# Integrating Speech, Music, and Sound: Paralinguistic Qualifiers in Popular Music Singing

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## INTRODUCTION

In his book, aptly titled *Speech, Music, Sound*, Theo van Leeuwen proposes to integrate these three modes of sonic information: "They have been talked about in different ways and with different terminologies: linguistics to talk about speech; musicology to talk about music; not much at all to talk about 'sound effects'" (Leewen 1999, p. 1). This conference could be seen as a first major collaborative effort in trying to structure and materialize this integration. In our paper, we would like to explore one possible point of juncture between speech, music and sound by analyzing the popular singing voice.

Popular singing arguably draws most of its inspiration from everyday speech (Rosselson, quoted in Frith 1996, p. 170). For example, and as some recent studies have demonstrated, singers of popular music genres such as country music clearly build their singing style from everyday speech practices, contrary to classically-trained singers (Cleveland, Sundberg and Stone 2001). Furthermore, even though lyrics constitute an important aspect of songs, they also work "as structures of sound that are direct signs of emotion and marks of character" (Frith 1998, p. 120). However, while we believe that most popular singing idioms are indeed taken from everyday speech and are conveying emotions in a similar way than speech does, it is also clear that these elements are then "stylized" by the singer-artist (Middleton 2000, p. 29).

In short, we would like to approach popular singing as a stylized way of conveying emotions using, among other things, everyday-speech modes of expression as its raw material. We are dealing here with a form of aesthetic naturalism which aims, according to American philosopher John Dewey, at "recovering the continuity of esthetic experience with normal processes of living" (quoted in Shusterman 1992, p. 13). In that context, paralinguistics can help us better understand and describe this process: "As in virtually all songs, the effects of words are crucial. But the strength of the 'naturalistic' tendency is such that a para-linguistic dimension is often as important as direct verbal meanings." (Middleton 2000, p. 29)

Among speech-related features that might be borrowed and stylized by popular music singers, we find a high number of paralinguistic effects (melodic drops, vibrato/tremolo, creaky voice, etc.). Many of these sound effects are notably responsible for conveying emotions both in speech and singing. It is our contention that this arguably common ground between music, speech and sound can be explored using existing tools developed in paralinguistics. Thus, by studying the interaction between lyrics (speech), singing (music) and paralanguage (sound), we hope to scratch the surface of the "expressive potential" of popular music singing.

## MATERIALS AND METHOD

In order to do so, this poster focuses on a set of four paralinguistic effects that Fernando Poyatos (1993, p 199-244) categorizes under the label of *paralinguistic qualifiers*: **breathy voice**, **raucous voice**, **falsetto voice** and its derivative, **cry breaks**. These effects, which mostly affect one's voice timbre, act as modifiers of verbal utterances. According to Poyatos (1993, p. 199-200):

> These varying components can be affected by *psychological* and *emotional* variables which will affect those physiological mechanisms. But above all, the communicational importance of […] paralinguistic qualifiers resides in their *sociocultural* functions, as they constitute an extremely complex series of uncontrollable or controllable voice effects which, in either case, are socially perceived and judged according to established values, not only universally (e.g., whispering of intimacy) but culturally as well […].

The following presents an analysis of the use of these four paralinguistic qualifiers in the second verse of Emmylou Harris' "Where Will I Be". Indeed, the country singer makes an intensive usage of many paralinguistic features in her singing. Of course, many of those features affect melodic and rhythmic parameters which are often taken into account in most analyses of singing (vibrato, portamento, ritard, etc.); however, we felt that the study of features affecting timbre was far more neglected. Accordingly, our analysis concentrates on the four qualifiers mentioned above. After a brief description of the song, the analysis looks at the potential expressive power of these qualifiers in a twenty-second-long excerpt of the recording. For the sake of clarity, we resort to a spectrogram which should help us visualizing these effects (see appendix for spectrogram and verse lyrics).

## ANALYSIS

### Song Context

The song "Where Will I Be" features in Emmylou Harris' 20th album, *Wrecking Ball* (1995), considered by many as a masterpiece of the genre. Perhaps a reason that could partly explain this favorable reception is the fact that the album is the only one of Harris' discography produced by Daniel Lanois, one of the most important producers of the 1980s and 1990s, and who is best known for his work with artists such as Peter Gabriel, U2, or Bob Dylan. As a matter of fact, one can clearly hear Lanois' touch in the recording, all the more so as he actually wrote the song. The lyrics suggest a reflection around the question of death ("Where will I be when the trumpet sounds") and the urge of living our desires. These thoughts are arranged in a series of scenes (verses) each of which depicts a specific event or environment. The chosen excerpt (second verse) relates the female character's encounter with "an Indian boy in Ottawa" who laid her "on a bed of straw". This very sensual verse is sung with many delicate vocal nuances, suggesting a palette of emotions as arguably felt by the character. The following section presents a brief analysis of four paralinguistic qualifiers used in this short excerpt and looks at the relationship they entertain with the lyrics.

### Four Paralinguistic Qualifiers

The appendix presents an annotated spectrogram of the verse. A series of ellipses indicate instances of the four paralinguistic effects under study. For sake of clarity, we have assigned a color to each effect: Pink for raucous voice, white for breathy voice, yellow for cry breaks and green for falsetto voice. The figure shows that there are two instances of raucous voice, four of breathy voice, two of cry breaks, as well as a single instance of falsetto voice. We also see that one of the ellipses accounts for a combination of breathy and falsetto voice (on the word "heart" at 74 s.). Of course, many other effects are visible on the spectrogram, such as drops, smears or vibratos, all effects that would be interesting to analyze. However and as previously mentioned, for this poster we have decided to focus on four qualifiers, beginning with what we will call raucous voice.

#### *Raucous Voice*

The term "raucous" is in itself problematic, because it suggests some kind of defect, while it is clearly not the case here. When looking closely at the spectrogram one can easily see that the number of partials is doubled, suggesting that additional vibrations occur. In fact, this looks very much like vocal folds vibrations combined with ventricular vibrations that are controlled by the singer (Bailly, Pelorson, Henrich 2006). When listening to these instances, we clearly hear that the voice is not husky or tensed; rather the effect is produced fluidly as it is the case with most professional popular music signers: "The raucous sound, so much valued in jazz, blues and pop, can and must be the result of something else than smoking or vocal folds under pressure […]. Indeed, it is perfectly possible to produce a raucous sound with the help of a harmless technique […]. This technique involves the vibration of the false bands [ventricular folds]." (Raby and Chagnon 2005, p. 83-84; our translation). As a matter of fact, the technique is also used in other forms of singing, such as throat singing (Bailly et al. 2007). In any event, even though this type of raucous voice is a staple vocal technique in many genres of popular music, Emmylou Harris seems to use it here in specific contexts. Indeed, we only hear it when lyrics are either referring directly to the "Indian boy" (60 s.) or, more importantly, when more intense action involving him is suggested ("He **laid** me down", 66 s.). Rather than connoting aggressiveness or violence (as would probably suggest a harsher and louder sound), the subtle effect tends to convey a sense of strength or power as represented, perhaps, by the Indian character. In the context, it also seems to support a positive attitude of the female character towards the event.

#### *Breathy Voice*

While raucous voice is representative of the most intense moments of the depicted scene, breathy voice suggests more delicate and inner emotions. The four most obvious instances of breathy voice in the excerpt occur on the last vowelic sound of the words "Ottawa" (64 s.), "straw" (69 s.), "breath" (72 s.) and "heart" (74 s.), vowels that are elongated and lasting more or less three beats each. The spectrogram shows that very little harmonic content is present in these instances, the higher spectrum being filled instead with breathing sound in varying degrees (contrary to what is observed, for example, in the harmonic content of the word "down", 67 s.). According to Poyatos (1993, p. 207), in everyday speech, breathy voice may be used to connote diverse emotions ranging from sexual arousal to more negative attitudes: "Breathiness is also the sound of weariness, of facing difficult decisions, of answering difficult questions under tension, […] of shock […], confusion […], anxiety, and dismissal […]." Once again, even though breathy voice is widely used in popular music singing, Harris seems to apply it at specific moments, perhaps suggesting a mixture of these emotions at varying degrees. For example, when heard on the word "breath", not only does breathy voice denote

the word's meaning, but it also evokes the moments of anxiety and stress as apparently felt by the female character ("He said: 'don't waste your breath / Don't waste your heart'"), perhaps in connection with past events or current troubled times (the first verse depicts a destructed environment in a time of war). In the case of "Ottawa" and "straw", the connotation tends to fall on the side of sensuality, providing a subtle contrast between the beginning of each line with their raucous voice. Interestingly, the alternation of raucous and breathy voice in these two lines creates a kind of emotional pattern going from the most intense to the most delicate: raucous voice on the first syllables ("**Met** an Indian boy", "He **laid** me down") and breathy voice on the last ones ("in Otta**wa**", "bed of str**aw**"). Breathy voice is also used in conjunction with falsetto voice on the word "heart", a case that leads us to the next series of effects.

***Second Mode of Phonation: Falsetto Voice and Cry Breaks***

"Falsetto" is a common term (along with "full head voice") that refers to "[t]he treble range produced by most adult […] singers through a technique whereby the vocal cords vibrate in a length shorter than usual, known as the second mode of phonation" (Negus, Jander and Giles 2008). Although usually associated with male singers, the technique is of course widely used by female singers, as it is the case here. Even though it is not that visible on the spectrogram (because of the combined effect of breathy voice), falsetto voice is usually characterized by a smaller number of harmonics (every second harmonic is either less visible or simply absent). Throughout the song, Emmylou Harris uses her head voice, especially so in the chorus sections. In the verse under study, however, and with the exception of yodel effects we will be discussing shortly, we only hear one clear instance of falsetto voice on the word "heart" (74 s.). Furthermore, and as mentioned earlier, the effect is clearly combined with breathy voice, giving rise to what Poyatos (1993, p. 211) calls "whispery falsetto". According to him, in normal speech, the effect is sometimes "observed in women and children […] when they cry". In this second section of the verse, we can hear that the female character is overwhelmed with sometimes conflicting emotions, a blend that is almost impossible to convey in such a short time with just simple words. Here, paralinguistic qualifiers are the primary vehicle of this emotional lace. In fact, it seems that the word "heart" is the highest moment of inner emotional intensity as felt by the female character who seems to have been profoundly touched by the related events. Poyatos' reference to crying is also interesting because it allows us to draw a relationship with another type of effect using the second mode of phonation: cry breaks.

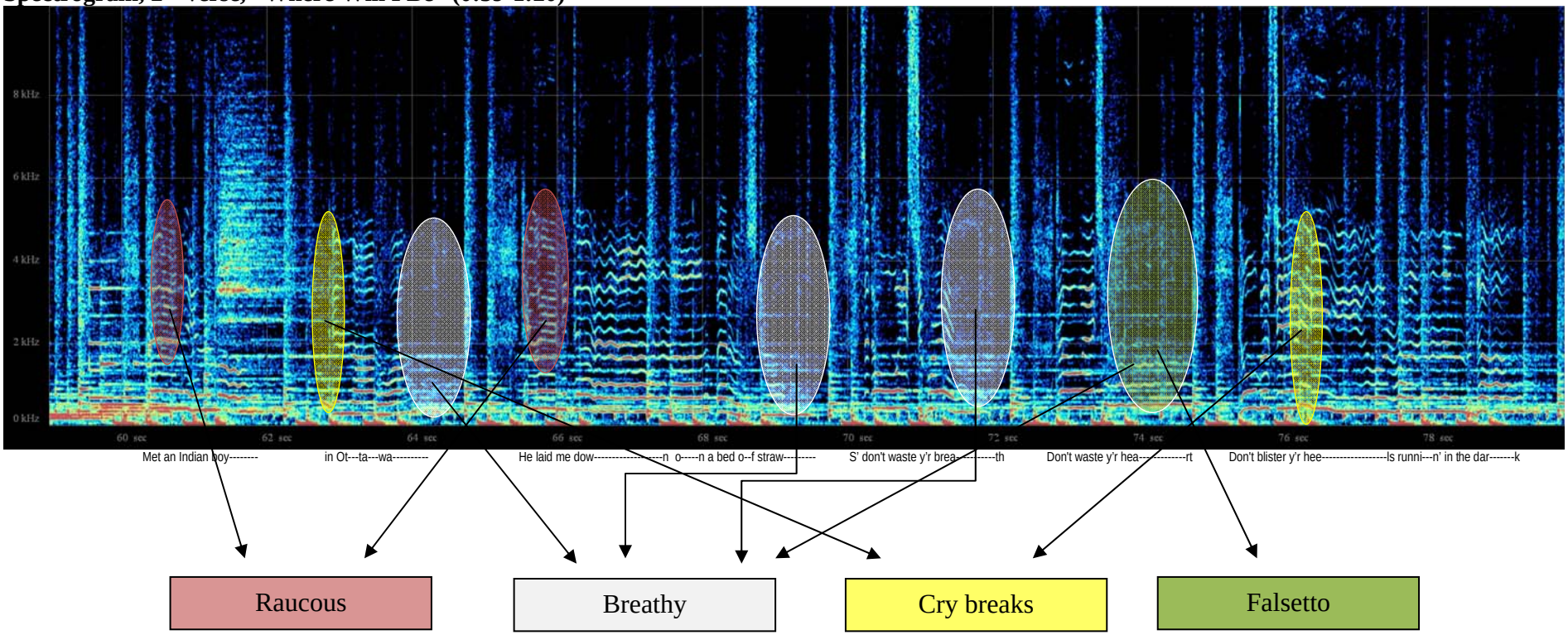
Considered by anthropologist Greg Urban (1988, p. 389-391) as one of the cultural "icons of crying" in stylized forms of singing and speech, falsetto breaks or "cry breaks" consist in a kind of yodel characterized by a sudden shift from one mode of phonation to the other. In the case under study, we hear two instances of cry breaks involving a shift from the second to the first mode of phonation ("**in** Ottawa", 63 s., and "your **hee**ls", 76 s.). In the context of a country-oriented singer, the use of cry breaks is certainly not surprising. According to Aaron Fox (2004, p. 280), "These articulations are coordinated with song forms and specific affective goals. 'Crying' effects, in particular, are both generalized aspects of a subgeneric [country] style […] and specifically coordinated with 'sad' songs, verbs of crying, and affectively potent moments". In our song, Harris uses the effect parsimoniously: In the first instance, the effect is very subtle and even barely audible unless we listen with much attention. It nevertheless provides an additional touch to the signer's expressive palette during the first few seconds of the excerpt. In comparison, the effect is loud and clear on the word "heel". The break seems to both denote the pain of blisters on one's heels, and, more metaphorically, connote the sadness as apparently felt by the character. Interestingly, the alternation between chest and head voice, including effects of falsetto breaks, is interpreted by musicologist Patrick Dailly (n.d.) as a stylistic features of what he calls "victim-songs" performed by many female popular music signers: "[T]hese two registers […] both inhabit women's pop music and when a singer makes a pointed and deliberate stylistic feature of changing between registers, something of the respective semantic 'etymologies' of the two voices is touched upon. […] Flipping freely between the voice of control [chest voice] and the voice of vulnerability [head voice] perfectly underlines the politics of victim-songs. The freedom and ease with which this is done suggests a kind of instability within the personae of the singers; they do not occupy a static position." In addition to the obvious fact that most country-oriented songs are often about some sort of victimization, in the song under study, the effect certainly helps in illustrating the nuances of emotions as presumably felt by the character.

**CONCLUSION**

For this poster, we have attempted to illustrate how the application to paralinguistics to popular music studies could contribute to integrate discourses about music, speech and sound. Of course, much additional work needs to be done. For example, in order to support our rather subjective interpretations, we would need to conduct reception tests. However, the aim of this paper was to measure the potential of drawing parallels between disciplines. We certainly hope that this goal was attained and that this study will encourage other scholars to carry further research.

## APPENDIX

**Spectrogram, 2nd verse, "Where Will I Be" (0:59-1:20)**

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