

# “THE PAIN, THE PAIN”: MODELLING MUSIC INFORMATION BEHAVIOR AND THE SONGS WE HATE

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## ABSTRACT

The paper presents a grounded theory analysis of 395 user responses to the survey question, “What is the worst song ever?” Important factors uncovered include: lyric quality, the “earworm” effect, voice quality, the influence of associated music videos, over-exposure, perceptions of pretentiousness, and associations with unpleasant personal experiences.

**Keywords:** User study, music information behaviour, music recommender systems.

## 1 INTRODUCTION

To understand music information retrieval (MIR) tasks, particularly music recommender systems, the issue of why we dislike a song can be as important as why we like one. In this paper we focus on this issue, presenting results collated from an on-line survey that asked respondents to provide details over song they did not like. Using a grounded theory approach to draw out significant features and characteristics, we discuss their implications and relevance to MIR.

Music psychology research to date has primarily focussed on music preference—music that individuals and groups like. An earlier review of this literature [1] has demonstrated that a deep understanding of music preference to have practical value in suggesting features and functionality for MIR software, particularly for music recommender systems. It would seem reasonable that an understanding of musical aversions could also be useful in informing MIR design, since the music seeker is simultaneously trying to locate desirable music and avoid disagreeable music. Music dislikes, however, have been relatively neglected as a subject of study. An exception is the work of artists Komar and Melamid, who based the composition of a song predicted to be liked by fewer than 200 people in the world on input from a survey of song feature dislikes [2].

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## 2 DATA COLLECTION

Using Survey Builder,<sup>1</sup> an online survey was constructed to gather descriptions of the music characteristics that define why people dislike particular pieces of music. The survey was posed as an opportunity to vote to determine the worst song ever, and was modelled on a similarly themed, postal survey organized by humorist and newspaper columnist Dave Barry [3]. Respondents were asked to enter the title and artist of the song that they themselves particularly hated, and to explain why. The respondents could also optionally enter their age, sex and nationality. The survey was publicized primarily by posting notices in music-related newsgroups, online discussion forums, and mailing lists.

The responses analyzed in this paper were submitted from March 21 to April 17 2005. 395 usable responses were collected. The majority of respondents were from English-speaking countries, and this language bias is reflected in the songs nominated—the overwhelming majority of which were North American and European, English language songs. For respondents volunteering demographic details, the number of male and females is nearly even (182 female, 177 male), and the bulk of respondents are adults in the 20–45 years old range (average age 32).

Figure 1 shows this data displayed as a scatter graph, plotting the decade of the song against the age of the subject (decade information for 12 of the songs could not be determined). The graph shows a strong weighting towards songs from the last five years (as many as from the previous decade). Around the age of 50 and above, the nomination of older songs becomes more noticeable.

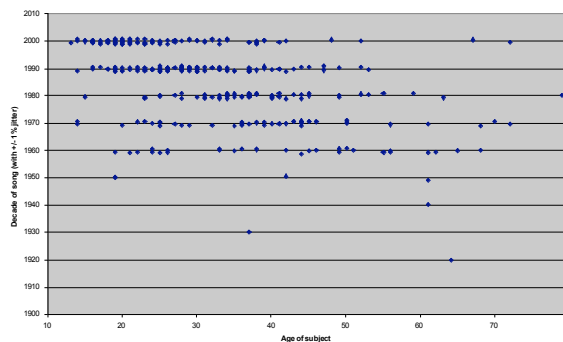


Figure 1. Decade of song versus age of subject.

The explanations detailing why respondents loathed their nominated song were analysed using a grounded

<sup>1</sup> <http://chnm.gmu.edu/tools/>

theory approach [4]. With this technique researchers attempt to approach the data without prior assumptions, and to generate theory from the data.

### 3 ANALYSIS AND DISCUSSION

Approximately 7% (30) of the survey respondents seemed to have difficulty in singling out particular features of a song to explain why they hated it. Some simply dismiss the nominated song as ‘horrible’, ‘indescribable’, ‘lamest song’; others clearly wrestle—unsuccessfully—with the problem of providing a reasoned, rational analysis of a visceral response:

I HATE this song [George Gershwin’s ‘Summertime’], it really irritates me. I know it’s a ‘classic’ and all that and I generally like the Gershwin’s output. I can’t find any aesthetic or logical reason why I’ve taken against this song but it just sets my teeth on edge.

This section explores the factors contributing to disliking a song as suggested in the remaining 93% of survey responses.

#### 3.1 Descriptive Data

Table 1. Top-ranked explanatory terms.

Feature Terms		Descriptive Terms	
Term	Response Count (%)	Term	Response Count (%)
lyric	152 (38%)	bad	48 (12%)
music	67 (17%)	annoy	34 (9%)
sing	52 (13%)	hate	32 (8%)
video	38 (10%)	really	31 (8%)
voice	37 (9%)	inane	30 (8%)
singer	33 (8%)	horrible	28 (7%)
sound	30 (8%)	stupid	27 (7%)
repetitive	22 (6%)	worst	25 (6%)
tune	21 (5%)	awful	23 (6%)
perform	18 (5%)	crap	22 (6%)
chorus	16 (4%)	bore	18 (5%)

In Table 1 we present the top-ranked terms taken from the ‘Explanation’ field of the online survey form. These data represent the number of responses which included the given term root (i.e., the terms ‘lyric’ and ‘lyrics’ were collapsed into one term category). The Feature Terms data highlight the most-frequently used terms that attempt to illustrate the components of the song under discussion. The Descriptive Terms data represent the most-frequently used terms which give a sense of the respondents’ feelings about the pieces.

#### 3.2 The Importance of Lyrics

Issues surrounding the lyrics of a given song appear to be the single most consistent factor in motivating the nomination of the song with 53% (209) of the responses commenting on some aspect of the lyrics. 77 (19%) of respondents provided lyric fragments to illustrate their explanations. The two descriptive terms commonly used

to describe the lyrics which jump out of the data based upon their frequency of use are ‘inane’ and ‘stupid’ with 30 (8%) and 27 (7%) responses including these terms respectively. Beyond the poetic and stylistic merits of the lyrics in question, 41 (10%) respondents made explicit negative comments about the underlying stories, ideas and themes expressed in the lyrics.

Overly simple, repetitious lyrics (cited in 5 responses, 9%) can be a factor in disliking a song; given this, it would seem reasonable that a song with a more complex story or message—requiring more complex lyrics—would be viewed more favourably. This appears to be the case only if the listener agrees with or enjoys the story or message. One source of objection is overly sentimental or clichéd lyrics (‘cheesy’, ‘corny’, ‘cloying’). Other storylines or messages that inspired dislike include sad stories (‘Makes me cry just to think of this awful song.’); songs expressing misogynous sentiments and other biases (‘The words are sexist and derogatory to almost everyone that breathes’, ‘because it was so discriminant against short people, and I am short’); and contradictory or unintelligible messages (‘There’s a line in the song that says “it can’t be taught,” while the chorus says “I can teach you, but I’d have to charge”).

#### 3.3 The Earworm Effect

‘Earworm’ is a literal translation of the German *Ohrwurm*, meaning a song that gets stuck in your head. 30 respondents (7.5%) cited this common, but exceptionally irritating, phenomenon (‘Oh god it’s in my head...the pain the pain!’). The earworm is not a recent phenomenon; the first extensive description of this condition dates to 1876 [5].

Earworms are frequently prompted by hearing a song, but they can also invade if one simply thinks about it—for example, when filling out an online survey: ‘I can’t stand the bloody chorus. Now look! It’s in my head and I can’t get it out’. Respondents note that earworms are ‘catchy’ and appealing, at least initially.

A song is more likely to be an earworm if it has one or more of the following characteristics [6, 7]:

- the song is overly repetitive, either in tune, lyrics, or both (‘crude lyrics, repeated over and over and over again in a mind-numbing manner’; ‘the repetitive lyrics over and over that creep inside your brain’).
- the tune or the lyrics lack complexity—the song is musically simplistic, or the lyrics are predictable and undemanding (‘the tune never changes’; ‘no musical variety’). Children’s music is particularly susceptible to becoming an earworm.
- the song contains incongruous or unexpected elements—for example, irregular beats, unpredicted melodic patterns, or unusual effects. ‘Who let the dogs out’ is cited for its ‘woof, woof, woof’ chorus.
- the song does not resolve, or the resolution is not as predicted by the listener; for example, one respondent nominated ‘Anything by Phil Collins or Genesis’ because their albums frequently include ‘Tunes that don’t resolve properly, or when I expect.’ The nominated song that provides the most extreme example of this property is ‘The song that never ends’ (Shari Lewis and Lamb Chop).

Note that some of these characteristics can be extracted from the music or lyrics to identify potential earworms. One can imagine, for example, measuring the degree of repetition in lyrics or melody, developing a metric for musical complexity, or noting how the song ends.

### 3.4 'The Voice'

110 responses (28%) cite aspects of the vocal elements of songs as a significant factor in disliking the nominated song. Singing is characterized as 'annoying', 'yowling', 'monotonous', and 'whiny'. Again, sentimentality ('sickly sweet') comes under fire. Over-dramatic vocal effects draw rebuke: 'relentless vocal gymnastics that spawned a generation of Pop Idol wannabes who compensate for their inability to sing by turning one note into 144!'

### 3.5 Music Videos

37 respondents—over 9%—mentioned the nominated song's accompanying music video as a factor in why they dislike the song. Most references simply dismiss the video ('stupid', 'horrible'). More detailed references are to the overall stylistic effect of the video ("flashy"; "seeing a video with all the possible cliches (especially the slow-motion) is just psychological terrorism").

Images and video are not currently included in most MIR systems to support searching and browsing. One notable exception is an interface based on a 'collage machine', which allows the user to serendipitously explore a music collection based on an interactive collage of images associated with song and album titles [8]. This neglect is surprising, given the long history of album and CD cover art; printing innovations in the late 1940s were quickly exploited by record companies to provide distinctive, attractive covers, and conventions of imagery, colour, and style emerged to represent different musical genres [9]. Shoppers in CD stores frequently use visual cues from CD covers to identify potentially interesting music when browsing, or as a memory aid to quickly pick out a particular desired CD from a stack [10]. And, of course, the artist is usually featured in a song's video, supporting easy visual identification of the performer.

Given these strong associations of still and video images with music, it appears promising to use CD covers and video images to support browsing in MIR systems. Images can be scanned more quickly than text, and support rapid relevant/not relevant decisions—in this case, to identify musical genres, artists, and mood that are not of interest, or to winnow out specific songs.

### 3.6 Over-Exposure

While the number of times an individual hears a song clearly influences whether that person likes/dislikes the song, the impact of repetition is neither straightforward nor clearly understood. The most widely accepted theory states that repeated exposure to a song tends to increase the degree of 'liking', until a peak is reached. After that peak, continued exposure to the song is associated with a lessening of 'liking' [11]. A similar pattern, dubbed 'thrashing' and 'sickness', has been noted in the acquisition of CDs for a personal music collection; a new pur-

chase is played frequently ('thrashing') until saturation is reached, at which point 'sickness' sets in and the CD is set aside [12]. The song may become more acceptable when (or if) the sense of over-familiarity wears off.

Approximately 6% (25) responses cited over-playing as a factor in disliking a song. One respondent declined to select a single song and instead nominated "any song that is at one of the first 5 chart positions. i just can't hear something 20 times a day." Over-exposure could come about through radio play ("The very worst about that song is that it was played on the radio all summer and you just couldn't hide from it."), or through other sources ("all those damn ipod commercials"; "seems to be in every movie during some cheesy driving scene"; "Its on nearly every bleeding love song compilation"; "worst of all its really popular for karaoke").

It is initially tempting to suggest associating a measure of the current degree of airplay with a song as meta-data. Unfortunately, this would provide only a rough indication of over-exposure. Airplay misses other potential venues for contact with a song, and individuals will have different thresholds for at which over-familiarity sets in.

A more promising approach is to require the audio player application to keep usage logs of the music listened to, and to analyse this information to detect patterns of usage. Given that most contemporary audio players integrate audio streaming this would also naturally cover the user's listening pattern to on-line radio stations noting, for example, when they effectively "change channel." Further research is required to determine whether an airplay measurement is too crude to be useful in filtering over-exposed songs.

### 3.7 Pretentiousness: Wannabes and Posers

Pop artists and their music can be seen as symbols for sub-cultures, outlooks on life, even entire generations. The perception that an artist is a 'wannabe', that he or she is merely copying the appearance, behaviour, or style of another group is cited as being particularly off-putting in 15 (3.7%) responses: 'just reeks of stupid white boy...misguidedly trying to channel prince'; 'faux "street" gestures'; 'faux spiritualism'. A similar distain is felt for songs perceived as pretentious or the product of 'posers' (15 responses, 3.7%): 'Overblown pretentious cliched rock, attempting to be poetic'; 'The inane lyrics and the fact that in popular opinion it is regarded as a deep and meaningful song'; "if I have to hear another U2 fanboy mumbling on about how Deep U2 are someone is going to hurt."; 'The pretentious artist'.

Given this frequent association of pretentiousness with particular artists, it appears that the ability to filter out songs from certain artists would be a useful facility for a music retrieval system.

### 3.8 Clashing Taste Cultures

*A colleague drops by to tell me that she's been looking through the posted survey responses. She agrees with most of them, but The Rasmus! How could anyone hate that group! And 'Milkshake'—that song is cute!*

No song is universally loved, or universally hated. Some respondents express a sense of surprise and dis-

may that their nominated song is not universally loathed: 'IT'S SO ANNOYING HOW MANY PEOPLE LOVE THIS DRIVEL'. This response can be interpreted in the context of 'taste cultures'—groups of people with similar likes and dislikes for products of significance to the group (such as music and clothing) [13]. A song may be particularly disliked if it is associated with a taste culture that the listener finds objectionable: 'Perhaps I really loath it because I don't like the sort of people that really get into it.'

Collaborative filtering systems make recommendations based on taste information collected from other users. Generally, it is easier to gather information on user likes than on dislikes (for example, a 'like' may be assumed if a user downloads a song). It would be interesting to explore whether recommendations could be refined by gathering dislike data as well.

### 3.9 Unfortunate Personal Associations

Songs can become strongly associated in our memories with people or events; think of the couples who hold hands when 'our song' comes on the radio, or remember a particularly enjoyable party from your youth and note that a song from that time pops into your head. For 5% (21) of the survey respondents, their nominated song has an unfortunate association that is evoked whenever they hear the song:

This song was played 5 times in a row at my Auntie's funeral. I can't listen to the song without thinking of her. (She died young)

Clearly such personal associations are impossible to capture in software. It is important to be aware of such idiosyncratic characteristics, however, as they are limiting factors to the success of any attempt to provide music recommendations.

## 4 CONCLUSIONS AND FUTURE WORK

Ultimately, the songs that we dislike depend as much upon ourselves as upon characteristics of the songs. The earworm effect suggests features of songs whose appeal is likely to fade, with further evidence supporting features of the lyrics and tune that particular individuals may dislike. As the survey continues gathering user input, we intend to gather up a research collection of the nominated works so we can begin a more in-depth mapping of the content-based (i.e., lyrics, audio) and extra-musical features (i.e., videos, radio play history, chart positions, etc.) to the rather passionately described explanations of the respondents. This mapping should contribute greatly to the improvement of both MIR recommender (positive) and user-defined MIR filtering (negative) algorithms.

Oh, and the song that received the most nominations for 'worst song ever'? *Achy Breaky Heart*, by Billy Ray Cyrus: respondents objected to its earworm qualities, lyrics, overly-simple melody, its taste culture, and yes, even cited personal associations ("My ex used to try to dance to it when we went out, and I have hated it and him since").

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