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Persona, emotions and technology:
the phonographic staging of the popular music voice

Introduction

On October 30th of 2002, George Graham (2002) broadcasted his 1300th album review on WVIA-FM, a Pennsylvanian public radio station. As a preamble to my paper, I would like to play you a few excerpts from this review:

> This is weekly album review number 1300, and I thought I would try something a little different in my approach. Our subject is Peter Gabriel's new CD *Up*, which was released in September [2002], and has already received a good deal of press and quite a few reviews, generally quite favorable. […] I thought that this time, I would focus this review almost entirely on a facet that we usually touch on only briefly each week, the sonic qualities of the recording. […] It has been a decade since Gabriel released his last studio album. Since then, there has been a lot of sonic experimentation going on especially in the alternative rock field, with loops and samples of pre-recorded sounds, heavily distorted and altered treatments of various instruments and vocals, and a sort of intentionally "lo-fi" approach. […] Gabriel adopts these techniques, but not to be trendy, or as the alternative rockers and commercial pop artists do, just to be louder and more in-your-face. Instead Gabriel's *Up* has, I think, probably the most effective use of these techniques I have heard for musical emphasis […]. It all creates a kind of alternate sound environment, at times ethereal, at other times unnerving or disorienting. […] It reaches the point that the sonic presentation becomes as important as the underlying material.

In this paper, I would like to examine in more details how the use of some of the techniques evoked by Graham contribute to the expressive power of recorded popular music. More precisely, I intend to illustrate how these effects participate to the *narrative* of recorded songs. From that perspective, techniques described by Graham might better be approached through the concept of *phonographic staging*: in a kind of acousmatic scenography, effects such as reverb, echo, filtering or overdubbing act as mediators of recorded sound sources. In the first part of my presentation, I will thus summarize a model of phonographic staging derived from the work of William Moylan (2002).

Now, voice is of course central in the articulation of this phonographic narrative. More than just a vehicle for the lyrics, voice acts, through the partial exposition of the singer's body, as the aural index of the artist's persona and represented emotions. Song characters, then, live through the singer's voices which are phonographically staged with the help of recording techniques. These vocal personas might embody different characters or

different facets of a same character. In the second part of my paper, I will spend some time analyzing the role of recording techniques in the phonographic staging of voice in two interrelated songs by Peter Gabriel, namely "Digging in the Dirt" from the 1992 album *Us*, and "Darkness" from the aforementioned *Up*, released ten years later. But before I do so, a word on phonographic staging.

Phonographic staging: the model

Derived, as I said, from the work of William Moylan, the phonographic staging model (appendix) aims to describe the effects following the manipulation of four main categories of sound perception through recording technology: loudness, space, time, and timbre. However, rather than describing the ways in which different sound effects are *produced* in the studio, the model aims to account for these effects mostly from the point of view of the listener: how do these effects alter the ways in which we *perceive* recorded sound sources.

Despite its apparent strict categorization, in no way is this proposed classification intended to be exclusive, for these aspects of sound are usually mutually intertwined. For example, reverberation, which is mostly responsible for spatial effects, also alters our perception of spectral and temporal characteristics of the original sound source. Moreover, it is common to find a single sound source affected by more than one effect at the same time. There are also effects that evolve in time, which can render their analysis even more difficult. The main reason for using such a classification system, really, is simply to help us orientate the examination process. Without going in too much details (I'd rather refer you to Moylan's book), I would now briefly go through each of the four main categories before concentrating on the two Gabriel songs.

Loudness

In the context of a sound recording, William Moylan distinguishes two kinds of loudness: First, "performance intensity," which refers to the actual level at which a given sound event was performed during the recording process. This is different from "dynamic level," which rather consists in the level of a sound event as heard in the context of a recorded mix. For example, in the context of a mix, a whispered voice (low performance intensity) might be heard at a much higher dynamic level than, say, a crashed cymbal. This type of contradictory manipulations, often impossible to realize in everyday situations, might be used in expressive ways, as we'll hear later in the Gabriel examples.

Space

Still according to Moylan, our perception of space in a recording results from the combination of three elements: stereo location, environment, and distance. (For the sake of this paper, I will be limiting my discussion to stereo recordings, leaving the analysis of surround effects for later...).

- *Stereo location* is defined by two parameters: first, the stereo *position* of a sound source on the stereo array; and second, its *diffusion*, which refers to the area this sound source appears to *cover* along that array. For example, a hi-hat might seem to sound from a precise point on the left-hand side, while a voice might be more diffused and located centre.
- *Environment* can be defined as the perceived space within which a source seems to be sounding in a recording. Usually, it is reverberation (or the absence of it) that is responsible for giving the impression of a given environment. We thus can find environmental characteristics ranging from relative dryness (little or no reverberation), to infinite (sustained) reverberation; not to mention special effects such as gated reverb.
- *Distance* constitutes the third spatial element. Still according to Moylan, distance can be defined as the perceived location of a sound source along the depth of a recording's virtual sound stage. The sound source will be perceived as sounding from a given distance from the listener, within a given environment. Although reverberation and loudness obviously contribute to our perception of distance, the fundamental parameter responsible for the perception of distance is the *timbral definition* of the perceived sound source.

Time

The third main aspect of sound perception is time. Indeed, a large number of sound effects and editing techniques allow us to manipulate time characteristics of sound events. For example, overdubbing techniques allow us to superimpose or make overlap two performances by a same singer, which of course is not possible in the everyday. Again, such techniques might lead to very expressive phonographic staging effects, as we'll hear with Gabriel. The table presents just a number of them, including effects of repetition, simultaneity, chronology and celerity.

Timbre

Finally, a sound source's timbre might be altered in different ways, providing additional expressive effects. Again, the table lists only a few of these effects, such as equalization, phasing, and saturation. As I mentioned earlier, the aim of the model is to try to provide the analyst with a tool for describing what is *heard* in recordings. Therefore, when mentioning equalization for example, I am referring to forms of filtering and EQ that are marked enough so they become noticeable to listeners, such as the "telephone" effect heard in CCR's "Suzie-Q" (1968) or Annie Lennox's flanged voice in the bridge of "Money Can't Buy It" (1992), or, as we'll hear right after our analysis of Peter Gabriel's "Digging in the Dirt" (1992) the saturated voice in Gabriel's "Darkness" (2002). It is with this brief overview in mind that we will now turn to the analyses.

Analyses
"Digging in the Dirt" (1992)

Broadly speaking, and as it is the case with many songs by Peter Gabriel, "Digging in the Dirt" is about a character's introspective process. In fact, the *Us* album is strongly linked with Gabriel's own questioning and actually followed a five-year therapy which ended in 1991: "After a particularly bad time I decided I had to look inside myself and find out what was going on and what was going wrong" (O'Hagan 1992, 4). This process was to be reflected in most of the album's songs.

About "Digging in the Dirt" more specifically, Peter Gabriel explains: "'Digging in the dirt' was looking at the darker side of myself. […] I was looking at the way I'd been behaving—sort of passive-aggressive—looking at the bastard in me that I hadn't really acknowledged, and, as I was writing, I was inter-weaving bits of myself." (www.petergabriel.com/us) Indeed, many features of the song help convey this "inter-weaving" activity. For a start, the form of the song is a little strange, in that one could interpret it as displaying two distinct and contrasting choruses: one aggressive, the other more gentle.

In addition to the form, there's the instrumentation which seems to always underline some aspect or another of what is depicted in the song. Much could be said about these two parameters alone (not to mention others, such as the use of modal harmony, or meter), but the aspect on which I would like to focus for now is the phonographic staging of the voice.

I suggest we listen to the song section by section with the lyrics, starting with the first verse section. The first two verses feature the character who realizes that something bad inside of him is getting stronger, and that he won't be able to go on with this feeling for much longer. As Gabriel explained earlier, this thing refers to the character's darker side, his aggressive facet that is about to explode in the next two sections of the song. As you will hear in the excerpt, the voice here has been doubled. However, the two voices are not quite in synch, already suggesting some kind of duality within the character's mind.

EXAMPLE 1. Peter Gabriel, "Digging in the Dirt," verses 1 and 2 (00:25-0:49)

By contrast, the doubling of voices in the climb section that follows is much more synchronized. This time, we hear the character in a more aggressive state: Gabriel sings in a higher register a lyric displaying many repetitions (especially the "I told you"), implying a build-up in the character's emotive state. The feeling is also conveyed by the ascending bend on the word "far" in a falsetto voice. The whole passage is supported by the mono doubling of the voice which makes it significantly thicker.

EXAMPLE 2. Peter Gabriel, "Digging in the Dirt," climb (0:49-1:12)

Then, something interesting happens when entering the first chorus: Before Gabriel ends his last "I told you," he is literally cut off by… himself singing the line "Don't talk back" which overlaps with the preceding line.

EXAMPLE 3. Peter Gabriel, "Digging in the Dirt," overlapping effect (1:09-1:13)

This overlapping effect leads us to the most aggressive section of the song. This time, not only is the voice doubled, but the lyrics are filled with hard consonants, such as t's and k's ("Don**'t ta**l**k** ba**ck**"). The combination of the voice doubling with Gabriel's harsh voice and exaggerated pronunciation help foreground these transients that also resonate in a carefully equalized reverb. The section ends with the line "this is for real," with an extended and gradually opening "Reaaaaal". Let's listen to the end of the climb we've just heard, followed by the first chorus.

EXAMPLE 4. Peter Gabriel, "Digging in the Dirt," pseudo-chorus 1 (1:10-1:36)

We then get into a very contrasting section, which starts with the title line "I'm digging in the dirt". In this second contrasting chorus, the character is somehow asking for help: "I'm digging in the dirt/Stay with me I need support". Here, Gabriel sings in a much gentler and breathier voice, and the part is also harmonized, which conveys a sense of euphony. No more heavy guitar either, which hands over to a clean guitar with panned echo:

EXAMPLE 5. Peter Gabriel, Digging in the Dirt," chorus (1:36-1:58)

This chorus also provides us with a key to the song: "I'm digging in the dirt/To find the places I got hurt/To open up the places I got hurt". After the transition, we hear again the character in a new verse with the same voice blurred by our uneven doubling.
This time though, the character seems to have found the psychoanalytic source of his problem: sex, as illustrated by the structure of the lyrics and the play with the voice's dynamic level, both of which gradually focus on the word "sex": Note how the line "I feel it in my sex" is louder.

EXAMPLE 6. Peter Gabriel, "Digging in the Dirt," verses 3 and 4 (2:22-2:46)

Of course, much more could be said about this song, but I would now like to turn to a more recent song by Gabriel which explores similar ground.

"Darkness" (2002)
As in "Digging in the Dirt," the main character in "Darkness" faces inner turmoil, with something wrong stirring within him. However, the negative emotion is a little different than in the first song: As Gabriel himself explains in an interview, "'Darkness' was originally titled 'House in the Woods' and is about fear" and how it inhibits people (www.petergabriel.com/moonclub). Accordingly, in "Darkness," many strategies have been used to phonographically stage the voice in order to complement the song's narrative and the character's various feelings. For the sake of our analysis, I've

isolated a continuous one-minute excerpt (1:11-2:15) during which we can hear at least five different types of effects applied on the voice, corresponding to as many attitudes and emotional states. I've broken this excerpt in few sound examples, so we can focus on some aspects of phonographic staging.

During the first two lines, voice is completely dry, with no reverb, and sounds very close to the microphone. The character is then starting to explore his own mind, gradually getting aware of his fears. Here, the introspective character is "heard" in extreme close-up (low performance intensity with higher dynamic level), with sounds in the background, including, as you'll certainly note, a distorted cry heard at a very low dynamic level. Furthermore, Gabriel sings with minimum energy, with minimal pronunciation, just as if the inhibited character was somehow trying to quieten down this emerging and yet unrestrainable sentiment of fear.

EXAMPLE 7. Peter Gabriel, "Darkness" (1:11-1:19)

In the next line, Gabriel's performance intensity and range are higher, and we clearly hear some reverb on his voice, supporting the sort of new affirmative attitude displayed by the character, or, if you prefer, by one of the character's facets. The melodic line is also more lyrical, with a descending bend on the prolonged "way".

EXAMPLE 8. Peter Gabriel, "Darkness" (1:19-1:24)

In the next verse, voice has been heavily processed and sounds saturated, distorted. This time, Gabriel is clearly singing with a harsher voice, especially so on the word "scared," signalling both some anger and fear, emotions that the distorted voice certainly reinforces. And even though lyrics are not that intelligible, these sounds still convey the character's intense emotional state. Notice also the sampled shouting "Hey!" on every eighth beat that we previously heard in the background, which is now much more prominent, perhaps suggesting that now fear has completely overcome the character.

EXAMPLE 9. Peter Gabriel, "Darkness" (1:25-1:47)

Then, on the two final lines of the excerpt ("I have my fears/But they do not have me"), we hear in turn two different altered vocal sounds superimposed on the character's main voice. First, on the line "I have my fears," we hear a voice at a very low dynamic level that seems to have been passed through a vocoder, somehow referring to the character's fear, still there in the background, eventually ready to resurface at any moment. Then, during the last line, we clearly hear a forced whispery voice superimposed on the main one on the line "But they do not have me," representing, perhaps, the other side of the character that replies "really? Not quite".

EXAMPLE 10. Peter Gabriel, "Darkness" (2:02-2:15)

Conclusion

In these two songs, Gabriel explores contradictory inner feelings in, I think, a very sensitive and expressive way. The arrangements, instrumentation, melodic lines, harmonic patterns, formal divisions and, of course, Gabriel's singing, all contribute to express these refined introspective journeys; but I hope I was able to illustrate the important role phonographic staging is also playing in this process.

Of course, such strategies are not really new; only technological means to produce them change and get, perhaps, a little more refined. Indeed, many of the electroacoustic manipulations heard in music, or in any other media today, seem to be rooted in very ancient practices, whose characteristics are shared by other cultures around the world. I'm thinking here of resonant spots found in Paleolithic caves coinciding with the location of rupestrian paintings (Reznikoff 1995; Waller 1993); or built structures from the Neolithic Era designed for reinforcing shamans' voices during rituals (Watson and Keating 1999); or the Ancient Greek theatres, in which chorus singers were to be located in the reverberating orchestra, while the actors were on the *logeion*, the narrow stage located in back of the orchestra, from where the spoken voice could this time be heard loud and dry (Wiles 1991, 36-39).[1] These old practices, just like the ones heard in recordings today, are of course anchored in a mix of cultural and psychoacoustic factors. Interestingly, whether we listen to a track by Peter Gabriel, or imagine some vocal ritual from the past, both means of expression seem to explore the same vagaries of our human condition.

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[1] Lacasse (2000, 71-143) provides a historical survey of "vocal staging".

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Appendix: Technological Musical Parameters Responsible for Phonographic Staging Effects*

Aspects of Sound Perception		Parameters/Effects	Short Definitions	Reference Methods/*Examples*	
Loudness	Performance	Performance Intensity	The level at which a given sound source was performed during the recording process. This expression refers to the traditional concept of *dynamics*.	- Description: Soft, Louder than, etc./piano, forte, mp, fff, etc. - Graph	
	Recording	Dynamic Level	The level at which a sound source is heard in the context of a recording (within a mix).		
		PI *versus* DL	Ratio between performance intensity and the perceived dynamic level (includes effects such as fade-out and compression/limiting.)		
Space	Stereo Location	Position	Place occupied by a sound source on the left-right stereo array.	- Description: Left, Right, Centre. - Numeric scale: *–3* (left) to *+3* (right), *0*=centre - Graph	
		Diffusion	Area that a given sound source appears to cover along the left-right stereo array.	- Description: Point Source, Spread Source, Split Source (Bilateral) - Graph	
	Environment	Reverberation	Prolongation of a given sound event in time. Some characteristics of reverberation include reverberation time, level (envelope), frequency spectrum, etc. In most cases, reverberation effects are associated with spatial environments.	- Description (time): *Short, Long* - Numeric Value: *150 ms, 2 sec.* - Graph	Expressions used to refer to common environments (reverb effects): *Gated Reverb, Concert Hall, Cathedral, Bathroom.*
	Distance	Resolution + others	Apparent location of a sound source along the front/back axis. Impression of distance is mostly the result of timbre resolution (influenced by other parameters, such as reverberation, dynamic level, equalization, etc.).	- Description: *Close, Far, Close Up, etc.* - Graph	

Time	Autosonic Repetition	Echo	Regular repetition of a given sound event in time. Echo is mostly characterized by a usually fixed delay time between repetitions (≥ 50 ms), by the number of repetitions, and the dynamic level of repetitions (usually fading).	- Description - Graph
		Looping	Sound excerpt regularly repeated in time, usually in accordance to metre.	
		Reiteration	Irregular repetition of a given sound event in time.	
		Scratching	Repetition of a given sound event in time, usually accompanied by a typical vinyl scratch sound.	
	Simultaneity *(overdubbing)*	Doubling	Superimposition of two (or more) performances of a given musical part executed by the same sound source.	- Description - Graph
		Self-Harmonization	Harmonization of a given musical part performed by the same sound source.	
		Overlapping	Performance of a musical part by a given sound source that lies partly over another part performed by the same sound source.	
	Chronology	Backward playing	Performance heard in reverse.	- Description - Graph
		Chopping	Division of a sample in smaller units that are reconfigured in a new order.	
	Celerity	Acceleration	Noticeable speed variation of a given performance.	- Description - Graph
		Deceleration		
Timbre	Alteration	Equalization	Noticeable variation within the frequency spectrum of a given sound source.	- Description - Graph
		Saturation	Typical harsh sound following the saturation (distortion) of a given sound source.	

		Phasing Effects	Variation in time of the harmonic content of a given sound event. Includes effects such as phase shifting, flanging, chorus, etc.	
		Others		
	Electronic	Sounds created with the help of electronic instruments, such as synthesizers, computers, etc.		

*Derived from William Moylan, *The Art of Recording: Understanding and Crafting the Mix*, 2nd edition. Focal Press, 2002.

Sound of Emotions. Unleash your Creativity and express your Emotions through your Music. Sample Lessons. Learn More. The Method. The Sound of Emotions piano method is a new approach to learning to play the piano and practicing improvisation. It's about giving a voice to the emotions, and the rest is all about the various kind of musical styles that exist. It will require commitment and perseverance, but at all stages this website will help you to keep in touch with your emotions and to gain the utmost pleasure from the experience of making music. I Believe that the emotions we feel must be nurtured and, of course, techniques must be learnt but never at cost of losing the passion for the music you feel. Shin Megami Tensei: Persona 5 brings popular music into the world of video games. Persona 5 is a 100-hour long game, and the soundtrack is there to back that up. Person 5 Menu Screen. Though Persona 5 excels in storytelling through emotion, at the end of the day, it is still a game about going to a new high school. Nevertheless, the music will have players ready and excited to go to a new and unknown school. Atlus's Shin Megami Tensei franchise, the parent series of the Persona games, has been around since 1992. In the past, games have done everything to avoid a clear vocal melody since the voice naturally attracts attention to itself and away from what's happening in the game. However, Persona 5 throws that style book out of the window within a minute of the game. Why does music make us feel? On the one hand, music is a purely abstract art form, devoid of language or explicit ideas. And yet, even though music says little, it still manages to touch us deeply. When listening to our favourite songs, our body betrays all the symptoms of emotional arousal. What is rather more significant is the finding that the dopamine neurons in the caudate-a region of the brain involved in learning stimulus-response associations, and in anticipating food and other 'reward' stimuli - were at their most active around 15 seconds before the participants' favourite moments in the music. The researchers call this the 'anticipatory phase' and argue that the purpose of this activity is to help us predict the arrival of our favourite part. The neural network model is capable of detecting five different male/female emotions from audio speeches. (Deep Learning, NLP, Python). MIT License. README.md. Speech Emotion Analyzer. The idea behind creating this project was to build a machine learning model that could detect emotions from the speech we have with each other all the time. Nowadays personalization is something that is needed in all the things we experience everyday. In order to test out our model on voices that were completely different than what we have in our training and test data, we recorded our own voices with dfferent emotions and predicted the outcomes. You can see the results below: The audio contained a male voice which said "This coffee sucks" in a angry tone. 'Persona, emotions and technology: the phonographic staging of the popular music voice', CHARM Symposium 2: Towards a Musicology of Production (The Art of Record Production), 17–18 September, London. http://charm.cchcdn.net/redist/pdf/s2Lacasse.pdf Google Scholar. Landau, J. 1969. 'Review of James Taylor', Rolling Stone, 19 April 1969, p. 28Google Scholar. 'Singer-songwriter authenticity, the unconscious and emotions (feat. Adele's "Someone Like You")', in The Cambridge Companion to the Singer-songwriter, ed. Williams, K. and Williams, J.A. (Cambridge, Cambridge University Press), pp. 291–304CrossRef Google Scholar.