PEOPLE AND THEIR MUSIC

Sally Jo Cunningham
Department of Computer Science, University of Waikato, Hamilton
New Zealand

Introduction

Since 2002 David Bainbridge (University of Waikato), J. Stephen Downie (University of Illinois at Urbana-Champaign), and I have been trying to find out what people do with music, and what they would like to do. The motivation for this work is to inform music information retrieval (MIR) system development—to suggest functionality and to explore useful ways to organize music collections within MIR software.

MIR, as the name suggests, has emerged out of Information Retrieval. Although scattered bits of work have been conducted on music retrieval systems over the past 30 years, it is only recently that these bits have coalesced to form a research field (the first MIR conference was held in 2000, and it's since become a yearly event). The Information Retrieval influence has meant that the focus of much of the research has been in supporting search, primarily known item searches. The question that this raised for the three of us was whether there were other music activities that were being neglected. To move towards an answer to this question, we have been focusing our efforts on examining what people actually do with their personal music and with public music collections. We are particularly interested in behaviors that can, or should, be supported in a music retrieval system; we also choose to focus on the everyday behaviors of people with music that they personally enjoy, rather than, for example, the specialist needs of music professionals.

Our approach

Our work has mainly been qualitative and ethnographic. We combine a variety of techniques—interviews, participant observations, query analysis—to gain as rich a picture as possible of music behaviors. To date, our work has included:

- analyzing music queries posted to Usenet News [1] and to the Google Answers ask-an-expert service [2]. These queries are rich examples of music information needs—the postings are in natural language and aren't constrained by query languages or any preconceptions about the types of information that could be asked for. The most interesting insight from this work was that people want all sorts of music-related documents: they want lyrics, information about the artist, pictures, guitar tablatures, and a host of other document types. An MIR system should support users in locating a far

richer set of documents than simply 'the song' as an mp3 file.

- watching what people do in music CD stores [3]. A CD store is, essentially, a publicly accessible music collection, and seeing what people do in these stores might give us ideas about how people would want to interact with a publicly accessible MIR system. The most significant lesson learned from this exercise is that people do a LOT of browsing with music. Browsing has not been well supported in MIR systems, relative to searching, so this observation has opened up a new set of possibilities for us in MIR design. Browsing can be useful in bringing music to one's attention for possible purchase, but can also be a simple pleasure in and of itself—not surprisingly, people enjoy interacting with music.

- finding out how people organize their personal CD collections [4], again with an eye to finding ideas for personal digital libraries of music. This research confirmed observations from earlier studies, including the importance of the visual aspects of a collection. The visual is particularly important with personal collections, as people want to 'show off' their collections to others, or use the visual aspects such as CD cover images to quickly browse collections.

- gathering descriptions of why people hate particular songs [5], in the guise of an online survey where people nominate a song for 'the worst song ever' and then explain why they hate it. The idea here is that music recommender systems are beginning to be based on music psychology research into music preferences. Music dislikes, however, haven't been studies in nearly as much depth. We're trying to find features that can be used in a music recommender system to try to filter away songs that users are probably going to dislike. Some of the characteristics that cause people to loathe a given song are idiosyncratic (for example, the song might remind them of a former spouse). Other features are more amenable to inclusion in an MIR system; for example, songs with simple, repetitive lyrics and rhythm are particularly susceptible to being hated.

References

[1] Downie, J. Stephen, and Cunningham, S.J. (2002) Toward a theory of music information retrieval queries: system design implications. *Proceedings of the*

International Symposium on Music Information Retrieval (ISMIR02), Paris (France), 299 – 300.

[2] Bainbridge, D., Cunningham, S.J., and Downie, J.S. (2003) How people describe their music information needs: a grounded theory analysis of music queries. *Proceedings of the International Symposium on Music Information Retrieval* (ISMIR03), Baltimore (October 2003), 221-222.

[3] Cunningham, S.J., Reeves, N., and Britland, M. (2003) An ethnographic study of music information seeking: implications for the design of a music digital library. *Proceedings of the Joint Conference on Digital Libraries*, Houston, May 2003.

[4] Cunningham, S.J., Jones, M., and Jones, S. (2004) Organizing digital music for use: an examination of personal music collections. *Proceedings of the International Symposium on Music Information Retrieval (ISMIR04)*, Barcelona (October 2004), pp. 447-454.

[5] Cunningham, S.J., Downie, J.S., and Bainbridge, D. "The Pain, The Pain": Modelling music information behavior and the songs we hate. Working Paper, Department of Computer Science, University of Waikato (Hamilton, New Zealand).