

Appealing to the Drummers in All of Us

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ABSTRACT

Drums have been with people for a significant portion of modern history. With the advent of the digital age, drums are being reappropriated as tools for humans to synthesize music on computers. This has allowed drums to be used as an accessible and ubiquitous tool that can interface with modern software. A specific context that relies upon drums as a tool to interface with software is in video games. Two specific games use drums as a primary means of input for the player to interface with the game: *Rock Band* and *Guitar Hero*. By following specific patterns on the screen, a player is able to experience the creation of rock music from the drummer's perspective. At the same time though, the peripherals are inviting a certain type of player to interface with the music and the game, while at the same time becoming a status symbol for gamers everywhere. This paper explores this claim through a semiotic analysis of the drum peripherals for these two games, situated among other popular, homemade, and professional peripherals. This paper also explores the implications for design these peripherals have for the CHI community and for design practitioners.

Author Keywords

Semiotics, Guitar Hero, Rock Band, Drums, Peripherals

ACM Classification Keywords

H.5.1 Multimedia Information Systems, H.5.2 User Interfaces, H5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

INTRODUCTION

Humans have been using drums for a large part of human history. Drums have been used for many different purposes: as a means of communication through large battles in human history (e.g. the U.S. Civil War); a means to rally soldiers to the call of battle; a mechanism for which new soldiers for training in marching. Drum have also been used as a means for humans to communicate with each other - rural tribes of Africa use them as a means to communicate with each other in the tribe and also to others. Drums have also been used to celebrate festive occasions and commemorate religious activities. Drums are also simply used as a musical instrument to create music for musicians to make a living. Musicians have also used drums to develop the

techniques of this art and also to inspire other players to keep drumming a creative act. Writers have utilized drums to signal to audiences when a punchline of a joke has been delivered, most commonly through a rim-shot. Specifically, within rock music, drums have been used as a structural element to songs from which a constant tempo can be created and be used as a musical element for other musicians to improvise over. Drums have also been used to express certain situations from which people can easily respond to. For example, a rim shot is used to signal in modern comedies for when a joke has happened and for the audience to laugh.

Computing has also brought many new ideas to the world of drumming. Among the many different designs used to enhance creativity and drumming, the use of computers has brought with it new knowledge on music synthesis. This knowledge has allowed many designers to create different tools to interface with the computer for music, sometimes known as *peripherals*. These peripherals have not only allowed musicians to be able to work with drums in new ways, but have also opened up the world of drumming to those without formal musical training. In one specific setting, these peripherals have allowed people to play video games that are based upon using drum peripherals as the primary means of input. Two currently popular video games, *Rock Band* (RB) and *Guitar Hero* (GH) allow players to play on a drum peripheral that allows the player to perform rock music by matching the colors on the screen to the colored drums on the peripheral. Designers have also created other peripherals to allow the player to interface with popular musical synthesis software (e.g. Reason, GarageBand). For example, Roland makes drum peripherals that allow the player to change the sounds of the drums based upon how the player is striking the drum with their sticks or hands and the software responds accordingly.

All of these drum peripherals have helped change the way many have thought about music creation, which has also opened up the musical world to a much larger audience. Also, these peripherals are also shaping the future ways people are thinking about drumming and how software should respond and enhance the skills of the player. At the same time, however, while these compelling uses for these peripherals have demonstrated a reason to continue their use, it is my claim that *the construction and interfacing of these peripherals with different types of software are constructing different ideal drummers who are benefiting from a specialization of their talents from the use of these peripherals*. To further this claim, I will give a semiotic analysis of two particular drum peripherals, the controllers for RB and GH, situated in the ecologies of electronic drum peripherals.

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This analysis will break down this claim by suggesting that these ideal drummers are being constructed from three different areas of specialization and filtering. After the analysis, I will describe how this specialization provides implications for design for HCI practitioners and members of the HCI research community.

DRUM PERIPHERAL ECOLOGIES

Video Game Peripherals

Two of the main video game peripherals are for the video games *Rock Band* and *Guitar Hero* (shown in figure 1 below). These peripherals plug into a gaming console or computer through either a standard USB or wireless connection. These games are played by a person who strikes one of the color-coded drums (green, red, yellow, blue, and orange) at the correct time, dictated by a pattern from the video game. Each peripheral also has a foot pedal attachment that connects to the back of the peripheral. This foot pedal simulates a bass drum pedal the player can step on to feel like he/she is playing the bass drum of a drum set. Each of the drum peripherals also is made out of plastic and rubber. Each of the drums on the peripherals has a standard diameter (approx 12"-13") used within the musical community and are color-coded along the rims to tell the player which drum(s) match to the patterns of the games. These drums also make a very similar sound to a practice pad when hit by a drum stick. The player can also adjust the height of the peripheral using the latches on the legs of the stand the peripheral rests on. Each peripheral comes with its own signature pair of sticks (branded differently). The sticks have similar weights and are similar to 5A drum sticks, allowing the player to sacrifice power for speed during play.



Figure 1: The RB and GH Drum Peripherals (pictures from amazon.com)

While the above descriptions of these peripherals show the common form qualities of each, there are many differences to them. The RB peripheral allows the foot pedal to connect to the bottom of the stand, where there are plastic pipes which fit into the foot pedal. The GH peripheral allows the foot pedal to be “free floating” away from the actual peripheral. Another difference between these two peripherals is the orientation of the colored drums. The RB peripheral has four colored drums (from left to right: red, yellow, blue, green, and orange is used for the bass drum pedal). The GH peripheral has 3 drums (from left to right: red, blue, and green), 2 cymbals (yellow and orange), and a kick pedal, represented in the game as purple. The assembly of

these peripherals is also different. The RB peripheral disassembles into 3 main pieces: the bass drum pedal, the drums themselves, and the stand itself. The GH peripheral disassembles into 4 pieces: cymbals, foot pedal, stand, and drums. The peripherals themselves also have different weights: the RB peripheral is much lighter than the GH peripheral, allowing this peripheral to not move away from the player during extreme play.

These are only two of the many peripherals that compose a larger ecology of video game peripherals. These peripherals are mostly similar in form to the RB and GH peripherals, but also are used for other music games as well. The peripherals which are similar in form to these peripherals are from Logitech, ION, GH5, *Rock Revolution*, and *Band Hero*. Other forms have been explored, such as the bongos created for the game *Donkey Konga*, or the taiko drums made for *Taiko Drum Master*. In a similar fashion to the RB and GH peripherals, these peripherals directly interface with music games, some of which are exclusive to the title they were built for. The ION, Logitech, GH5, Band Hero, and Rock Revolution peripherals are all very similar in form and similar to the RB and GH peripherals. One difference the ION peripheral has is that it is made out of metal and can be used to generate music in musical synthesis programs. The Donkey Konga bongos and the taiko drums are also different in from the rest of these peripherals in that standard drum sticks aren’t used to play the instruments: the Donkey Konga bongos are meant to be played with the hands; the taiko drum peripheral is meant to be hit with a more cylindrical stick reminiscent of those used in Japanese culture.

Other Game Ecologies

While video game peripherals are a well-known ecology of drum peripherals, they are not the only set of electronic drums consumers can buy or build. Many drum peripherals have been homemade. These peripherals have been made through the use of knowledge of building computers and computer-like parts. Two of the more well-known homemade drum peripherals are “the ultimate view” (ultimate) [11] and the silent drum (silent) [10]. The ultimate drum peripheral is a rectangular layout that has special areas designated for different color combinations of the games mentioned earlier. This allows a player to play the charts from the guitar tracks of these games on the drum set itself. The foot pedal is then used as the guitar’s whammy bar. The ultimate is a thin peripheral composed of a sheet of metal, with dartboard-like hit zones for the player to strike. These zones are different combinations of the colors utilized in RB and GH, so the player can be able to play different chords with a single drum hit. The silent is a thin sheet attached to a light and a camera that detects when a player is touching the instrument with one’s hands. When one starts to play this instrument in a manner similar to bongos, synthesized sounds come out. This allows a performer to be able to play the peripheral in a very silent manner.

Another important set of drum peripherals available to performers are professional drum peripherals. These are expensive pieces of musical equipment that not only allow a performer to play them like actual drums, but can also be used to synthesize music and other sounds through striking their “heads”. Four examples of these are drums from the following companies

TrapKat, Roland, Korg, and Zen. The TrapKat is a drum synthesizer in the shape of a half-octagon that allows the player to not only play the different areas of the peripheral with their sticks, but allows multiple sounds to be played at the same time. The peripheral takes care of this by playing different zones that are close in proximity to where the performer is playing. The Roland HPD-15 is synthesizer that allows a player to play the different rubber areas of the drum with their hands (or sticks). It is capable of producing a wide variety of different sounds and is also capable of interfacing with a computer and professional music synthesis programs. The Korg Wavedrum is a 13" diameter drum that is capable of producing thousands of different sounds and is capable of changing sounds based upon how the drum is struck by the player. The Wavedrum has also been designed to allow the player to place the drum on a traditional snare drum stand, allowing one to play this peripheral as if it were a traditional drum. The Zen drums are large peripherals that contain many different sized drum heads on them that allow a player to play them in a horizontal and vertical fashion, similar to marching quad toms or "quints" (quintuple toms). These peripherals also have controls that can modify the sounds coming out of each of them, similar to a mixing board. They can take a wide variety of different physical forms, ranging from a wooden-veneer rectangle to a sleek-looking blue boomerang, containing thousands of different combinations of sounds and experiences.

DRUM PERIPHERALS AS STATUS SYMBOLS

The RB and GH drums, as part of the community of electronic drum peripherals, speak as status symbols of the performer who are playing them. Specifically, the status symbol of these peripherals are made evident through analyzing them through lenses of accessibility, the skill set needed to play the peripheral, the play styles that are created and rewarded from the use of these peripherals, and the fashionable aspects of these peripherals.

Accessibility

The RB and GH drum peripherals open the world of drumming to the performer in many different ways. First, these peripherals cost around \$100 USD each, which allows a person who has this much money to be able to being playing immediately. In addition, since the nature of these peripherals are video game-oriented, the purchase of this peripheral, which costs more than a typical game (around \$59 USD), speaks to a player who is more likely to invest more in this peripheral and the subsequent experience one will have with it, not to mention the other instrument peripherals that can come bundled with these peripherals. Ultimately, while opening up the world of drumming to a much larger audience, these peripherals only create a more accessible world to those who are willing to invest the time and money into these peripherals, which is a different type of gamer than the "stereotypical" game player. In addition, the peripherals are also selecting those players who do have full use of their bodies, as in order to utilize the full capabilities of the peripheral one has to have working arms and legs. This accessibility is also only selecting those players who are willing to teach their bodies how to move their limbs independently, a task that takes professional drummers a long time to hone. Also, these peripherals exploit what many believe are to be a "drum

set", which is used to not only allow experienced players start playing these games immediately, but to also bring in new people to these games [4].

The games that come with these peripherals also allow the world of drumming to be more accessible to the average player. One simply needs to navigate through the proper menus to find the "no fail" setting, and the player can play to one's contentment, regardless of whether or not the performer wants to match the patterns on screen. The RB and GH peripherals are also the standard peripherals for use with these games, which allows anyone who wants to buy these games to be able to take part in this community. This is contrasted by the other video game peripherals, which cost anywhere from \$100-\$300 USD to purchase and are equipped with different levels of sensitivity and realism. For example, the \$300 ION drums are metallic and feature the full capabilities of a traditional drum set and are extremely sensitive to the player's play style.

The Performer's Skill Set

These drum peripherals also speak of the player's skill set of drumming while not only playing on the peripherals, but also in what the peripherals are capable of supporting. These peripherals allow the player to be able to play the drum set, but at a much simpler level of sophistication. For example, these peripherals don't naturally allow the performer's hands to cross during play, even though a performer can cross one's hands. When a professional drummer is behind a drum set, allowing one to cross one's arms is essential, as it lets the drummer to not only provide a rhythmic structure to what is being played, but to also play fills with a higher degree of difficulty. Both of these peripherals also only come with only one bass drum pedal (though one could purchase a second pedal if desired, but this is not offered in the standard bundle). While this makes it simpler to play the games, this restricts the type of music that can be played from these peripherals. Genres like metal or samba cannot be played through these instruments, as the necessary hardware aren't included, and are left up to the player to figure out to make these peripherals work in these genres.

Another important part of the drummer's repertoire that is not supported in either of these peripherals is rolls, where a player uses the natural bounce of the drum stick to hit the drum in a very rapid succession. If a performer would like to be able to have a "roll" recognized by the peripheral and the corresponding game, a performer has to use more powerful single strokes in rapid succession to give the appearance to the peripheral that a roll is happening. This makes not only the performer more of a slave to the peripheral, but also makes the player's sound more synthesized, as computers have had to do this to simulate rolls. This extra thought activity during the experience of play is foreign to drummers with experience, requiring them to focus on *how* they should be playing, not what they would *like* to play. The player also has to provide extra force to the drums themselves in order for the hit to be "recognized" by the peripheral and the game. This takes away from the performer's abilities to showcase their dynamic (sound level) talents: instead of being able to play from a range of pianissimo (very soft) to fortissimo (very loud), the performer must treat mezzo forte as

his/her piano. This type of play is reminiscent of the cultural symbol, Animal, from the Muppets, who is famous for not only playing the drums very loudly, but also very spasmodically. The peripherals recognize and reward play like Animal does, even giving the player an achievement called ANIMAL! This is an aspect that is unique to this ecology of drum peripheral.

The peripherals from RB and GH also showcase the beginner-like aspects of the player by also not allowing him/her to become a “showman”, which many people have come to associate with the world of drumming. For example, the drums cannot be moved during play, kicked around, or have their heads exchanged (an example of this is of The Who, who are famous for knocking over parts of the drum set during play). This is what some people expect and pay to see of a rock show, which is what these games and peripherals are trying to draw upon. This rock show nature is something that happens in the real world, but isn’t considered “common sense” by these actual peripherals [7]. What is expected from these peripherals is a very static performance, where the player sits behind the drum set and just plays exactly what is in front of them. If this happened in a professional rock concert, the band would probably be booed or not even have many records sold. This type of play is more espoused by the gaming aspect of the peripherals, where the point of using them is to not only match the pattern on the screen, but to score the highest amount of points on each level (i.e. song). The performance of playing the peripherals in this community then becomes “a technical and practical accomplishment which draws on accumulated social and cultural knowledge” (Entwistle, 31) [1], and not one based on creativity. With these peripherals, the performer is always reminded and suggested that he/she stay and think like an amateur drummer.

Rewarded Play Styles

In addition to opening up drumming to more amateurs, these peripherals also speak to the different desired play styles that should be played on them. As mentioned earlier, the RB peripheral is more like a quad tom from a typical marching band. It is dissimilar to this instrument in the fact that the drums are all the same size, and that the green tom is used as a cymbal in RB, which isn’t the case when playing the quad toms (these would use the yellow and red or the red and blue as “home” drums where patterns are played on and the others used for fills and offer effects). In a drumline for a marching band, the type of desired play is very technical and rhythmic in nature, and showcases the techniques and variable sounds from different types of sticking and types of strokes used. But the RB peripheral has drums that make the same sounds and orient the player on different drums based upon the predetermined patterns in the game. The GH peripheral also suffers from this, but in a different way. While the form of the GH peripheral is similar to a drum set, the peripheral doesn’t feature a high hat, and places all the cymbals in front of the player, instead of around the player. This causes the player to lean forward all of the time to play the structural elements of songs, as opposed to having a more relaxed posture and using the cymbals that are closest to his/her hands. With these types of play styles afforded from these peripherals and designed song charts, the performer is learning the wrong set of skills that are necessary for a drummer to be able to succeed in

the “real” world. The drummer is then being played by the peripheral, and not the other way around.

The peripherals and the games also are allowing for a certain set of designed behaviors for the community of gamers. [9]. If we are to look at these peripherals as an extension of the self, we can see these peripherals similar to technologies of the self [5]. These technologies allow the performer to use these as tools that allow the performer to inscribe their face and contribution to the gaming community (their “face” to be seen as [5]). Since these peripherals allow the player to be able to perform rock music, these are tools that are supposed to allow the performer to bring out their “inner drummer” for others to see. One way this has happened is through the usage of YouTube and Adobe AfterEffects. These technologies in conjunction with the peripherals allow the performer to have their performance lived over and over again, and also live. On the contrary, though, the most popular videos that feature these peripherals and the games don’t utilize these peripherals, which limit the amount of exposure a performer can receive. These videos use the more “hardcore” peripherals, like the ION, which showcase the performer’s hands over the peripheral, while showcasing their technical performance in the game. This is different than the advertisements for the games and videos showcasing performers who don’t play on the higher difficulty levels, as they use the standard RB and GH peripherals. These technologies, then, are also remediating the reality of the struggle of an actual drummer and band: in order to get noticed, one needs money and means of promotion, which these standard peripherals don’t afford. In addition, when the performer is playing the peripheral in these games, the in-game avatars are also playing with them, but also respond to how well the player is doing from an accuracy standpoint (i.e. the more accurate the player is, the more outlandish moves the avatar does – like salute the camera and take their hands off the drums, even though music is still playing!). Therefore, these peripherals and the games are taking the professional performance out of the performance of playing the drums, and are relying more on the player and the gaming community to acknowledge if a performer’s performance is worthy of being acknowledged or not, rather than music critics and the drumming community itself. This is different in the case of the other peripheral ecologies, where critics and the drumming community have more of a say as to the impact of these peripherals.

Fashionable Aspects

These peripherals have fashionable aspects to them that also reveal the status of the player and the peripheral itself. One aspect of these peripherals is that they can be modded to allow cymbals and stickers applied to them, allowing the performer’s personality and sense of fashion be made evident in the real world. This also allows for a more personalized drum peripheral, similar to how drum sets for bands feature the band’s name on the bass drum, along with other fashionable elements on stage. This also allows for the peripheral to become less like a controller used for input into these games, and closer to a real-life drum set. The RB peripheral actually has cymbals the performer can buy to attach to the drum set, whereas the GH peripheral comes with stickers the performer can put on any of the peripherals in the

bundle. This is not required for the performer to do, from the game's perspective but is something that the peripherals do allow one to express oneself as a performer, and as a gamer.

These drum peripherals can also be seen as a fashion symbol of the type of gamer and their wants and desires. First, since these peripherals serve pragmatically as a game controller, there is a "gamer" element to these peripherals, which speaks of a person who spends most of his/her time in front of a television or computer monitor playing video games for most of their life. For many, this is a proud symbol they are willing to show to others and is a source of value in playing these games [7], while for others who aren't gamers, these peripherals could be placing a stereotype involuntarily on them. The sign of the "gamer" is also evident during the playing of the actual levels, as when a player doesn't match up a color correctly, a sound of a drum hitting a rim is played from the monitor, even though the performer in real life is actually making sounds from the peripheral. This then blurs the line between "performer" and "gamer", as the "gamer" can perform these songs at tournaments and conventions and be thought of as a drummer, when all he/she is really doing is matching colors and responding to patterns [9]. In this sense, to get noticed means that one has to "wear" the right type of peripheral in their playing of levels of these games, and the right peripheral can connote success in this community [2]. The RB and GH peripherals also are cues to what types of music he/she likes, what bands the person is "in to", what he/she thinks of these games and rock music, and can also be reflected in their disposition and clothing they wear while playing. For example, "hardcore" players will either wear clothing similar to actual percussionists, or wear loser fitting clothing to allow their bodies to be able to move freely during play [3]. These peripherals, then, are their means to become part of "the in crowd" in this gaming community.

DRUM PERIPHERALS AS MUSICAL INSTRUMENTS

The RB and GH drum peripherals are more than just status symbols and simple controllers used to interface with their corresponding video games. These peripherals, as musical instruments, help to construct the ideal drummer three respects: their form directly remediates actual musical instruments, they bring with them the fun of using actual instruments, and are part of the mise en scene of a rock performance.

Peripheral Form and Use

These peripherals' form directly suggests that they are to be used as musical instruments for the player. The RB and GH peripherals are composed of practice pads (seen in figure 2), which is also the case for the other ecologies of drum peripherals. Since these peripherals are composed of practice pads, this allows the player to treat them as an instrument to practice on. Practice pads are also used by drummers to practice their rhythmic and sticking skills and also to play when a drum set is not directly accessible. Practice pads also have a signature sound to them, which are also created when the drummer starts to play on the pad. This allows the performer to test their skills and talents before moving their performance to actual drum equipment. These peripherals have this nature to them, as not only do they

have the same sound of the practice pad, but these peripherals can be used as a first step for a performer to practice, train for other peripherals, or be tossed aside before an actual performance occurs. Another aspect of the practice pad that is utilized with these peripherals is the social and fun nature to them – there are no "wrong" notes or rhythms that can be played. Everything that is created from the pad has this element to them, and is the same with these peripherals. The concept of "wrong" notes is only introduced when the peripheral is connected to the games, where the play is being judged for accuracy. This free play element to the peripheral allows more people to become a part of the music that is created from these peripherals, which these and the games actually do quite well.



Figure 2: A Drummer's Practice Pad and 5A sticks

There is also another side of the practice pad that is remediated in these peripherals. Traditionally, practice pads are meant to be used in solitude, and are used in smaller groups of musicians to not only have others learn what rhythms and sounds are expected during the songs, but also to have the drummer learn how to create the right types of sounds that will work well with others. This is traditionally done in the first years of a drummer's training, which is also a targeted audience of these games. This "public" usage of the peripheral is also embedded as well, because many gamers play with these peripherals in solitude, or with others in a collocated setting of 4 individuals (or 3 other players through online play). Practice pads also have an element of "throwawayness" to them, in that they are meant to be tossed aside after sufficient practice in each session of play, and altogether once the drummer has acquired sufficient skill. This is

true for the peripheral as well, as the electrical equipment inside of them or the plastic casing breaks down and is destroyed after some use (which is also similar to real drum heads which actual break after long periods of play). The peripherals can also be replaced just as easily as one of these practice pads as well, just by going to a store and buying new ones.

These peripherals also produce sound when struck, which also makes them a musical instrument. These peripherals have the capabilities to create the sounds of rim shots and rolls directly from the peripheral itself, and can make the sounds of toms and cymbals when connected to the gaming console. The sounds of the toms and cymbals also disconnect the player from the drum peripheral, as drums are being switched for different sounds frequently during each song. The peripherals themselves also are similar to real drum equipment as well: they contain similar customization latches that allow the player to adjust the height of the drum peripheral to a more suitable height. The only difference is that these peripherals utilize “latches” instead of wing nuts to actually adjust the peripheral, which is confusing at first to someone who has experience with actual drum equipment. This also prevents the performer from feeling the tightness and the “adjustedness” of the drums themselves and can’t readily customize the whole peripheral to one’s liking. These aspects of the drum peripheral’s form emphasizes that the performer who should be playing these be there to either practice their skills for themselves or others in a very that allows the performer to be more mobile. Professional drummers invest much more time into their equipment than what these peripherals are suggesting, and this is also true for the other ecologies of drum peripherals.

Peripheral Fun and Creativity

These drum peripherals allow for certain types of fun and creative behaviors, while discouraging others. First, the form of these peripherals is practice-centered, and if one doesn’t either want to practice (i.e. want to create “real” music) or want to play from the musical genres in placed in front of them by the game, then this peripheral will not be a tool used for fun. Second, the form of these drums also limits the types of sounds that are capable of being created from the peripheral. All the player hears from the drum peripheral are sounds of the peripheral, and not the sounds of snare drums, cymbals, toms, etc. These “extra” sounds are only capable of being heard while the peripheral is used in the only context it was designed for: with the video game. Since the peripheral limits what is possible, the player has to be able to subscribe to this design of what fun is in a musical context. In addition, this design also removes the experience of playing in front of a crowd on a stage in a stadium or music hall, where the music is professional and highly entertaining. Third, a critical aspect of the peripheral is that there is a learning curve in being able to make the peripheral perform to its full capability (i.e. play “gut-busting” drum solos and metal music on expert in these games, equivalent to a “real” drummer’s knowledge and skill set). If one doesn’t have time to put into the RB and GH peripherals, or spend hours learning how to drum or navigating the tutorials or drum machine events, then the player will be restricted to what they can do and not have as much fun as they were intended to give the player.

These peripherals offer another layer of fun when the player does spend the time: earning the community’s respect and the craft of making new content for the gaming community. These types of fun come from the social interactions gamers have with each other [9]. As tools for playing music games, the learning of this tool becomes a “rite of passage” to the upper echelons of gamers who are able to play at the highest difficulty levels and compete in national tournaments [9]. This opens the door for the player to meet many new people and be able to exchange their mutual love appreciation for music and gaming, as a result of learning and using this peripheral. In addition, a player can be able to gain fans, reputation, and respect as these tournaments. This type of learning will help the performer feel a sense of pride, but will help him/her avoid any embarrassment about using the tools improperly, as these skills have already been learned and tested many times [9]. This respect can also be generated through the use of creating content for the gaming community to view, for example videos for YouTube. The player can purchase a GameBridge which allows a player to take the video from their console and save it to a computer, where a player can add a video of their play session on top of the video to prove that he/she actually performed the video that is playing in front of them. This allows other gamers to be able to view and learn from this content and appreciate the talents and efforts of the creators of these videos, giving these performers an elevated status in the community. To others in and outside of this community, this elevated status may be a source of anger, as these performers and merely just matching patterns on the screen. The performance may not be able to be seen for its intricacies and then cause the performer to be labeled as a “gamer” or “not a real drummer”, as the drums being used are merely peripherals used for entertainment, not “serious” music creation [9]. These rewards and fun are left up to the player to decide if he/she wants to subscribe to this world, accessible through this peripheral.

A Part of Rock’s Mise en Scene

These peripherals are also a critical element of being a part of the performance of rock music, composed of musical instruments. These peripherals are worthy of being called rock instruments, as they help to complete the experience of being at a rock concert. Without the drummer, the song the audience would be listening to would not “be complete”. The sounds from the drum peripheral help to provide the sounds necessary both in the real world and in the game world of the actuality of the song that is being played, and allowing other musicians to be able to play their parts as well. This allows the player of the peripheral to provide the structural support needed to convince the audience music is being played, and is part of the theatrics that are expected when one goes to an actual rock concert [8].

Musical instruments also have the tendency to bring others into the area of where they are being played, and these peripherals are no different. As the drum peripheral is being played, other gamers will know the sounds that are being played and want to play as well. This is also true in the game itself, as the player receives a full “crowd rating”, the sounds of the crowd are amplified, giving the impression that more people are around and “digging” the music [1]. This aspect also has another side to it as well, as loud play during certain times of the day will have some

believe that noise equivalent to a garage band is being played, and will want the noise to stop. Another aspect of these peripherals that allows them to be musical instruments is that they allow a performer to fade in and out of the music, as what happens in rock music. The performer first receives attention when he/she starts to play, and when other musicians are playing, the drummer's music fades into the background until he/she colors the sound created with fills or cymbal crashes. This is readily seen by the form of the peripherals as having these drum-like qualities. If a player wants to be able to use these tools for actual music creation, these peripherals definitely allow him/her the agency of creation and all the aspects the rock community has to offer.

DRUM PERIPHERALS AS THE DRUMMER'S PERSONA

These peripherals are also constructing an ideal persona that can come out from the player's performance with the peripheral. Both peripherals address the new player, while also building the persona of the drummer that is supposed to play well with these games: the RB drummer is a more refined and technical drummer, whereas the GH drummer is quite energetic and places a lot of energy into his/her play. These personas are also constructed out of the use of the peripheral with each of these games and with the designers of the song (level) charts of the video games (screenshots of the interface are shown below in figure 3).



Figure 3: The Rock Band (highest above) and Guitar Hero (above) Interfaces [6]

Addressing the Beginner

Each of these peripherals has aspects of them which appeal to and construct the notion of an amateur drummer. The simplification of these peripherals from their real-world counterparts allows for an easier learning curve for learning how to play these peripherals. There is no high hat, extra cymbals to carry around, double bass drum pedal, auxiliary percussion items, etc. on these peripherals, which allows a newer drummer to start playing. All a drummer has to do is pick up the sticks that came with the peripheral and proceed to perform the tracks in the game. The games also helps the beginner in many different ways: a menu showing how to use the peripheral is presented on the game's first loading, there are tutorial and practice modes, there is a drum machine mode which allows the drummer to practice a pattern at a desired tempo, and the default difficulty that is presented to the drummer is medium (which is accessible to a large audience). After finishing playing, one can get a general idea how he/she needs to improve and also appreciates the talent of the drummers who play the tracks in the video games. Also, the beginner is addressed through the peripheral because the tacit knowledge of professional drummers isn't needed in order to operate the peripheral. One can use the controller functions on the peripheral to navigate through the menus, and then activate the desired choices by using the corresponding drum(s). In addition, in order for a drummer to play at the lower levels in the game, the performer doesn't need to use only their wrists to successfully complete the songs: the charts are at a sufficient complexity that the natural tendency of beginning drummers to use their arms and shoulders to play will not prevent them from completing a track. Through this operation of the peripheral, it also allows the drummer to feel content that he/she was able to play a song that he/she normally likes to sit and listen to, rather than perform. This could allow the drummer to want to play more with these peripherals, or even want to take lessons on drumming and play on actual drums. The reverse of this situation is also possible: even though the beginner is addressed through the peripheral and the games, a drummer may have such a negative experience with these peripherals that he/she abandons them forever and this experience is brought to mind every time he/she sees others playing the games. From these aspects of the peripherals, the beginning drummer is being addressed when a drummer sits down in front of these peripherals.

The Refined Drummer

The peripheral for the game *Rock Band* is more suited towards a drummer who has more experience and a more refined level of technical play. All of the drums are positioned roughly on the same physical level. This allows the drummer to not have to worry about hitting or maintaining any cymbals during the performance of a song. These drums are also situated in the same manner as a set of quad toms in a marching band. Drummers who usually play this instrument are given this instrument as they have proven their experience in drumming, but also the ability to maintain a steady pattern on the drums, while knowing how to improvise over the four different tones. This expertise is also shown by the structure of the colored drums on the peripheral itself: since the drummer is usually right handed the red drum usually becomes a snare drum, the yellow drum usually functions as a high hat, the blue drum functions as a tom, and the green

drum functions as the drummer's cymbals. The drums functions are subject to change, as harder drum charts switch the use of the red and yellow drums and require faster sticking and more precise timing, which only more experienced drummers have. This expertise is also reinforced from how close the drums are to each other, which allows the drummer to not move their arms very much during play, and focus more on the intricate patterns presented. The bass pedal is also in a convenient location for the more experienced drummer, as it fastens and locks onto the pipes at the bottom of the peripheral. This is similar to how a bass drum pedal is attached to a real base drum and fastened onto it such that it won't move away from the drum and drummer while playing music.

The expertise of the drummer for *Rock Band* is also shown by the placement of where the "home" location is for the sticks to rest when the drummer is done playing. This location is on top of the peripheral, behind the yellow and blue drums. Professional quad toms also place their sticks in this same location as well. The quad toms are also seen in the color scheme of the stand of the peripheral. When a quad tom player doesn't feel like carrying the drums on a harness, he/she places them on a metal stand. The greys and silvers of the base of the peripheral are of the same color as this equipment, and the stand is composed of pipes which are adjustable and have roughly the same size and shape of a stand for quad toms. The quad toms are also remediated through the RB peripheral in is heavy and cumbersome to lift. The peripheral is also precariously perched on top of the stand and situated at an angle closer to the drummer, which is also like the real world, where the drummer will take care to make sure the drums will not tip over the stand. An aspect of the RB peripheral that also speaks to a more experienced drummer is that it connects to the gaming console via a USB connection. This physical connection means that after the drummer has taken out the peripheral and plugged it in, it means he/she is "locked in" and committed to a play session. This is similar to the care and effort one has to go through to take out the drums and set them up to not only perform music, but to practice music as well. This persona is also shown through the games' aesthetic as well, where the player gets to play on a professional music stage, music hall, or night club, which is a sign of the level of expertise the musician has. These aspects of the RB peripheral build this persona of a more refined and older drummer who has had experience in playing the drums and is rewarded with the form of quad toms and the ability to play intricate and difficult patterns on them.

The Wild and Energetic Drummer

While the RB peripheral builds up a sense of refinement in the performance of music and the player, the GH peripheral builds a persona that is rooted in the wild nature and energy that comes out in the performances of many renowned bands (e.g. The Who). This peripheral is adorned with cymbals in the back, which allows the player to be able to access different sounds, but also a much louder set of sounds. This louder set of sounds has an addictive nature to them, in that one can freely start hitting them and continue to create a set of sounds that are attention-drawing and satisfying to hear. This gives the drummer the "free reign" to "go wild and crazy" when sitting behind the drum set. This is

also a popular notion of what the cymbals are meant to be used for as well, and is one of the aspects of drumming that is appealing to some players. The form of the peripheral as close to an actual drum set allows the player to have more energy, as they drummer has to physically cover more distance with each stroke of the drum sticks. This requires more energy for the player to be able to maintain and sustain the music that is coming from his/her drums. The separation of the bass drum pedal from the actual peripheral as well also encourages a wilder drummer, as the energy from the action of pressing it gives the pedal motion to start moving away from the drum set, even though the drum peripheral itself is still mostly stationary.

The youth and energy of the drummer behind the GH peripheral is also shown in the colors used to adorn the peripheral and the materiality of the drums themselves. The GH peripheral is coated in a veneer of shiny black paint, which appeals to the darker side of the drummer. The sleekness is also speaking to the younger drummer, as the looks of the drums themselves are a critical element of the drums selected to play on at this level of experience. The black is also an aesthetic brought from the genre of metal music, where black is used as a primary color to outwardly express one's darker side of the soul and all of the violence and anger that one has underneath their pleasant exterior. This calling from the color of the drum set also helps to let the player know it is alright to strike the drums quite hard and loudly, as this is what is espoused in the music videos of metal music. This is also supported in the materiality of the drums themselves, as they are made to sustain a lot of damage from players of most ages, while still being able to transmit electrical signals to the game. The GH peripheral also encourages a more energetic drummer because it can be wirelessly connected to the gaming console and be separate from the console itself. Because it is wireless, the performer can freely take out the peripheral at any time and just as easily put it away. This allows the drummer to have the choice when and where to let their "inner rocker" out for the world to see, and still be able to separate that identity and put it back in the closet when the play session is over. This is also espoused in the aesthetics of the game, which take place in a whimsical musical realm where loudness and the popular notions of rock music are encouraged over technical play. All of these aspects are appealing to and are utilized in the play of *Guitar Hero*, where the targeted audience is someone who is younger and is beginning to learn how to play the drums.

Molding of the Player's Persona

These personas are not only crafted from the peripherals themselves, but through the players' engagement with others in the gaming community as well. In addition, these peripherals' personas are crafted from the hegemony that occurs through the design of the peripheral, the use of the peripheral as a "technology of the self" [5], and also as a consequence of considering the peripherals' embodiment of the tacit knowledge of the drummers in the world and the designers who created the peripherals.

The Persona as a Result of Engagement

As a result of playing with these games for an extended period of time, the player ends up learning what type of persona he/she

should be able to achieve success or enjoyment in these games. From the types of play styles and personas that are innate to the peripherals and the games, the player begins to learn what types of behaviors are rewarded by the games, and which behaviors are discouraged. For example, in *Rock Band*, the drummer will learn the importance of fills (used to initiate overdrive), solos (which are technically laid out for the drummer and are worth a bonus amount of points), and working with others both of these games (to achieve a higher star rating from the audience, and the elusive gold star rating if all players are on expert). In *Guitar Hero*, this type of play is also recommended by the game, but the player is allowed to just “hack away” at the patterns from the game and have as much as possible from these actions. These play styles showcase very clearly what types of personas are meant to be playing behind these different peripherals, and the player must be willing to adapt to each different persona of play, in addition to the style of play and the different charts for each of the games’ songs. So if one doesn’t necessarily fit into either one of these two distinct and radically different personas, then the game will either help the player to become these personas through the games’ desired engagement with the peripheral, or will not treat the player’s performance in a desirable manner (the game will “fail” the person’s performance) [7]. Then the player doesn’t really have all that much of a choice – either to adapt to the game and the peripheral, or to stay the way he/she wants to, but at the cost of not performing well in these games. Therefore, these peripherals, when connected to the corresponding games, allow a person to “wear” their persona in the game at any time: a rocker. As such, when the performer sits behind the drum peripheral, it is similar to an actor gracing the stage with his/her presence, and is only allowed to stay in this persona as long as we continue to play by the peripherals’ and the games’ rules [7].

The Hegemonic Perspective

These personas are also crafted from the perspective of the game designer’s take on what rock should be. For spending their hard-earned cash, a gamer can be able to choose which peripheral and which avatars in the game he/she wants to rock with. While being able to select certain attributes of these avatars, like name, clothing, and the music style the avatar likes, the gamer doesn’t get to choose much more with respect to how the avatar rocks, and his/her own type of play (as the games and peripherals reward and conform the behaviors of the player). The designers have crafted these selections as their views on how drumming and rock should be done, situating them in a role of power over the player’s rock experience. This allows the designers and the game companies to become a “ruling class” that has the means of producing experiences which try to get gamers to spend money on this experience, without knowing that they are being subjected to a different definition of rock and being changed to accommodate this view. This is also reinforced by the continual creation of downloadable content for the gamers to buy and stay “plugged into” this experience, creating a hegemony between these two groups of people [7]. It is left up to the player to decide who they want to be in this rock world, even though the designers and the peripherals are pushing hard on the player to become a fashioned persona in the world of video game rock.

A “Technology of the Self”

“Technologies of the self” is a concept first described by Foucault, which are technologies that “permit individuals to effect by their own means or with the help of others a certain number of operations on their own bodies and souls, thoughts, conduct and way of being so as to transform themselves in order to attain a certain state of happiness, purity, wisdom, perfection or immortality. (Foucault 1988: 18)” [5]. As part of the drummer’s persona in these games, these peripherals act as technologies of the self in the real world and in the virtual world. First, these peripherals allow the gamer to have fun by not only earning points, but also by slowly transforming their bodies into a machine-like professional drummer that can be able to able most drum beats. This is reinforced by the crowds cheering in these games, transforming the player into a rock demigod. Second, these peripherals are also the marker of the amount of knowledge the drummer has in the world of drumming, which he/she can use to not only do well in the games, but to also share with other gamers and musicians.

In another light, these peripherals can also be seen as the type of “clothing” the drummer can wear to become the persona that these games are suggesting one can become. Different drummers wear different types of clothing, and also serve to show what level of fun and commitment he/she wants to have with these games. Some drummers will wear loose-fitting clothing that will allow them the freedom to move their body to the music and not prevent them from hitting all of the drums, whereas others will don goth-like outfits that truly allow them to immerse themselves into the rock culture they love to listen to and be a part of. The drum peripherals are then seen as clothing to complement what the drummer is wearing and will enhance the experience the drummer has with these games. The drum peripherals are also seen as the clothing of a champion, as they are the primary technology used for competition in tournaments, and the drum peripheral is the competitor’s weapon of choice in an epic rock battle. Taken in these respects, the drum peripheral is a “technology of the self” which allows the gamer to not only become a drummer, but to become a specialize type of drummer that can transcend into “rocker”, or even “professional gut-buster”.

Tacit Knowledge

The tacit knowledge embedded within these peripherals has helped to craft the personas these peripherals create [4]. Not only is this tacit knowledge embedded in the play styles created from the use of the peripherals and the actual form of the peripherals themselves, but also from the games themselves. For example, the *Guitar Hero* games reward the performer with extra points and crowd approval for hitting certain areas of the songs with more force than the minimum enough to translate the signal to the game (this is only recognized by realizing the different interface elements on the pattern displayed). Also, this series constantly reminds the player to “Crank it up!”, a reference to the loud nature of rock concerts and how most televisions play the music at a soft volume or are not hooked up to an expensive home theatre system. *Rock Band* reinforces the technical nature of drumming, as it rewards the player with more crowd approval by getting the bass and snare drums right, and then adding the other

drums on top of these two critical elements of drumming. This is also how some teach how to play a real drum set, as it is easier to get one's body to move one arm and one foot independently at first, and then slowly learn how to add the other hand and other foot into the playing of the drum set. Both of these games are also rewarding the player's knowledge of the technical aspects of playing on a drum set with these peripherals, something which not only takes a long time to learn, but is only accessible to the drumming community itself. These aspects of the peripherals for RB and GH elicit these types of personas, in a similar manner that the other drumming peripherals.

CONCLUSION

Drumming is an activity that has been used by people for many years for many different reasons: for communication, for art, for performance, and for productivity. Currently, drumming has been taken into the digital realm to interface with video games and computers as instruments of sound synthesis. With the creation of these tools, though, their production has created ideal users for these peripherals that will not only specialize them with the designed and selected talents of drumming, but will also craft a persona for the drummer to obey while playing these games. These peripherals are also changing the way society views drumming and the people who are playing them: no longer are there drummers who can drum, but gamers are allowed to drum with the "best of" professional drummers. These changes are innate to the peripherals and the games to which the peripherals "belong" to, creating the peripheral as a status symbol for the drummer, the peripheral being considered as a musical instrument, and the peripheral being a tool to create the desired persona for the drummer.

With these peripherals changing the nature of drumming, it is important to reflect upon how designers can acknowledge these changes and either intentionally design artifacts in this manner or to avoid this type of change. This type of change can be alleviated or possibly prevented through the use of ethnography and longitudinal user studies with these peripherals. It is important to see how people take artifacts like these peripherals and not only use them in the short term, but in the long term as well. This can not only help to prevent any unintentional changes

in people as a result of these artifacts, but it can also help to see how people are using their knowledge of this tool and applying it to different contexts. It would be a worthwhile study to see how users of these peripherals think about music and their desires to possibly use this knowledge to create music or participate in real bands; it would also be intriguing to see what types of skills these drummers have learned from the use of these peripherals and closely these skills match up to those who have learned how to play actual drums first. Above all, it is important that designers of these peripherals and games should be aware of these culturally and socially defining aspects of the experience they are giving to people, and to be fully aware of what they are doing and the consequences of the attitudes of the designers vested into the artifacts they create [2].

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REFERENCES

1. Bardzell, 1-5, "Constructing the User of Mæve"
2. Crane, 171-201, "Men's Clothing and the Construction of Masculine Identities: Class, Lifestyle, and Popular Culture"
3. Davis, 1-18, "Do Clothes Speak? What Makes them Fashion?"
4. Dourish, 99-126, "'Being-in-the-World': Embodied Interaction"
5. Entwistle, 208-19, "'Power Dressing' and the Construction of the Career Woman"
6. Game interface screenshots from <http://www.youtube.com/watch?v=dXOWCsvlRjE> and <http://www.youtube.com/watch?v=d5MqHgszLG0&feature=fvw>
7. Hebdige, 1-19, "Introduction" and Chapter 1
8. Lacey, 5-45, "Film Language."
9. P. Smith, 58-73, "Culture as Action in Symbolic Interactionism, Phenomenology, and Ethnomethodology"
10. The Silent Drum Controller. http://www.realidadvisual.org/jaimeoliver/research_Silentperc.htm.
11. Ultimate View of Fire and Flames on Drums. <http://www.youtube.com/watch?v=hSMzNbpa0WA>.