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**“Mycelia”**: An investigation into the human reception of ethnobotanical art and immersive multimedia in art exhibitions

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## **ABSTRACT**

Through emerging technologies, we are able to observe the connection between humans and the natural landscape more clearly than ever. The ways in which we interact with the world are being greatly supported by the creative arts, benefitting from such innovations. This project investigated audience receptions to ethnobotanical art in a multi-sensory exhibition of transmedia artists, *Mycelia*. Interpreting mixed data sets, the findings showed a correlation between level of immersion and audience connection to the art's themes and messages. The interaction with ethnobotanical art also led audiences to reflect on their environmental views. It is anticipated that interlinking such practices has wider implications on the capacity of immersive art experiences to stimulate change within environmental settings and beyond.



Original design by @000d1g1m0n on Instagram

*"Mycelium describes the most common of fungal habits, better thought of not as a thing but as a process: an exploratory, irregular tendency." (Sheldrake, 2020, pp. 11)*

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## **INTRODUCTION**

Ethnobotany is a changing, “interdisciplinary science that combines anthropology and botany” (Prance, 1991 pp. 210). This measure of the “importance of plants [...] to people” (Hoffman & Gallaher, 2007, pp. 201) is critical in understanding humanity’s impact on the natural environment, especially following crises like climate change and decreasing biodiversity worldwide. While positive and negative, the relationship between humans and nature is closely examined through the arts (Appendix A). For this project, art reception is defined as the interplay between “utilitarian” and “aesthetic” emotions (Hager et al., 2012, pp. 320), where “intrinsic qualities” (Scherer, 2004, pp. 244) such as beauty integrate with physical context and individual situations. The purpose of this project is to investigate audience receptions of ethnobotanical art and how this art influences audiences’ views on environmentalism and sustainability. As art becomes more accessible through modern technologies, can it be an effective means of raising environmental awareness?

The project utilised a multimedia, immersive exhibition showcasing ethnobotanical works, *Mycelia*, as a creative artefact to collect data. Survey responses, interviews, and quantitative exhibition analysis provided grounds to propose new conclusions on ethnobotanical art’s influence upon the audiences’ environmental philosophies. The multi-sensory nature of the exhibition also prompted investigation into the effectiveness of immersive media in conveying messages, ideas, and themes to the audiences over traditional art forms, i.e., static paintings, sculpture, and writing. The immersive sounds and interactive artworks proved to be fundamental in the connection made between audiences and the art’s intentions.

## **LITERATURE REVIEW**

To explore a new field of research, ethnobotanical art reception, an analysis of the pre-existing academia must be made. This project investigates the emotional responses to art and its reception, the influence of location and immersion in art, and how aesthetics relates to human philosophy and societal contexts. The selected literature is relatively new, analysing a prevalent discussion in an advancing age of art and technology. The following review structures the literature into two sections: 'Art Perception and Emotion' and 'Societal Influence on Art', concluding with how this literature informs the direction of this project.

### **Section 1: Art Perception and Emotion**

From an art perception context, there exists an extensive debate into whether the negative emotions associated with art of a painful topic can be translated into a positive experience for an audience. Complex psychological studies into the emotional distancing of an audience member from the intended impact of an art piece have raised significant debate in particular. This allows a consumer to nullify the emotional distress caused by art that is designed to trigger negative emotions (such as environmental guilt) with the intent of "safeguarding the hedonic expectations" (Menninghaus et al., 2017, pp. 3) and ensuring a pleasurable experience. The *Distancing-Embracing Model* is a leader in art reception theory and represents the cognitive schemata and processing of art, with all negative emotional responses being "at some psychological distance" (Menninghaus et al., 2017, pp. 3) as a separate entity. The 'embracing' element occurs when the "powers of negative emotions" (Menninghaus et al., 2017, pp. 3) are adopted as a service, assimilating the experience into an intense, and ultimately more rewarding experience of art reception. The compartmentalisation of these two components of art reception breaks down the human experience into distinguishable, ordered stages. The ordering of these stages is important to consider for this project as qualitative data gathered from surveys allowed participants to

reflect upon their involvement in both stages. This project makes the case for the act of distancing to be a passive, ongoing process audience members experience as they receive art to protect their enjoyment in the exhibition. While audiences digest themes from the art to understand any meaning, they are initially distanced from the emotional counterpart until the reflective process of embracing takes place shortly afterwards, where audiences can emotionally engage with the art.

Yet, this report has been criticised by academics, labelling it as the over-simplification of human reception. It is argued that distancing yourself from artworks that elicit negative emotions does not allow someone to embrace the art more emotionally, claiming this theory acts as a “weak metaphor” (Davies, 2017, e357). Davies (2017) argues that the psychological distance set by audiences from a stimulus cannot solve the “paradox” (Davies, 2017, e357) of human interactions and tragedy alone. In defining this paradox of painful art, the work of Menninghaus et al. (2017), along with Davies’ (2017) critique of said work is explored by Strohl (2019). Strohl (2019) argues that while the model described by Menninghaus et al. (2017) is not a “totalizing solution” (Strohl, 2019, pp. 7), the theorem is clear that the “negative affect plays a positive role in making the experience more enjoyable” (Strohl, 2019, pp. 7). The clarification of distancing positive and negative emotions is the key area of conflict between Menninghaus et al. (2017) and Davies (2017). This fluidity of emotion is also critical to consider in this project, as survey participants were given open-ended questions to stimulate honest reflection rather than binary positive or negative responses. This promotes the embracing of a spectrum of emotions with each influencing one another, as opposed to a collection of responses labelling the emotional experience as ‘positive’ or ‘negative’.

Incorporation of “social factors” (Strohl, 2019, pp. 7), “relational” (Bastian, 2017, pp. e352) experiences, and “social sharing” (Egloff, 2017, pp. e358) must be considered when discussing art reception. A different audience will have a different emotional response, and an audience’s wider knowledge of a certain topic can impact how much someone learns, is affected by, and how much is taken away from an experience. For example, an active

environmentalist aware of issues of climate change is less likely to be emotionally impacted by painful, ethnobotanical art than someone who is not as familiar with such distressing topics. Bastian (2017) supports these ‘embracing’ factors suggested by Strohl (2019) in their argument, claiming that “sharing an experience [...] amplifies both the pleasantness and unpleasantness” of exploring an art gallery (Bastian, 2017, pp. e352). Bastian (2017) also proposes additional factors that contribute to the enjoyment from negative emotions in art. These include “befriending others” and the “sense of connectedness” (Bastian, 2017, pp. e352) to an art piece. Although these factors are not examined in detail, Bastian (2017) provides a supplementary component to the pre-existing *Distancing-Embracing Model* from Menninghaus et al. (2017).

With this project, sound is an all-encompassing feature, providing a sense of space and natural environment simulation. This live sound performance acts as an immersive art form, investigating the influence of sensory experiences in art reception. Considering the negative emotion response in music, Baltes and Miu’s study (2014) incorporates the social factors mentioned by Bastian (2017) and Strohl (2019) as key indicators of emotional reactivity. Within a musical framework, the “presence of others” and the “ambience of the location” (Baltes & Miu, 2014, pp. 59) are critical factors to consider when recording an audience’s response to art or music. This indirectly supports the importance of social factors argued by Strohl (2019), Bastian (2017), and Egloff (2017) when experiencing meaningful art. In addition, the study includes references to “visual images” (Baltes & Miu, 2014, pp. 59) as a feature that can often accompany live music performance. The transportive effect of immersive experiences is said to be associated with a heightened emotional experience, whereby an audience is allowed to “imagine places or events” (Baltes & Miu, 2014, pp. 59).

However, in order to achieve the high value transmission associated with live performance or exhibition, there must be an element of interactivity that can generate a sense of belonging in an audience. This is argued by Hung et al. (2016) who confirm the need for interactive multimedia technologies in an exhibition setting. In this study, the “adoption of interactive multimedia technologies in exhibitions increased visitor-exhibit



interactivity and visitor satisfaction” and “only effective visitor interaction could achieve value transmission” (Hung et al., 2016, pp. 408). This is a widely accepted view in the academic field, and this engagement was similarly measured in *Mycelia*, focussing upon the effect of ethnobotanical art specifically. Experts like Li & Liew (2015) supporting the claim that “interaction” is a “key factor[s] of enhancement of on-site visit experience” (Li & Liew, 2015, pp. 224). The element of personalisation presented in the findings was not applied to this project, due to the free, open nature of the exhibition. Using immersive media allows for an “understanding of the situated experience of art” (Costello et al., 2005, pp. 55) where “artists create a link between the event aspects of the performativity with the materiality of the installation” (Jacucci, 2010, pp. 3). This literature claims that for art to be actively engaged with and its message to be fully transmitted, an audience must be capable of touching, discussing, feeling, and interacting with it. This concept of interaction is a core value of the *Mycelia* exhibition and its research questions, focussing on ethnobotanical art exclusively.

## Section 2: Societal Influence on Arts

Looking wider, it is argued that immersive experiences are unable to impact an audience’s values without an element of societal implication to “connect researchers’ endeavours with communities” (Jones, 2012, pp. 2). The temporal nature of artworks is claimed to not have the emotional staying power to impact an audience’s philosophies alone. For example, Jones references dreams as constructions of memory that rely upon the “building blocks of narrative accounts” (Jones, 2012, pp. 1). The practice of *Performative Social Science* allows for both scholarly perspectives and a grounding to real life that leads to an audience relating to the arts, not just perceiving it. This will affect how easily communities are developed around a certain art event or scene, generating a long-lasting societal impact. By *Performative Social Science*, Jones (2012) refers to the communicative nature of research paired with the involvement of audiences, often through transmedia practice. The topic “challenges the traditional binary between research and (re)presentation”

(Jones, 2012, pp. 4), arguing that the grounding an art piece in theory completes the experience, protecting it from total abstraction.

Jones (2012) references and takes inspiration from Bourriaud's *Relational Aesthetics* (2002). Both papers place importance upon the physical context of art in its perception, where "artistic activity [...] evolve[s] according to periods and social contexts" (Bourriaud, 2002, pp. 4). Dissimilar to the work of Menninghaus et al. (2017), this argument takes the reception of art from an audience to be a natural phenomenon, an action you cannot control. The space in which this "relational art" (Bourriaud, 2002, pp. 5) is kept should not simply be a physical space to house paintings. Rather, it is a venue for discussion and reflection. Unlike the *Distancing-Embracing Model*, Bourriaud (2002) argues that audiences are unable to manipulate how we react to art. What we can control however, is the human response following the reception of such artforms. Bourriaud (2002) and Jones (2012) refer to this response as the broader discussion generated from art, prompting "meetings and invites appointments" (Bourriaud, 2002, pp. 13). Rather than separating positive and negative emotion, the acts of seeing and "perceiving" (Bourriaud, 2002, pp. 13) are separated, deconstructing the viewing experience into, again, ordered stages. All these factors are subconsciously considered when receiving a form of art and are innate to our lifestyle. In this instance, emotional and perceptual responses include perspectives on environmentalism and sustainability.

Through analysing this literature, research gaps arise, prompting questions around the reception of art, specifically that of ethnobotanical values:

- **Are immersive media forms more likely to engage an audience and stimulate a reaction?**
- **How does ethnobotanical art influence an audience's philosophies and environmental values?**

These research questions will be referenced throughout this essay, drawing new conclusions through analysis of its findings. Introducing immersion as a component of location provides a new perspective in the academic debate surrounding art reception. The implementation of a theme such as nature is also deliberate in this project in an attempt to present something familiar, yet ultimately in danger. Themes such as environmentalism, existentialism, and nature will be explored, focussing upon how the values and emotions of an audience are affected by multi-sensory art forms. It is my view that emotional responses cannot be fragmented deliberately, and that the observation of someone's emotions is not a case of binary identification. This view acts as the reason for conducting such research and is why qualitative research data from this projects' surveys will generate new discussions, contributing new conclusions to the complex academic debate.

## **METHODOLOGY**

*Mycelia* adopts a practice-based research framework examining the ways in which an audience receives ethnobotanical art and its effects upon the audience's philosophies and environmental perspectives. Fusing these academic fields with a personal fascination of the natural and technological world provides a basis for research, using an immersive exhibition as a creative artefact for the basis of knowledge. This knowledge presents primary qualitative and quantitative data, as will be explored further in the chapter. The exhibition consisted of:

- sixteen original art pieces including digital art, painting, and poetry, etc.,
- a live sound performance incorporating natural field recordings and electronic synthesis,
- an interactive sound station featuring the PlayTronica TouchMe (App. B).

This design follows the views of art academics who describe the relationship between art theory and practice to be “dialogical” (Davey, 2013, pp. 21), where the intent of art materialises through its interactions with an audience. In *Mycelia*, these interactions are collected via retrospective survey and prospective interview. In this way, the research is interpretive, where the “reality is observed subjectively” (Crossley, 2021), but the use of quantitative data in part introduces ‘positivism’, where the “researcher can observe reality objectively” (Crossley, 2021). This mixed methods research approach is deliberate and allows for well-rounded conclusions to be made, strengthening the project's response to the research questions. Surveying participants after the exhibition allows for less interference with their cognitive and emotional preferences during their experience. The quantitative data supports the written, qualitative data, embedding one form of data into another “to understand the reasons for certain participants' behaviours” (Ivankova & Creswell, 2009, pp. 144). This approach was inspired by the theoretical ethos of the ‘Sustainability in an

Imaginary World' project, where researchers were "not interested in informing [...] but in provoking" (Bendor et al. 2017, pp. 7), encouraging authentic reflection without external influence or bias. This leads to results that are more valid and useful to analyse when responding to the research questions.

The project produces exploratory data, where knowledge is "constructed" (Soiferman, 2010, pp. 12). Yet, it is necessary to base research in theory, ensuring data remains inductive through "ground work" (Jebb et al., 2017, pp. 274). This research strategy is ethnographic, studying participants' natural reactions to immersive art of ethnobotanical themes, and was achieved through the following methods:

### **1. Survey**

After visiting the exhibition and interacting with the art, a QR code leading to a survey of eight questions was available where participants could answer the quantitative and open-ended questions relating to the experience. In total, seventeen responses were recorded, all with varying opinions and insights for analysis (App. C).

### **2. Interviews**

Three semi-structured interviews were conducted with local sustainability experts prior to the exhibition to negate bias (App. D). These interviews provided qualitative insight into the role of environmentalism within art, and how art can influence human emotion and action. These responses align with the research questions, as will be explored in the next chapter.

### **3. Exhibition Analysis**

The majority of the exhibition was recorded, with both audio and video (App. E). To analyse audience behavioural patterns, the video footage provides an understanding into how immersive media affects art reception. This includes duration of stay, direction of travel, proportion of time at individual pieces, and approaches to art reception; were audiences introspective, or did they discuss their experience with others? While this research approach supports the qualitative data, it is not empirical evidence. Therefore, a decision was made to focus primarily on the 'time spent' values (App. C, A), comparing these to a similar case study in order to draw new conclusions.

To analyse the data, it is necessary to adopt different techniques for "embedding one type of conclusion with the other" (Creswell & Tashakkori, 2007, pp. 108). For survey and interview data, frequent narratives that arise across participants are identified, analysing the discourse while referring to the research questions. Direct, anonymous quotations are taken from survey responses and compared against each other to "illustrate categories and themes [keeping] the analysis firmly grounded in the data" (Seers, 2018, pp. 2). However, in order to maintain valid analysis, researcher bias must be kept to a minimum. The results are therefore taken at face value, without any form of editing. This reduces the chance for analysis to "reflect[s] the researcher's preference for [a result] over other possible results" (Wilholt, 2009, pp. 92), distorting the findings. For exhibition analysis, quantitative data will be measured using variables such as time (minutes).

Taking this hybrid methodological approach does have limitations, however. The mixed methods approach incorporating "both qualitative and quantitative data on the same cases" requires a "triangulation" (O'Cathain et al., 2010) process. Responses will be taken from a "questionnaire with their interview transcript" (O'Cathain et al., 2010) as direct quotations, rather than an itemised matrix. This allows for minimal researcher bias, however, the link between qualitative and quantitative data is less defined. In response, the quantitative data will be supporting the qualitative data to "elaborate on results from the other method" (Migiro & Magangi, 2011, pp. 3759). The survey responses form a select sample size of university students and lecturers interested in sustainability, exhibitions, or

both. Feedback from other groups may not be of the same opinions. Similarly, several attendees had known about the exhibition months prior, and so could either prepare their answers in advance, or introduce bias.

The sample size for the interviewees is also narrow with researchers all being experts in sustainability limited to western countries. This leads to an increased risk of “assuming as true a false premise” (Faber & Fonseca, 2014, pp. 28) with few opposing perspectives to generate a balanced argument. A larger sample size would have provided more valid, diverse results. However, hosting the exhibition at Warwick University was a deliberate choice to ensure sufficient access to resources and attendees. Survey responses also ranged in depth, with some participants responding in short sentences, and some in paragraphs. Clearly indicating a suggested length of responses would have made results more reliable. Adopting more quantitative techniques to measure individual experiences was also considered, e.g., heartrate monitors. These were rejected as invasive with too many external factors interfering with the results, e.g., room temperature.

In summary, this project adopts a mixed methods approach incorporating both qualitative and quantitative data in a practice-based research framework. Qualitative results collected are analysed for the narrative and discourse generated, and quantitative results are observed objectively. This analysis supports the research aims of the project: ethnobotanical art reception, and the role of immersive media in said reception.

## **FINDINGS**

The sources of data for this research project are survey responses, interviews, and exhibition analysis. Both sustainability experts and survey participants tended to believe immersive experiences are more effective at relaying a message or theme than traditional art forms (App. D, Interview 3, 17;30 + App. C, Table Ca, Cb + Cf). The most engaging art form was the live sound performance with 10/17 participants engaging with immersive media the most (App. C, A). However, there was a mixed response from the total sample regarding the effectiveness of ethnobotanical art on changing someone's viewpoint on environmentalism (App. D, Int. 3, 18;57 + App. C, Ea + Ee). From analysing all forms of data, two main arguments are proposed.

I. Immersive art experiences allow for a greater connection to a theme or message than traditional art forms.

II. Interacting with ethnobotanical art generates environmental discourse amongst audiences.

Individual freedom was seen to play a key role in the reception of art. Without a “forced agenda” (App. C, Fo), the exhibition allowed for a “deeper response” (App. C, Fp) to the exhibition's themes. Direct quotes and numerical data will support these arguments, with the total sample consisting of sustainability experts and the consenting audience of the exhibition. All anonymous survey responses are available (App. C, A - E) with illustrative diagrams (App. F, Fig. 1 + 2) to synthesise their views. Full interviews are also available through links and on the *Mycelia* website (App. E).



## **ANALYSIS I: Immersive Art Experiences**

To analyse the findings, a theoretical framework is implemented by using a series of tools and recognising the position of the researcher. These tools include textural and discourse analysis, numerical data analysis, and relevant references to literature or real-life examples to support analytical claims.

Immersion within an art context is a relatively new paradigm to consider, with the rapid development of technology contributing immensely to human connection. This is seen through the previous literature around physicality of art and its connection to an audience from Jacucci et al.'s (2010) work. The potential to stimulate a response from multiple human senses like hearing, touch, and sight, introduces new dimensions to art is similarly argued by Li & Liew (2015). Through analysing written and verbal responses from *Mycelia* participants, there is an evident correlation between heightened levels of immersion and increased emotional engagement with art.

*“The fact that people have the ability to hear, or see different things is going to engage with people more than if it was just a picture on a wall.” – Esha Shah, (App. D, Int. 1, 13;18)*

The participatory element of immersive art retains audience attention easier, according to Esha. The incorporation of different senses is seen as a key factor in how much an audience felt connected with an art piece. Immersive art is presented here as a progression from traditional art forms, reducing classical work to merely pictures on a wall with little emotional substance. Context becomes a feature of art, introducing different narratives through location, audience, and era. This can also be seen through survey responses describing senses being “heightened” (App. C, Bi), imagery being supported through sound (App. C, Cf), a greater sense of involvement (App. C, Ca), and contrasts between “static” artworks and immersive media (App. C, Ci). These responses align with both Hung et al. (2016) and Li & Liew’s (2015) aforementioned literature outlining the

importance of immersion and physicality in audience-art engagement. While the emotional potency of traditional paintings or sketches is not the focus of this study, findings present the link between increased sensory engagement and overall enjoyment to be a sentiment shared by survey participants. These comments provide evidence for the value immersive media in connecting to an audience over traditional art forms.

*"It allowed you to feel a real connection to nature, like the sound was being translated through you but made by the plant. Felt like a conversation!" – Anonymous (App. C, Bb)*

Experiencing feedback featured especially with the PlayTronica TouchMe (App. E). This is a clear method of immersion, with humanity's influence on nature represented through a playable instrument. The tangibility of exhibition features like this appears to reflect the connection humans make to nature. The conversational element generates a two-way narrative that findings argue does not exist with traditional art forms (App. C, Cf). This transaction is a common trope in Bourriaud's (2002) aforementioned discussion around relational art, claiming an art exhibition is a space for discourse and reflection. Greater connections to the topic of environmentalism can be made through discourse, where audiences are in control of their experience; "you're almost living it" (App. D, Int. 2, 17;30). This is an example of Menninghaus' 'Embracing' model (2017), where the art is incorporated into your beliefs, rather than being observed from afar. This emotional involvement appears to be a key characteristic of impactful, immersive art.

The average time spent in the exhibition by survey participants was 48.8 minutes, equating to 3.1 minutes per artwork (App. C, A + App. F, Fig. 1). There is a clear difference between the time spent in this immersive experience, over the time measured in the Neues Museum Nürnberg observing traditional art forms in a 2017 study. On average, participants spent "50.5s on one artwork" (Carbon, 2017, pp. 5) including all viewings. The wall-hung portraits "were viewed for a much shorter period of time" (Carbon, 2017, pp. 7) upon second viewing, with some artworks being omitted entirely. This leads to an average total time spent

of 23.6 minutes excluding walking time. There are limitations to comparing the *Mycelia* model to the Neues Museum model. For example, the Neues Museum consisted of 28 static artworks, and *Mycelia* consisted of 16 artworks, of which 6 were changing throughout the exhibition. The times measured for *Mycelia* are recorded from the survey participants, so may be estimates, and do not account for the entire audience, of which varied between age, profession, and background. However, conclusions around the correlation between increased time spent in the *Mycelia* exhibition and the presence of immersive media can still be made due to the vast difference in values between the studies.

## **ANALYSIS II: Interacting with Ethnobotanical Art**

Prior to conducting research, pre-existing values and preferences were present as a researcher, believing that ethnobotanical art prompts discussion around topics such as climate change and environmentalism. To negate the effects of this bias, each survey, interview question, and art form was presented as ambiguous and open-ended to stimulate authentic responses. For example, prompting survey participants to answer “why/why not?” (App. C, C). Two clear narratives on the ability of ethnobotanical art to change perspectives arise. There exists either a positive or neutral correlation between observing ethnobotanical art and actionable change in environmental beliefs. Participants arrived with pre-existing environmental values, and these were either “exemplified” (App. C, Ea) or unchanged; “there was lots of things I already knew” (App. C, Eg).

*“When I’ve seen art pieces that were more abstract, it’s a bit harder to relate to it, whereas there are pieces on sustainability where you see the amount of plastic [...] and that makes you realize how much of an impact it actually has.” – Charity Bellan, (App. D, Int. 3, 10;45)*

Here, Charity is saying that de-mystifying nature and bringing it into an interactive space allows for the discussions surrounding its protection to form naturally. There is a

difference between hearing about troubling environmental disasters through online sources versus witnessing a symbol of destruction first-hand. Similarly, the observation of negative emotions is seen here, just as Strohl (2019) describes. While audiences' emotional response to environmental disasters tends to be negative, the art still fosters a positive experience, with audiences feeling educated or inspired (App. C, Cm). The use of living plants in the exhibition was deliberate to tangibly depict the human-plant symbiosis present in ethnobotanical phenomena. With animate objects, there isn't a need for words as the art is "something easy to digest" (App. D, Int. 3, 9;50), effectively conveying environmental messages through ethnobotanical art. Yet, Priya provided a counterargument, arguing that ethnobotanical art is not "the only way" (App. D, Int. 3, 18;57) of promoting sustainability. From this comment, it can be inferred that ethnobotanical art is not a singular source of information. Rather, an audience's environmental view forms from the consolidation of information from sources such as TV, newspapers, and personal experience. Previous reference to Jones' (2012) ideology of *Performative Social Science* applies here, where art crosses the barrier between performative and of societal consequence. Therefore, it could be argued that ethnobotanical art solely acts as a catalyst for raising an audience's environmental awareness. When an audience engages with environmental messaging outside of a news context, it becomes real.

Overall, through analysing the use of language and discourse in the interview and survey responses, there is a strong argument for the immersion of art forms to positively correlate with the emotional engagement and reception of a piece. Hung et al.'s writing (2016) on the impact of multi-sensory art applies here, where immersive art seems more likely to engage an audience, allowing its themes to translate more effectively than through traditional art forms. Secondly, the ethnobotanical theme of the exhibition proved to stimulate environmental reflection amongst the audience, however, it did not have the capacity to entirely change the audience's perspectives on environmentalism, countering Bastian's view (2017) that art is a consistent contributor to societal action. This can be linked to the audience's contextual knowledge of the subject, i.e., they were already familiar with issues

surrounding the protection of our environment. Yet, there were no instances of a participant's environmental attitudes being weakened, only confirmed, or strengthened. Ethnobotanical art can therefore be seen as an effective means of provoking environmental discussion amongst audiences.

## **CONCLUSION**

To conclude, novel and confirmatory findings from the *Mycelia* exhibition have provided insightful proof-of-concept for a practice-based research framework investigating the human reception of ethnobotanical art and the influence of immersive media on the translation of thematic messaging. Data provided evidence for a correlation between audience immersion and message transmission, as well as between ethnobotanical art themes and environmental discourse, with some audience philosophies changing. It is my view that as a researcher, immersive media is a revolutionary means of storytelling and provide a basis for discussion, reflection, and education in many fields. By responding to the outlined research questions, *Mycelia* opens exciting avenues for arts-based research accounting for societal influence, immersion, and environmental discourse. Connecting with people's senses and stories through art is a powerful tool that has the capacity to shape our futures.

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## **APPENDICES**

### **A: Examples of Ethnobotanical and Environmental Art Exhibitions**

WWF's *Future of Nature* (2023): An online exhibition of AI-generated art depicting the bleak future of nature in the UK if we don't act now. Available [here](#).

Wellcome Collection's *Rooted Beings* (2022): An exhibition presenting a new interpretation of humans' relationship to plants and fungi. Available [here](#).

Mike Nelson's *Extinction Beckons* (2023): An exhibition of scavenged materials to present a dystopic future. Available [here](#).

Le Good Society's *Make Everyday Earth Day* Campaign (2023): A collection of billboards featuring a QR code to digital art work regarding our climate. Available [here](#).

Royal Academy's *Eco-Visionaries* Project (2019-20): A collection of works exploring how architects, artists, and designers are responding to the climate crisis. Available [here](#).

### **B: PlayTronica TouchMe**

A musical circuit board that uses human touch and MIDI technology to allow users to create sounds by touching plants. Available [here](#).

### **C: Survey Responses**

**Table A**

	<b>Start Time</b>	<b>End Time</b>	<b>Welcome! First of all, how did you participate in Mycelia?</b>	<b>Which art pieces did you engage with the most?</b>	<b>How much time would you say you spent in Mycelia? (Minutes)</b>
a.	17:14	17:19	Audience member	Digital art	20
b.	17:15	17:20	Audience member	Live sound performance	15
c.	17:19	17:59	Audience member	Live sound performance	55 minutes
d.	17:37	18:18	Audience member	Live sound performance	25
e.	17:39	17:43	Audience member	Interactive sound table (Playtronica TouchMe)	25
f.	17:44	17:55	Audience member	Physical art (painting, printed photography, etc.)	30
g.	17:44	18:00	Audience member	Live sound performance	25

h.	18:03	18:05	Audience member	Live sound performance	60
i.	18:20	18:24	Audience member	Digital art	30
j.	18:34	18:58	Audience member	Physical art (painting, printed photography, etc.)	90 minutes
k.	18:37	18:55	Artist	Physical art (painting, printed photography, etc.)	60
l.	18:46	18:49	Artist	Digital art	45
m.	18:55	19:04	Audience member	Digital art	60
n.	18:57	19:02	Audience member	Live sound performance	30
o.	19:18	19:22	Audience member	Live sound performance	60
p.	19:23	19:36	Audience member	Live sound performance	80
q.	19:25	19:35	Audience member	Live sound performance	60

**Table B****Table C**

	<b>For one or more art pieces, describe your experience as a viewer. Were any emotions triggered? Any questions raised?</b>	<b>Did you find the use of both audio &amp; visual pieces created an immersive experience? Why/why not?</b>
a.	I felt very peaceful, and at one with nature.	I did, it helped me feel more involved and helped me explore the theme of the exhibition more.
b.	The interactive sound table was amazing- it allowed you to feel a real connection to nature, like the sound was being translated through you but made by the plant. Felt like a conversation!	Absolutely. Being able to interact and view nature and nature related artwork was made extra enjoyable with the naturalistic and calming music
c.	I think many of the art pieces triggered more deep thinking about the effect humans have on the environment. It made me question what effect I was having on the environment.	Yes. The music created a very immersive experience when walking around and being able to sit down to look at the art helped to create an immersive experience.
d.	I felt immersed in the aesthetic and artistic message of the event, and particularly enjoyed the highly cohesive cross-platforming of different artistic styles to represent a common theme!	Yes

e.	I dont know their names but the ambience was amazing and tied everything together for quite a calming experience	Yes as above sorry!
f.	There was a particular piece which mentioned escapism and that was the main feeling I had in viewing these art pieces. Each of them had their own unique message within them, for other pieces I felt a form of reunification with nature.	Yes. The audio in particular was immersive. It was a sound in the background which had a way of immersing yourself fully into the imagery you were interacting with.
g.	The live sound performance was enchanting.	100% felt immersive with different senses involved and the artwork all around the room, at different height levels.
h.	serenity, feeling at home	yes
i.	I felt as if my senses were heightened, I questioned what I was seeing on screen but felt weirdly comforted by it. It felt safe and clear, like breathing.	The physical pieces, digital works and soundscape merged together very well, but the projected art onto the walls felt quite static compared to the television screens and hanging art
j.	It made me think about how we treat plants	Yes because it got us involved
k.	Calmness and serenity was provoked by the music and the moving images and poetry. The art provided a balance and the plants making music meant that I felt part of the process.	Yes it did I was very sensory and felt stimulating.
l.	Intrigue	I did
m.	The images evoked a sense of a comfortable human relationship with nature and with life, one without the pressures imposed on human life by capitalist economics.	Yes, the music evoked a few different ideas about nature for me, some of the music sounding cheerful and sad. Overall loved it as I already liked Plantasia
n.	I found all art pieces extremely thought provoking and to make a multiple statements in regard to the current interaction between our world and nature.  The over accompanying sound and light also heightened the ability to feel immersed within the art and surrounding space. Carefully constructed sounds enabled a transportation to a rainforest like space.	Yes please see above
o.	Calmness.	The audio looping and nature sounds were immersive. The video loops were also excellent at drawing you in.
p.	I arrived quite tired and work-focused. The exhibition took me to a quieter more contemplative space - I stayed	Yes - I enjoyed the soil / plant interaction. I felt the whole aesthetic married to the intellectual content really well

	much longer than I had expected. The text piece on the l/h monitor (slow scroll) made me think about identity and connection	
q.	Calm & peace Sadness when considering the impact of humans on nature	Yes - interactivity and all-round sound created a sense of being alone in the room and connected to nature.

**Table D****Table E**

	<b>To what extent did you feel the art pieces engaged with the topic of ethnobotany (the relationship between humans and plants)?</b>	<b>After participating in Mycelia, do you feel your opinion on humanity's relationship with nature has changed at all? Why/why not?</b>
a.	All of the pieces did	It has definitely changed the way that I look at the relationship. It has exemplified it.
b.	All of the pieces did	Yes, especially after reading one part of the zine which was about humans not needing to be 'saviours' of nature. I'd never considered that before and it informed the rest of my experience
c.	Most of the pieces did	I think it emphasizes the issues that humanity causes nature and the ways in which humanity needs nature. More in tune with my ideas but showing them more vividly.
d.	Most of the pieces did	I would not say so, but I am glad to have engaged on this level with ethnobotanic art
e.	Most of the pieces did	Not really as I would say I have always appreciated it
f.	Most of the pieces did	I feel my relationship has been changed. It made me more aware of the enforced split between nature and humanity. It has made me consider how I had participated in that. It also made me further appreciate my relationship with nature, particularly the interrelation between humanity and nature.
g.	All of the pieces did	There was a lot of things that I already knew, but appreciated seeing the perspectives.
h.	All of the pieces did	yes, i don't think i realised how connected we are. scientifically and creatively
i.	Most of the pieces did	It hasn't changed my view too much, but has helped me appreciate the beauty of merging nature with digital art, which was very serene.
j.	Most of the pieces did	Yeah because it made me ponder on the importance of plants in our world
k.	All of the pieces did	Not, I've always viewed it as important 2'd I think has strengthened it.

l.	Most of the pieces did	Yes
m.	Most of the pieces did	My thoughts haven't really changed because I already agreed with the premise that we should subvert hegemonic relationships with nature by reviving older, indigenous knowledge of and ideas about nature.
n.	All of the pieces did	I feel it definitely heightened my awareness of the way in which we accept internal nature as a replacement for external nature.
o.	Most of the pieces did	Made me more mindful.
p.	Most of the pieces did	I learned about decolonising conservation. Btw my iPhone autocorrect tried to change decolonising to recolonising. Made me think about myself in nature not just observing.
q.	Most of the pieces did	Realised that there is beauty in the connection between man-made structures and plants. Humans and plants can connect in a positive way.

**Table F**

	<b>Finally, do you think immersive art has the ability to influence positive environmental change in its audience? Why/why not?</b>
a.	I do, getting people physically involved can help to make people feel like a part of something. People can feel like they are actually making a difference and driving change.
b.	Absolutely! Any and all awareness of nature allows for environmental change, especially when it is so immersive
c.	I think it does, the experience was very thought provoking and interesting leads to the individual thinking about their relationship with nature and how to change and be better.
d.	Absolutely, I think it has a side by side role with political change, and presenting the relationship between the two and its beauty, is as important as exhibiting the damage done by humanity in other dramatic contexts.
e.	If someone is unconvinced this is very compelling
f.	I think it does have that ability. The art shows the negative relationship we have with nature at present. But it also shows a hope for how we may be able to improve that relationship with nature, and I think it has the ability to effect that change.
g.	I think so. It really sharpens the mind.

h.	yes, this experience made it more full of emotion
i.	Definitely. As an audience member, it helped brighten my understanding of nature and its unconscious art: something that should be protected.
j.	Yes because it informs people in a way that is interactive and gets them involved
k.	Yes it does it gives people a time and space to think deeply and engage in art surrounding the themes
l.	Yes
m.	Yes, but the effect is doubled if they've taken mushrooms. If you're sympathetic to environmentalism, your mind may be changed by what you see here but you'd probably want to read the zines available on the desk to colour the art with a bit more political theory (because the relationship between humans and nature implies an examination of hegemonic relationships with nature). I think that this sort of thing on some mushrooms would probably be life-changing.
n.	Yes as it provides thought provoking information which relate to the way in which we treat our surrounding environment.
o.	Yes, done properly, in a non-preachy way. This exhibition allowed the viewer to engage without a forced agenda.
p.	I think the emotional engagement of the soundscape and visual elements encourage a deeper response than just reading some text or watching something more passively. So yeah, it connects in a more powerful way
q.	Yes. The mesmerising qualities of immersive art allows the messages to embed more effectively and so are more likely to lead up action

## **D: Interviews**

**1:** Esha Shah, Sustainability Ambassador for Sociology Department at Warwick University, Available [here](#).

**2:** Katherine Mayfield & Evelin Sanderson-Nichols, Sustainability Champions at Warwick University, Available [here](#).

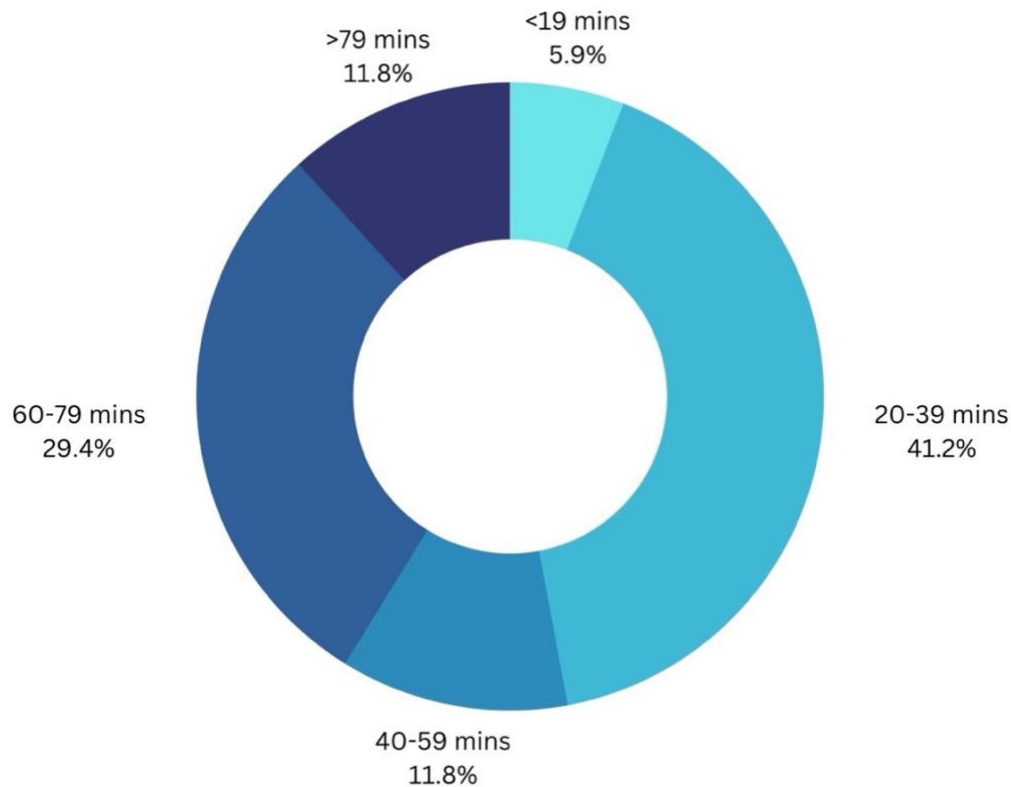
**3:** Charity Bellan & Priya Chawla, Cut The Flow Assistants at Warwick University, Available [here](#).

## **E: Website**

A webpage consisting of exhibition images, audio recordings, interviews, plans, preparations, and videos. Available [here](#). (<https://ldobbs.xyz/mycelia/>)

## **F: Figures**

**Fig. 1** A pie chart displaying the proportion of survey participants' time spent in the *Mycelia* exhibition



**Fig. 2** A word cloud consisting of frequent words used in the survey responses

