COMMUNITIES IN TRANSFORMATION

Transdisciplinary contributions for cultural integrated landscape management

Luiz Oosterbeek, João Fernando Igansi Nunes (org.)

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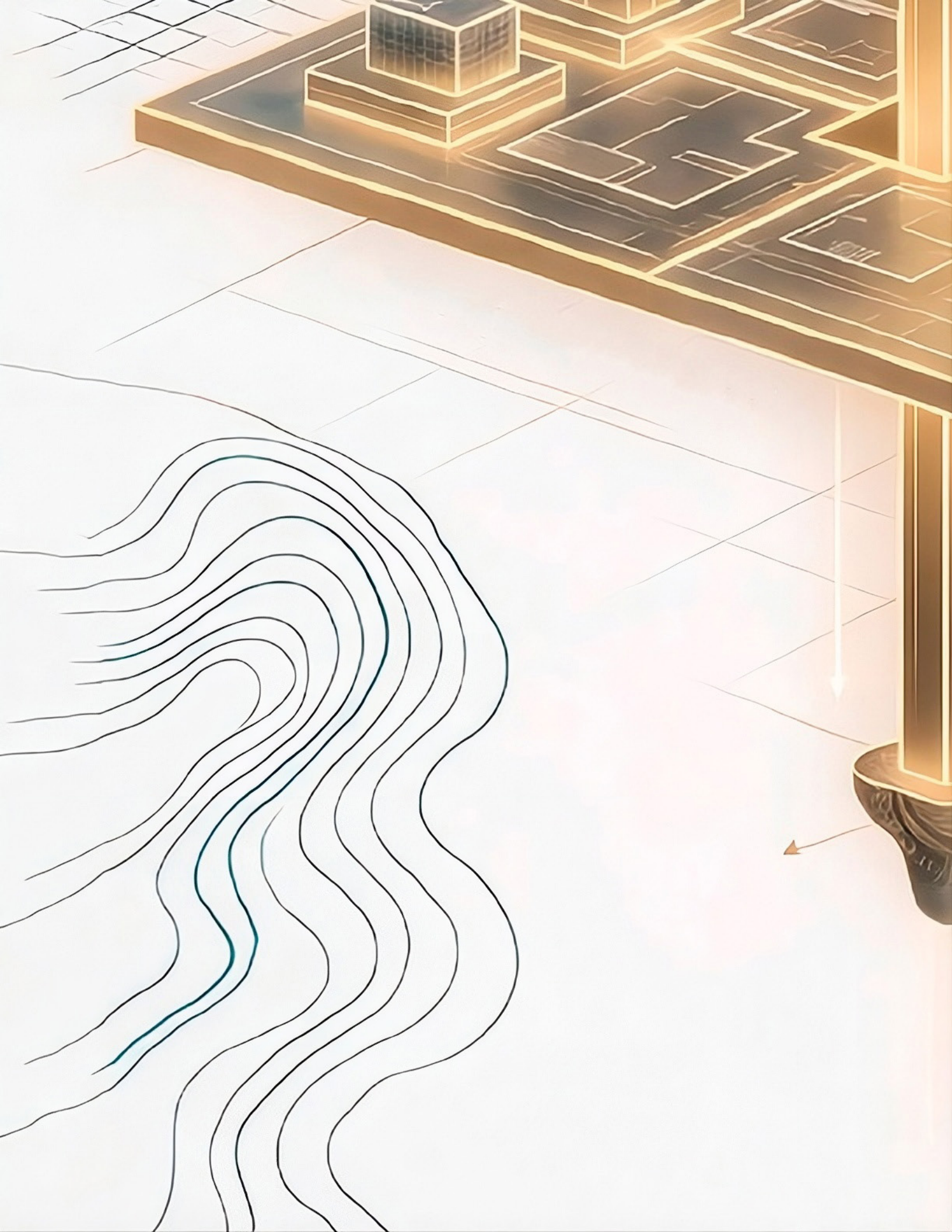

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Contactar: Instituto Terra e Memória
Largo dos Combatentes, 6120-750 Mação, Portugal
itm.macao@gmail.com
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Summary

Psychological effects of applied music in museums

BILJANA JOKIĆ[1]
IVANA LUKOVIĆ[2]

Introduction

Most people have experienced emotional enrichment while listening to music they enjoy, and many prefer working in environments where music plays subtly in the background. The beneficial effects of music, especially on emotions, are well-documented and supported across a variety of empirical studies (Zentner et al., 2008; Juslin and Sloboda, 2010).

Particularly relevant to the present study is the distinction between active music listening (when music is the primary focus of attention) and passive or background listening, (where music is present but not the central stimulus).

1 Center for Applied Music, Belgrade; Department of Psychology, Singidunum University; FEFA, Metropolitan University, Serbia

2 Center for Applied Music, Belgrade, Serbia

While both modes of engagement have demonstrated positive effects, this paper centers on the impact of background music, as it plays a crucial role in shaping the ambient experience in spaces such as museums.

Effects of background music. Empirical findings largely support the positive impact of background music on emotion, mood and emotional regulation (Kämpfe et al., 2011). These findings are further confirmed by the physiological results: listening to pleasurable music is associated with increased dopamine release – a neurotransmitter commonly linked to feelings of reward and well-being (Nadler et al., 2010).

The effects of background music on cognitive processes (e.g., memory or language-based tasks) are more complicated. These effects are shaped by a complex interplay of contextual variables, task demands, musical characteristics, and individual differences–further complicated by a lack of methodologically rigorous and comparable studies (De la Mora Velasco and Hirumi, 2020). The mechanisms by which music influences psychological processes remain only partially understood. Interestingly, rather than exerting a direct effect on cognitive performance, as is often assumed, one alternative explanation is offered by the arousal and mood hypothesis, which posits that music influences cognition indirectly by altering arousal levels and emotional states (Thompson et al., 2001).

Background music in museums. Research on the effects of background music in museum settings remains limited, yet existing findings are promising. For instance, the emotional valence of music (e.g., happy, sad, peaceful, or unsettling) and its likability have been shown to significantly influence visitors' experiences of artworks (Braun Janzen et al., 2023). Additionally, background music has been found to encourage visitors to spend more time in the museum environment (Chen and Tsai, 2015). An important remark is that visiting museums in general is related to greater well-being and improved mental health (Ter-Kazarian and Luke, 2021; Fancourt et al., 2018). The interplay of museum space, exhibits, and background music has the potential to enhance the visitor experience, as indicated by studies

on multisensory museum environments (Luo et al., 2024) and multimodal art encounters—for example, the act of listening to music while engaging with visual artworks (Actis-Grosso et al., 2017).

Originally composed music for a museum. Original compositions specifically created for museum settings remain relatively rare. Some examples are usually inspired by a museum's permanent collection and performed in one-off concerts within the museum space (DeOreo, 2019). A different approach, however, emerges within the framework of applied music: compositions designed to function as continuous background sound throughout an exhibition. This method, referred to as synomusic, integrates music into the museum ambience as a consistent element of the visitor experience (Marković and Jokić, 2022).

Synomusic is a form of applied music specifically composed for exhibitions and museum settings—permanent, site-specific sound designed to unify exhibits, space, and visitor experience into a coherent ambient whole. Tailored to the theme, content, and character of each exhibition, synomusic aims to enhance the aesthetic experience by creating a subtle sonic backdrop that deepens visitor engagement and binds the exhibition elements together (see: Markovic, in this volume).

Theoretical perspective: Escape-seeking dichotomy

In line with the above mentioned empirical results, the beneficial effects of visiting museums could be expected in all three domains of psychological processes: emotion (positive impact on emotion and mood), cognition (memory and learning), motivation (inspiring action and play). However, a relevant question is why is that important? Or why do people visit museums?

Visiting museums can be interpreted through the lens of Iso-Ahola's (1982; 2010) escape–seeking dichotomy, which conceptualizes human behavior as motivated by two dialectically related forces: the desire to escape the routines, stressors, or interpersonal challenges of everyday life, and the desire to seek psychological or social rewards in contrasting environments. Museums, especially those

that incorporate ambient elements such as background music, offer ideal settings for both motivational dimensions to be fulfilled simultaneously.

On one hand, the escape component is addressed as visitors step away from their habitual environments into curated, contemplative spaces that promote reflection, emotional distancing from everyday reality, or immersion in history, science, or art. On the other hand, the seeking component is reflected in the pursuit of intrinsic rewards such as learning, aesthetic pleasure, play, or meaningful social interaction. Indeed, some studies have already reported results on visitors' motivation in line with Iso-Ahola dichotomy, like seeking news/information, education, cultural vs. escape from daily routines and busy lives (Ntamkarelou et al., 2017; Slater, 2007).

Features like background music, interactive exhibits, or multisensory design can intensify these rewards by shaping the emotional tone and enhancing the immersive quality of the experience. In this sense, museum visits—particularly those supported by synomusic or similar multisensory strategies—can be seen as contexts where escape and seeking motivations converge, providing a psychologically restorative and enriching experience that addresses both personal and interpersonal needs.

Empirical illustration: visiting museums with synomusic

One such example is the Museum of Science and Technology in Belgrade where original applied music was composed by three composers for the entire museum space with three distinct parts of the permanent museum exhibition, and played continuously for three months during the exhibition.

Our research study employed a mixed-methods design, combining quantitative and qualitative approaches to evaluate the impact of synomusic on emotions, cognition and motivation. Given that museum visits are typically rated positively regardless of additional stimuli (Zhao and Mao, 2022), we placed particular emphasis on qualitative responses, anticipating that synomusic would shape the

experience in a more nuanced way, making visits feel more engaging, memorable, and atmospherically distinctive than those in silence.

The details on the artistic part of the project as well as an in depth research that intended to measure the effects of that approach on visitors' experience are reported elsewhere (Marković and Jokić, 2022; Jokic, Markovic and Lukovic, 2023). In this paper we will focus on the interesting insights that emerged from the qualitative part of the study reflecting escape-seeking dichotomy (Iso-Ahola, 1982; 2010).

Visitors reported a range of psychological and experiential benefits following their time in the museum, reflecting the multidimensional impact of the museum environment. One recurring theme was the *sense of escape from everyday life*, often described in contrast to the visitors' mental and physical state before entering. As one participant explained: "Before visiting the museum, we were completely drained—physically and mentally. It felt like we had been run over by a steamroller, tense and on edge. But the museum completely turned things around." Similarly, another visitor noticed: "I'm retired, so I enjoy getting out and changing my surroundings a bit. I feel cheerful, in a good mood, and completely positive. It's not a calm kind of peace—I'm actually full of joy.".These experiences align with the escape dimension of Iso-Ahola's motivational framework, highlighting the museum as a space of psychological relief.

The next three themes align with Iso-Ahola's seeking dimension—though in many cases, the positive effects of a museum visit emerge unexpectedly. Visitors may come without clear intentions, or simply to accompany someone else, only to find themselves engaged in play, learning, or an overall improved emotional state. In this sense, the seeking dimension may be better understood not as a precondition for visiting, but as something that unfolds during the experience itself. Put differently, the following themes can be interpreted either as outcomes of the museum visit or as motivations for it, depending on the visitor's prior exposure to and familiarity with museum settings.

A significant benefit was the *element of play*, which challenged conventional expectations of museum behavior emphasizing the museum's capacity to foster spontaneous joy and childlike engagement even among adult audiences: "This turned out to be more playful and fun than I expected from a museum", "There are so many things here that we either saw in textbooks or that our generation grew up with –we actually used some of them ourselves. And that's just the kind of person I am – I came mainly to get interested and to have fun", "In the end, we got really involved and had so much fun in the Science Playroom, the crooked room, and with the distorted mirrors. We were just acting like kids and goofing around, even though these things are less significant than the exhibits on the upper floor"; "A lot of the exhibits required interaction and collaboration between multiple people, which really enhanced the overall experience".

The third theme was *learning and cognitive stimulation*, especially prominent in interactive zones such as the Science Playroom:"We really enjoyed the mental challenge in the Science Playroom—trying to work out solutions. The rest of the museum is pleasant and enjoyable, but here you really have to make an effort to reach a result." This reflects the seeking component of visitor motivation, driven by a desire for intellectual engagement, which is common in museums in general. Similarly, other participants commented: "I was interested in many things we had studied at university, but some of them I had never actually seen in person. Now it all connects—how certain things work. I enjoyed the experimenting and the active involvement—where you watch something and then do something with it. It's interactive" ,"We really enjoyed the mental challenge in the Science Playroom—trying to work out solutions. The rest of the museum is pleasant and enjoyable; we look around and have a good time. But here, you really have to put in some effort to reach a result".

Finally, many visitors reported *experiences of emotional resonance*, often tied to nostalgia and personal memory: "I'm happy now because I saw so many things that reminded me of my childhood and early youth. I didn't expect to see

items we actually used back then." These emotionally charged moments demonstrate how exhibitions can evoke personal histories and contribute to emotional wellbeing. "I was emotionally moved–these objects somehow have a soul, they have something in them"; "For me, the ideal museum experience involves a sense of excitement, unpredictability, and emotional activation"; "I felt excited before the museum visit, a bit impatient and maybe even tense. I kept wondering what I would see, since it was my first time coming to this museum. By the end, I felt complete – I got more than I expected".

Not surprising, there are also comments showing *mix of escape and seeking dimensions*, such as the last one above, or the next one reflecting psycho-physiological restoration, beneficial effects on emotion, and learning: "Before coming to the museum, I was really tired—I didn't sleep well last night and barely managed to come. But during the visit, I started feeling better because I was genuinely having fun, and now I feel re-energized and full of impressions. I'm in a better mood because I saw something that resonated with me, and it made me want to learn more about different things.".

Discussion

Our findings align with previous research on the contributions of museums and music to well-being (Kämpfe et al., 2011; Fancourt et al., 2018; Ter-Kazarian and Luke, 2021). As expected, these effects were replicated in multimodal settings, where museum artifacts were presented along with background music specifically composed for the exhibition. While the main goal of our research study was to measure the effects of originally composed music on all key psychological domains: emotion (enhanced mood), cognition (improved memory and learning), and motivation (stimulated play and action), another important dimension emerged in the qualitative analysis.

During their interviews on site, museum visitors spontaneously described transcending everyday reality during their visit by being immersed in the world

of artifacts. They reported that such mental and emotional activity reduced their stress and restored energy and enhanced their overall well-being. Therefore, in this paper, we specifically explored the relationship between visitors' reported mental and emotional states and two distinct motivational forces, as conceptualized in Iso-Ahola's (1982, 2010) escape–seeking theory.

The escape dimension is our desire to escape the routines, stressors, or interpersonal challenges of everyday life. The seeking dimension is the need to seek psychological or social rewards in different environments – in this case, a museum with synesthetic music where visitors can play, learn, and feel desired emotion. Although in the context of museum visits the escape and seeking dimensions often align more with experiences that unfold during the visit rather than with initial motivations for attending, we nonetheless find this dichotomy useful for understanding both the reasons behind museum visits and the unexpected benefits that may influence future decisions and visitor behavior.

Our research suggests the connection between museums with background music and fulfillment of escape and (psychological) rewards seeking motivations. It might look straightforward - museums present a wide range of exhibit types within thoughtfully curated spatial and contextual settings, offering visitors the chance to step outside of everyday routines and enter immersive, constructed worlds of meaning and material culture (Latham, 2007). Museums, especially those that incorporate ambient elements such as background music, offer ideal settings for both motivational dimensions to be fulfilled simultaneously.

According to our findings, the escape component is addressed as visitors step away from their habitual environments into curated, contemplative spaces that promote reflection, emotional distancing, or immersion in history, science, or art. On the other hand, seeking components are reflected in the pursuit of intrinsic rewards such as learning, aesthetic pleasure, play, or meaningful social interaction. Features like background music, interactive exhibits, or multisensory design can intensify these rewards by shaping the emotional tone and enhancing the immersive

quality of the experience. In this sense, museum visits, particularly those supported by synomusic or similar multisensory strategies, can be seen as contexts where escape and seeking motivations converge, providing a psychologically restorative and enriching experience that addresses both personal and interpersonal needs.

These individual accounts underscore the diverse psychological functions a museum visit can serve—ranging from escape and play to cognitive stimulation and emotional connection. Studying such experiences is particularly relevant in light of research showing that well-being and happiness are closely linked to the quality of one's leisure activities (Newman, Tay and Diener, 2014). Museums, as structured yet open-ended leisure spaces, offer unique opportunities for personally meaningful engagement. By addressing both hedonic (e.g., pleasure, relaxation) and eudaimonic (e.g., learning, personal growth) aspects of well-being, museum visits can significantly contribute to psychological health and life satisfaction. Understanding the specific motives and effects associated with these visits not only enriches museum studies but also highlights their broader role in public mental health and leisure science.

With the aim to further refine all the findings that emerged from our pilot study, and provide answers to some new questions, a large-scale multicultural music in museums research project, with the name EUROMUSE, is currently underway. The findings that will cast some light on the effects of background music in different museum environments will be presented as part of the monograph that will accompany the EUROMUSE project conference in Spring 2026.

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