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Altering Conscious Mind: Where is the Listener's Attention when Listening to Classical versus Ritual Music?

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ABSTRACT

Trance is a broader constructed cultural concept and everyday phenomenon, including different levels of absorption (total involvement, narrowed attention) and mind-wandering (attention detached from external factors and focused on internal thoughts). Trance understood as an altered state of consciousness has been mostly studied in the context of rituals to regulate mood and emotion. However, mind-wandering and absorption are also at play in our everyday listening activities. No research has been published on how different music genres may alter the conscious mind in everyday music listening settings and how personality traits contribute to that experience. 32 participants were engaged in five classical and five ritual excerpts; an online survey gathered data on cognitive experiences and used scales to explore emotions and assess depression, absorption and personality traits. Participants were more absorbed in classical music due to familiarity and enjoyment with positive-evoked emotions and had the most mind-wandering in ritual music with negative-induced emotions. Tendencies for absorption demonstrated a disposition to deeper attention on the music; personality traits having a significant effect. Depressed individuals had more tendency to mind-wandering than absorption. This study provides a new lens to comprehend the functions of opposite cognitive states with various music in an everyday context.

1. INTRODUCTION

Due to cultural and biological aspects of music either being 'received' (from the music's essence) or 'constructed' (individual's appropriation of the music), individuals experience music's effect on consciousness differently (Juslin and Sloboda, 2001: 5). The notion of constructed trance seen in everyday life includes a continuum, consisting of *absorption* (i.e. focused attention) and mind-wandering (i.e. detached attention) through inner states and external situations. Trance, comprehended as an altered state of consciousness (ASC) has been commonly reviewed for mood and emotion regulation in rituals. Since mind-wandering and absorption are evoked in our everyday listening activities, no research has been investigated to compare how classical and ritual music genres may alter the conscious mind in everyday music listening contexts. Different personality traits contributing to cognitive experiences also requires a further account.

Everyday Listening: Exploring Consciousness Levels. Over more than two decades, everyday music listening has seen more extensive focus in the humanities and social sciences research. Music is indeed a consumed commodity and also a functional source of human life (Magrini, 2000). Furthermore, there have been innovative empirical studies of music in everyday life (North, Hargreaves and Hargreaves, 2004). [1] One of the most common activities while listening to music is housework (22%) (Sloboda, 1999). The function of everyday music listening has been a resource to regulate behaviour and mood instead of exploring the experience itself. DeNora has observed that the listening activities can evoke memories and associations (2000), which would include inner attention with visual imagery and affectiveness that are experienced with familiar music in one of the most dominant listening methods in the West (Herbert, 2011). Moreover, music functions as a way to shape the quality of experiences in our consciousness. Music acts as a space allowing internal (thoughts) and external (visual stimuli) phenomena to take place (Bull, 2007). Bull suggests that the 'uncontrollable' feelings or thoughts may conclude from the 'nonmediated experience', which could jeopardise the individual's sense of cognitive control (2007: 125).

Everyday music listening is apparent in many cultures and strong emotional experiences are said to be 'transcultural universal' (Herbert, 2011). The views regarding attentional processes in the listening studies can be summarised as: music featuring distributed attention in a complex setting (as mind-wandering) (Sloboda and O'Neill, 2001), attentiveness and concentration through external and/or internal focus (as absorption), and 'a potentially multisensory character' (both cultural and musical resources and links) (Herbert, 2011: 18). The musical event can have different meanings in different settings so this would create different kinds of musical experience (Herbert, 2011). Studies of strong experiences of music (SEM) indicate that intense involvement can occur at any setting involuntarily (Gabrielsson, 2010). Many everyday listening periods are brief and subtle experiences which may not evoke strong emotions, and thus, can be effortlessly forgotten (Herbert, 2011). Indeed, music is used in everyday life's numerous contexts and more research is done in such uses, functions and subjective experiences of music with many attentional processes. However, it is clear that not much research has been produced on how various music modulates consciousness in everyday life. Consciousness became a multidisciplinary concept such as in neuropsychology, neuroscience, cognitive psychology, ethnomusicology and philosophy. Many ethnological studies in music and consciousness have also explored the changes in consciousness, where the consciousness is generally respected

[1] There is a crucial difference between the uses and functions of music listening. The use of music listening is the situation or system in which music is utilised. The function of music listening is the purposes for its use and especially the wider aim it provides (Merriam and Merriam, 1964).

in the construct terms of trance and ASC, and they can be treated and conceptualized separately.

ASC. Conceptualising experience through emotional states can contribute to the shifts of consciousness. ASC's definition was recognised in Ludwig's published paper: '...any mental state(s) induced by various physiological, psychological, or pharmacological man[o]euvers or agents, which can be recognized subjectively by the individual himself (or by an objective observer of the individual) as representing a *sufficient deviation* in subjective experience... from certain general norms for that individual during an alert, waking consciousness' (1966: 225). Kokoszka has separated the shifts of consciousness into 'Profoundly Altered' (PASC) and 'Superficially Altered' states to understand everyday life ASC (1999–2000: 169).[2] ASC experience is considerably dissimilar from an everyday model. ASC's exact definition is still being considered today, and it is generally been discussed relating to universal, absolute and religious matters of the human mind.

Hinton and Kirmayer argued in their innovative publication that healing and psychotherapy may prosper through eliciting positive psychological states by 'flexibility' or the skill to alter cognitive states or behaviours (2017). Cognitive flexibility theory states that 'the ability to spontaneously restructure one's knowledge' through 'criss-crossing conceptual landscapes' (Spiro and Jehng 1990: 165-69); may achieve certain results, such as healing (Friedson, 1996). Rituals with music were given as examples to explore how certain musical features, such as complex polymetres and drones, may evoke flexibility in consciousness, and thus, create healing (Friedson, 1996). Research on various music is still scarce to understand how ASC and cognitive flexibility create different effects on the human mind and body.

Trance. Trance has more than a single meaning, which varies in sociocultural context. However, this paper is focusing on the combined definition of trance from Becker and Rouget: '...as a bodily event, characterized by strong emotion, intense focus, the loss of the strong sense of self, usually enveloped by amnesia and a cessation of the inner language' (Becker, 2004: 43) through viewing trance as a flexible process (Rouget, 1985). Herbert's definition of 'trancing-as-process' is 'an over-arching concept that subsumes 'absorption' and 'dissociation' (detachment) within it, where different experiences of sections of trance would display different scales of absorption or dissociation (2011: 3). The main focus in this paper is absorption and 'mind-wandering' since these are experiences that have been mostly documented in music psychology research. Mind-wandering is explained and examined as the experience of the unrelated thoughts and images, being altered from a current task. One of Herbert's absorbing and dissociative trancing categorisation involves: decrease in intensity of a thought or internal speech (with fluctuated sense of self or experience) (2011). Trance can occur in various contexts: clinical, ritual and natural (everyday life) (Herbert, 2011).

To differentiate the trancing in ritualistic contexts by trancing in everyday life, the activity must happen in a ritualistic setting, such as being in a quite specific room with a group of people being involved in such activity with mutual attentional focus attended on a specific object or person (Cupchik, 2013), extracted from the everyday setting (Herbert, 2011). Fachner noted musical features which contribute to the notion of trance (2006): accelerations in tempo, increase in volume, repetition, ostinato, simple variation, slow change in passages, complex, polyphonic texture, which are all seen worldwide musics and can be considered as universal cross-cultural characteristics (Szabo, 2006). Trance's concept concerning the continuum of being totally aware and not being totally aware of the experience has still not been developed systematically by examining the experience within various music.

Total Involvement in Music: Absorption. Despite music research on absorption being limited, absorption may be a significant constituent of everyday music listening experiences (Herbert, 2011). The definitions of the term within the existing ethnomusicology and psychology literature are ambiguous. Some misperception is present as to whether absorption is considered as a trait and/ or state of the individual (Roche and McConkey, 1990: 92). According to Tellegen and Atkinson's landmark article (which proposed the first personality framework including absorption), they described absorption as a personality trait related to events of total attentional engagement and correlated with hypnotizability, which engages fully with one's representational (i.e. perceptual, enactive and imaginative) resources (1974). Broadly utilised absorption scale is the Tellegen Absorption Scale (TAS) by Tellegen and Atkinson (1974). The TAS is one of the 11 main scales of the Multidimensional Personality Questionnaire, which measures individual differences in absorption (Tellegen, 1982). Tellegen states that the TAS comprises nine content groups outlined as *responsive to engaging stimuli, responsive to inductive stimuli, often thinks in images, can summon vivid and suggestive images, has 'cross-modal' experiences, can become absorbed in own thoughts and imaginings, can vividly reexperience the past, has episodes of expanded awareness, and experiences ASC* (1981, 1982). Herbert adopts Jamieson's (2005: 120) definition of absorption that it is 'an effortless, non-volitional quality of deep involvement with the objects of consciousness', and matches with the definition: 'attentional engagement that is goal-directed, rational and effortful' (2011).

[2] PASC: The concept of PASC includes various experiences which are branded by content and that are notably different from common everyday experiences. Unusual states of consciousness of PASC becomes clear when their circumstance correlates with alcohol, observation of an art piece, prayer, etc. Consequently, this concept also has particular experiences explained by mystics with many cultural and historical backgrounds, called 'mystical states', 'supraconsciousness' or 'ultraconsciousness' in Eastern traditions. These type of states are understood to be as PASC in the world of psychology in most of the Western traditions. PASC is also categorised as an insight experience from comprehending and clarifying the metaphysical, existential concerns. PASCs are also felt with supernatural experiences depending on the religious concept (e.g. an individual can feel a connection with God) (*see* Smith, 2018).

SASC: SASCs include mainly relaxation states and only a 'slightly different content and/or modalities of experiencing in comparison with the most common experiences' (Kokoszka, 1999–2000: 169). SASCs also comprise various everyday experiences categorised by modifications in the perception of reality, the rationality of experiences and emotional states. It has been considered as one of the domains of psychopathology and drug culture (*see* Bourguignon, 1973).

However, these states have never been explored in consciousness psychology, which gives attention to the most unfamiliar states (*see* Smith, 2018).

Respecting absorption and attention, Nagy and Szabo categorised high-absorbed people correlating with 'trance experiences' and low-absorbed people correlating with 'memories and relaxation' (2003: 429). Some scholars also investigated that high involvement in music evokes strong emotions (Nagy and Szabo, 2006) in everyday life (Sloboda, O'Neill and Ivaldi, 2001). Zentner, Grandjean and Scherer generated a model of emotion, called 'Geneva Emotional Music Scale' (GEMS) (2008), having nine categories: *wonder, transcendence, power, tenderness, nostalgia, peacefulness, joyful activation, sadness and tension*. Absorption also correlates with music enjoyment (Snodgrass and Lynn, 1989) and art appreciation through part of an individual participation of a cognitive or an emotional kind with the attentional object (Combs et al, 1988). Overall, absorption associates with changes in attention, imagery, awareness, emotions and personal experience of perception, time and meaning. Although absorption is originally defined as a personality construct, there is also evidence for a 'state' construct. More research is needed to clarify what music (including musical features) is suitable for the experience of total absorption.

Mind-Wandering in Context. A restless-mind involves the activity of mind-wandering, which consists of self-produced thoughts in the stream of one's consciousness, where there is a switch in attention from an ongoing task to task-unrelated thoughts and images (James, 1890). Humans spend a considerable amount of time, approximately one-third of daily life, on mind-wandering (Kane et al., 2007), mostly about social relationships (Mar, Mason and Litvack, 2012), self-significance (Smallwood et al., 2011), autobiographical memories (Smallwood and O'Connor, 2011) and future-related planning (Baird, Smallwood and Schooler, 2011). People are more likely to think about the future than the past when mind-wandering, although this is different in the case of having depression (Stawarczyk et al., 2011).

The impacts of various emotional-evoked experiences in music on cognition, as well as on spontaneous thoughts still need further clarification. Taruffi and Koelsch's previous investigation demonstrated that the use of sad music aids to boost self-reflection as an internally-oriented cognition (2014). Sad-evoking music with low-arousal emotions (contrasted with happy-evoking music with high-arousal emotions) increases the mind-wandering activities; tempo being an influencing musical factor (Taruffi et al., 2017). Unhappy mind-wandering also involves increased physiological arousal, such as chills (Smallwood et al., 2011). Mind-wandering is still an important concept that lets our minds wander how certain mental and musical cues trigger this cognitive phenomenon with emotions. Further explanation is required to understand how the musical cues may trigger mind-wandering, and how this varies with emotional processes.

Individual Difference Impacting Consciousness Levels. There has been increasing attention seen from some psychologists on the personality traits, such as 'Big Five personality traits' ['openness to experience', 'extraversion', 'agreeableness', 'conscientiousness' and 'neuroticism'] (Garrido and Schubert, 2011). 'Openness to experience' presents emotional understanding, aesthetic curiosities, liberalism, flexibility and independence (Coan, 1977), which correlates with absorption in many situations (Roche and McConkey, 1990).

The understanding of the self-generated thought is also important to consider on the topic of individual differences as the thoughts shape our experiences with music. Humans are experiencing self-generated spontaneous thoughts during ongoing tasks as a type of distraction for approximately 50% of each day, which leads to mind-wandering (Smallwood and Andrews-Hanna, 2013). There are disadvantages to these thoughts, which lead to poor task performance and psychological wellbeing, such as *depression* (Smallwood and Andrews-Hanna, 2013). Individual differences, inclination to mind-wandering evoking more enjoyment in negative stimuli (Garrido and Schubert, 2011) and having symptoms of depression due to negative self-generated thoughts (Gotlib et al., 2004), can alter our perceptions and experiences of music, which needs further scientific clarification.

Hypothesis of the Current Study. Despite the valuable literature from diverse disciplines on music and consciousness in everyday listening context, the exploration of how our consciousness can be altered within the realm of music demands to be advanced. There is still a gap in how distinctive music genres may alter the conscious mind in everyday music listening scenarios and how personality traits influence experiences. Emotions accompanying cognitive experiences also requires further exploration. The selected questions and hypotheses were that:

1) A-Which genre of music had the highest levels of absorption? Buddhist and/ or Shaman ritual music will have the highest levels of absorption because of their 'trance-like'-musical qualities such as the repetitive ideas and drones (Becker, 2004; Friedson, 1996).

   B-Which genre of music had the highest levels of mind-wandering? Sad classical instrumental music will have the highest levels of mind-wandering, because of previous findings comparing mind-wandering levels between sad and happy music (Taruffi et al., 2017).

2) Which emotions will be associated with these mental experiences? I do not have a specific hypothesis in this regard. This is an exploratory question. Familiarity with music may modulate enjoyment of the overall experience.

3) How will personality traits influence cognitive experiences with music? Tendency to depression will be associated with higher levels of mind-wandering (Killingsworth and Gilbert, 2010) and trait absorption will be associated with focused and narrowed attention during the music listening.

2. METHOD

Design. The recruitment of the participants was conducted through the online survey platform, *Qualtrics.* The survey was aimed to investigate certain opposite cognitive experiences, such as absorption and mind-wandering, and different mental

states, varying in attentional level, in response to ten various classical and world ritual music stimuli. Different emotional

experiences were also explored in various music stimuli. It took approximately 40-50 minutes for each participant to complete the whole survey.

Participants. The online survey was distributed by sharing it on Facebook via the online *Qualtrics* survey link mostly to the participants from the United Kingdom and Cyprus. The total sample consisted of 32 healthy subjects with a gender distribution of 26 females and 6 males. The participants had an age range of 18-61 years (M = 29.5, SD = 12.7). The survey was anonymous and all voluntary.

Music Stimuli. The stimuli to which the participants listened are shown in Tables 1 and 2. To choose the music stimuli, I ran a pilot study, where I selected six classical and six ritual extracts to start with, each being two minutes. I dictated the parts of the extracts which might evoke the most mind-wandering, such as sections featuring long notes, and absorption levels, such as certain dynamic changes within the extracts. I selected pieces which would evoke various musical emotions, such as sadness, calmness and happiness. I informally asked six friends to listen to these short tracks and rate their attentional levels [7-point scale] to see whether these tracks are effectively leading to various levels of attentions (6 females, mean age = 37, age-range = 20-67). Accordingly, I chose the most attentional and non-attentional effective excerpts: five various classical and five various ritual, to use them on the online survey. I edited and predetermined start and endpoints of each of the musical extracts. The order of the stimuli was presented in a counterbalanced order to create a sense of flexibility between the extracts. Each *YouTube* extracts lasted one and a half minutes in length, and the names of the stimuli were not mentioned to the participants.

Table 1. Classical musical stimuli (Titles, artist(s)/ composer(s), genre (and types) and written Year).

Title	Artist(s)/Composer (s)	Genre (Type)	Year
Trumpet Concerto in E-flat major, *I. Allegro*	Joseph Haydn	Classical (Classical)	1796
Suite No. 2, Romeo and Juliet, Op. 64, Dance of the Knights	Sergei Prokofiev	Classical (Modern)	1935-36
Pavane pour une infante défunte	Maurice Ravel	Classical (Romantic)	1899
4 Pieces	Sergei Rachmaninoff	Classical (Romantic)	1887-1888
Violin Concerto in G Minor, BWV 1056, *II. Andante*	Johann Sebastian Bach	Classical (Baroque)	1730-38

Table 2. Ritual musical stimuli (Titles, artist(s)/ composer(s), genre (and types) and written Year).

Honshirabe	**Kohachiro Miyata**	**Ritual (Japan)**	**1977**
Yanvalou	Voodoo Drums	Ritual (Voodoo Drumming Haiti)	2001
The Korean Shaman Ritual of the Dead	Ssitkimkut	Ritual (Korea)	2018
Ah-Ahk	Ch'on Pei Hi Mun	Ritual (Korea)	2011
Bönpo Chöd Pilgrimage	Roberto Passuti (Stenopecia Group)	Ritual (Nepal)	2008

Procedure. The survey was divided into six parts, utilising rating scales, sliders, open-ended questions and multiple-choice questions. It began with a *Participant Information Sheet Template,* including instruction for the participants and consent form. The instructions included that audio is played in the survey, so the participants were asked to make sure their device (phone or computer) had sound, and that the volume was not muted and at a comfortable level. The requirements while listening to the musical excerpts were also to use headphones with eyes closed, focusing on thoughts and emotions and letting them flow through, trying to relax as much as possible. The second section included demographic sample questions, comprising age and gender. *Short Test of Musical Preferences* was also utilised to understand the participant's most preferred musical genre (Rentfrow et al., 2003).

In the next section, ten musical extracts were being played and the section aimed to assess attention, awareness of the self, of the environment and to self-reference. For each extract, thought investigation items were assessed (Appendix 1). Familiarity 7-point rating scale from *not familiar at all* to *extremely familiar* were utilised. To test mind-wandering and absorption levels, a rating scale of 1) *I was totally absorbed in the music* to 7) *I was thinking about something unrelated to the music* was used. Then, multiple questions were offered to ask whether the participants were thinking something from the *past/ present/ future/ I don't know* to test mind-wandering. For valence, a rating scale is utilised to ask whether it was a *positive, negative or mixed content of thoughts* (1-*very negative content of thoughts* to 7-*very positive content of thoughts*). For self-reference, again, a rating scale is utilised to ask what extent were the thoughts autobiographical (1-*to a very small extent* to 7-*to a very large extent*). An open-ended question requested participants to comment on the content of their thoughts or experience when they were listening to the music. Then, a slider was used to test the awareness of the surroundings when the participants were listening to the music from *none at all* to *a great deal.* Multiple-answered choice question tested whether the participants had experienced any bodily sensations: *warmth, coldness, frowning, smiling, goosebumps, tears, lump in the throat* and *tingling.* To test the musical aspects grabbing participant's attention, another

multiple-answered question was provided, featuring *melody, rhythm, harmony, texture, timbre, structure, tonality, instrumentation* and *none.* A slider is also utilised to evaluate how much the participant enjoyed the music from *not at all* to *a lot.* To comprehend the participants' inner language, they were asked if their thoughts occurred in words or images. If they selected images, then the question, *'Did you imagine vivid images?'* occurred.

The fourth section featured 34-item *TAS* to assess the levels of openness to absorbing and altering experiences of each participant (Tellegen, 1992). The rating scale included *0-never, 1-at least once, 2-occasionally, 3-often, 4-very often.* Then, the *Ten-Item Personality Inventory* (TIPI) is employed to test five personality traits with a 7-point rating scale (1-*disagree strongly* to 7-*agree strongly*) (Gosling, Rentfrow and Swann, 2003).

The last section included the *Depression, Anxiety and Stress Scale – 21 Items (DASS-21)* with a rating scale (*0-did not apply to me at all* to *3-applied to me very much or most of the time),* especially to determine the tendency to depression of each participant (Lovibond and Lovibond, 1995).

3. RESULTS

1) Thought Investigations. Participants were not very familiar with all of the extracts, except the 'Prokofiev: Suite No.2', where they were 'fairly familiar'. The classical extracts were significantly more familiar than the ritual extracts (Familiarity was a 7-point rating scale from 0-*not familiar at all* to 7-*extremely familiar*, Classical: M = 3.39, SD = 1.91; Ritual: M = 2.14, SD = 1.35; $t(62) = 4.16$, $p < .0001$). The most scored on 'totally absorbed in the music' extract was a Buddhist ritual extract: *Bönpö Chöd Pilgrimage* (M = 1.69, SD = 1.00). Figure 1 illustrates that there were more present- ($t(62) = 3.84$, $p = .0003$), past- ($t(62) = 5.80$, $p < .0001$) and future-related ($t(62) = 4.71$, $p < .0001$) content of thoughts with the classical extracts than ritual extracts. More 'I don't know'-related content of thoughts were evoked with ritual music ($t(62) = 18.7$, $p < .0001$).

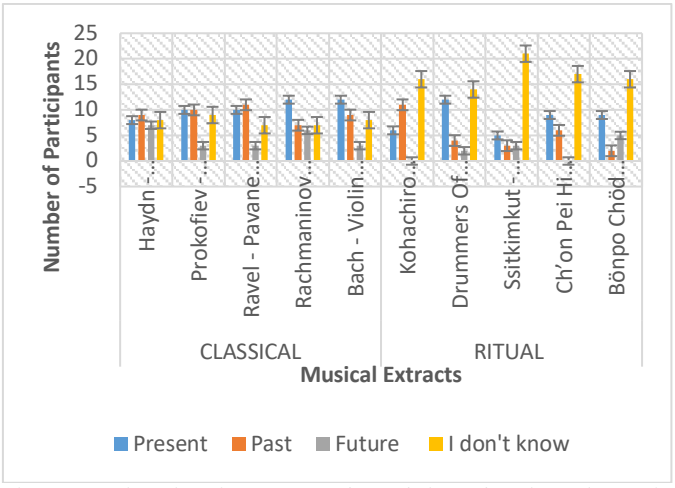

Figure 1. Thoughts from present/ past/ future/ I don't know in classical versus ritual extracts.

More positive and mixed content of thoughts were induced in classical extracts, and more negative content of thoughts was evoked in ritual extracts ($t(62) = 2.92$, $p = .005$) (Figure 2).

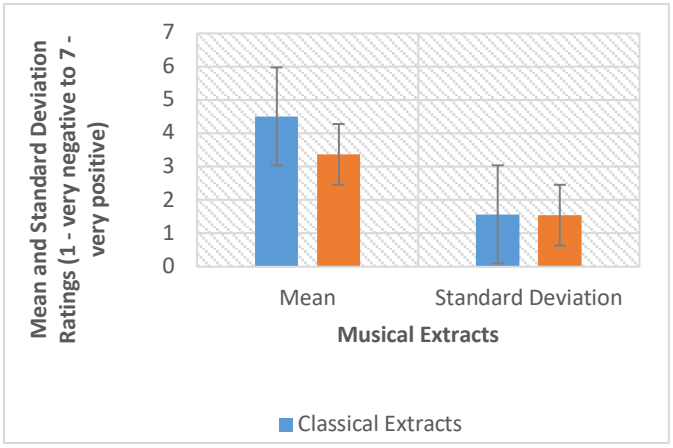

Figure 2. Comparison of content of thoughts between classical and ritual extracts (N=32).

Classical extracts evoked significantly larger extent autobiographical thoughts than ritual extracts ($t(62) = 2.26$, $p = 0.03$). The mean rate of awareness during listening to classical music was 37% (SD = 24%), which the slider indicated approximately *'a little'*. The mean rate of awareness during listening to ritual music was 47% (SD = 30%), approximately to *'a moderate amount'* (Figure 3).

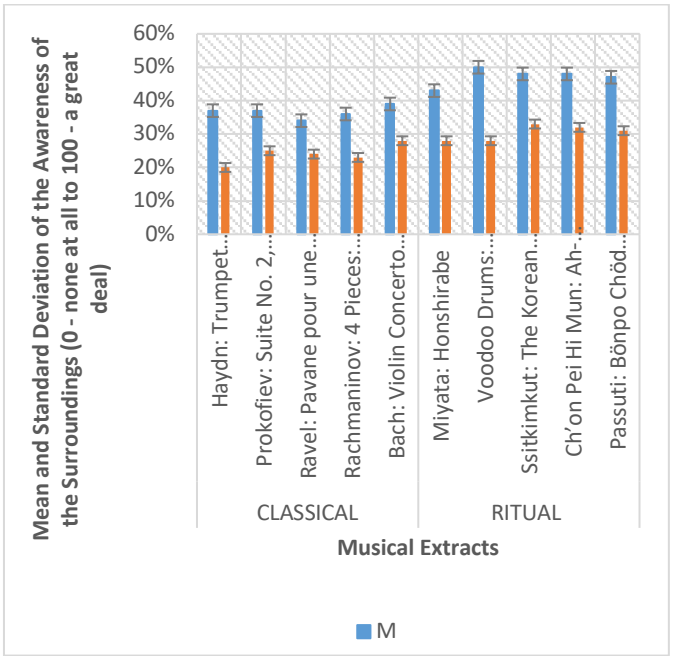

Figure 3. Comparison of the awareness of the surroundings between classical and ritual extracts (N=32).

More chills were induced within listening to the classical extracts, considering the 'none' option for chill-inducing

moments appeared to be ticked more during the ritual extracts listening. For classical extracts, mostly 'warmth' and 'smiling' chills were evoked, and for ritual extracts, 'coldness', 'frowning' and 'none' chills were seen. 'Bönpo Chöd Pilgrimage' ritual extract was the only extract that had the most mixed content of chills, including 'coldness', 'goosebumps', 'warmth' and 'frowning'. For classical extracts, common musical features noticed were 'instrumentation', 'tonality' and 'harmony'. For ritual extracts, they were 'texture', 'timbre' and 'none'. Rhythmic, melodic and instrumental aspects grabbed attention in all the extracts.

Some comments on the experiences featuring the musical features were:

*'I didn't really think about anything else apart from the complex **rhythms** with the **drums** within the music'* – Drummers of The Societe Absolument Guinin, Participant No. 1.

'I was thinking that I would love to be able to play the piano as it sounds beautiful' – Rachmaninov: 4 Pieces: Melody, Participant No. 22.

The slider results on the 'enjoyment' question indicated that the participants enjoyed classical music (M = 65%, SD = 25%) nearly twice as much than the ritual music (M = 32%, SD = 25%; $t(62) = 5.57$, $p < .0001$). In the case of the form of mental activity, more people tended to have thoughts in words while listening to ritual music, which differed significantly ($t(62) = 3.00$, p = .004) (Figure 4; Table 3). More images (especially vivid-images) were significantly visualised while listening to classical music. In ritual extracts, more people significantly experienced non-vivid images. In all extracts, more people experienced images (M = 19.6, SD = 5.68) than words (M = 12.4, SD = 5.68) ($t(62) = 5.07$, $p < .0001$).

Table 3. Significance of the contrast of the form of mental activity categories of classical and ritual extracts (N=32).

Mental Activity (Words/ Images)	**Classical**		**Ritual**		**T-tests**	
	M	**SD**	**M**	**SD**	***t***	***p***
Words	10.20	3.40	14.20	6.73	3.00	.004**
Images	21.80	3.40	17.4	6.73	3.21	.002**
Vivid Images	14.20	5.26	7.80	4.76	5.10	<.0001***
Non-Vivid Images	8.60	1.52	9.60	2.30	2.05	.04*

Note: Numbers indicate the number of participants. *p<.05, **p<.01, ***$p\leq$.001.

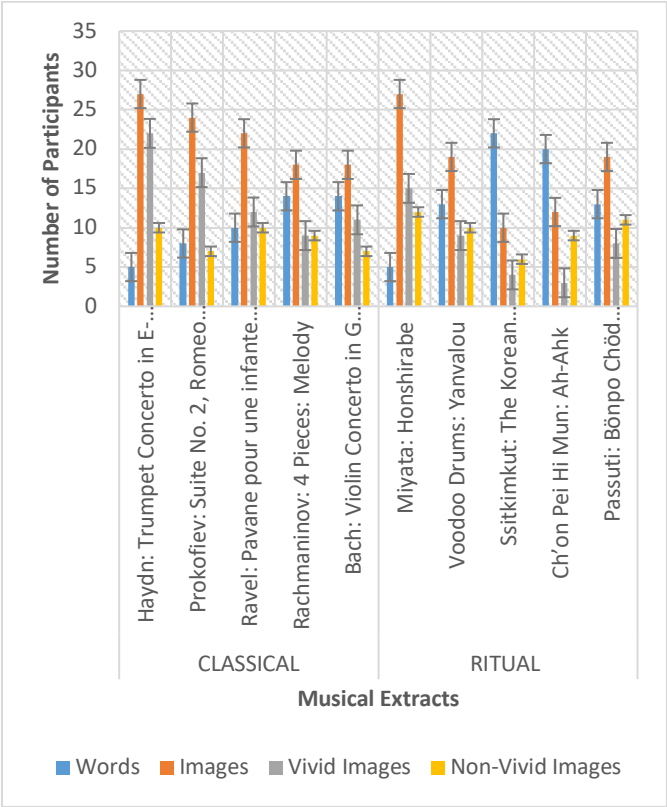

Figure 4. Comparison of the form of mental activity categories of classical and ritual extracts.

Felt emotions for the classical extracts frequently reported were positive and neutral emotions under the categories: joyful activation, tenderness, peacefulness and transcendence. For ritual extracts, felt emotions often tended to be neutral and negative emotions under the categories: transcendence, peacefulness, power, sadness and tense.

2) Correlations of the Thought Investigations, Personality Traits and Depression. [3] [4] Both classical and ritual extracts showed a positive correlation regarding the more familiarity evoking more enjoyment (Classical: $r = .53$); only the 'Bönpo Chöd Pilgrimage' ritual extract ($r = -.73$) showed a negative correlation. The correlation test on the familiarity and attention at the end of both classical and ritual extracts showed a negative association that participants were more absorbed to the more familiar music. Regarding attention and enjoyment of all extracts, there was a significant positive association: participants were more absorbed within more enjoyable extracts (Classical: $r = -.40$). Attention and awareness of the surroundings illustrated a positive correlation in all extracts; although there was a stronger positive correlation during the listening of ritual extract ($r = .36$). The content of thoughts was positively correlated with enjoyment (Classical: $r = .53$, Ritual: $r = .75$). Regarding only classical extracts, enjoyment and familiarity are positively correlated (r

[3] I have not carried out the Bonferroni correction because of the exploratory nature of my correlation analysis.

[4] Only the significant correlation results are noted in the main text.

= .53*)* and enjoyment and attention were negatively correlated (*r* = -.40).

There was a negative correlation between the means of each participants' attention at the end of the extracts and responsiveness to engaging stimuli, such as sights and sounds (*r* = -.23) (Figure 5). Correlation between vivid reminiscence and means of the attentional rating of individuals showed a positive relationship (*r* = .27) (Figure 6). The figures represented below show that the individuals with tendencies to absorption had an inclination to focus on the music (or other thoughts).

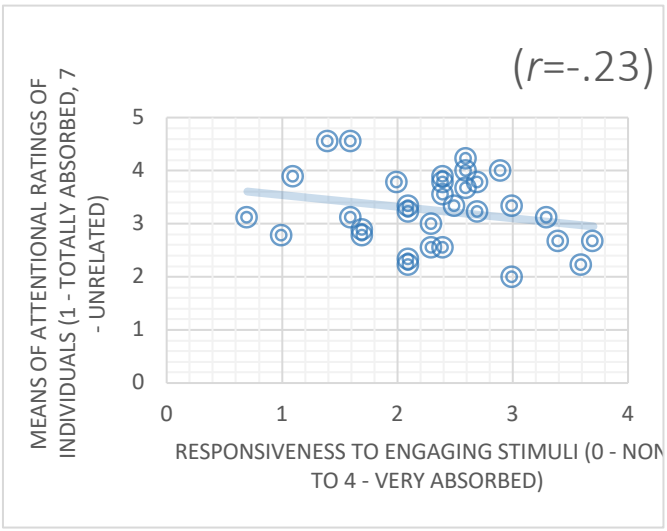

Figure 5. Correlation between responsiveness to engaging stimuli and means of the attentional ratings of individuals.

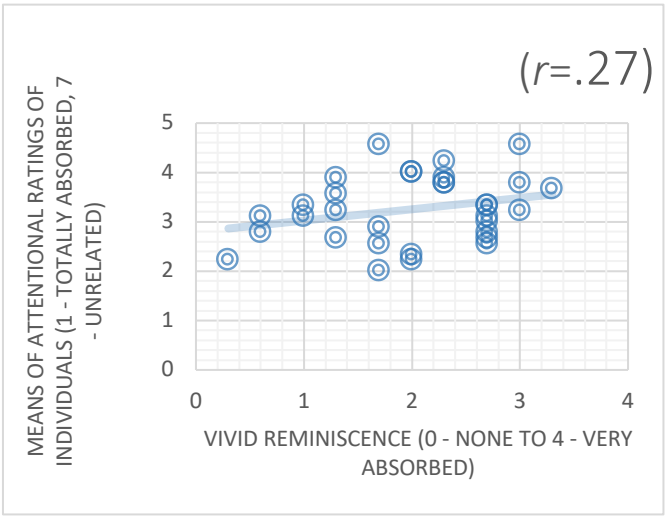

Figure 6. Correlation between vivid reminiscence and means of the attentional ratings of individuals.

According to DASS-21 and the mean of the *depression* variable (M = 1.97 [0-Normal, 1-Mild, 2-Moderate, 3-Severe, 4-Extremely Severe], SD = 1.69), the average participant seemed to have a moderate level of depression.[5]

The full *r* correlation results of TAS, TIPI and *Depression* are presented in Table 4. Extraversion was positively correlated with agreeableness (*r* = .36), responsiveness to engaging stimuli (*r* = .38) and enhanced cognition (*r* = .41). Enhanced cognition was positively correlated with agreeableness (*r* = .39), oblivious involvement (*r* = .68) and enhanced awareness (*r* = .64). Oblivious involvement was positively correlated with vivid reminiscence (*r* = .36) and enhanced awareness (*r* = .76). Enhanced awareness was positively correlated with vivid reminiscence (*r* = .46). The means of TAS was positively correlated with extraversion, agreeableness, conscientiousness and openness to experience, and negatively correlated with emotional stability. Therefore, the results showed that people with higher tendencies to absorption are extraverted, agreeable, conscientious and open to experiences.

There were strong positive correlations between depression and responsiveness to engaging stimuli, enhanced cognition (*r* = .48), oblivious involvement (*r* = .40) and enhanced awareness (*r* =.39). Overall correlation results between depression and absorption showed that individuals with tendencies to depression had the disposition to be absorbed on the music (and thoughts).

Depression was positively correlated with autobiographical thoughts (Classical: *r* = .18, Ritual: *r* = .12), awareness of the surroundings (Classical: *r* = .07, Ritual: *r* = .004) and enjoyment in ritual extracts (*r* = .04) (*see* Appendix 2 for the t-tests).

[5] For the purposes of this study, only *depression* scores are calculated and *stress* and *anxiety* scores are excluded from the DASS-21.

Table 4. The correlation matrix depicting correlation between TAS, TIPI and Depression from DASS-21 variables (r).

		1	2	3	4	5	6	7	8	9	10	11
1.	**Extraversion**											
2.	**Agreeableness**	.36*										
3.	**Conscientiousness**	-.01	.01									
4.	**Emotional Stability**	.24	.03	.10								
5.	**Openness to Experience**	.10	.19	.10	.18							
6.	**Responsiveness to Engaging Stimuli**	.38*	.07	-.06	-.00	.12						
7.	**Enhanced Cognition**	.41*	.39*	.11	-.09	.22	.17					
8.	**Oblivious/ Dissociative Involvement**	.26	.39*	.29	.01	.24	.20	.68**				
9.	**Vivid Reminiscence**	.38*	.25	-.05	-.26	-.18	-.03	.31	.36*			
10.	**Enhance Awareness**	.18	.26	.04	-.13	-.02	.27	.64**	.76**	.46**		
11.	**Depression**	.14	.16	.08	.24	.21	.17	.48**	.40*	-.05	.39*	

3) T-test Results for the Personality Traits. The results between TAS variables and the means of attentional levels in all excerpts differed significantly (Table 5). Individuals with tendencies to responsiveness to engaging stimuli evoked the most inclination to focus on the music (and other thoughts), and the enhanced awareness elicited the least inclination to focus on the music (and other thoughts).

Table 5. Comparing the TAS variables with the means of the Attentional Ratings with the independent t-test.

TAS Variables	M	SD	*t*	*p*
Responsiveness to Engaging Stimuli	2.31	0.74	5.30	<.0001***
Enhanced Cognition	2.05	0.61	7.43	<.0001***
Oblivious/ Dissociative Involvement	2.22	0.80	5.55	<.0001***
Vivid Reminiscence	1.97	0.80	6.90	<.0001***
Enhance Awareness	1.65	0.97	7.64	<.0001***

An independent t-test to compare the TIPI variables and Depression scores showed that there was a significant difference between the scores (Table 6). People with different personality traits have different levels of depression. Agreeable people tend to experience the most levels of depression, followed by emotionally stable people, extroverts, and then, conscientious people. People who are open to experiences tend to suffer the lowest level of depression.

Table 6. Comparing the TIPI variables and Depression with the independent t-test.

TIPI Variables	M	SD	*t*	*p*
Extraversion	4.52	1.03	7.32	<.0001***
Agreeableness	4.86	1.44	7.39	<.0001***
Conscientiousness	4.33	0.92	6.97	<.0001***
Emotional Stability	4.58	0.71	8.09	<.0001***
Openness to Experience	4.23	0.73	6.98	<.0001***

An independent t-test showed that there was a significant difference between the TIPI variables and Depression (Table 7). These results suggest that all the personality traits, shown in the table, tended to be absorbed in music stimuli.

Table 7. Comparing the variables of TIPI and TAS with the independent t-test.

TIPI Variables	M	SD	*t*	*p*
Extraversion	4.52	1.03	10.86	<.0001***
Agreeableness	4.86	1.44	9.74	<.0001***
Conscientiousness	4.33	0.92	10.74	<.0001***
Emotional Stability	4.58	0.71	13.62	<.0001***
Openness to Experience	4.23	0.73	11.60	<.0001***

4. DISCUSSION

In this study, I compared various ritual and classical musics to explore different levels of attention related to the notions of absorption and mind-wandering, and how familiarity with the music further influenced these notions. Emotions and influencing personality traits were also examined to understand the cognitive experiences with music. Within the framework of music psychology research in absorption and mind-wandering and granting limited research on the attention in everyday music listening, this study is novel because of its focus on everyday trance as an ASC through classical versus ritual music via the contribution of personality traits.

The results revealed that classical music had the highest levels of absorption according to the TAS and 'attention at the end of the extract' results, which did not support the hypothesis that initially assumed ritual music would have the highest levels of absorption. Respectively, ritual music had the highest levels of mind-wandering when considering the 'attention' and TAS results. Familiarity and enjoyment with the classical music of the Western participants has significantly modulated the results, indicating more tendency to absorption towards classical music (Herbert, 2011), which grabbed more significant narrowed and focused attention (Snodgrass and Lynn, 1989). The familiarity aspect of classical music modulated the absorbing experience as predicted by the hypothesis.

More captivation in self-referential thoughts (evoking mind-wandering) showed more enjoyment and limited awareness of the surroundings (evoking absorption) while listening to all excerpts (McVay and Kane, 2010; DeNora, 2000); although these variables were more frequently seen in classical music. Pertinently, cognitive flexibility and ASC were present, comprising both absorption and mind-wandering, while listening to music (Hinton and Kirmayer, 2017). Participants significantly did not know where their attention was while listening to ritual music, which contributed to absorption. They indicated '*present*-', '*past*-', and '*future'*-related content of thoughts when listening to classical music; Baird, Smallwood and Schooler prove that the 'past'- and 'future'-related content of thoughts associate with mind-wandering (2011). Thus, the results also found supporting findings for

the hypothesis that classical music listening evokes mind-wandering.

The exploratory question on the emotions being associated with these mental experiences showed stimulating outcomes. Philosophical and psychological studies dictated that 'happiness' and 'sadness' were the most acknowledged emotions in music (Kivy, 1990). Accordingly, the most frequent emotions associated with absorption and classical music observed to be as positive (including happiness and power) and neutral emotions (including peacefulness), which also had more frequent 'warmth' and 'smiling' chills. More positive content of thoughts was aroused in more familiar classical music; grabbing more narrowed and focused attention. Ritual music perceived to have neutral and negative emotions (including sadness and tension) with frequently-reported 'coldness', 'frowning' and 'none' chills. This paper's findings supported Taruffi et al.'s findings where 'sad' music would evoke the highest levels of mind-wandering (2017), and additionally found that unfamiliar ritual music has the capability to arouse negative emotions with more tendency for the mind to wander. Participants thought in words and sometimes in non-vivid images while listening to ritual music, which could be further explored to investigate the effect of absorption and mind-wandering studies. In all music, more people experienced images than words, having a relationship with mental imagery and music processing (Koelsch and Skouras, 2014). According to the emotion discoveries on these mental experiences, the findings are against the first hypothesis.

Bönpö Chöd Pilgrimage was the only ritual extract that showed less familiarity and more enjoyment within the participants. This extract also had the most mixed-reported type of chills, including 'coldness', 'goosebumps', 'warmth' and 'frowning: observed emotional flexibility. This 'loose' ritual extract had a contrary contribution to the general absorption literature where its unfamiliarity evoked more absorption (McCrae and Costa, 1985a). The results also showed that the rhythmic, instrumental and melodic features of classical and ritual music grasped participants' attention the most. It can be observed that the repetitive drumming of *Passuti'*s extract was one of the transparent features that contributed to the hypnotic experience, and thus to absorption (Szabo, 2006).

Considering the personality traits, the third claim was supported by the individuals with leanings to absorption, showing an urge to focus on the music and/ or other thoughts. TAS results showed a link between more narrowed and focused attention induced in the participants, which supported the hypothesis. People with tendencies to absorption having tendencies to depression was not depicted in the hypothesis. Following Roche and McConkey's study on the absorption correlating with openness to experience amongst others (1990), this study found that people with higher tendencies to absorption appeared to be extraverted and agreeable. Furthermore, results with depression generally showed more tendency to mind-wandering than absorption; everyday negative mood also motivating the mind-wandering during listening (Taruffi and Koelsch, 2014). Attentional shift to past events evoked mind-wandering tendencies in the case of depression while listening to classical music (Franklin et al., 2016). Awareness of the surroundings was higher during experiencing ritual music, albeit differing insignificantly between classical music, which evoked mind-wandering. Classical music-induced larger extent autobiographical thoughts in depressed individuals (Joorman, 2005). More enjoyment in ritual extracts was associated with higher levels of depression. There is a connection between depression and enjoyment of sadness, considering that ritual music-evoked more sadness, evoking mind-wandering.

There were limitations to the findings of the study. The sample size of 32 participants can be more comprehensive. The study can also be replicated cross-culturally for more diverse results. The ritual setting is chiefly important for a trance to occur (Friedson, 1996). Only ritual's music aspect to test the notion of trance was utilised, which made the study limited. For future research, the study can run in a ritualistic environment for more promising results. It should be kept in mind that this could affect attentional levels of the individuals that are participating in a ritual which could impact the process of trancing. The test of awareness of the surroundings while listening to music to investigate whether unfamiliar music allows a more immersive experience rather than triggering autobiographical aspects or more standardised associations can be explored further.

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APPENDIX

Appendix 1. Items Utilised in the Experiment (Excluding Scales).

Thought Investigation	Question
Familiarity	How familiar are you with the piece?
Mind-Wandering/ Absorption	Where was your attention before the music ended?
Mind-Wandering	Were you thinking something from the past/ present/ future/ I don't know?
Content of Thought	
Valence	Was it a positive, negative or mixed content of thoughts?
Self-referentiality	To what extent were these thoughts autobiographical?
Open-Ended Format	Would you like to comment on the content of your thoughts or experience when you were listening to the music?
Environment	Were you aware of the surroundings around you whilst you were listening to the music?
Bodily Sensations	Choose any of the following if you had any of them: warmth, coldness, frowning, smiling, goosebumps, tears, lump in the throat, tingling.
Musical Features	Which aspects of the music grabbed your attention? (E.g. structure, timbre, etc.)
Evaluating the Music	How much did you enjoy the music?
Form of Thought	
Inner Language	Did your thoughts occur in words or images?
If images are chosen)	Did you imagine vivid images?

Answers were given in rating scales, sliders, open-ended answers and multiple-choice answers.

Appendix 2. Comparing the Depression and Four Thought Investigations for a Link to Mind-Wandering.

Thought Investigations	M	SD	*t*	*p*
	Classical (Ritual)	Classical (Ritual)	Classical (Ritual)	Classical (Ritual)
Content of Thought	4.51 (1.57)	1.57 (1.55)	6.25 (3.48)	<.0001*** (.0009***)
Autobiographical Thoughts	3.33 (2.40)	1.75 (1.53)	3.19 (1.09)	.002** (.28)
Awareness of the Surroundings	0.37 (0.47)	0.24 (0.30)	5.27 (4.91)	<.0001*** (<.0001***)
Enjoyment	0.65 (0.32)	0.25 (0.25)	4.34 (5.43)	<.0001*** (<.0001***)