

Challenges in Cross-Cultural/Multilingual Music Information Seeking

Jin Ha Lee

J. Stephen Downie

Sally Jo Cunningham

University of Illinois at Urbana-Champaign

University of Waikato

HUMIRS Project

- Human Use of Music Information Retrieval Systems
- Sub-project of the International Music Information Retrieval Systems Evaluation Laboratory (IMIRSEL)

Previous MIR User Studies (1)

User-provided Features	Downie & Cunningham, 2002	Bainbridge et al., 2003
Bibliographic	75.2%	81.3%
Lyrics	14.3%	28.9%
Genre	9.9%	32.7%
Similar works	9.9%	4.6%
Affect	7.5%	2.4%
Lyric Story	6.8%	2.6%
Tempo	2.5%	2.4%
Example	1.8%	4.4%

Previous MIR User Studies (2)

Feature	Positive (%)
Singer/Performer	96.2
Title of work	91.7
Lyric words	74.0
Music style/Genre	62.7
Recommendations	62.2
Similar artist	59.3
Creator	54.5

- Survey responses to “When you search for music or music information, how likely are you to use the following search/browse options?”

(Lee & Downie, 2004)

Previous MIR User Studies (3)

- All seven interviewees mentioned “**Artist name**” and “**Song title**” as attributes to retrieve songs from collection. Two mentioned “**Lyrics**” and one mentioned “**Genre.**” (Vignoli, 2004)
- “It was found that the most preferred and used type of query by these individuals was by using the **titles of songs**, which was followed by using the **artist’s name**. Surprisingly some individuals said that they used **lyrics** from songs to find a specific item.” (Taheri-Panah & Macfarlane, 2004)

Predominant Access Points for Music Information Seeking

- Bibliographic (e.g., artist name, work title)
- Genre (e.g., classical, jazz, rock)
- & Lyric information

Problem

- Predominant access points for music information seeking are primarily textual information that are language or culture dependent.
- What if you are searching for music in non-native languages or music from different cultures?

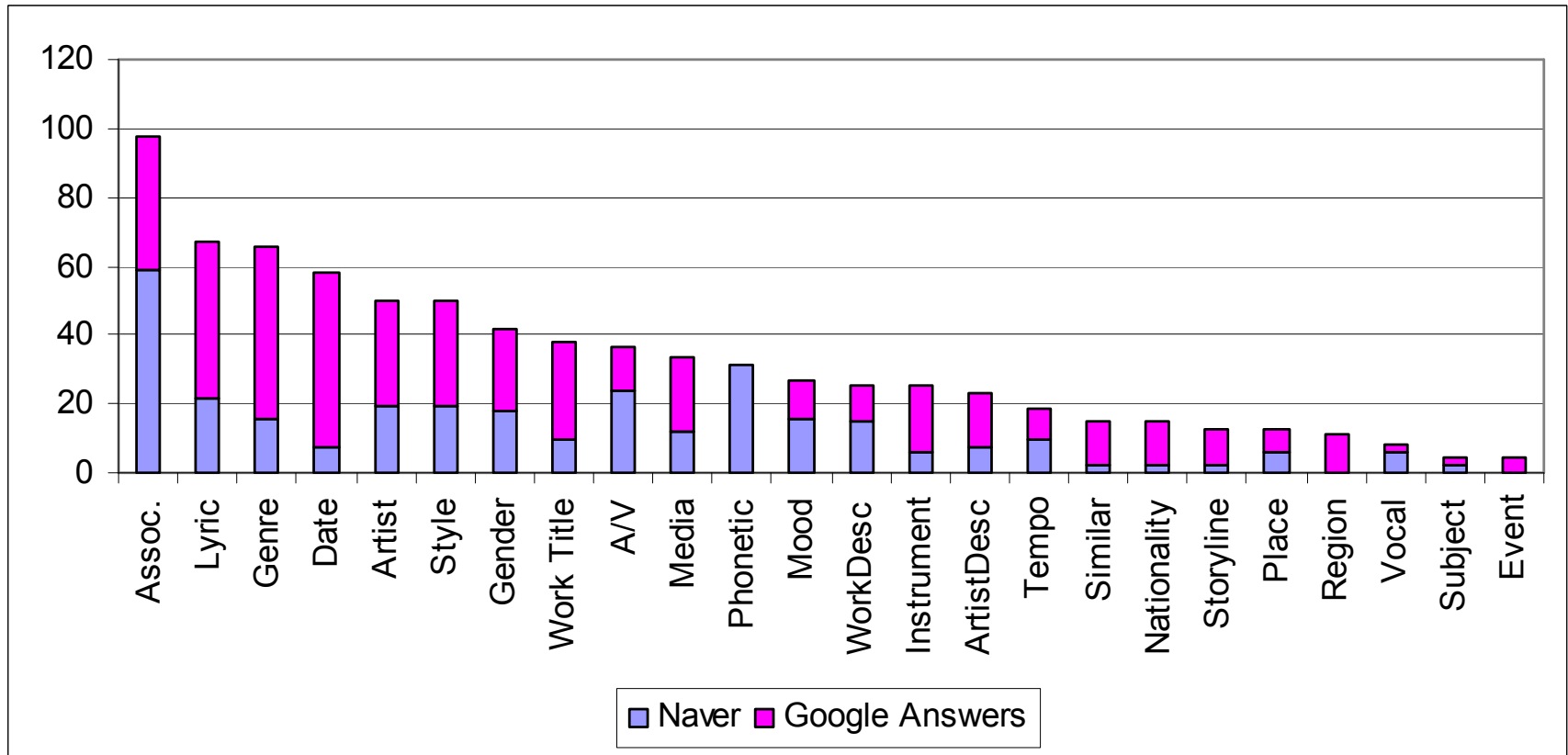
Our Test Data Collection

- Cross-cultural/Multilingual music queries
 - 107 Naver 지식 (knowledge) iN (Under POP category)
- Mono-cultural/Monolingual music queries
 - 150 from Google Answers

Comparison of Music Information Needs

Music Information Needs	Naver (%)	Google (%)
Identify artist/work	48.6	32.6
Get recommendations	36.2	5.0
Acquire lyrics	5.7	6.4
Request translation	2.9	0.7
Seek general information	1.9	25.5
Request transliteration	1.9	0.0
Locate work	1.0	17.0

Comparison of User-provided Features ("Identify Artist/Work" Type Queries)



Variable	Naver (%)	Google (%)	P-value (2-tailed)
Date information	7.8	50.0	.000
Phonetic sound of lyrics	31.4	0.0	.000
Name of musical genre	15.7	50.0	.000
Lyric word	21.6	45.7	.017
Name of region	0.0	10.9	.021
Title of work	9.8	28.3	.034
Nationality	2.0	13.0	.050
Similar work/artist	2.0	13.0	.050
Musical instrument	5.9	19.6	.062
Associated use	58.8	39.1	.068
Storyline of work	2.0	10.9	.098

Variable	Naver (%)	Google (%)	P-value (2-tailed)
Audio/Video example	23.5	13.0	.204
Name of related event	0.0	4.3	.222
Name of artist	19.6	30.4	.246
Description of musical style	19.6	30.4	.246
Media	11.8	21.7	.273
Description of artist	7.8	15.2	.341
Gender of artist	17.6	23.9	.464
Mood/Affect of music	15.7	10.9	.561
Vocal range of artist	5.9	2.2	.619
Description of work	13.7	10.9	.763
Subject of music	2.0	2.2	1.000
Tempo of music	9.8	8.7	1.000
Place music heard	5.9	6.5	1.000

Challenges for Users (1)

- Difficulties in remembering names and titles, understanding and providing lyric information
- Inconsistency in transliteration and back-transliteration

Natalie Imbruglia	→ 나탈리 임브루리아	→ Nataly(?) Imbrulia(?)
	임부글리아	Natalie Imbuglia(?)
	임부르글리아	Imburglia(?)
	임브루글리아	Imbruglia
	임부롤리아	Imburulia(?)
	임부루그리아	Imburuglia(?)

Challenges for Users (2)

- Different genre labels and classifications (e.g., 팝 (Pop) or 샹송 (Chanson) in Korea)
 - Q. Pop. What is pop? Does rock belong to pop? They say pop means popular music, but I'm so confused. Are there different kinds of pop? If rock doesn't belong to pop, then where does it belong to???*
- Lack of formalized context metadata (e.g., metadata on associated use of music in movies, advertisements, etc.)

Implications for MIR Systems

- Recommendation feature based on similarity: “Give me some music similar to this particular song(s) or artist(s).”
- Query-by-example facilities: Links to audio/video representation of sought music
- Metadata on the associated use of music in other works
- More culturally neutral or language-independent access points (e.g., gender, mood, etc.)

Questions?

- Special Thanks to
 - Andrew W. Mellon Foundation
 - National Science Foundation