

Music in Mind?

An Experience Sampling Study of What, When and Why

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Background

Imagining music in course of everyday life

Anecdote \longrightarrow Scientific investigation

Musical imagery (MI) = the conscious experience of an internal representation of music (Bailes, 2009)

Bailes (2006, 2007): experience sampling study of university music students' everyday imaginings

- Spontaneous occurrence
- Involuntary corollary of voluntary musical activity (e.g. performing, thinking about music)

\longrightarrow Questions of volition

Reporting bias?

- Differences in thought suppression predict INMI (Beaman & Williams, 2013)
- Obsessive compulsive attributes and INMI disturbance/frequency (Müllensiefen et al., 2014)
 - BUT, reliance on retrospective questionnaires might have led to a greater focus on INMI than would occur with time sensitive method
- Neuroticism/reports of music stuck in the head (Beaty et al., 2013) – only in questionnaire study, NOT in experience sampling study

Experience sampling methods (Bailes, 2006, 2007) allow ‘observation’ of experiences as they occur

Aim: Expand Bailes (2006, 2007) using a qualitatively rich experience sampling method on the wider public

Q. What and when people imagine in everyday life?

Transliminality

= permeability of a psychological membrane between conscious and unconscious awareness

High score on Thalbourne's 'Transliminality Scale' (Lange, Thalbourne, Houran, & Storm, 2000) associated with imagery persistence and distraction, measured by questionnaire (Wammes & Baruss, 2009)

Sub-aim: test the hypothesis of an association between transliminality and the frequency of imagining music, measured using time-sensitive ESM

Individual differences

- Not all music equally susceptible to becoming a thought incursion
- Music that individuals choose to engage with more likely to be imagined than music that is less significant?



Hypothesis: positive relationship between imagining music and reports of actively choosing to hear it

- Musical experience positively related to INMI (Beaman & Williams, 2010; Liikkanen, 2008, 2012; Müllensiefen et al., 2014; Williamson & Jilka, 2013)
- Link between INMI and singing and listening to music (Müllensiefen et al., 2014)

Mood congruent imagery

Bailes (2007) – respondents above mid-point on rating scales for positivity and arousal when imagining music

- BUT, no comparable mood ratings for non-imagery episodes

Q. Is there an effect of mood congruence?

- i.e. Does the mood experienced when hearing particular music match the mood experienced when imagining it?

If so, perhaps indicative of imagining music as an emotion-regulation strategy

e.g. Individuals wishing to increase their positive affect state might imagine a song that makes them happy

Music listening to boost wellbeing is inexpensive, amenable to personalization, portable (Västfjäll, Juslin & Hartig, 2012) – imagining music even more so!

Method

Experience sampling methods to observe the musical experiences of respondents from the general population (Bailes, 2006)

Participants

- N = 47 (21 male)
- Volunteers from greater Western Sydney & undergraduate psychology students from University of Western Sydney
- aged 18 to 53 years
- Ollen Musical Sophistication Index range 39 – 944

Procedure

- Briefing session: informed consent sought, distribution of background questionnaire & revised transliminality questionnaire (Lange et al., 2000)
- Participants received pack of 42 Experience Sampling Forms (ESF): 1 ESF to be filled out each time they receive an SMS
- Bulk SMS provider scheduled sending of message “Please fill out your form” to participants 6 times a day, over 7 days, between 9am and 9pm
- Quasi-random schedule, with one signal scheduled within each two-hour time period
- On receipt of SMS, participants to fill out a blank ESF as soon as possible

Experience Sampling Form (ESF)

- 2 sides of (A4) sheet of paper to be completed when messaged (Bailes, 2006)
- Introductory section (date, time contacted, time filled out)

PART A

For each pair of moods, tick the category that most closely describes the way you were feeling when you were contacted.

	Very	Quite	Somewhat	Neither	Somewhat	Quite	Very	
Alert								Drowsy
Happy								Sad
Lonely								Connected
Energetic								Tired
Involved								Detached
Tense								Relaxed
Interested								Bored

Where were you? _____

What was the MAIN thing you were doing? _____

Who were you with? (Circle as many as are applicable)

Alone

Partner

Person/people you live with

Family member(s)

Friend(s)

Professional(s) (e.g. dentist)

Acquaintance(s)

Strangers

Person/people you work with

If not alone, how many people were you with? _____

ESF ctd..

Part B

Completed if hearing music at time of contact

- Up-dated from Bailes (2006) to include laptops and mp3 players as possible sources of music
- Stylistic categories updated to include trance/house/techno, country, blues, urban (rap, R&B, hip hop) and gospel

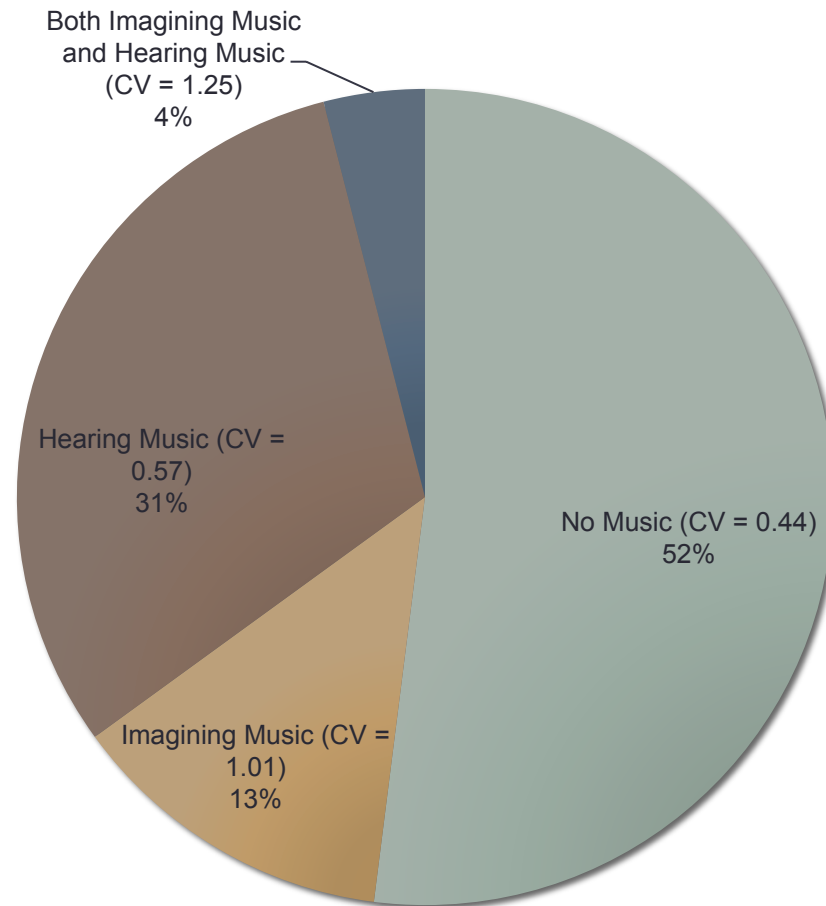
Part C

Completed if imagining music at time of contact

- Up-dated with style categories as in Part B
- Questions adapted to accommodate respondents without musical training
- Tempo/Rhythm added as a potentially important element of imagined music

Results

1,415 ESFs returned (out of a possible 1,974)



What do we imagine?

- 'Recency effect' – music actually heard since previous cue imagined 38% of the time
- More imagined music (66%) could be named than heard music (55%) ($t(35) = 2.03, p < .0005$)
- No evidence that music respondents actively choose to hear is imagined more ($r(164) = 0.106, p = .17$)

Reasons for imagining

Node	References	% of References
Recently heard	61	37.7
Don't know why	19	11.7
Stickiness	11	6.8
TV	7	4.3
Spontaneity	7	4.3
Recently imagined	6	3.7
Value judgement	5	3.1
Musical features	5	3.1
Favourite music	5	3.1
Visual cue	4	2.5
Recently sung/played	3	1.9
Imagery on waking	3	1.9
Intentional imagining	3	1.9
Sentimental/nostalgia	3	1.9
Other	20	12.3

Artists imagined more than once

Artist	Number of Episodes	Number of Respondents
Michael Jackson	7	6
Beyonce	4	4
Akon	4	3
Jordin Sparks	4	3
Pink	4	3
Australian All Stars	4	1
The Dubliners	4	1
Britney Spears	2	2
Lady Gaga	2	2
Kings of Leon	2	2
ACDC	2	2

Individual differences imagining music

- 8 respondents reported imagining their own compositions (4 male, OMSI 42-248)
- Significant correlation between proportion of reported imagery episodes and transliminality score ($r(46) = .34, p = .01$)
- Correlation between proportion of imagery episodes reported and
 - Age ($r_s(43) = .37, p = .02$)
 - Years of practice on an instrument ($r_s(42) = .30, p = .05$)
- More 'musically sophisticated' (OMSI > 500) report greater proportion of imagery (M= 36%) than less 'musically sophisticated' (OMSI < 500) $U=18.5, N_1=4, N_2=29, p=.025$, two-tailed)

Contextual factors and Musical State

- Significant predictors of musical state:
 - Location of respondents
 - Activity
- Imagining music:
 - Gender of respondents (greater for men, compared to no music)
 - Time of day (greater 11am-1pm, compared to no music)
- Both hearing and imagining music:
 - Odds decreased (compared to no music) when working, interacting with others, being at leisure, watching TV, or simply 'being'

Mood congruence?

Mood Pair	Correlation for Imagined Item with	Correlation for Imagined Item with
	Same Heard Item	Different Heard Item
Alert/Drowsy	0.425	0.948**
Happy/Sad	0.951**	0.713*
Lonely/Connected	0.774*	0.649
Energetic/Tired	0.761*	0.753*
Involved/Detached	0.716*	0.162
Tense/Relaxed	0.805*	0.225
Interested/Bored	0.739*	0.595

Note. $df = 5$. * $p < 0.05$, ** $p < .0005$

Conclusions (1) – Individual differences

- Respondents differed twice as much in the amount of time spent imagining music as hearing music or being without music
- Formal music training did not relate to incidence of imagining music (cf. Müllensiefen et al., 2014), **but engagement (music practice, composite OMSI) did**
 - Supports view that it is the exposure to music and degree to which it is valued that is associated with MI (Beaman & Williams, 2010; Beaty et al., 2013; Müllensiefen et al., 2014)
- Individuals reported imagining their own music

Conclusions (2)

- Association between transliminality and MI frequency
 - Q. does the propensity for thought to cross in and out of awareness lead to a greater consciousness of imagined phenomena?
- Reports of concurrently hearing AND imagining music
 - Q. diffuse forms of conscious awareness (cf. Herbert, 2011 – music and trance in everyday listening)?
NB. Less likely to occur when working, interacting with others...
- A correlation between mood ratings for heard and imagined episodes of the same music is consistent with mood congruence

Implications

- Replication of Bailes (2006, 2007) suggests MI is commonplace and experienced in similar ways across different populations
- Music students demonstrated greater awareness of reasons for imagining music than current sample:
 - **if** non-experts less prone to reflect on MI than experts, **then** important to use ESM to capture experience as it happens
- Further research
 - To determine whether MI is an effective means of emotional self-regulation
 - To explore the link between arousal and the chronobiology of MI

Thank you!

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