. Jeanclerc, posted October 22, 2009)

Those who did have DJing or digital remix experience were flummoxed by the disconnect between the play mechanics of *DJ Hero*'s hybrid turntable/mixer/sampler and their own understanding of actual remix production interfaces:

> The game is confused as to what it is trying to produce, it combines vinyl based mixing, digital vinyl based mixing (like Serato, Traktor etc) and fully digital mixing (eg Ableton) into a single composition. Some of the transitions and effects you hear are simply not possible with vinyl. You have Armanda Van Burren CDJ style beat repeats and key points on one track and seconds later you have scratches. This is simply not possible without having 4 hands. (M. Radcliffe, posted November 1, 2009)
>
> I have 18 years experience as a mobile/club DJ and was excited when this game came out, but I am extremely disappointed. It is nothing compared to real scratching…. [T]he game does a poor job of emulating the feel of a real vinyl…. AND WHY ONLY 1 TURNTABLE!? EVERY DJ SETUP I EVER SAW USES 2. (Oseph S. Vetrano, Jr., posted November 1, 2009)

Guitar Hero, *Rock Band*, and *DJ Hero* all aim to integrate kinesthetic engagement with audiovisual experience—in keeping with digital games' established role as "a paradigmatic site for producing, imagining, and testing different kinds of relations between the body and technology in contemporary culture."[37] Game designers have

long understood that mutually reinforcing audio and visual stimuli set the stage for immersive gameplay. These music-oriented games go a step further by making physical engagement with the game controller meaningful and viscerally persuasive: whereas most games draw players into the on-screen gameworld, allowing them to master and forget the controller in their hands, these games draw attention to the controller as instrument and the living room as performance space. Moreover, their challenge-and-reward system is built around a dynamic process of bringing audio, visual, and kinesthetic experience into *ever-closer* alignment: becoming a good player means getting better and better at stitching one's own body to the sound coming out of the speakers, mending the schizophonic split between live and recorded music.[38]

But comparing players' experience of *Guitar Hero*, *Rock Band,* and *DJ Hero* (not to mention comparing their sales histories) adds nuance to this finding, highlighting the importance of the cultural knowledge that players bring to the games. As Laura Ermi and Frans Mäyrä have shown, gameplay immersion has sensory, challenge-based, and imaginative components, derived from a game's "audiovisual execution," the proper calibration of its technical and strategic challenges, and its narrative or characters.[39] *Guitar Hero* and *Rock Band* are light on narrative and characters, but they still rely on imaginative immersion grounded in prior knowledge. The iconic figure of the guitar hero, the familiar appearance and fret-and-strum mechanics of the guitar controller, and the basic assumption that rock songs are created by a group of musicians who are each responsible for producing one musical line: all these elements form the scaffolding for a player's initial experience with the games. Many *Guitar Hero* players told me that they had not previously been fans of the rock and metal songs featured in the games; as they developed an intimate relationship with these repertoires through gameplay, they came to be more appreciative listeners as well. Things didn't work out this way for *DJ Hero*. The game featured a well-designed, distinctive physical interface and a carefully curated lineup of hip-hop and electronic dance music tracks, but even avowed fans of these genres often reported that they felt less connected to the game music than they did when playing *Guitar Hero*.

It may seem that the moral of this story is that music-oriented game designers should stick with simulating traditional musical instruments if they want to hit the virtual/visceral sweet spot of multisensory immersion. However, there are other ways to build on players' internalized music-cultural knowledge and habitual modes of embodied engagement. For instance, several *DJ Hero* reviewers noted that the music in the game made them want to get up and dance. This visceral response has already become the conceptual seed of a new wave of games that teach players elaborate dance choreography.[40] Now that full-body motion-sensing technologies are becoming standard gaming equipment, designers have an opportunity to forge even deeper connections among audio, visual, and kinesthetic engagement. As experienced dancers already know, the human body can be a powerful musical instrument.

Notes

1. Katie Zezima, "Virtual Frets, Actual Sweat," *New York Times*, July 15, 2007, http://www.nytimes.com/2007/07/15/fashion/15guitar .
2. These sales data are compiled from figures cited in César Berardini, "Rock Band Surpasses $1 Billion Dollars in Sales," *TeamXBox.com*, March 26, 2009, http://news.teamxbox.com/xbox/19228/Rock-Band-Surpasses-1-Billion-Dollars-in-Sales ; Kris Graft, "Rock Band: 10m Units Shipped Worldwide," *Edge-Online.com*, February 12, 2009, http://www.edge-online.com/news/rock-band-10m-units-shipped-worldwide ; Jeff Howe, "Why the Music Industry Hates Guitar Hero," *Wired.com*, February 23, 2009, http://www.wired.com/culture/culturereviews/magazine/17-03/st_essay ; and Tor Thorsen, "NPD: Wii Play Top Us Best-Seller to Date," *GameSpot.com*, January 19, 2010, http://uk.gamespot.com/news/6246627.html . *Guitar Hero* (2005), *Guitar Hero II* (2006), and the *Rock Band* games (2007–2010) were developed by Harmonix Music Systems; *Guitar Hero III* (2007) and subsequent *Guitar Hero* games were developed by Neversoft.
3. Chris Morris, "Call of Duty, Guitar Hero Top All-Time Best Selling List," *CNBC*, March 24, 2011, http://www.cnbc.com/id/42253109 .
4. Mike Rose, "Rock Band Passes 100m Song Downloads," *Gamasutra.com*, May 5, 2011, http://www.gamasutra.com/view/news/34521/Rock_Band_Passes_100_Million_Song_Downloads.php .

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6. John, "Everything That's Wrong with Pop Culture in Two Photos," *theCHIVE.com*, February 24, 2010, http://web.archive.org/web/20100227011927/http://thechive.com/2010/02/24/everything-thats-wrong-with-pop-culture-in-two-photos-2-photos/. This post juxtaposes an iconic photograph of Johnny Cash making an obscene gesture at the photographer (labeled "Then") with an image of Miley Cyrus smashing a *Guitar Hero* controller during a video shoot (labeled "Now").
7. Kiri Miller, "Schizophonic Performance: *Guitar Hero, Rock Band*, and Virtual Virtuosity," *Journal of the Society for American Music* 3, no. 4 (2009).
8. Ibid.; see also R. Murray Schafer, *The New Soundscape: A Handbook for the Modern Music Teacher* (Don Mills, Ont.: BMI Canada Limited, 1969) and Steven Feld, "From Schizophonia to Schismogenesis: On the Discourses and Commodification Practices of 'World Music' and 'World Beat,'" in *Music Grooves: Essays and Dialogues*, ed. Charles Keil and Steven Feld (Chicago: University of Chicago Press, 1994).
9. Steve Dixon, *Digital Performance: A History of New Media in Theater, Dance, Performance Art, and Installation* (Cambridge, MA: MIT Press, 2007), 23.
10. For points of entry into the rich literature on these topics, readers might start with Michael Chanan, *Repeated Takes: A Short History of Recording and Its Effects on Music* (New York: Verso, 1995); Paul Théberge, *Any Sound You Can Imagine: Making Music/Consuming Technology* (Middletown, CT: Wesleyan University Press, 1997); Philip Auslander, *Liveness: Performance in a Mediatized Culture* (New York: Routledge, 1999); Steve Waksman, *Instruments of Desire: The Electric Guitar and the Shaping of Musical Experience* (Cambridge, MA: Harvard University Press, 1999); Jason Toynbee, *Making Popular Music: Musicians, Creativity and Institutions* (New York: Oxford University Press, 2000); René T. A. Lysloff and Leslie C. Gay, Jr., eds., *Music and Technoculture* (Middletown, CT: Wesleyan University Press, 2003); Jonathan Sterne, *The Audible Past: Cultural Origins of Sound Reproduction* (Durham, NC: Duke University Press, 2003); Katz, *Capturing Sound: How Technology Has Changed Music*; and Paul D. Greene and Thomas Porcello, *Wired for Sound: Engineering and Technologies in Sonic Cultures* (Middletown, CT: Wesleyan University Press, 2005).

11. Marie-Laure Ryan, "Cyberspace, Virtuality, and the Text," in *Cyberspace Textuality: Computer Technology and Literary Theory*, ed. Marie-Laure Ryan (Bloomington: Indiana University Press, 1999), 89, 94.
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14. Michael Gurevich, "Jamspace: Designing a Collaborative Networked Music Space for Novices," in *Proceedings of the 2006 International Conference on New Interfaces for Musical Expression* (Paris, France: NIME, 2006), 118, 120.
15. Tina Blaine and Sidney Fels, "Contexts of Collaborative Musical Experiences," *Proceedings of the 2003 Conference on New Interfaces for Musical Expression* (NIME.org, 2003), 129, 133, http://www.nime.org/2003/onlineproceedings/Papers/NIME03_Blaine.pdf.
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17. See Kiri Miller, *Playing Along: Digital Games, YouTube, and Virtual Performance* (New York: Oxford University Press, 2012).
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22. Rob Kay, interview with the author, October 17, 2007. All subsequent Rob Kay quotations are from this interview.
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