

UPBEAT AND QUIRKY, WITH A BIT OF A BUILD: INTERPRETIVE REPERTOIRES IN CREATIVE MUSIC SEARCH

Charlie Inskip

Dept of Info Science,
City University London
c.inskip@city.ac.uk

Andy MacFarlane

Dept of Info Science,
City University London
andym@soi.city.ac.uk

Pauline Rafferty

Dept of Info Studies,
University of Aberystwyth
pmr@aber.ac.uk

ABSTRACT

Pre-existing commercial music is widely used to accompany moving images in films, TV commercials and computer games. This process is known as music synchronisation. Professionals are employed by rights holders and film makers to perform creative music searches on large catalogues to find appropriate pieces of music for synchronisation. This paper discusses a Discourse Analysis of thirty interview texts related to the process. Coded examples are presented and discussed. Four interpretive repertoires are identified: the Musical Repertoire, the Soundtrack Repertoire, the Business Repertoire and the Cultural Repertoire. These ways of talking about music are adopted by all of the community regardless of their interest as Music Owner or Music User.

Music is shown to have multi-variate and sometimes conflicting meanings within this community which are dynamic and negotiated. This is related to a theoretical feedback model of communication and meaning making which proposes that Owners and Users employ their own and shared ways of talking and thinking about music and its context to determine musical meaning. The value to the music information retrieval community is to inform system design from a user information needs perspective.

1. INTRODUCTION

The record and music publishing industries and artists and writers benefit financially from secondary exploitation of their copyrights when they are used in films, TV shows, advertising and computer games. This process is known as music synchronisation, or 'sync'. The professional music Users employ specialists to search large catalogues for pre-existing commercial music in conjunction with the Owners' in-house specialists. Often these creative music searches are based on an ever-changing written query, or 'brief', which is sometimes accompanied by a moving visual clip or still images. [1]

The major Owners have attempted to disintermediate this process somewhat by developing and maintaining web-based applications which search their catalogues. These mainly use controlled vocabularies to explore databases of textual metadata linked to the relevant audio files. As would be expected, the metadata fields used in these applications include bibliographic information such

as Artist, Title, Year and Chart position. Additionally they recognize the need for the Users to search for unknown items, and include more descriptive domain-based fields such as Mood, Genre, Tempo and Subject. Cataloguing is done by hand [2].

This paper presents a Discourse Analysis of thirty face-to-face interviews with professionals involved in sync in the UK. These semi-structured interviews have taken place over a period of two years as part of a wider investigation into the communication processes and information needs of this group of under-researched creative music searchers. The aim of the paper is to present an analysis of these texts which identifies the various interpretive repertoires used by this community of specialist users. A range of ways of talking about music is discussed, derived from a Discourse Analytic approach. The repertoires are adopted throughout the community and no repertoire is exclusive to one type of stakeholder. The varying discourses represent different ways of constructing reality and reveal important factors which may contribute to the design of music information retrieval systems for the purpose of music synchronisation.

Publications discussing qualitative research of user information needs traditionally bemoan the fact that there is little work in this area. However awareness of user needs and behaviour keeps users on the ISMIR radar, even though they are not usually the focus of reported research. Generally focus is on tagging and certain aspects of evaluation, such as ground truth and playlist evaluation. However in [3] the word 'user' does not appear in any top ten lists for ISMIR paper titles over the ten years of the conference, nor, indeed, in the top 20 bi-grams from titles and abstracts. Nevertheless, applying 'music information need' or 'user behaviour' as a query to the ISMIR Cloud Browser [4] does generate a range of relevant work focusing on user information needs such as [5,6,7]. This paper is situated within the user information needs paradigm and reflects the call at ISMIR 2009 [8] for the community to meet a number of challenges, the first identified being "*ISMIR needs to more actively encourage the participation of potential users of music-IR systems.*" [8]

The next section introduces and describes the methodology. This is followed by a summary of the findings and some examples of the coding and analytic process. In the final section the implications of the use of these repertoires are discussed, applying them to a theoretical model,

Permission to make digital or hard copies of all or part of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page.

© 2010 International Society for Music Information Retrieval

and suggestions are made as to how this work may be relevant to the music information retrieval community.

2. METHODOLOGY

In Discourse Analysis (DA), language is seen to construct reality, rather than simply reflect and describe it [9]. There are numerous methodologies under the DA umbrella, which vary widely in the amount of detail in which they look at the texts being considered [10]. Texts may be any written or spoken form of interaction, including interviews and other documents which are related to the subject in question. The linguistic approach identifies pauses and hesitations and detailed lexicographic units, while the social psychology approach, used here, seeks to identify attitudes, beliefs and attributions [9]. Interpretive repertoires are described as “*a lexicon or register of terms and metaphors drawn upon to characterize and evaluate actions and events*” [9:138]. Although there is no ‘recipe’ [11] for identifying interpretive repertoires [12] there is a developing DA literature in the library and information studies and human computer interaction domains [13-18].

Since October 2007, 23 professionals directly involved in searching for music to accompany moving images have taken part in semi-structured interviews. Seven people were observed while making relevance judgments, three of whom had previously been interviewed [19]. The sample was derived using snowball sampling [20], where each participant in the research recommended a small number of people to approach for the next interview. This method allows access to previously hidden communities and distances the sample from the researcher’s preconceived ideas of who may be relevant. All participants were provided with an explanatory statement detailing and contextualizing the research project and gave informed consent. Interviews and observations lasted up to one hour, were recorded digitally and transcribed using MS Word. The transcriptions were then imported into NVivo software [21] and coded manually by the corresponding author, ensuring consistency.

The objective of the analysis was to identify interpretive repertoires within the interview and observation texts, highlighting the ways in which this community of varied-interest stakeholders talk about music. Interpretive repertoires are drawn from and used by a wide community of interest. One viewpoint of DA is that no one participant will be consistent in their talk, and the researcher is likely to find consistencies and variability not only between texts, which may be expected, but also within them. These consistencies and contradictions are drawn from a variety of repertoires which represent different ways of thinking about something [11,12], in this case, music. All of the participants are talking about searching for music in large collections and using music with moving images. However some of them are rights holders and their intermedia-

ries (Owners) while others are music supervisors and film makers (Users). Each group draws from the other’s repertoires in their music talk. Analyzing these repertoires in detail should identify more than one way of talking about music, informing work on meaning making in creative music search.

For the purposes of analysis there were two iterations of coding. On the first pass examples of ‘talk about music’ were identified. These were marked up using the coding facility in NVivo. This enables the researcher to tag highlighted text elements with bespoke codes and then extract, sort and analyse data tagged under specific codes in order to spot patterns, word and tag frequencies etc.. All the sections of text coded as ‘talk about music’ were then examined to determine how music was being described. Previous work had identified two broad groups of facets used in sync search engines [2] and user sync queries [22]: Bibliographic (content-based) and Descriptive (contextual). These facets were used as a starting point for the coding. There seemed to be more of a focus on Bibliographic data (eg Artist, Title) in the Owners’ search engines while the Users’ queries were more based on Descriptive language (eg Mood, Novelty).

3. IDENTIFIED REPERTOIRES

The language within each ‘talk about music’ section was carefully considered. This close reading of the transcriptions brought to light ways of talking about music that did not fit into either Bibliographic or Descriptive talk. It was found that a total of four types of language were consistently employed. These were identified by contradictions within or between texts or signalled by regularly-arising metaphors or phrases. Contradictions can be resolved by acknowledging a participant is switching repertoire and acknowledging the existence of more than one point of view. It is widely agreed in DA that this is a strong indication of interpretive repertoires. The words and phrases were divided into categories based on their themes, and coded within the interview texts (Table 1). Each theme, or repertoire, positions music differently in a users’ world view. These are presented below as four interpretive repertoires, which have been named the Musical Repertoire, the Business Repertoire, the Soundtrack Repertoire and the Culture Repertoire.

3.1 The Musical Repertoire

In this repertoire, music is *an asset which is created and has identifiable characteristics*. The repertoire is identified by the appearance of bibliographic musical keywords (Table 1), such as ‘artist’, ‘title’, ‘instrumental’, ‘lyrics’. These familiar facets are commonly used to identify a piece of music. However, they relate more to how the Owners identify the music in their catalogues than how the musical elements are matched to a visual. Referring to an analysis of the Owners’ bespoke search engines [2] these facets identify a recording or a composition and

help to isolate it within a large catalogue of recordings or compositions. The record companies and music publishers responsible for curating commercial music catalogues and exploiting recordings and compositions use these ‘traditional’ musical library facets when organizing their materials.

3.2 The Business Repertoire

In the Business Repertoire, music is *a large collection of recordings which are marketable, contractual and negotiable and have monetary value to the Owner*. There are a number of facets relating to music talk that are not immediately obviously musical, but they are important in exploitation terms nonetheless. These criteria are more concerned with business issues relating to signing, exploiting, and licensing music and include such keywords as “*license*” and “*clearance*”. They also employ the words used to sell the music to consumers, such as “*brand new*”, and “*cool*”. The size of a catalogue is very important in this repertoire.

There are frequent co-locations of physical metaphors when the Business Repertoire is used: “*work with it*”, “*at the coalface*”, “*splattering*”, “*wall-to-wall*”, “*throw music up against it*”, “*dig it out*”, “*churn up a ton of songs*”, “*trawl through a catalogue*”. These physical metaphors indicate the way of thinking that music is a physical capital resource for the Owners and Users alike, and using it as such adds value to their commercial activities.

3.3 The Soundtrack Repertoire

Here, music is *a mood enhancing ingredient inextricably linked to User’s message being conveyed by moving image to viewer / listener*. This repertoire differs significantly from the Musical Repertoire. In the Soundtrack Repertoire, music is ‘*upbeat and quirky, with a bit of a build*’ as opposed to ‘*uptempo and leftfield, with a crescendo*’. It is ‘*recessive and background*’ rather than ‘*acoustic with sparse instrumentation*’. This repertoire reflects the way in which the music functions when it is synchronized with the music, and the goal of the film maker in this process. It predominates in user queries [22] but also appears in interviews across the stakeholder spectrum.

3.4 The Cultural Repertoire

Finally, music is represented as being *a subjective appealing distraction which is personal and emotive*. The piece of film has a final audience, which also includes the participants in this process in their recreational lives consuming the media they are involved in creating. As recreational consumers themselves they often bring less ‘professional’ music talk to these discussions, indicating they are enthusiastic fans of the cultures of music and film: These purely subjective evaluations of media content appear throughout the texts and are an important way of communicating the meaning and value of a piece of music, film, or the combination of the two. It is marked by a frequent trope: ‘*when it works, it works*’, ‘*you just know*’, or ‘*it’s gut instinct*’. This phrase arises throughout the interviews in response to the question ‘*what makes a great sync?*’

These repertoires are summarised in Table 1 (below) alongside examples of nouns, phrases and adjectives which help to identify the repertoire in the data:

Repertoire	Keywords
Musical Repertoire: Music is an asset which is created, and has identifiable characteristics.	<i>Artist, song title, writer, year, album title, chart position, genre, keyword, tempo, lyrics, mood, subject, vocal mix / instrumental</i>
Business Repertoire: Music is a large collection of recordings which are marketable, contractual and negotiable and have monetary value to the Owner.	<i>Brand new, cool, big catalogue, comprehensive, demographic, one stop, originating territory, physical</i>
Soundtrack Repertoire: Music is a mood enhancing ingredient inextricably linked to User’s message being conveyed by moving image to viewer / listener.	<i>Effervescent, uplifting, recessive, theme, build, quirky, unexpected, familiar, theme, background, match the music to the picture</i>
Cultural Repertoire: Music is a subjective appealing distraction which is personal and emotive	<i>Like it, opinion, brilliant, great, hate it, it just works, gut feeling, instinct</i>

Table 1 Talk about music - interpretive repertoires

4. REPERTOIRE ANALYSIS

4.1 Extract 1

An example of coded text can be seen in Appendix 8.1. It can be seen from this extract that the participant is using a range of approaches in her music talk. She is a synchronisation manager in a music publishing company (Owner) and her role is to secure syncs for the music in the catalogue she represents. Her answer to the question:

“How do you then match those to the briefs that you are sent and how do you promote them to to your potential clients?”

incorporates all four repertoires, which in the extract are tagged as <MR> (Musical Repertoire),
 (Business Repertoire), <SR> (Soundtrack Repertoire) and <CR> (Cultural Repertoire). (The colour coding used in NVivo has been translated in this paper into XML-type codes for ease of explanation and reproduction). In the BR firstly she identifies her business resource, the physical “*dedicated music server*”, which contains a database of her collection, which is “*quick*” and efficient (“*the most optimum way*”) and refers to the physical acts of making cds and putting mp3s on an ftp site.

She switches to SR, using the film makers’ special language of “*briefs*”, “*visuals*”, “*matching the music to picture*” and “*marry it up*”. Although it is not specifically her role to match the music to the moving image it is frequently described by participants as their preferred way of determining relevance. Incorporating this SR act in her discourse indicates an understanding of “*the other side*”,

their way of thinking and working. Indeed she has work experience in the film world and is therefore in a position to adopt repertoires representing different interests.

The CR is clearly identifiable through the use of the subjective opinion-oriented comments of “*I think...*” (“*...are going to work / fit / appropriate*”). This repertoire presents the idea that the ‘fit’ between music and film is very subjective, and allows the User to make the final decision. Forcing a piece of music on a User (“*this is the one for you*”) arises throughout the interviews as a bad approach, whereas a subtle negotiation approach or “*letting the user decide / discover*” is preferred. The CR allows this deference without devaluing the knowledge and expertise of speaker and puts them in a safe position if the final choice is not successful or popular, distancing them from unpopular decisions.

The participant’s use of MR in this section discusses the key elements of the musical content of specific “songs”, including lyrics (“*words*”), genres (“*rock*”, “*pop*”) and instrumentation (“*acoustic instrumentals*”). Unsurprisingly these facets appear throughout the texts and are used widely by the participants. Technical musical terms, however, such as melody, harmony, key, or rhythm are rarely mentioned. The MR is more focused on higher level bibliographic metadata than technical musical content. This widespread use of layman’s musical language enables easy communication between all parties and stakeholders regardless of their musical expertise. It consists of easily identified facets which are used to organize rights holders’ collections rather than more technical film or musical terms used in the SR, or the marketing-based language of the BR.

4.2 Extract 2

Here (Appendix 8.2) a different participant (019SYN) discusses “*What makes a great sync*”. He draws from the CR and BR in his answer, switching quickly from one to the other. Although he appears to believe that a “*great sync*” is one that “*works perfectly with that film*” he fully acknowledges that there are other factors which come into play from the BR, including “*cost*”, “*politics*”, “*the PR and the story*”. Again, combining these repertoires justifies and explains self-contradiction and acknowledges the wide variety of factors that impact on the choice of music in this process. Although he initially aligns himself with the CR, presenting the BR as an unpleasant but necessary fact of life, he reinforces his professional standing by acknowledging the importance of market-based factors to successful synchronisation.

5. DISCUSSION

5.1 Meaning-making

These repertoires combine dynamically to determine musical meaning within this community. Music for synchronisation is not purely an abstract art form. It has commercial value, and can be bought and sold, negotiated and cleared; it has physicality, weight and volume; it is an identifiable unique item in a large collection or an

amorphous mass of a collection itself; it is defined by the factors around its creation, the artist, the date, or it is defined by its effect on the mood or even purchasing activity of the listener / viewer; it is personal and subjective or it is a perfect match.

Although there is often some emphasis on one or another of the repertoires, each of the participants acknowledges this range of meanings in their music talk. These repertoires can be used to identify their Codes (ways of looking at music) and Competences (ways of looking at the world) [23]. Indeed, Owner Codes mainly draw from MR, User Codes from SR while Owner Competences relate more closely to BR and User Competences to CR (see Fig 1, below).

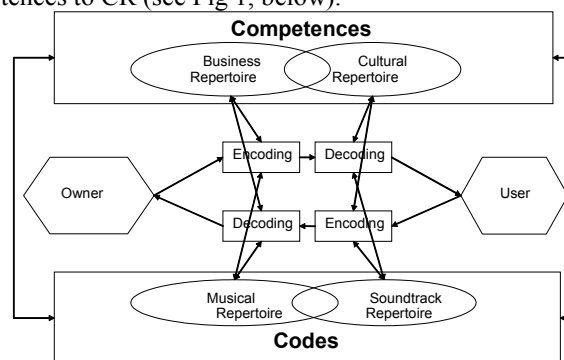


Figure 1 Repertoires as Codes and Competences (adapted from [23])

The model in Figure 1 is adapted from [24], suggesting that the meaning making process in music synchronisation is a dynamic feedback loop between the Owner and the User. The Owners and Users draw from their own and shared Codes and Competences in determining and communicating musical meaning. The results of the DA reported here reinforce the Codes and Competences aspect of the model. The intention is to investigate the Encoding / Decoding process in future analyses.

5.2 Music Information Retrieval

The value of this work to the wider discipline of Music Information Retrieval is twofold. Firstly, the rich and detailed insights into the Repertoires employed within this community of users offered by the analysis indicate a wide variety of ways of thinking about music. In terms of tool and, ultimately, system design, recognizing that music is a multi-variate concept with conflicting features (it is abstract and concrete, it is objective and subjective and it can be used as part of a multi-media construct while standing alone) is key to successfully meeting user information needs. For example, if these ideas were incorporated in the design of a system to find music for sync then the music would not only be described using bibliographic metadata (MR) but would incorporate facets from all of the repertoires. It would allow a user to search databases for a selection of thirty second sections of tracks which are popular with a specific target audience (BR), which have not been used in advertising (SR), have a build (SR), no vocal (or a vocal with a specific lyric which is relevant to the commercial’s message) (MR), specific instruments

and feels (MR), price ranges and ease of approval (BR), and is of a style which is preferred by the stakeholders (CR). Much of the BR information can be found in the royalties and business affairs services in Owners systems and attempts are being made by some corporations to incorporate this into their search applications. Automated content-based tools such as ‘crescendo detectors’ or ‘timbre identifiers’ would be of use for SR and MR, while autotagging and playlist-building reflect CR. A holistic approach can only benefit industry and the research community.

Secondly, the dynamic element of this process reminds us that meaning is not static but relates both to content and to ever-changing context. This constant flux means that any research is purely a snapshot of ways of thinking and talking about music. As the digital information society develops and music becomes all-pervasive, users and systems become more sophisticated. As the music industry’s relationship with music is forced by this development to change then the Codes and Competences made apparent by this analysis are equally likely to develop and change.

6. CONCLUSION

There are appearances through the texts of four repertoires. Music appears to have many forms, which are all considered by all of the participants. Although at first glance it may appear that one group of people (the Owners) thinks one way while another (the Users) think another, this is not the case. Indeed their views are often similar. The ways of thinking about music in this community are more complex. There is certainly some value in analyzing the texts for their surface content - indeed this is an useful way to determine key themes and for the researcher to get an initial understanding of the dynamics of a multi-stakeholder information communications process [1]. However, although it is time-consuming, applying DA to these texts has revealed patterns that were not already clear, given this analysis deeper insight into meaning making within this community and allowed some testing of the theoretical model [24].

7. ACKNOWLEDGEMENTS

Many thanks to all the anonymous participants in this research for being so free with their valuable time and insight. Charlie Inskip gratefully acknowledges financial support from AHRC for this PhD research. The anonymous reviewers comments were also invaluable.

8. APPENDICES

8.1 Extract 1

In this interview extract (001SYN) it can be seen how the participant, who works for a rights holder, uses a range of repertoires to make a decision on the relevant piece of music. Each repertoire example is marked in ◊:

Question: How do you then match those to the briefs that you are sent and how do you promote them to to your potential clients?

*Answer:
I have all our music on a dedicated music server</BR><SR> so I will get a brief in and quite often I’ll actually get the visual in as well so if I have the visual up on screen</SR>
 I’ll bring up my music database </BR><SR>[the visual?]. The visual of the ad, for instance, they’ll send me the visual of the ad, so I’ve got the 60 second or the 30 second ad in front of me which really helps, because it’s very different reading a brief and actually seeing how they shoot it. So I’ll see it </SR>
then I’ll bring up my music database and the</BR><MR> songs</MR> that <CR>I think work</CR>
I’ll pick up</BR> and <MR>I’ll play the sections of the song</MR> that <CR>I think are going to fit</CR>. <SR>I’ll match the music to the picture. I’ll marry it up and see if it works or not.</SR>
 That’s the most optimum way of doing it </BR><SR>if you get the actual visual in. if I get the script then I’ll look at the script, </SR><MR>I’ll see if sometimes they’ll have a keyword search sometimes they want words say sunshine in it, so I’ll look at
all our songs</BR> you know which songs have the word sunshine in </MR>and then <SR>match see </SR>
if pitch those </BR><CR>see if those work</CR>. <MR>Or there’ll be a genre, what kind of style, you know they’ll say ‘no rock, no pop, we just want purely acoustic instrumentals’ anything like that, so I’ll go through the all the instrumentals that I have in that genre and listen to those</MR>
 and pitch </BR><CR>what I think’s appropriate.</CR>
Nowadays I have to say, I used to make up cds and send them out but because of the fast turnaround I email mp3s, or I put them onto an ftp site and I say ‘here [indistinct] here’s [indistinct] package you know download these,</BR><CR> these are the songs that I think are going to work for you</CR>.
 And that’s how I get them out there. Because it’s much quicker now to do that, much.</BR>*

8.2 Extract 2

This example, features a freelance creative music searcher employed by ad agencies:

Question: ok. Last one. What makes a great sync?

*Answer: Good question, what makes a great sync?
I think the most important thing for me is not to compromise.
<CR> It has to be the best piece of music for that film.</CR>
.And away from all the other factors around it, ie cost, politics, all those things that come into it,<CR> it has to have that feeling</CR> that no matter where this piece of music has come from, no matter how much it costs, no matter who owns it, and who’s getting the money,</BR> <CR>it is the right piece for this film. That’s the essence, I feel.</CR>
Beyond that, I think, other things on top of the sync, beyond the sync, can make it a great thing, I mean the PR and the story. If it’s a band that have been launched off the back of an amazing spot I think that can*

also be really exciting, but that's just an added extra.
</BR><CR>I think it's just how that piece of music works perfectly with that film. .. yes.</CR>

9. REFERENCES

- [1] C. Inskip, A. MacFarlane & P. Rafferty: "Music, Movies and Meaning", *Proceedings of 9th International Society for Music Information Retrieval Conference*, Vienna, Austria, 2008.
- [2] C. Inskip, A. MacFarlane & P. Rafferty: "Organising Music for Movies", *Proceedings of International Society for Knowledge Organization (UK) Content Architecture conference*, London, UK, 22-23 Jun 2009
- [3] J. Lee, M. Cameron Jones, J.S.Downie: "An analysis of ISMIR Proceedings: Patterns of Authorship, Topic and Citation", *Proceedings of 10th International Society for Music Information Retrieval Conference*, Kobe, Japan, 2009.
- [4] M.Grachten, M.Schedl, T.Pohle, G.Widmer: "The ISMIR Cloud: A Decade of ISMIR conferences at your fingertips", *Proceedings of 10th International Society for Music Information Retrieval Conference*, Kobe, Japan, 2009.
- [5] D.Bainbridge, S.J.Cunningham, J.S.Downie: "How People Describe Their Music Information Needs: A Grounded Theory Analysis Of Music Queries", *Proceedings of 4th International Society for Music Information Retrieval Conference*, Baltimore, 2003
- [6] S.J.Cunningham & D.Nichols: "Exploring social music behaviour: an investigation into music search at parties", *Proceedings of 10th International Society for Music Information Retrieval Conference*, Kobe, Japan, 2009.
- [7] J.Lee, J.S.Downie, M.Cameron Jones: "Preliminary Analyses of Information Features Provided by Users for Identifying Music", *Proceedings of 8th International Society for Music Information Retrieval Conference*, Vienna, Austria, 2007.
- [8] J.S.Downie, D.Byrd, T.Crawford: "Ten Years of ISMIR: Reflections on Challenges and Opportunities", *Proceedings of 10th International Society for Music Information Retrieval Conference*, Kobe, Japan, 2009.
- [9] J. Potter & M. Wetherell: *Discourse and Social Psychology*, Sage Publications, London, 1987
- [10] B.Paltridge: *Discourse Analysis*, Continuum, London, 2006
- [11] C.Antaki, M.Billig, D.Edwards & J.Potter: "Discourse analysis means doing analysis", *Discourse Analysis Online*, 2002 [available at <<http://extra.shu.ac.uk/daol/articles/v1/n1/a1/antaki200202-paper.html>> last accessed March 2, 2010]
- [12] P.J.McKenzie: "Interpretive Repertoires" chapter 36 in eds K. Fisher, S. Erdelez & L.McKenzie: *Theories of Information Behaviour*", ASIST, Information Today, Medford, 2005
- [13] S. Talja: *Music, Culture, and the Library*, Scarecrow Press, Maryland, 2001
- [14] J. Carlisle: "Digital Music and Generation Y: discourse analysis of the online music information behaviour talk of five young Australians", *Information Research*, Vol 12, No 4, 2007
- [15] B. Frohmann: "Discourse Analysis as a Research Method in Library and Information Science", *Library and Information Science Research*, Vol 16, pt 2, pp 119-138, 1994
- [16] J.M.Budd & D.Raber: "Discourse Analysis: Method and Application in the study of information", *Information Processing and Management*, Vol 32, No 2, pp 217-226, 1996
- [17] D.Stowell, A.Robertson, N.Bryan-Kinns & M.D.Plumbley: "Evaluation of live human-computer music-making: quantitative and qualitative approaches", *International Journal of Human Computer Studies*, Vol 67, No 11, pp 960-975, 2009
- [18] C. Inskip, A. MacFarlane & P. Rafferty: "Creative Professional Users' Musical Relevance Criteria", *Journal of Information Science* In Press, 2010
- [19] M.Patton: *Qualitative evaluation and research methods*. Sage Publications, Newbury Park, California, 1990
- [20] NVivo software: <http://www.qsrinternational.com/> QSR International, 2010
- [21] C. Inskip, A. MacFarlane & P. Rafferty (2009) "Towards the Disintermediation of Creative Music Search", *Proceedings of ECDL Workshop on Exploring Musical Information Spaces*, Corfu, Greece, 1-2 Oct 2009
- [22] P.Tagg: *Introductory notes to the Semiotics of Music, version 3*, 1999 [internet] (Accessed [07 Dec 2006]), <http://www.tagg.org/xpdfs/semiotug.pdf>
- [23] C. Inskip, A. MacFarlane & P. Rafferty (2008) "Meaning, communication, music: towards a revised communication model", *Journal of Documentation* Vol 64, No 5, pp 687-706.