Towards an analysis of *Papa Sangre,* an audio-only game for the iPhone/iPad.

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Abstract

This is an attempt at a preliminary analysis of an audio-only game for the iPhone and

iPad: *Papa Sangre.* The paper firstly sets out the context for such a novel choice of

subject and argues for the experience of audio-only gaming as worthy of analysis

alongside electroacoustic music. It proposes that the only completely satisfactory

approach to analysing interactive music, especially in games, would be

transdisciplinary. It acknowledges that this paper is far from that ideal. Nevertheless,

it then analyses the game up to the end of the third level, by referring to audio files of

captured gameplay. The first analysis is based on critical listening and interaction.

Then consideration is given to the semiotic aspects. Finally an attempt is made to

apply Brigid Costello's 'Pleasure Framework' to the analysis. The paper concludes by

assessing the aesthetic and musical value of an audio-only game within the context of

electroacoustic music analysis.

Introduction

While computer gaming has become an object of ever-increasing interest for

academic study, game audio is still a relatively under-researched area. Only a handful

of recent publications, most notably Karen Collins' book *Game Sound: an*

Introduction to the History, Theory, and Practice of Video Game Music and Sound Design, have tackled the topic.

Still less researched is the genre of audio-only gaming, which is something of a niche activity within gaming itself. Probably the most important early example was Kenji Eno's *Real Sound: Kaze No Regret* (1999), which was made available on the Sega Saturn and Dreamcast platforms. This was aimed at blind gamers, who have remained the primary constituency for the genre. Nintendo cottoned on to the idea, and produced a series of games from 2006 onwards called *Soundvoyager*, in which users navigate using only sound clues. A survey of the audiogames.net website will reveal that this is today a flourishing area, with hundreds of games designed for both PC and games consoles. Two typical examples are *Terraformer*, in which the gamer has to fight robots in order to gather terraforming tools, a process which is made possible by 3-D sonar navigation; and *Seuss Crane: Detective for Hire*, which is effectively a drama in which the gamer plays the detective. The absence of visual information in these games has, of course, a transformative effect on the nature of the interaction.

Most studies of audio-only gaming (e.g. Friberg and Gärdenfors 2004; Röber and Masuch 2007; Roden et al. 2007; Papworth 2010; etc.) have concentrated upon design and technical issues, with minimal discussion of aesthetic content. Music analysis has almost completely avoided the genre. While there have been several attempts to analyse the music accompanying visually based computer games, using traditional music analytical methods (which generally are well suited to the predominantly cinematic nature of games soundtracks) there have been none for audio-only gaming. Electroacoustic music analysis, specifically, has also shown some interest in film, much less interest in games, and no interest at all (until now) in audio-

only games. There are probably three main reasons for this: firstly, electroacoustic music analysis itself is a developing field and its tools are by no means established; secondly, the aesthetic value of a computer game may well be viewed as inherently less than, for example, an acousmatic concert work; thirdly, the analysis of interactive art presents a unique set of challenges which are still poorly understood.

Despite these reservations, it is the present author's contention that audio-only gaming provides an excellent opportunity for the development of a new framework for electroacoustic music analysis. These games deploy a lexicon of musical gesture that will be familiar to most scholars of electroacoustic music. Furthermore, they emphasise the experiential aspects of the music by blurring the distinction between composer, performer and audience. The gamer, in effect, becomes all three, shaping and interacting with the sonic content through a series of decisions that create a highly engaging auditory experience. Now, of course, the gamer does not necessarily believe that he or she is creating 'music'. But it is hard to argue that the sounds that result from the game are incidental, in the way that a soundtrack to a visually based game might be. We might prefer to call this process 'self-devised audible design within a set of constraints established by the rules of the game', but this definition differs from 'music' only in terms of its intentionality. That there is an aesthetic dimension to this play may readily be demonstrated.

The act of gaming involves something which is not often discussed in music analysis: pleasure. Brigid Costello, for example, has proposed a "pleasure framework" for understanding both computer games and interactive art, that includes thirteen categories that may be analysed separately: creation; exploration; discovery; difficulty; competition; danger; captivation; sensation; sympathy; simulation; fantasy; camaraderie; subversion. (Costello 2007, 370-371). An analysis of interactive work

should include this experiential dimension, if it is to reflect accurately the nature of its

content. For music is not (or not only) an objective thing 'out there', but rather a

subjective experience that we have 'in here'. The extent to which electroacoustic

music analysis treats the work as equivalent to geological formations or weather

systems in order to gain a more 'scientific' understanding of its effects, is the measure

of its partiality. In failing to take account of the human experience, doubtless driven

by a horror of the kind of flowery descriptive music analyses undertaken in the past, it

also fails to engage with the one of the most important and pleasurable aspects of a

work.

As John Dewey argued, in *Art As Experience* (1934): '...An experience is a

product, one might almost say by-product, of continuous and cumulative interaction

of an organic self with the world' and '...works of art are the most intimate and

energetic means of aiding individuals to share in the arts of living.' He went on to

say:

> So extensive and subtly pervasive are the ideas that set art upon a remote
>
> pedestal, that many a person would be repelled rather than pleased if told that
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> he enjoyed his casual recreations, at least in part, because of their aesthetic
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> quality. The arts which today have most vitality for the average person are the
>
> things he does not take to be arts; for instance, the movie, jazzed music, the
>
> comic strip… (Dewey 2005 [1934], 4).

> Today we might add computer gaming to this list.

The difficulty that is faced by an analyst who accepts these arguments and is

further willing to address audio-only gaming as a field worthy of attention is: how

may we best capture and analyse such user experiences? This is a transdisciplinary challenge. Psychology, neuroscience, human-computer interaction research, and probably several other disciplines, will all have a part to play. Scientific monitoring tools may be helpful in gaining measurable data. An analytical approach such as this, that observes trends and changes in human experience is desirable for understanding not only computer games but any form of interactive artwork.

Analysing *Papa Sangre*

The analysis presented here should be seen in the context of the arguments above. It is a limited attempt to fulfil the requirements described, and represents merely a first step towards identifying and articulating an analytical approach seen from a more than one disciplinary perspective. A more complete multidisciplinary analysis would engage a team of researchers from relevant disciplines and a sufficient number of gamers to be able to draw verifiable conclusions based on measurable data. It would also be best situated in a scientific laboratory environment in order to ensure full and complete capture of interactions and user responses.

This analysis is therefore just a preliminary case study conducted by the present author in a non-scientific context and using only his knowledge of appropriate disciplines and critical frameworks. Its purpose is modest: to explore approaches to the subject and to offer some exemplary comments that might provide a stimulus for future research. Nevertheless, it is a piece of electroacoustic music analysis, albeit adopting a rather different method to those so far employed by the Orema Project http://www.orema.dmu.ac.uk

The analysis covers several segments of captured gameplay, as follows:

1. *In the Dark* 1' 13"

2. *Tutorial* 3' 41"

3. *Caught by the Snuffle Hog* 0' 44"

4. Level 1 *The Palace of Bones* (first attempt) 4' 33"

5. Level 1 *The Palace of Bones* (second attempt) 2' 42"

6. Level 2 *The Bed of Bones* 5' 44"

7. Level 3 *Hog Patrol* 11' 38"

These may be heard at http://www.ioct.dmu.ac.uk/people/ahugill/papasangre.html

The first clip, *In the Dark,* is a fixed composition that introduces the game and sets up the underlying narrative. The second clip, *Tutorial,* as its name suggests, introduces the interactive controls and the basic elements of the gameplay. This would normally only be played once by the gamer. The third clip is included as an example of what happens when the gamer makes a mistake. The two attempts at Level 1 were necessitated by the app crashing before completion. *Papa Sangre* is somewhat unstable, probably as a result of the rather heavy processing demands made by the binaural engine. The lengthening of timings of Levels 1, 2, and 3 reflect the increasing difficulty of the gaming. All the captured gameplay, apart from the two attempts at level 1, is a first-time attempt and every effort was made to perform as well as possible. The game was played on an iPhone 4S and the audio was captured on an iMac running OS 10.7, using a direct input and Audio Hijack. The audio clips were edited in Logic Pro, but only trimmed and bounced to disk, not treated or manipulated in any way.

Papa Sangre is an app for the iPhone and iPad that was developed by a team at *Somethin' Else*, a London-based content design company, including Paul Bennun, Ben Cave, Adam Hoyle of Do Tank, Peter Law, Margaret Robertson, Nick Ryan and Tassos Stevens of Coney, with support from *4iP*. The game was launched in 2010, and rapidly attracted attention, both for the novelty of the approach and for the quality of the sound design and gameplay. The game was developed in software (including the *Verb Session* reverberation tool and the *HEar* binaural encoding tools from IRCAM), but also through playing a theatre game called 'Sangre Y Patatas', a kind of Blind Man's Bluff using nachos on the floor and other sound cues to simulate the gaming interaction (Papa Sangre Blog, 2010).

Papa Sangre is a 'first person' game, in which the gamer navigates through a virtual world using only aural cues. Movement is enabled by left-right-left-right touching of the lower half of the screen, corresponding to footsteps. Orientation is adjusted by scrolling the upper half of the screen. There are graphics (feet and a dial) that correspond to these regions, but there is no need at all to be able to see them. All the audio in the game is binaural, and was created using either a software engine or by dummy head recording. It is designed to be experienced wearing headphones. The game uses a Head Related Transfer Function to calculate variations in sound source characteristics relative to user position in real time.

In the Dark

This is a fixed composition which sets up the underlying narrative for the gameplay. As well as introducing the game scenario, it also, more subtly, introduces the spatial effects that will characterise the future gameplay and situates the gamer at the centre of the experience.

0' 00" – 0' 07" Introduces the 'bridging' motif, a synthesized texture with an underlying pulsation evoking perhaps distant machinery. This recurs throughout the game as a bridge between levels, a 'waiting' sound that nevertheless maintains atmosphere. The distant effect of the low pulsations implies menace. On this occasion, the motif increases in both volume and presence, before a short silent break while the game shifts to the intro proper.

0' 10" – 1' 13" *Intro.* This establishes an initial narrative. The central character (the gamer) is heard walking through what seems to be a busy street. There is background noise of traffic. Some operatic singing is heard, perhaps through an open window, perhaps from a radio. A voice suddenly seems close, desperately crying 'somebody help me', but perhaps it is just a beggar. More jumbled conversation follows, and a telephone is heard ringing in the distance. The gamer walks towards the sound. A child's voice is heard singing 'twinkle, twinkle', becoming especially clear with the phrase 'like a diamond in the sky'. At 0' 33", the gamer answers the phone, and hears a man's voice delivering the following message:

'Buenos dias compañeros! The soul of someone dear to you is in grave danger. To save him, you must leave this world and follow me into the kingdom of … Papa Sangre! No time to lose!'

The message is delivered in a faintly comical Spanish accent. Since the surrounding 'real' world is clearly England, and probably London (judging by the accents) this message is evidently coming from 'somewhere else'. The name 'Papa Sangre' immediately conjures up voodoo (the voodoo priests are called 'Papa') and blood ('sangre'). The humour is underpinned by a sense of menace. By this point, the

gamer will probably already have decided whether or not to suspend disbelief and engage in this fantasy.

Notice how this opening sequence has rapidly and cleverly established some key pieces of information. The gamer is identified as someone on a mission, who is willing to ignore urgent pleas for help in order to answer a ringing telephone situated (presumably) in a public phonebox in a busy street. It has also been established that the 'normal' world is full of strangeness. The singing and the child's voice suggest a fantasy element to the coming experience. The unanswered ringing phone is itself uncanny, and the street noises are also not at all reassuring. Many of the key elements of pleasure identified by Costello are already here: exploration; discovery; danger; captivation; fantasy. It is by playing with the idea of 'sympathy', however, that the game establishes its major hook: who am I, that I will ignore pleas for help? Where do my sympathies lie? This is the initial enigma.

The other highly important aspect of this intro is that it establishes this as an electroacoustic world. Of course, the gamer already knows that *Papa Sangre* is an audio-only game, but the purpose of the intro is to prepare and awaken the senses to the creative potential that this represents. The sense of navigation that is crucial to the gameplay is established by the sound of footsteps and the direction of travel towards the ringing phone. The rest of the composition is pure soundscape, with keynote sounds of traffic and bustle and various sound signals (the singing, the desperate man, the child, the telephone).

Following the telephone message, then, we must leave 'this world' with its obvious sonic signifiers of normal daily life and plunge into the fantasy 'kingdom of Papa Sangre', which is an entirely electroacoustically composed place. The intro represents this change by a move to more abstract sounds from 0' 24" to 1' 13",

which follow a classic spectromorphological pattern of accumulating highly textured synthesizer sweeps leading to a falling gesture. Once again, this establishes a sense of background and foreground, combined with forward motion as the accumulation leads to a significant event. The density and scope of the sweeps also maps out the acoustic terrain, demonstrating to the gamer that the entire 360 degree stereo field, perceived both horizontally and vertically, will be made available in this game. The gesture concludes with a sound effect that is seamlessly blended in to the more abstract spectromorphological content, but which re-establishes the presence of the gamer, who 'falls' with an 'ouff' onto the floor of this ambiguous sonorous space. The fall is accompanied by sounds of smaller falling objects, which seem to have been scattered as the gamer 'lands'. Given the preceding action, we may infer that these are bones strewn about the place. Evidently, the kingdom of Papa Sangre is 'down there', scary, and full of death.

Tutorial

There is little to be gained by analysing the tutorial, although it is important to listen to this clip if the principles of movement and navigation that operate during the gameplay are to be understood. It is mainly significant for the introduction of a new character: a Fluttery Wuttery (Watery?) Thing (FWT) who is 'here to help you'. The FWT provides the tuition and acts as a guide and partial narrator in the forthcoming gameplay. The FWT is voiced by a woman who is well-spoken, but with a slight accent that is hard to place. She sounds like she may be a fortune-teller. Her precise role in the kingdom of Papa Sangre is unclear, but we learn quickly that this is 'the land of the dead' and that we are 'a brave soul, here to rescue a soul in peril, no'? Our

mission seems rather Orphean in character, appropriately enough for someone who is to travel using sound and music. The key aspects of the game are explained: how to orientate and move around using sound locations, how to collect the 'musical notes' that are the objective of each level, and how to find one's way to the exit from the current chamber.

Caught by the Snuffle Hog

Given the success of the gameplay in the following clips, it is important to include an example of what happens when a mistake is made. The snuffle hogs dominate the early levels, and avoiding them is the major challenge. The FWT warns about the dangers of getting too near one, and in the subsequent clip is heard the sound effects of gruesome screaming and munching of flesh and bone that occurs when the gamer makes that mistake. This 'death' is however temporary, according to the FWT, as 'your soul remains to try again in a new body'. In gameplay terms, the level is restarted. In electroacoustic terms, there is little remarkable about this sound effect other than to observe that it actualises the narrative in quite a rupturing and cartoon-like way, effectively and temporarily breaking the atmosphere and, ironically, interrupting the suspension of disbelief.

Level 1 *The Palace of Bones*

The level is introduced by the bridging motif, still as distant as ever, followed by some pitched material: two slow and gloomy chords played on string synth pads:

These are repeated, each time with a large swell and fade on both chords, while the FWT warns us that a hog is asleep (cue sound effect of snoring pig) next to the musical note that is our goal. Now the gaming proper begins.

The elements of the sonic landscape are a synthesizer texture and the musical note, which is a repeated pitch (C) sounding more like an electronic bleep than anything particularly 'musical'. However, it has a stable pitch, which none of the other sounds has, and is therefore readily distinguishable. The orientation has switched entirely to the horizontal plane as one navigates. The impression of height is only created by the echoing of the footsteps, which seem somewhat dislocated from the imagined environment. Their reverberation characteristics, which never change, suggest a rather empty, cavernous space, whereas the hog and note seem quite to exist in a much smaller space. Since these footsteps are the only indicator of one's own existence in the space, it is also somewhat unsettling to realise that their reverberation is the same however close to the 'walls' one might come. There are clearly technical reasons for this: recomputing the reverberation pattern for each individual location would place an impossible strain on the engine. But there is also a certain pleasure to be had from this apparent failure of simulation: by emphasizing the cartoon-like nature of the footsteps (which seem to be taken wearing hard shoes, or perhaps Cuban heels, and walking on an echoing surface), we are constantly reminded that this is a game and we are in an imaginary landscape. It takes very little time to suspend disbelief. Absolute verisimilitude is probably not a requirement in a computer game.

The musical note is discovered quite quickly (1' 19" in the first attempt, 0' 53" in the second). The main pleasure in this level is the sense of danger in proximity to the snoring hog. How close may we come without being detected? The spatialisation effectively conveys the fine detail of the navigation, and the keynote synthesizer ambience, which has now established itself as an unpitched drone, or even a 'megadrone' (Tagg 1999), helps to maintain a sense of atmosphere. Notice how the footsteps include the sound of a second foot coming to rest in almost military 'attention' fashion when the gamer stops walking. No running is attempted in this level.

Finding the exit is a tougher challenge. One must navigate towards a pair of glockenspiel-like spread chords which steadily alternate in an attractive fashion, accompanied by a knocking-on-wood sound (five rhythmic knocks) that suggests a door. Both recorded attempts contain instances of hitting a 'wall', which is rather cleverly accompanied by a haptic clue as the iPhone vibrates. This passage of play (0' 54" – 2' 31" in the second attempt) is the point at which the game's narrative is suspended and for the first time the gamer is navigating through purely acoustic space with only sonic clues as a guide. The electroacoustic elements for this first level are deliberately sparse: the exit sounds, the drone, the footsteps and occasionally the wall. Localisation is carefully indicated by accurate binaural imaging. Impressively, this seems to work at the level of a single step in a given direction. Nevertheless, the exit sound effects (for example) do create some sense of dislocation as one's direction changes – the move from one position to the next is not entirely smooth.

From an aesthetic point of view, this episode is intriguing. On one level, it seems to offer the least satisfactory experience, since the musical materials are so sparse and the structure is so variable. It is also the case that one is by now immersed

in the gameplay aspects, and therefore barely paying any attention to this as potential electroacoustic *music* (indeed, why would one want to do so?). Yet, it is now, at the moment when one is finally in charge of the game, that the sense of play asserts itself most strongly and the idea of enjoying the soundscape for more than just its narrative drive begins to appear. It is a question of agency. For the first time, the game's makers have left us in a pleasurable acoustic environment without obviously captivating controls. The hog is sleeping. The FWT is silent. We may take as long as we like. It will be observed that the pace of movement in both attempts is slow: this is the aesthetic effect 'kicking in' and somewhat overriding the rules of the gameplay.

Finally the exit is found, and accompanied by some joyous chimes and synthesizer music that contains a hint of heavenly choirs. Relief is evidently the intended emotion.

Level 2 *The Bed of Bones*

Once again, the bridging motif introduces the level. The FWT tells us that this is the guardroom and contains a sleeping hog who will awaken and chase us if we step on any of the 'discarded finger bones' that litter the floor. The sounds of these finger bones are suitably scrunchy, but some also make a sound like a squeaky toy: a comic intrusion which, once again, breaks the illusion and reminds us we are playing a game. The hog will chase to the location where the sound is made, so running away will save us. Clearly the idea of this level is to raise skill levels and to encourage more rapid and responsive interaction.

This time, we are plunged much more immediately into the gameplay. The ever-present synthesizer drone provides background atmosphere (somewhat

reminiscent of the soundtrack for Alfred Hitchcock's *The Birds)* and there are new sounds to confuse us. A tolling bell travels across the acoustic space, producing a sense of disorientation. The musical note seems more distant and harder to locate. 'Walls' are quickly hit. Almost inevitably, the gamer steps on the bones, while a sound like buzzing mosquitoes (but musical rather than a sound effect) and the scrunching and squeaking creates the sense of danger. Running feels like a very appropriate response. At 2' 23" the FWT reassures us that we are safe. The hog can be heard snoring and the musical note (D) is nearby. As one moves, there are occasional small scrunches underfoot. The atmosphere is very effectively maintained. Going on tiptoe is impossible in these boots, so moving slowly feels like the right thing to do. A sudden loud, unexplained, rattling noise at 2' 59" is a genuine surprise. This is like a ghost train.

On finding the musical note, we are instructed to collect another (E: a C major scale is building). It is quite a relief to find that the exit is fairly close. The FWT explains that the hog chased us when we trod on 'something loud, perhaps some crunchy bones from all the souls it's eaten before you'. Of course, real bones would sound nowhere near as loud as this when trodden upon. The unreality of the 'simulation' is subtly emphasized by our implicit understanding and acceptance of this fact within the game. The sounds in this electroacoustic environment are in no way equivalent to anything encountered in real life. The fact that we barely register this sense of rupture is a mark of the extent to which we have entered the fantasy kingdom, and consequently the effectiveness of *Papa Sangre* as a game.

Level 3 *Hog Patrol*

The instructions are the same as before, but this time a hog is patrolling the room from left to right in front of us, which adds a new layer of challenge to the gameplay. Locating the first note is much harder, obscured as it is by the snuffling hog sound and apparently positioned further away. The localisation seems to have become more finely tuned, and orientation, which remains in the horizontal plane only, is the main challenge. The musical elements remain sparse. Gone are the squeaky bones and the sudden noises: this is just the hog, the note, and the background drone. The level is pure navigation, and it takes a good 4' 30" to find the first note, and a further 4' to find the second. It is hard to tell precisely where the hog's movements take it relative to one's own position. As if in acknowledgement of the difficulties, the exit is relatively easy to locate, although it still takes a few minutes to leave.

Semiotics

The semiotics of the game are a mixture of direct connotation (the snoring pig represents a hog, for example) and more complex signifiers. The bridging motif and the synth 'megadrone', draw on established musical conventions (typically within cinema) that indicate imminent danger (Tagg 1999, 20). These in turn derive from natural phenomena (rumbling thunder, earthquake, etc.) that provoke an instinctual response. However, their use in the game has an ironic twist, provided both by the context and by their relative lack of function during gameplay. Extended passages of gamer agency are substrated by the megadrone, which rapidly loses its signifying power and becomes instead a keynote environmental ambience. The use of musical notes as the goal offers a rational element in an otherwise irrational environment, signifying a sense of consolation and normalisation against the suggested terror. The

organisation of the musical notes into a C major scale compounds this principle. Familiar gestures from electroacoustic music (sudden unexplained noises, descending morphologies and consequent events, background/foreground interactions, and so on) provide a sense of forward motion, signifying in a more abstract way the continuation of the narrative. Finally, and uniquely to audio-only gaming, acoustic *location* acts as a major signifier. One's position is also one's agency in the game. The area of choice is to stand, walk, or run. Movement is thus signified by purely acoustic cues which, although somewhat crude, are highly effective in enabling orientation relative to the sound signals and within a field of keynote sounds. It is this semiotic layer which is the most powerful affect of the game, creating a strong sense of intimacy and isolation by constantly reinforcing one's sense of immersion in the world of *Papa Sangre.*

Pleasure analysis

The analysis of pleasure in interactivity is in its infancy. HCI research has developed some frameworks for analysing concepts such as 'fun' and 'entertainment', but largely within the field of usability (Carroll and Thomas 1988; Monk, Hassenzahl et al. 2002; Blythe & Wright, 2003). Charlotte Wiberg observes that 'those responsible for funding research, worldwide, may have been reluctant to fund research into pleasure and fun, concentrating resources rather on workplace related technologies and systems' (Wiberg 2007, 1). Consequently, research findings rarely go much beyond the conclusion that design simplicity is the most aesthetically pleasing approach (Nielsen 1999). Nevertheless, some frameworks have been suggested, such as that of Patrick Jordan, who identifies four broad types: Physio-Pleasure, Socio-Pleasure, Psycho-Pleasure and Ideo-Pleasure (Jordan 1999). So far, neuroscientific

and similarly empirical approaches to the study of pleasure seem to have been little attempted.

There have been several attempts to examine pleasure from within aesthetics. Gordon Graham, for example, has approached the topic from a philosophical perspective (Graham 1994) and various researchers, including Brigid Costello, have proposed a framework for interactive art. Costello's framework divides pleasure into thirteen categories, as follows:

Creation is the pleasure participants get from having the power to create something while interacting with a work. It is also the pleasure participants get from being able to express themselves creatively.

Exploration is the pleasure participants get from exploring a situation. Exploration is often linked with the next pleasure, discovery, but not always. Sometimes it is fun to just explore.

Discovery is the pleasure participants get from making a discovery or working something out.

Difficulty is the pleasure participants get from having to develop a skill or to exercise skill in order to do something. Difficulty might also occur at an intellectual level in works that require a certain amount of skill to understand them or an aspect of their content.

Competition is the pleasure participants get from trying to achieve a de-fined goal. This could be a goal that is defined by them or it might be one that is defined by the work. Completing the goal could involve working with or against another human participant, a perceived entity within the work, or the system of the work itself.

Danger is the pleasure of participants feeling scared, in danger, or as if they are taking a risk. This feeling might be as mild as a sense of unease or might involve a strong feeling of fear.

Captivation is the pleasure of participants feeling mesmerized or spellbound by something or of feeling like another entity has control over them.

Sensation is the pleasure participants get from the feeling of any physical action the work evokes, e.g. touch, body movements, hearing, vocalising etc.

Sympathy is the pleasure of sharing emotional or physical feelings with something.

Simulation is the pleasure of perceiving a copy or representation of some-thing from real life.

Fantasy is the pleasure of perceiving a fantastical creation of the imagination.

Camaraderie is the pleasure of developing a sense of friendship, fellowship or intimacy with someone.

Subversion is the pleasure of breaking rules or of seeing others break them. It is also the pleasure of subverting or twisting the meaning of something or of seeing someone else do so (Costello 2007, 370-1).

It is beyond the scope of the present article to attempt to establish a new transdisciplinary framework for understanding pleasure within the context of electroacoustic music analysis, but there is clearly a need for such a development if it is accepted that the subjective experience of this music is a crucial part of its formation. We will restrict ourselves instead merely to a few analytical notes on *Papa Sangre,* using Costello's framework as a starting-point.

Creation: there is a certain amount of creative pleasure in *Papa Sangre,* which increases as the game allows room for the gamer's agency. Clearly this is somewhat at the expense of the intended gameplay. Avoiding the hog, collecting the notes, finding the exit, are the imperatives in the game. However, one may spend time enjoying the soundscape and one's navigations through it, listening in a reduced way that is perhaps removed from the makers' intentions.

Exploration and *discovery* are major components of the pleasure in *Papa Sangre.* It is the fact that these are auditory, rather than visual, actions that increases the pleasure from an electroacoustic music perspective. 'Working out' where one is located, how to move towards the goal, what the kingdom is like, and so on, is not so different from the same pleasure derived from active listening to a fixed media acousmatic work. One is in command of the process in an obvious way in an interactive game, but it may also be said that one listens selectively in a concert situation.

The *difficulty* of *Papa Sangre* is of course the business of 'seeing with your ears'. The early levels stress this difficulty, increasing one's skill levels step by step. The more intellectual aspects of 'understanding' are less present (the action is quite cartoon-like), at least early on.

The pleasure of finding a musical note or the exit is the main form of *competition* in the early levels of *Papa Sangre.* Presumably, later levels will be more about avoiding dangers and traps. These are conventional gaming pleasures, but with the unusual twist of being entirely accomplished in the acoustic domain.

The sense of *danger* is surprisingly realistic, especially given the compromises in verisimilitude that are of necessity made by the game's design. This sense lasts

beyond the game, at least for the present author, who experienced a rather unpleasant nightmare that was clearly derived from the gameplay.

There is *captivation* in any successful game, and *Papa Sangre* is no exception. The FWT and *Papa Sangre* himself provide the controlling element. However, the constraints of the game are also some source of frustration, which works against the captivation pleasure somewhat, as one may wish to be more creative.

The *sensational* aspect of the game is its most distinctive feature, being audio-only. This is enhanced by touch, too, when the iPhone vibrates. This is a game that stands or falls on its sensational appeal.

The major unanswered question in the early stages of the narrative is that of *sympathy*. By the end of Level 3, this pleasure is still ambiguous, or even, less charitably, absent. The gamer, as the central figure in the game, seems to lack sympathy, and neither the FWT nor Papa Sangre himself are presented as sympathetic. The FWT is rather neutral, detached from the action apart from in an informational way. Papa Sangre is obviously a monster, and is in any case absent. At the beginning of this experience, one does not really like oneself very much. Perhaps that will change later on.

The pleasure of the *simulation* is mixed. The technical limitations of the 360 degree environment and the somewhat obvious sound effects reduce pleasure. On the other hand, the very facts of being able to navigate in 360 degrees and that this is clearly a cartoon fantasy compensate for that disappointment. The sense of pleasure when the HRTF delivers a convincing orientation is real, and the novelty of the whole approach is in itself pleasurable.

Fantasy is the genre of the game, and the one delivered here is pleasant enough (in an entertainingly disagreeable way), although not too demanding in the early stages.

Camaraderie is distinctly lacking. There are no other entities with whom to bond, and the sense of isolation is quite profound.

There is little capacity too for *subversion,* which is largely overridden by the captivation pleasure. Perhaps this will change in later levels.

Conclusion

While it is clear that the intention behind *Papa Sangre* is distant from the artistic creation of electroacoustic *music,* it nevertheless shares many of the features of more aesthetically-driven work. The experience of the gamer parallels that of the concert-goer in the sense of pleasure and discovery that active engagement with the music may bring. Furthermore, the structure and form of the game is not so dissimilar to many of the more episodic concert works in the standard repertoire. Of course, the goals of the gamer are rather different to those of the concert-goer and, as Dewey observed, would not be considered to be 'artistic' as such. Nor is their agency the same, although interactive music is increasingly breaking down the one-way traffic that characterises acousmatic concerts. Despite these differences, the *Papa Sangre* gamer, wittingly or unwittingly, is engaged in act of sonic manipulation over time that outputs a steady stream of electroacoustic material. This is shaped by understanding, by experience, and by pleasure, within the formal constraints laid down by the rules of the game. This is what, in a more traditional context, we might call 'composition'.

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