Using Light as a Medium to Convey Its Dark Side—A Light Festival Case Study

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Abstract: The pervasive use of anthropogenic light at night has significantly increased the brightness of the night sky, which negatively affects human wellbeing, the ecology of plants and animals, night sky aesthetics, and astronomical observations. However, public awareness of light pollution remains limited. This study evaluates the effectiveness of an ‘eco-art installation’ in raising awareness about the impacts of anthropogenic light at night (ALAN). The installation, ‘Scope’, used light as a medium to convey the adverse effects of anthropogenic light at the Te Ramaroa festival in Nelson, New Zealand, which is held to celebrate light in the depths of winter. An online survey assessed the awareness of Nelson region residents, comparing responses between those who experienced the installation and those who did not, and assessing the self-reported knowledge increase after engagement with the installation. The findings indicated that eco-art installations can significantly enhance the public’s understanding of ALAN’s environmental and health impacts. The installation successfully increased self-reported specific knowledge about ALAN, with 92% of visitors reporting learning something new; however, overarching knowledge and levels of concern were largely similar between the groups. Emotional engagement was high, with 62% of viewers stating that the installation invoked an emotional response. While the study did not measure behavioural changes, 94% of festival participants found it at least ‘somewhat appropriate’ and 64% found it ‘very’ or ‘entirely appropriate’ to raise awareness of these issues at such events, suggesting a potential foundation for future action. This research underscores the promise of art–science collaborations in environmental education and public engagement.

Keywords: visual art; environmental art; public engagement; light at night; light pollution

1. Introduction

The pervasive use of artificial light at night has dramatically increased night-time radiance across much of the Earth’s surface. While anthropogenic light serves important functions such as enhancing orientation, road safety, and the perception of personal safety, it also poses significant negative impacts. The consequences of lighting the night sky above natural levels include adverse effects on human wellbeing, the diminishing aesthetics of the night sky, and limitations on celestial observations for astronomers and indigenous communities with cultural ties to the night sky [1,2]. Additionally, a growing body of evidence documents that excessive artificial light at night detrimentally affects the plants and animals around us [3–5]. Anthropogenic light at night can cause strong responses in physiology (e.g., in hormone levels), life history traits (e.g., number of offspring), the disruption of daily activity patterns (e.g., earlier onset of activity and later cessation), seasonal timing (e.g., timing of flowering and leaf fall in plants), and navigation [6]. The characteristics of the emitted light (including the intensity, colour spectrum, timing, and extent), together with characteristics of the receiving environment (e.g., sensitivity to brightness and different colours of the receiving organisms, including humans), determine...
the extent of the negative consequences that this light may cause [4]. These negative effects are widespread across species groups, and are found in both diurnal and nocturnal species [6], and species interactions are also affected, including, for example, pollination services [7]. These negative, unintended consequences of excess anthropogenic light at night are sometimes referred to as light pollution. Increasing light emissions into the night sky are not only resulting in local light pollution, but the scattering of this light in the atmosphere can create skylight, extending substantial distances from the sources of night-time lighting (>100 km) [8].

Light-polluted skies cover more than a quarter of the Earth’s land surface [9], and this area is growing rapidly, as is the brightness of previously lit areas [10]. New Zealand is a relatively dark country at night with direct light emissions from c. 5% of land surface [10], and some 50% of the country is affected by skylight. Yet, with a highly urbanised population, c. 97% of New Zealanders live under non-pristine skies, and c. 83% cannot see the Milky Way [9]. Despite calls for New Zealand to become a Dark Sky Nation [11] and the extent of light at night growing faster in this country than the global average, efforts to reduce light pollution are hindered by a lack of public awareness regarding its impacts and possible mitigation options [12]. A rapid enhancement of awareness and public engagement is crucial to preserving our right to access the night sky and mitigating its negative impacts.

Art can help shift public awareness of and attitudes towards environmental issues. Artists around the globe have used various media to capture the beauty of the natural world and highlight the destructive effects of anthropogenic impacts, such as pollution and climate change. The arts are widely adopted as a way of science communication (see review in [13]), particularly as related to threatened species and climate change (e.g., see [14–16]). Artistic expressions can evoke powerful emotions and empathy that help foster a deeper connection between people and the natural world [17]. Through such emotional engagement, art installations and exhibitions can raise awareness of the environmental impacts of human activities and inspire action to mitigate these effects.

Light has long fascinated humans [18,19]. We can leverage this fascination to convey environmental messages about the adverse impacts of light pollution. Light installations at festivals offer a unique method to raise awareness. By transforming familiar places into enchanting wonderlands [18,19], such light installations can attract large audiences at the same time as addressing the negative impacts of artificial light such as increased energy consumption and ecological disruption. The large number of people that visit such festivals may reach an audience that otherwise may not frequently encounter science outreach. By being temporary, these installations do not create lasting negative impacts themselves but can serve to increase awareness and a call to action. Individuals’ (re)actions may include changes in their own behaviour, and/or calling on governments and organisations to lead the way in terms of change in the use of light at night.

In this study, we evaluated the effectiveness of a light installation at a local light festival in increasing the public awareness of the negative impacts of anthropogenic light at night. The installation, titled ‘Scope’, was part of Te Ramaorua festival (July 2023), which is held every two years in Nelson, New Zealand, to celebrate light in the depths of winter. The installation informed visitors about the many negative aspects of anthropogenic light while using light as a medium to transfer that message, as a deliberate, somewhat ironic case in point. We also conducted an online survey to assess the awareness of residents in the Nelson region, comparing responses between those who experienced the ‘Scope’ installation and those who did not, and assessing the impact of the installation on the participants’ knowledge on anthropogenic light at night.

2. Materials and Methods

2.1. Description of the Scope Installation

The Scope installation (artist, KB) comprised a tall pillar-like installation (approximately 2.0 × 0.5 × 0.5 m), made from plywood and finished with black and white paint, invoking the contrast of night and day (Figure 1). The installation featured 12 peepholes,
and was hosted in an indoor venue of the festival. Festival attendants could peek into each one of the peepholes to find gently backlit slides with short statements/facts about the negative consequences of anthropogenic light at night (light pollution). The installation also projected a slideshow on the wall opposite the installation, featuring further facts and additional detail on the impacts of light at night. In this way, the installation demonstrated both externally projected light (potentially ‘polluting’) and internalised light (‘non-polluting’). Each peephole and slide presented a scientific fact related to an impact of light at night in a concise, illustrated, and hopefully visually attractive manner. Based on the scientific literature, each statement was short and easy to read for people ‘on the go’ with a limited amount of time (Figure 1).

Figure 1. The Scope installation at Te Ramaroa Festival 2023. (A) Conceptual diagram; (B) the Scope installation, including examples of statements in the peepholes, and a visitor viewing through a peephole while the accompanying slide show is presenting on the opposite wall.
Examples of statements used include ‘Artificial lights can disrupt the migration of birds, causing them to stray off course and leave too early or too late in the season’ and ‘Artificial light and a night can throw off a plant’s natural cycle and response to the change of seasons. This then affects all animals that depend on this plant’.

The installation intended to evoke the curiosity of people of all ages, with the height determining who could easily access which parts of the installation. For example, young children were encouraged to interact with the installation by going around the peepholes at their height and finding the pictures with the kiwi bird in it, while their parents might try to access one of the higher peepholes. At each of the five nights of the festival, either of the authors (artist/researcher KB or researcher EC) were present at the installation to engage in conversations with participants and to provide context for the installation. Visitors were invited to participate in a questionnaire and were given a small card with a QR code and weblink to the online questionnaire (see below). The cards were also available in a holder on the installation, so that people could access the questionnaire invitation even if the installation was not supervised. In addition, the QR code was presented in the slide show on the opposing wall. Elsewhere on the festival terrain, these same cards were handed out to festivalgoers, with the question to fill out the questionnaire.

2.2. Participant Recruitment

We sought participants 16 years and over living in the Nelson–Tasman–Marlborough region (Te Tau Ihu o Te Waka a Māui) of New Zealand. We were interested to hear from people who attended Te Ramaroa Light Festival Nelson (July 2023) and people who did not. To recruit participants, we advertised the online survey both online and physically, as follows:

1. during Te Ramaroa festival (30 June–4 July 2023), where we handed out small cards with a QR code and a weblink to the survey;
2. in the physical marketing material, website, and social media content provided by the Te Ramaroa festival organisers;
3. through neighbourhood social media groups on Facebook, and advertisements in free local newspapers.

Survey invitations and announcements were phrased neutrally with respect to light and dark, so as not to bias responses. For example: “The aim of this study is to assess people’s perception of attitude to light and dark at night. We hope to better understand how important the different uses of light and darkness at night are to you, the underlying reasons of these attitudes, and whether they are adaptable.”, “What is the power of light and dark at night?”, and “This survey is part of a research study that aims to assess people’s perception of light and dark at night. What motivates us to illuminate our surroundings, and when do we prefer to keep things dark?”. The online survey was hosted on SurveyMonkey, was anonymous, and internet protocol (IP) addresses were not collected. However, as a reward for their time, participants who completed the survey were free to leave their email addresses to enter into the draw for one of five NZD 100 gift vouchers. Survey data were received on a single source file handled by the research lead (EC), who unlinked the personal details (used only for the prize purposes) from the responses that were submitted.

2.3. Survey Instrument Design

The online survey instrument consisted of a series of 5-point unipolar rating questions, in addition to some background questions. The survey instrument employed a combination of existing questions from the literature and new questions. Existing instruments did not adequately cover the content, and were framed narrowly around ‘light pollution’ [20–23]. Our approach required a more neutral framing, hence we used and rephrased questions from the existing instruments, and designed additional novel questions to effectively reach the target population. The usability and technical functionality of the electronic survey instrument were tested in the field, and the phrasing of questions was amended according
to feedback to improve clarity. The landing page of the questionnaire included the estimated completion time (10–15 min), and details about the purpose of the study. Informed consent to participation was implicit through submission of the online questionnaire. The study was approved by the Te Pūkenga Nelson-Marlborough Institute of Technology Research and Ethics Committee.

The final survey consisted of five sections, as follows:

1. Demographics and background (age, gender, highest education, affinity with nature, and place of residence);
2. Knowledge of and concern about unintended consequences of light at night;
3. Perceptions of the light-scape and of functions of light and darkness in the participant’s neighbourhood/place of residence. Results on this section are not included in the current study;
4. Participants of the survey were asked whether they attended Te Ramaroa Light festival and whether they engaged with the ‘Scope’ installation, in which case, they were asked some specific questions about this installation;
5. For those people who attended Te Ramaroa, additional questions were asked about the light festival itself. These responses were for the benefit of the festival organisers only, and are not reported on here.

Since all questions were compulsory, there were no missing data. We asked participants whether they were aware of various potential negative consequences of light at night, and if they noted they were aware, we followed up with a question regarding their level of concern about this consequence. For each consequence, we combined these questions to obtain one measure of concern, by considering those who reported not to be aware of the negative impact of ALAN to also have no concern about such impacts. Open text box answers with details about the participants’ reported emotional response to the installation were coded according to the 34 emotional categories reported by Cowen and Keltner [24], and these results were qualitatively described only, due to the small sample size.

2.4. Analysis

We assessed to what extent the ‘Scope’ light installation at a local light festival (Te Ramaroa, Nelson, New Zealand) affected the participants’ awareness of unintended negative impacts of light at night. We report quantitative data as median and interquartile range or absolute frequency and percentage, as appropriate. To allow comparison of the different participant groups, we first assessed whether these groups differed in background and demographics.

Tests of independence were used to assess differences in background and demographics for the participants in the different groups (group A: those who visited Te Ramaroa vs. group B: those who did not; and for those who did—whether they visited Scope or not). A Chi-square test was conducted for categorical variables (gender and working day); if the variable was ordered (age group, education, nature relationship, and urban–rural gradient), a linear-by-linear association test was used [25], using the lbl_test function in the coin package [26]. In both cases, an asymptotic distribution was used to estimate the statistic and \( p \)-value, following [27]. Since background and demographic variables did not differ between participant groups, we then used the same tests to assess whether festivalgoers and participants engaging with the Scope installation differed in knowledge (Chi-square) and extent of concern (linear-by-linear association test) for each of nine categories of unintended consequences of light at night with other participants. All analyses were conducted in R version 4.4.0 [28].

3. Results

In total, 329 participants completed the survey, of which 222 (67.5%) attended the light festival (Group A) and 107 (32.5%) did not attend. Of the festival participants, 107 engaged with the Scope installation and 115 did not (35% and 32.5% of respondents, respectively). Due to the recruitment process, the response rate was not calculable. The completion rate of the survey was high at 79%. The survey had a margin of error of 5% at a 95% confidence level.
The majority of respondents were female (70.5%), and the overwhelming majority of respondents resided in Nelson city (90.9%). The median respondent age was 45 years (interquartile range 30–55 years). Demographics and background variables of age, education, working day, and connectedness to nature did not differ between the participants who visited and those who did not visit Te Ramaroa (Group A vs. B), nor between those who visited the Scope installation at the festival and other festival participants (Group A1 vs. A2). However, participants who visited Te Ramaroa were significantly more likely to live in suburban and inner city areas, compared with participants who did not attend the festival (see Supplementary Information, Table S1).

Almost half (n = 115) of the festival-going respondents did not engage with the Scope installation for reasons unspecified. This was not unexpected, as the festival was spread out over the city, and hence not all visitors would have been near the installation, which was housed in the Arts and Media building, or it may have been busy in this part of the building when they were there. Of the 107 respondents who engaged with Scope, 92% self-reported that the installation had taught them at least something new about the unintended consequences of light at night (with 67 participants reporting learning some new information, 27 reporting learning a lot of information, and 4 participants stating that all the information was new to them; an additional 5 festivalgoers responded stating that they already knew all the content, and 4 ‘did not remember’).

All participants were asked whether they considered each of nine categories to be an impact of artificial light at night (e.g., “Do you think that outdoor artificial light at night can cause the following potential unintended consequences? Artificial light at night can.... affect the behaviour of animals” Answer options: I do not know/Yes/No). There was a high level of self-reported knowledge regarding nine categories of potential impacts that were presented (Figure 2A). Almost half of the respondents (n = 157, 48%) reported being aware of all the nine consequences, while 7% (n = 24) of respondents only identified three or fewer impact categories. When next asked about their level of concern for each of these categories, the majority (73%) of respondents showed at least moderate concern for five or more impacts, whereas about 5% of respondents reported at least moderate concern for only one of the impacts.

For each unintended consequence of ALAN, we compared knowledge and the level of concern reported by participants who visited Te Ramaroa festival and those who did not, and by general festivalgoers compared with those who engaged with the Scope installation (Table 1, Figure 2). Festivalgoers were more likely to report that they knew that light at night can affect the natural rhythm of people than those respondents who did not visit the festival (\(p = 0.027\)). There were no other differences between these groups. There was some evidence (\(p = 0.078\)) that those who engaged with Scope were more likely to report that light at night can cause a reduction in the health of the environment compared with those festival participants who did not engage with the installation (Figure 2A). While it appeared that festival participants who engaged with Scope were somewhat less likely to report a ‘Not at all’ or ‘slight’ level of concern for several consequences (Figure 2B), none of these differences were significant (Table 1). No other differences between festivalgoers who engaged with Scope and those who did not were found.

In total, 66 participants out of the 107 that engaged with Scope (61.7%) reported that the installation evoked an emotional response (27 responded that it did not, and 14 did not remember). Of those who reported an emotional response, more than half (36) voluntarily left details in the optional open text box about their emotional experience, with the most common responses relating to feelings of sadness, surprise, empathy, and admiration. Those who self-reported an increasing level of new knowledge were more likely to also report an emotional response (\(p = 0.01, Z = 2.56\)) (Figure 3).

Out of all 201 festivalgoers surveyed, only 6% (n = 13) felt it was ‘not at all appropriate’ to raise awareness about the unintended consequences of light at night at a light festival. In contrast, 32% felt it was ‘somewhat’ or ‘moderately appropriate’ (n = 31 and 33, respectively) and 62% found it ‘very appropriate’ or ‘entirely appropriate’ (n = 60 and 64, respectively).
Whether or not participants engaged with Scope was not associated with the response (linear-by-linear association test, z = −1.328, p = 0.18).

Figure 2. Knowledge (A) and level of concern (B) regarding categories of unintended consequences of ALAN across the different light festival participant groups (No: did not participate in Te Ramaroa 2023; Yes: did visit the light festival Te Ramaroa 2023, but did not engage with the Scope Installation; Yes + Scope: engaged with the Scope installation at Te Ramaroa 2023).

Table 1. Summary of tests of differences in reporting of knowledge of and concern about unintended consequences between the different groups of participants (Chi-square tests for knowledge, df = 1; linear-by-linear association test for concern, df = 4; p-values < 0.05 are bolded; and p < 0.10 are italicised). The knowledge question was posed as “Do you think that outdoor artificial light at night can cause the following unintended consequences?” (Options: Yes, No, I do not know—tested here as Yes vs. No or I do not know). The concern question was “To what extent are you concerned about the following unintended consequences of artificial light at night?” (Unipolar scale with 5 options: not at all concerned, slightly concerned, moderately concerned, very concerned, or extremely concerned).
4. Discussion

This study focussed on the role of a light festival and art installation in raising awareness about the unintended consequences of anthropogenic light at night (ALAN) in a New Zealand community. Our findings underscore the potential of art–science collaborations in environmental education and public engagement.

Engagement through art installations can raise awareness about the environmental impacts of human activities and inspire actions to mitigate these effects [29]. Previous research has primarily demonstrated this in relation to pollution and climate change [14–16,29]. The visual nature of light emissions and humanity’s attraction to light offers a compelling medium to illustrate humanity’s impact on the environment [30]. Our study showed an increase in factual knowledge self-reported by participants, and supports the idea that light festivals are effective at engaging the public on the issue of light pollution, i.e., the negative consequences of excess anthropogenic light at night. It should be noted that we did not ask the same respondents about their knowledge prior to and after attending the festival and engaging with the installation to test the implication of the light festival and the installation. Instead, we relied on people to self-report their knowledge increase through engagement with the installation. Nonetheless, by placing installations in accessible public spaces, these events can reach a diverse audience, including those who might not typically visit art galleries or engage with scientific discussions.

The Scope installation at the Te Ramaroa Nelson Light Festival exemplifies a temporary “eco-art installation”, driven by the need to communicate impacts of anthropogenic light at night. It bridges art and science, employing didacticism to persuade viewers of ecological priorities [31], but also provides a counter-intuitive strategy through using light as the medium to convey its dark side. Below, we further analyse the communicative nature of the Scope installation, using Cucuzzella’s application [32] of Habermas’s four areas of communicative actions—the instrumental, normative, teleological, and dramaturgical realms [33].

The Scope installation was of an instrumental nature, i.e., it was firmly grounded in scientific facts [32] about ALAN. The installation’s messages (both in the peepholes of the installation and on the adjacent presentation) depicted the ecological and health impacts of artificial light, which are well documented in the scientific literature (including, e.g., [1,5,34–36]). Accurate scientific information is known to increase the factual accuracy and support for government action to address it immediately after exposure [37]. The Scope installation successfully increased factual knowledge among its viewers. The propensity of self-reported increased specific knowledge at a lower-level (i.e., facts such as “migrating birds may be attracted”) suggests that eco-art installations, such as Scope, can be powerful tools for education. However, the knowledge of overarching ALAN impacts (“animal and plants may be affected”) did not differ between festivalgoers who engaged with Scope and those who did not. While our survey results indicated that a substantial majority of the general community were aware of some of the unintended consequences associated with
our 24 h economy, few recognised the full range of consequences (as communicated via the Scope installation and posed by the questionnaire). Although not significant, trends also indicated a somewhat increased level of concern about the consequences of light at night among those who interacted with the installation, compared with those who did not.

People with an increased engagement with eco-artworks are more likely to remember the content, which ultimately can translate into action [38]. The Scope installation used light, the very medium of the issue at hand, to highlight its negative impacts, creating a direct and relevant connection, designed to increase engagement and enhance understanding and retention. The installation hence had a clear and deliberate relation between the form and the content (i.e., normative nature [32]). We anticipated that this alignment between form and content helped convey the message in a more impactful and memorable way. Moreover, form and content were specifically designed to be in-line with and juxtaposed to the installation’s context, respectively. That is, the installation highlighted the negative effects of light at a light festival where participants came to celebrate and enjoy light. This dissonance was an item commonly raised by visitors in casual conversation with the authors at the festival. The juxtaposition may help with increased retention and ultimately pro-environmental action [39]. The installation was developed in such a way to be cognisant of the context, and to illustrate the subject in a non-threatening way. Our findings show strong support for using light festivals as platforms for raising awareness about ALAN. Of the festival participants surveyed, 94% felt it was at least ‘somewhat appropriate’ (and 62% ‘very appropriate’ or ‘entirely appropriate’) to raise awareness of the unintended consequences of light at night at such events. This indicates a general acceptance of integrating educational and environmental messages into recreational and cultural activities, suggesting that light festivals can effectively serve dual purposes of entertainment and educational outreach. Our findings suggest that festivals are relevant for educational outreach, capable of reaching diverse public audiences, and promoting greater environmental consciousness.

With respect to the dramaturgical nature of the installation, Scope was highly expressive, and successfully evoked emotional responses such as surprise, sadness, and empathy among viewers. Such emotional reactions are crucial for fostering a connection to the issue and motivating action. The high percentage of participants who reported learning new information and feeling emotionally affected (61.7%) supports the installation’s effectiveness in meaningfully engaging viewers. Through affecting people’s emotion and effective communication of scientific data, art can also overcome barriers associated with traditional science communication [38]. Art installations are particularly effective when they are interactive [13]. The lure of the peepholes at different heights created an attraction and required active engagement. Future work will incorporate participatory approaches, where the audience becomes a collaborator or creator of the art, which is even more effective [13,40].

The intention of the installation was to raise awareness, rather than having the message of a ‘call to action’. Our study did not directly measure the impact on people’s (intended or real) behaviour, so the teleological nature (i.e., the effectiveness in initiating action, [32]) of the installation remains unknown. Without prompt, in an optional comments box at the end of the survey, three respondents noted that this installation was a call to action for them. The high levels of awareness and concern reported by respondents who engaged with Scope suggest that such installations can create a foundation for individual action and public demand for policy changes. Moreover, the high percentage of festivalgoers who found it appropriate to raise awareness at a light festival (94%) indicates strong public support, which can influence corporate and governmental actions. Future research should investigate whether installations such as these lead to concrete actions by individuals and other entities.

Our study was based on a voluntary survey, which may bias results, for example, through self-selection bias. The demographics of the respondents broadly reflected the Nelson region population [41], although females were overrepresented in our sample. We took great care in the marketing of the survey as well as the survey question framing to ensure neutral language about darkness and light at night, rather than, e.g., referring
to ‘light pollution’, so as not to bias responses to certain groups in the population. We
cannot ascertain the response rate of the survey due to the generic recruitment methods
employed, but the high completion rate (79% of people who started the survey, completed
it) suggests that respondents engaged with the survey. Having an opportunity of a reward
for survey completion (i.e., draw for a voucher) may have helped reduce self-selection bias
and increase completion rates.

5. Conclusions

Reports of increased knowledge and evoked emotions through engagement with the
installation Scope, suggest that such installations can effectively provoke thought and
encourage a deeper engagement with environmental issues. Hence, we propose that eco-art
installations at light festivals hold significant promise for raising public awareness about
the impacts of anthropogenic light at night. By effectively combining art and science, such
platforms can enhance learning and inspire informed actions to mitigate light pollution
and preserve the integrity of our night-time environment.

Supplementary Materials: The following supporting information can be downloaded at: https://www.mdpi.com/article/10.3390/su16166941/s1, Table S1: Summary of demographic and back-
ground variables for the different groups of participants, and tests of differences between the groups.

Author Contributions: Study conceptualization and writing, K.B. and E.C.; Artistic creation, K.B.;
Survey design, methodology, and analysis, E.C. All authors have read and agreed to the published
version of the manuscript.

Funding: This research was funded by the Nelson-Marlborough Institute of Technology (R2311).

Institutional Review Board Statement: This study was approved by the Te-Pūkenga Nelson-
Marlborough Institute of Technology Research and Ethics Committee (2023-B03).

Informed Consent Statement: Informed consent from all subjects involved in this study was implied
by their voluntary submission of the online survey.

Data Availability Statement: The raw data supporting the conclusions of this article will be made
available by the authors on request.

Acknowledgments: We would like to thank the Te Ramaroa 2023 organising and selection committees
for the opportunity to conduct this study during the festival. We thank Pearl and Tanē Heke for
handing out invitations to the online survey at the festival, Velma Vermaat for logistical support, and
Jeff Dalley for survey methodological support and reviewing the manuscript.

Conflicts of Interest: The authors declare no conflicts of interest.

References


15. Brook, L. Evaluating the Emotional Impact of Environmental Artworks Using Q Methodology. *AJHA* 2022, 9, 211–232. [CrossRef]


