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CES

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**Measuring the Impact of Art on Environmental
Consciousness: Evidence from a Pilot Art Experiment
in Excideuil (Dordogne, France)**

Mathilde MAUREL

Lili ONILLON

Thomas VENDRYES

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Measuring the Impact of Art on Environmental Consciousness: Evidence from a Pilot Art Experiment in Excideuil (Dordogne, France)

Mathilde Maurel (CNRS, France and Centre d’Economie de la Sorbonne, Université Paris 1 Panthéon-Sorbonne, corresponding author)

Lili Onillon (Laboratoire d’Excellence « Dynamiques Territoriales et Spatiales », LabEx DynamiTe)

Thomas Vendryes (Université Paris-Saclay, ENS Paris-Saclay, Centre for Economics at Paris-Saclay (CEPS))

Abstract

This paper presents preliminary results from the MIACE project, based on a survey of 62 individuals around an environmental art exhibition held in June 2025 in Excideuil, France. Comparing visitors and non-visitors, we explore whether artistic exposure can influence environmental consciousness and contribute to understanding how art may shape perceptions and attitudes.

Keywords

Environmental consciousness; Environmental art; Impact evaluation; Behavioral change; Aesthetic experience

JEL Classification Codes

Q59; Q51; D91; Z11; C93

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Introduction

The MIACE project (Measuring the Impact of Art on Environmental Consciousness) is a transdisciplinary research and creation initiative uniting artists, philosophers, and economists from Université Paris 1 Panthéon-Sorbonne (ACTE, CES, ISJPS) and beyond (CEPS, University Paris-Saclay, HCTI, etc.). Its aim is to examine how artistic experience may influence individual and collective perceptions of the climate crisis. Beyond conceptual inquiry, MIACE grounds its investigation in empirical fieldwork, seeking to evaluate whether aesthetic and emotional engagement can generate measurable shifts in environmental attitudes.

The Excideuil residencies, conducted in rural Dordogne in 2025, constitute the project's pilot experiment and methodological cornerstone. This site, marked by a recent cliff collapse, provided both the thematic focus and the empirical terrain for testing art's potential to activate ecological awareness. During two successive residencies (February and June), artists Thibaut Honoré, Justine Maljak, Rafiy Okefolahan and Laurine Wagner collaborated with economists (authors of this paper) to jointly design artworks and a protocol for the assessment of their impact. The resulting exhibition, L125.1, combined sculpture, painting, photography, video, and installation to evoke the landscape's vulnerability and humanity's entanglement with it. Parallel to these artistic developments, economists implemented a controlled evaluation design based in particular on the New Ecological Paradigm (NEP) scale to measure participants' cognitive and affective responses.

A total of 62 questionnaires were collected (36 in the treatment group, 26 in the control group), allowing a first quantitative assessment of the effects of artistic exposure on pro-environmental attitudes. Preliminary results indicate that participants who experienced the L125.1 art trail expressed stronger ecological concern, heightened emotional sensitivity to environmental fragility, and a more pragmatic orientation toward actionable solutions. These findings support the hypothesis that aesthetic engagement functions as a bridge between knowledge, emotion, and environmental responsibility, while also exposing the methodological and contextual challenges of measuring art's impact under real-world conditions.

Accordingly, Excideuil operates as a living laboratory where artistic practice and social science experimentation intersect. It highlights both the potential and the limits of art-based approaches to climate engagement, revealing the tensions between affective experience and empirical evaluation.

The paper is structured as follows: Section 1 reviews the relevant literature on environmental art and behavioral change, Section 2 presents the exhibition that took place in Excideuil and discusses how the artworks produced by the team relate to and position themselves within this body of work; Section 3 details the research protocol and study design; Section 4 presents the main findings from the Excideuil experiment; Section 5 discusses the methodological implications and limitations; and Section 6 concludes with perspectives for future research.

1 Literature Review

This section outlines the theoretical foundations of our analysis, beginning with the paradox of climate urgency and the barriers that prevent individual action. It then examines the role of art as a mediating tool capable of connecting scientific knowledge to lived experience through emotional, cognitive, and participatory pathways. We further highlight how artistic engagement can transcend socio-economic determinants, shape environmental emotions, and reinforce social norms. The section concludes by situating the MIACE project within this literature, emphasizing its contribution to moving from correlational insights toward experimentally grounded causal evidence.

Climate urgency and the paradox of inaction

The most recent reports from the Intergovernmental Panel on Climate Change (Calvin et al., 2023) provide categorical evidence of the anthropogenic origins of global warming since the industrial era. This scientific consensus highlights the critical need to build a collective environmental consciousness to foster behaviors aligned with sustainability. Yet, the existing literature reveals a persistent gap between knowledge and individual action (Moser, 2016; Galeotti et al., 2024). Social dilemmas, institutional constraints, and powerful consumption norms often obstruct behavioral change (Druen & Zawadzki, 2021). Feelings of limited personal responsibility or helplessness (Kollmuss & Agyeman, 2002) further exacerbate what has been described as a paradox of environmental action.

Stern's Value-Belief-Norm framework (2000) explains this inertia by showing that values influence environmental beliefs, which in turn can foster a sense of moral obligation to act. However, acting on these drivers requires forms of communication that address not only knowledge but also morality, values, and emotions. Traditional approaches of scientific or rational communication struggle to engage with these deeper dimensions (Blake, 1999; Nisbet, 2009).

Art as a medium for environmental mediation

In this context, art emerges as a promising vehicle for mobilizing climate awareness. Unlike conventional forms of climate education, often criticized as vertical and impersonal (Moser & Dilling, 2007), artistic practice introduces an affective dimension that can bridge the gap between scientific discourse and lived experience. Visual and performative works have been shown to elicit affective reactions that increase engagement and understanding (Curtis et al., 2012 ; Colavito et al., 2020 ; Olazabal et al., 2024). Art does not merely translate scientific knowledge into emotions, but can also deepen comprehension by activating distinct cognitive and psychological pathways (Roosen et al., 2018).

The immersive and participatory character of art fosters creativity, interaction, and relational learning (Branagan, 2005; Jacobson et al., 2016). Importantly, art situates individuals within

local contexts, anchoring environmental challenges in place-based experiences and reconnecting audiences with nature and the living world (Brown et al., 2019; Bottin et al., 2023). By embedding environmental issues in specific cultural and territorial settings, art enhances awareness and provides an added value compared to purely rational, universalist discourse.

Transcending socioeconomic determinants

Crucially, the impact of art can transcend the traditional socio-economic determinants (age, economic status, education level) that structure individual propensities for climate action and aesthetic preferences. Recent evidence shows that certain aesthetic experiences can overcome these sources of inertia and mobilize environmentally responsible behaviors even among groups less inclined by background or education to engage with environmental art (Flowers et al., 2015; Brosch, 2021). By creating universally accessible emotional and imaginative connections, art broadens the reach and depth of climate messaging beyond the limits of targeted educational or policy interventions.

The role of emotions in climate engagement

Recent advances emphasize the central role of emotions in shaping environmental attitudes. A meta-analysis by Brosch (2021) identifies affective reactions as the strongest predictor of climate perceptions and actions. While some studies highlight the limited effectiveness of fear-based approaches (O'Neill & Nicholson-Cole, 2009), others demonstrate the predictive power of negative emotions such as worry (Brosch, 2021). Roeser (2012) argues that emotions connect the moral significance of climate change, particularly in relation to future generations, to personal motivation, often more effectively than rational arguments alone.

Art as reflexive practice and social norm reconfiguration

Beyond individual cognition, art operates as a reflective practice that reshapes self-concepts and fosters ecological engagement (Curtis et al. 2009; Curtis et al. 2014). By immersing individuals in aesthetic experiences, art nurtures empathy toward the living, anchoring environmental issues in personal and collective identity (Sommer et al. 2019). Works grounded in local realities encourage a sharper awareness of the consequences of inaction (Druen & Zawadzki 2021), a mechanism the MIACE project sought to examine empirically through this experiment in Excideuil.

Another critical pathway is the formation and reinforcement of social norms. In dilemmas of collective action, norms help individuals move from egoistic choices to cooperative behavior (Biel & Thøgersen, 2007). Art, especially in community-based contexts, acts as a catalyst for such pro-environmental norms (Marks et al., 2016). By both representing and embedding these norms in shared experiences, art influences what is perceived as socially desirable (Belfiore & Bennett, 2007). Correcting misperceptions of environmental norm prevalence (Chen et al.

2022; Andre et al. 2024) offers a low-cost yet powerful lever for altering climate-related attitudes and behaviors.

From correlation to causal inference

Despite these promising insights, much of the literature remains correlational and descriptive (Brosch 2021). Systematic evaluations often lack experimental rigor, with limited use of control groups (Galeotti et al. 2024). The ambition of the MIACE project is to address this gap by implementing exploratory experiments that combine collaborative artistic creation with controlled impact evaluation. Through this approach, MIACE aims to demonstrate whether and how art can causally influence environmental awareness, attitudes, and policy preferences.

Positioning of the MIACE project

The MIACE project gathers the collaborative expertise of artists, economists, and philosophers, working alongside several institutional and associative partners, to explore the effectiveness of artistic interventions in promoting environmental engagement. Its artworks, grounded in place-based contexts and emphasizing connections to nature, aim to harness emotional and aesthetic triggers to foster public mobilization.

A central innovation of MIACE lies in its protocol of rigorous evaluation, with the Excideuil residency serving as a pilot site. While this residency serves the ambition of controlled, scientific assessment, its specific territorial conditions simultaneously reveal practical limits and methodological challenges of field implementation. The conclusions drawn from Excideuil are therefore provisional, illuminating both the potential and limitations of such art-based climate impact evaluation on the ground.

2 The L125.1 Exhibition in Excideuil and the Artists' Contributions

This section traces the deployment of the L125.1 exhibition, showing how artists and researchers explored the topic of the Excideuil 2024 cliff collapse and its ecological, material, and human implications. Through the account of the residencies and the presentation of the works by Honoré & Maljak, Okefolahan, and Wagner, the text highlights diverse artistic approaches that engage with territorial memory, climatic disruption, and environmental vulnerability. Yet it is especially in the final paragraphs that the core of the project becomes clear: the works produced within MIACE cultivate a step-aside posture, open space for positive emotional engagement, and foster a concrete and sensitive connection with nature, notably when it bears the marks of climatic catastrophe. This interplay between reflective withdrawal,

shared affect, and environmental commitment forms the guiding thread of the exhibition's meaning and its evaluation.

Excideuil and the preparation of the L125.1 Exhibition

In February 2024 a karst cliff collapsed due to heavy rainfall and rock permeability on the road leading to Excideuil, a small rural village (1 200 h.) located in the Périgord region, in the South-West of France. This natural disaster immobilized the village for a year. It served as a reminder that water is both a source of risk as well as a major asset upon which the town built its prosperity. Working in partnership with the artist residency "Les Grandes Fenêtres " in Excideuil, the artists and researchers chose this climate disaster as the topic of the exhibition. The art trail L125.1 is named after a municipal order classifying the Excideuil cliff collapse as a natural disaster.

To design this protocol and rigorous evaluation artists and researchers gathered at "les Grandes Fenêtres " in February 2025. During their residency they discovered the village of Excideuil, went to see the debris from the cliff collapse, saw the river to study the relationship between water and rock. They also got the opportunity to meet local experts and political representatives and to discuss with the inhabitants to gain further insight onto how they experienced this disaster.

The February residency was a moment of intensive exchange, where artists and academics worked together to share observations and insights. This dialogue sparked the creation of painting, sculpture, photography, and installations each offering a distinct perspective on the cliff collapse, while economists began designing a questionnaire and evaluation protocol for a randomized controlled trial.

Justine Maljak and Thibault Honoré

Since 2019, the artist duo Justine Maljak and Thibault Honoré have been working on creative research about risks and catastrophes, and they present their work at Excideuil as follows:

"How does the memory of this catastrophe shape the way the inhabitants perceive their territory today? The sinkholes, limestone pavements, and caves that emerge along the hillsides bear witness to the geological history of the region. The repetition of erosion cycles over millennia has given rise to a landscape identity inseparable from the notion of collapse. The way in which this environment can be studied by artists is a crucial issue in helping to represent the vulnerability of this community. At the end of two residencies held in February and June 2025, we created sculptures crafted from rock preserved during the cliff-clearing operations. These works were presented to the public in the gardens of Les Grandes Fenêtres. "

More picture and information about the artists are available on their instagram page : @honore.maljak

CLIFF

2025

Excideuil limestone, stainless steel, natural rubber.

By questioning the notion of repair, CLIFF offers a reinterpretation of this natural disaster and its impact on life in the town of Excideuil. Picture by Laurine Wagner



ROCKFALL

2025

Excideuil limestone, stainless steel.

ROCKFALL is an interactive work of art as well as a fun and educational device. The rules are simple: try your hand at building, alone or with others, varying the shapes and assemblies; maintain balance at the risk of collapse. Picture by Laurine Wagner.



Rafiy Okefolahan, a painter, describes his work in the following words:

"My installation at Excideuil consists of canvases that evoke the chaos and disorder of ecological disasters like tsunamis and cyclones. Through an explosion of colors, swirling forms, and visual disorder, the installation powerfully conveys a sense of ambient chaos that stirs feelings of unease and vulnerability. The representation is abstract, leaving the scenes open to interpretation and inviting the viewer into a sensory, emotional experience rather than a clear narrative.

The canvases are suspended without frames on the walls of a gravel-floored barn, illuminated only by natural light. Shadows deepen the unsettling atmosphere, reinforcing a sense of instability and collapse. This experience resonates deeply with the site-specific context of the 2024 landslides in Excideuil, highlighting our fragile relationship with the environment and calling for urgent awareness. "

More picture and information about the artist are available on the artist instagram page :
[@studiokefolahan](#)



"Eboulement II "

2025

Mixed technique, Picture by Laurine Wagner

Laurine Wagner

Laurine Wagner is a contemporary visual artist and researcher whose immersive installations and performances explore transitions and question our relationships to care, memory, and the living world. Here is what Laurine says about the artworks she presented at Excideuil.

"EXIT-DEUIL¹'s gilt is a multifaceted immersive and participatory installation. It was created in collaboration with ceramist Claude Aussage (Atelier Incognita Terra, Dussac, FR) for the making of six jars, including an Extra dolium 7; as well as with the help of a CNC machine from RMG Signalétique for the cutting of the wooden bases.

Starting from a reflection on water storage and dolia (earthen jars for various uses), I sought to question the process of creation itself. I invited spectators to pick up a fragment of paper, sit down with a pen, and write down their feelings about eco-anxieties in order to release them, before depositing the paper in a jar. On the last day of the exhibition, I, in collaboration with Claude Aussage, presented a performance in the form of a fire ritual, a moment of transformation.

EXIT-DEUIL's gilt reveals the afflictions that the environment, others, and ourselves may experience in relation to the notion of ecological mourning. The work aims to release energies and foster hope regarding both present and future inner and outer changes.



AUSCULTER

2025

Series of six digital photographic prints (Auscultur, Répercussion, Érosion, Traverser, Chute,

¹ In French, "deuil" means « mourning ». The title EXIT-DEUIL constitutes a deliberate play on words, intertwining Exit and Deuil to evoke both the process of mourning and the toponym Excideuil, the village where the cliff collapse occurred.

and Roche) on ecological canvas, 250g with eyelets, 225 × 150 cm. Pictures by Laurine Wagner.

Ausculteur is a series of six photographs captured while observing fragments of the cliff rock in Excideuil (FR), which collapsed on February 2, 2024. A visual and textual narration unfolds: to auscultate the repercussion of erosion, to traverse the fall of the rock. "



More picture and information about the artist are available on the artist website : <https://laurinewagner.com/>

The L.125.1 exhibition

During their second residency, from June 20 to 29, 2025, the artists finalized their works and presented them along an art trail. Visitors were invited into an aesthetic journey that mobilized not only the gaze but also the senses and emotions, placing them in direct contact with the fragility of collapsing cliff and threatened ecosystems. The experience moves beyond abstract or distant representations, offering a tangible encounter where vulnerability and the possibility of repair come into view.

In the works of Justine Maljak and Thibaut Honoré, the gesture of bandaging a stone becomes a powerful metaphor : nature may be wounded, but it can also be cared for and healed. Their art transforms fragility into an invitation to repair, encouraging reflection on balance, resilience, and sustainability. Spectators are thus drawn into the tension between destruction and care, where affective engagement fuels the conviction that action is possible.

Rafiy Okefolahan's vibrant and abstract canvases complement this dialogue with an intense emotional counterpoint. His bold chromatic contrasts and immersive forms create a visceral, sensory impact that bypasses rational discourse. Through color and feeling, his paintings deepen empathy and sharpen awareness of environmental vulnerability, reinforcing the emotional dimension of ecological consciousness.

With her participatory installation EXIT-DEUIL, Laurine Wagner develops a ritual of collective confrontation with eco-anxiety. She invites spectators to externalize their fears by writing them down and placing them in jars, which are later burned, a symbolic act that conjures misfortune and releases the weight of grief. This shared gesture transforms anxiety into resilience, acknowledging ecological mourning while opening pathways toward hope and action. Such interactivity illustrates how environmental art, at its most effective, moves beyond representation to create embodied experiences that engage both body and senses, reinforcing an acute awareness of ecological precariousness and the possibility of repair (Thorsnes et al., 2023).

Evaluations focus on how visitors engage with the works, and how this engagement heightens their awareness of the causes behind natural disasters and ecological imbalances. This emotional pathway is essential : as environmental art literature emphasizes, direct and affective experiences with nature deepen understanding and stimulate reflection on human responsibility (Curtis et al., 2014 ; Brady et al., 2020; Berleant, 2022). The aesthetic experience thus becomes a mode of empathic connection bridging knowledge and lived experience, essential for motivating pro-environmental attitudes.

Grounded in this “step aside” posture characteristic of engaged artistry, a deliberate withdrawal that creates space for reflection and critical questioning, these works articulate a pragmatic search for solutions. Rather than mere lamentation, the art invites a thoughtful reckoning with tangible realities and actionable care. Scholars argue that this posture is key to enabling spectators to recognize their role within ecological systems and to inspire behavioral shifts (Nisbet, 2009; Burke et al., 2018).

In summary, evaluating the impact of these works requires attending to both their emotional resonance and their ability to sharpen perception of ecological causes and consequences. This dual focus on affect and awareness reflects a growing consensus in environmental aesthetics and art research : that concrete aesthetic experiences with nature, coupled with deep emotional engagement, serve as powerful catalysts for ecological reflection, responsibility, and can foster the belief that environmental restoration is possible (Blake, 1999; Nurmis, 2016; Curtis et al., 2014).

3 Protocol and Study Design

The following sections present the structure and implementation of a study designed to evaluate the impact of artistic exposure on environmental attitudes. They first outline the context and objectives of the research, then detail the experimental design and randomization procedure, followed by the modalities of survey administration, the content of the questionnaire, and finally the composition of the sample. This step-by-step presentation culminates in the construction of a database from all collected responses, whose descriptive statistics, reported in Appendix A1, highlight differences between the treatment and control groups. Such contrasts form the basis for interpreting the study's preliminary findings and for refining future iterations of the experimental design.

Context and objectives

The present study is designed to assess the potential impact of artistic exposure on participants' pro-environmental attitudes, as measured mainly by the New Ecological Paradigm (NEP) scale, but also visitors' cognitive attributions regarding climate related phenomena such as the perceived causes of the cliff collapse and their policy preferences for mitigating climate change. In terms of methodology, the founding idea behind the study design (detailed below) was to compare the attitudes of the people who had seen the L125.1 exhibition (treatment group) and people who had not (control group). The research privileges two mechanisms largely recognized in specialized literature: emotional engagement and reflective cognition. This dual focus on affect and reflection reflects the artists' ability to create a reflective "step aside" space, fostering critical questioning and a tangible connection with environmental fragility, which literature identifies as essential for motivating pro-environmental behavior.

Design and randomization procedure

When they arrived at the exhibition, visitors were presented with an experiment designed to assess the impact of the artworks on environmental consciousness. Participation in the study was voluntary. A randomized controlled design was initially planned, randomly assigning participants to one of two conditions: a pre-exhibition control group (questionnaire administered prior to viewing the exhibition) or a post-exhibition treatment group (questionnaire administered after viewing the exhibition).

Randomization was implemented through a concealed selection task: upon arrival, each visitor was presented with four small stones from the cliff, two of which discreetly contained a lead insert at their base. Selecting a stone with a lead insert assigned the participant to the post-exhibition group, while selecting a stone without lead assigned them to the pre-exhibition group.

However, the randomization procedure could not be applied as strictly as planned. In certain cases, participants declined random assignment but consented to complete the questionnaire solely after viewing the exhibition. Furthermore, to increase the sample size and ensure sufficient data for analysis, additional questionnaires were distributed to residents of Excideuil who had not attended the exhibition (some during the exhibition in June and others two months later in September).

Survey administration

The questionnaire was available in both paper and online formats. The online version was accessible via a QR code printed on the exhibition's presentation flyer, which was distributed at the exhibition entrance and in various locations in Excideuil to encourage attendance. At the entrance to the exhibition, a dedicated table was staffed by the economists responsible for explaining objectives of the experiment, and distributing the survey.

Paradoxically, although the online format was conceived as a means to broaden accessibility and boost participation, it yielded very few responses. In several instances, visitors indicated after viewing the exhibition that they preferred to complete the questionnaire online at a later time. However, these stated intentions frequently failed to materialize into actual submissions. As a result, rather than increasing participation, the online option appeared to displace some immediate paper-based completions without generating the anticipated additional responses, thereby contributing to the predominance of paper-based surveys in the final dataset.

Questionnaire

As data were collected in the field the study was designed to be as short as possible. However answering the questionnaire took about 15 minutes. The survey began with the 15 items of the New Environmental Paradigm (NEP) index. This scale was originally introduced by Dunlap and Van Liere in 1978 and was revised several times with its most current version published in 2000 (Dunlap et al, 2000). This scale, based on stated preferences, has been shown to correlate with actual pro environmental behaviors (Cordano et al., 2003). The NEP has been used for almost 40 years in various studies and in several geographical contexts (Dunlap, 2008). Respondents were asked to indicate their extent of agreement with the 15 NEP items. The French translation of these items was adopted from the work of Schleyer-Lindenmann et al. (2014). These items were measured on a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree).

Following the NEP, the questionnaire assessed perceptions of the cliff collapse causes by asking: "What do you think are the causes of the cliff collapse? ". Participants were provided with ten possible causes (erosion, water infiltration, rainfall, construction work, droughts, deforestation, passage of vehicles and pedestrians, frost, climate change, and seismic activity) and were allowed to select multiple options. Next, an open-ended question was administered to explore participants' personal environmental attitudes and perceived responsibilities: "What

are your personal thoughts on current environmental concerns, and on the role that everyone could play in environmental protection?"

The questionnaire concluded with socio-demographic information and two self-assessment questions. On a 5-point Likert scale, respondents rated their artistic sensitivity (1 = not sensitive at all, 5 = very sensitive) and their environmental concern (1 = not concerned at all, 5 = very concerned).

Sample

A total of 62 completed questionnaires were collected, 7 of which were submitted online and 55 in paper format. This pilot experiment involved a control group of 26 individuals and a treated group of 36 individuals. The allocation was unbalanced due to the reluctance of participants to complete the questionnaire before the exposure to the artwork. It was designed not only to draw a set of meaningful preliminary conclusions which support and encourage the replication of the experiment in other contexts, as originally planned but also to reflect on the conditions needed to ensure greater success in terms of participation when replicated elsewhere. Our reflection here is therefore twofold: methodological, in refining the design and implementation for future iterations, and analytical, in delivering a number of early but significant findings.

The sociodemographic characteristics of participants in the control and treatment groups are largely similar across gender, rural/urban residence, number of children, education, occupation, and political orientation. Notable differences are observed in age distribution, with the treatment group skewing older than the control group, and in the distribution of residence departments. Most other dimensions, including educational attainment and family composition, show no significant differences between groups.

The findings indicate that, relative to the control group, the treatment group is characterized by higher levels of both environmental concern and artistic sensitivity. Such differences may reflect pre-existing dispositions that could influence responses to the intervention, and thus merit careful consideration in the interpretation of treatment effects.

Socio-demographic differences such as age and place of residence are factors that may either explain or confound individuals' appreciation of artworks, as well as their sensitivity to environmental issues (Baromètre 2024 des publics). The fact that we were unable to satisfactorily randomize our control and treatment samples, combined with the relatively small number of participants, entails the risk of mistakenly attributing to the treatment that is, to the artworks themselves effects that may in fact arise from these variables.

It may partly explain the divergent responses on the NEP scale attributed to exposure to the treatment and should be kept in mind when interpreting the results. For future iterations, increasing public participation and widening sociodemographic representation would strengthen the validity and generalizability of findings. The contribution here is therefore twofold : methodological, aimed at refining the design and implementation of the experiment, and analytical, offering a set of meaningful but preliminary conclusions.

4 Main Findings

The following sub-sections examine whether exposure to the L125.1 art trail influences participants' environmental consciousness. It first presents a critical analysis of NEP distribution patterns in the treatment versus control group, then moves policy recommendations by participants, then to perceptions of collective support for environmental policies, and finally to participants' attributions of the cliff collapse causes. Taken together, the results show how artistic engagement may shape environmental attitudes and interpretations.

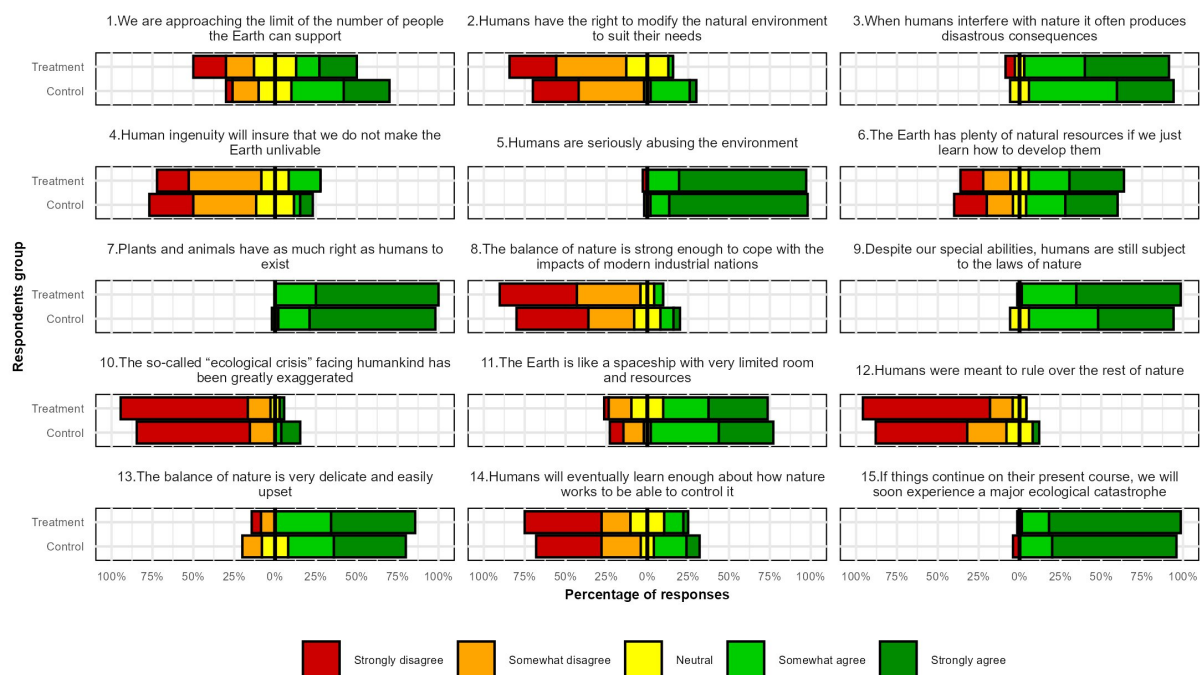
Environmental consciousness: The NEP index

Our main objective is to evaluate whether exposure to environment-related art can affect environmental consciousness. In our case, more precisely, whether people who have seen the L125.1 exhibition in Excideuil have different attitudes toward the environment, as measured by the NEP index. Graph 1² below displays the distribution of responses (Strongly disagree, Somewhat disagree, Neutral, Somewhat agree, Strongly agree) for each item of the NEP scale, for the treatment group (on top), *ie* people who have seen the exhibition, versus the control group (bottom), *ie* people who haven't seen the exhibition. The segments represent the proportion of each response for each group, hence the sizes of the bars are the same, while their position with regard to the centre and the different colored sub-segments graphically represent the distribution of answers. Please note that odd-numbered statements correspond to environment-friendly views, while even-numbered ones correspond to environment-skeptical views. So if the L.125.1 exhibition in Excideuil had a positive impact on the level of environmental consciousness of visitors, the bars for the "treatment group" (top) should be shifted to the right, and greener, for odd-numbered statements, while the reverse should be true for even-numbered. Given the relatively small number of observations, we do not expect differences to be statistically significant, but simply to provide some preliminary evidence on the impact of art. And actually, for 10 out of the 15 statements³, the treatment group seems to hold more environment-friendly views.

² In Appendix A2, a table containing all the statistics underlying Graph 1 is provided, along with a more detailed discussion of the results.

³ Statements 2, 3, 7, 8, 9, 10, 12, 13, 14, 15.

Figure 1 : Distribution of Likert-scales Responses to the New Ecological Paradigm (NEP) Items, Comparing Control and Treatment Groups



Note : Percentages are calculated on valid responses only (excluding missing values) and normalized to sum to 100% within each group. The diverging format centers the distribution by splitting the "Neutral" category into two halves for visualization purposes only, the category is treated as a single response option in all numerical analyses. The raw counts and percentage data used to construct this figure are presented in Appendix Table A1.

Overall, both groups display strong pro-environmental attitude particularly concerning items than emphasize human responsibility regarding environmental degradation. For instance, more than three-quarters of respondents in both groups strongly agreed that “humans are seriously abusing the environment” and that “plants and animals have as much right as humans to exist.” Such consensus suggests a broad acknowledgment of ecological limits and ethical considerations, independent of treatment status.

However, exposure to the L125.1 art trail seem to intensify certain attitudes. On items highlighting ecological fragility such as “the balance of nature is very delicate and easily upset” or “if things continue on their present course, we will soon experience a major ecological catastrophe” participants in the treatment group displayed higher levels of strong agreement than those in the control group. Similarly, they expressed stronger rejection of statements downplaying the severity of the ecological crisis.

These findings align with the literature, which underlines that aesthetic engagement, by eliciting strong affective responses like surprise, concern, or vulnerability can heighten awareness of the systemic causes of ecological imbalance and encourage critical reflection on human accountability (Curtis et al., 2014 ; Brady et al., 2020; Berleant, 2022).

Interestingly, the treatment group also demonstrated greater internal dispersion on several items suggesting that art experience stimulates critical reevaluation rather than only a reinforcement of existing views. For example, in response to “we are approaching the limit of the number of people the Earth can support,” the treatment group was more polarized, with both higher levels of strong disagreement and strong agreement compared to the control group. On questions concerning technological optimism such as “humans will eventually learn enough to control nature”, the treatment group turned out to be less decisive, showing more neutral responses.

Statement 12 (“Humans were meant to rule over the rest of nature”) shows a statistically significant difference between groups. Participants in the treatment group were substantially more likely to strongly reject this anthropocentric claim (77.8% vs. 56% in the control group; $p = 0.064$), suggesting that exposure to the art trail may specifically influence ethical dimensions of environmental worldview, particularly attitudes toward human dominance over nature.

Although only one item-level difference reached statistical significance, descriptive patterns suggest a modest tendency for the treatment group to express stronger pro-environmental views. This is supported by the recoded means and standard deviations (Table A1), which show that the treatment group’s mean is higher than the control group’s mean on 10 out of 15 items. While this trend is not uniform across all statements, it indicates a subtle shift toward stronger ecological attitudes among participants exposed to the art intervention.

Divergent pathways to environmental engagement: systemic critique vs. practical solutions

This interpretation gains additional depth from participants’ open-ended responses, which offered space for unstructured and self-directed expression.⁴ Across both groups, participants voiced feelings of pessimism and fatalism regarding environmental issues. The treatment group, in particular, articulated a sense of powerlessness and despair, often emphasizing institutional inaction with two respondents explicitly mentioning the failure of COP meetings.

Interestingly, the treatment group adopted a more pragmatic and solution-oriented stance toward the environmental crisis. Their proposals centred on concrete, realistic actions that are accessible to a wide audience and can be implemented immediately, illustrating a focus on individual agency and incremental change. In contrast, the control group articulated a vision for a profound paradigm shift, most often framed as the need to move beyond capitalism, and called for a transformation in societal values and ethics. While this systemic critique reflects a strong ideological position, it was rarely accompanied by specific, actionable steps to operationalize such change in practice. This contrast suggests that the treatment group’s exposure to the exhibition may have encouraged a mindset oriented toward feasible and participatory solutions, whereas the control group prioritised structural transformation without identifying pathways for its implementation.

⁴ All the statements written by the participants are available in the appendix A3.

Both groups voiced strong critiques of the economic system, recognizing profit-driven motives as major drivers of environmental destruction. Nevertheless, the control group’s criticism was markedly more radical, positioning capitalism itself as the central culprit and calling for a fundamental change in mindset and societal paradigm.

In terms of individual responsibility, the treatment group underscored concrete individual actions such as waste sorting, reducing plastic consumption, reconsidering travel needs, biking when possible, and tree planting with one participant even mentioning ceasing to use a refrigerator. The control group, although recognizing individual action as a duty, subordinated it to the role of public policy; several members suggested a return to simpler living but only two respondents mentioned concrete personal actions.

This contrast aligns with literature indicating that environmental artworks promoting pragmatic and positive engagement are generally more effective in inspiring pro-environmental behavior (Curtis et al., 2014; Sommer et al., 2019). By contrast, dystopian or apocalyptic artworks, which focus on radical system rejection without constructive proposals, frequently induce fatalism and emotional distancing, limiting their impact on attitudes and behaviors (Blake, 1999 ; Nurmis, 2016).

Importantly, the artworks featured in the Excideuil art trail belong precisely to the category identified as eliciting concrete actions. Through multisensory experiences, participatory rituals, and evocative representations of environmental fragility and repair, they invite visitors to engage emotionally and cognitively, fostering a constructive reflection on sustainable solutions and personal responsibility.

Underestimating collective engagement : effects of artistic intervention

Table 1 presents respondents’ perceptions of the proportion of the population that supports environmental policies. In both groups, a majority of participants believed that support was limited, with roughly half of respondents in the control group (50.0%) and the treatment group (53.1%) indicating that only a small proportion of the population is supportive. In the control group, nearly one third (30.8%) judged support to come from about half of the population, and none perceived it as widespread. In the treatment group, fewer respondents located support around half of the population (15.6%), while a small share viewed support as large (6.2%) or almost universal (3.1%).

Table 1 : Perceptions of Collective Support for Environmental Action in Control and Treatment Groups

Perceived population support for environmental policies	Total		Control		Treatment		P-value Fisher
	N	Percent	N	Percent	N	Percent	
A very small proportion	12	20.7	5	19.2	7	21.9	0.497

Perceived population support for environmental policies	Total	Control	Treatment	P-value Fisher
A small proportion	30 51.7	13 50.0	17 53.1	
About half	13 22.4	8 30.8	5 15.6	
A large proportion	2 3.4	0 0.0	2 6.2	
Almost the entire population	1 1.7	0 0.0	1 3.1	

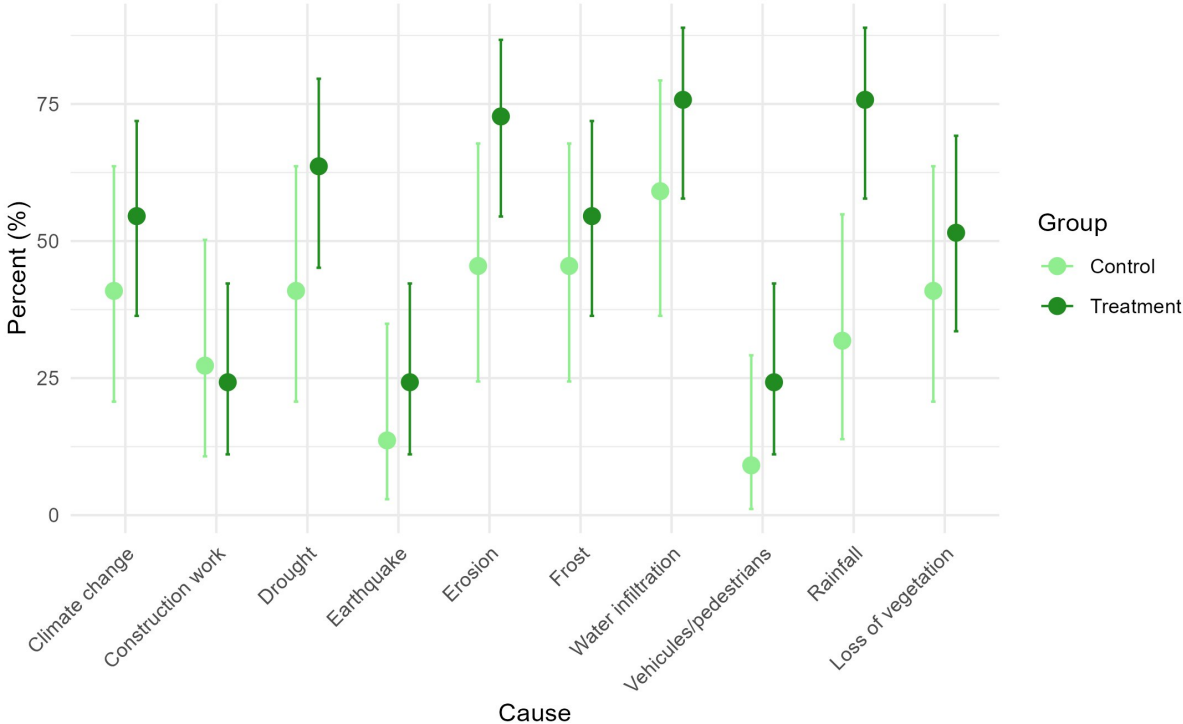
*Note : Percentages are based on valid responses only (N=58 overall). P-values are from Fisher's exact test comparing the overall distribution of responses across all categories between the Control and Treatment groups. Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.*

These perceptions are particularly relevant because underestimating the level of public engagement can have a disincentive effect, reducing individuals' own motivation to act environmentally. In our case, underestimation remained strong in both groups, as in fact, at least in European countries, a very large majority of citizens support strong pro-environmental policies (European Commission, Directorate-General for Climate Action, 2025). Our results thus align with prior studies showing that individuals systematically underestimate the proportion of the population concerned about climate change or supportive of environmental policies (Geiger, Sparkman & Weber, 2022; Geiger et al., 2025, Fang et al., 2025), suggesting that interventions fostering awareness and engagement may help reduce this bias. And following our experiment, exposure to the art intervention appears to have slightly shifted perceptions, with some participants adopting a more optimistic view of collective support.

Perceived causes of cliff collapse by group

The graph below shows the percentages of individuals attributing the cliff collapse to specific causes in each group. Individuals in the treatment group reported significantly higher frequencies for most causes, except for construction work, and more often invoked climate change as a factor (54.5% in the treatment group vs 40.9% in the control group). They linked it to various meteorological and geomorphological processes, including erosion (72.7%), heavy rainfall (75.8%), drought (63.6%), and water infiltration (75.8%). This indicates that the treatment group was better able to connect the abstract concept of climate change to its tangible consequences, whereas the control group, although recognizing climate change, reported systematically lower scores and less frequently associated it with specific environmental events.

Graph 2 : Proportion of respondents attributing cliff collapse to specific causes, with 95% confidence intervals, by groups (Control vs Treatment)



Note : For each cause, the proportion represents the percentage of respondents in the respective group who mentioned it (NAs excluded). Error bars indicate 95% confidence intervals.

These patterns suggest a clear divergence in how the two groups process information about climate change. Exposure to the artistic intervention seems to have fostered a more concrete and actionable understanding of climate change. The treatment group not only recognized climate-related causes more frequently but also integrated them into a broader narrative connecting abstract climate processes with observable impacts, whereas the control group paid less attention to systemic climatic links. This difference underscores the potential of art-based communication to enhance awareness of the direct consequences of climate change and to bridge the gap between abstract knowledge and lived, observable phenomena.

5 Discussion and Limitations

This L125.1 exhibition and the related survey were thought as pilot experiments, to identify challenges and limitations to be overcome in future research. Two main dimensions seem to be especially important: the actual implementation of the experimental protocol to avoid a selection bias and allow for a proper identification of causality mechanisms, and the measure of individual environmental consciousness. These two points will be discussed in turn in this section.

Randomization challenges and selection biases

The interpretation of our results as manifesting a causal impact of our treatment, *ie* exposure to environmental art, is impaired by the fact that the randomization process that was planned to avoid selection bias issues, did not work out as expected.

Convincing visitors to complete the survey at a specific time - before seeing the exhibition for the control group and after the exhibition for the treatment group - proved difficult. Because visitors were less numerous than expected, relatives of the respondents or individuals from outside the event itself were encouraged to fill out the survey. Therefore the random assignment of participants between treatment and control groups did not function as expected, failing to fully avoid a selection bias and limiting our ability to strictly establish causality between the artistic intervention and the observed outcomes. While exposure to art may have fostered new ideas and initiatives for the treated group, this can be also the result of the pre-existing differences in both demographic/socio-economic status and environmental concern/artistic sensitivity.

As shown in table A1 and discussed in section 2, respondents in the treatment group were more likely to have a master's degrees or a Phd than respondents on the control group. Furthermore the treatment group contained a higher proportion of managers and intellectual professions (28.6%) than the control group. In addition, young respondents were underrepresented in the treatment group whereas older age groups (50–59 and 60 years or above) were more frequent in the treatment group (27.8% and 47.2%, respectively) than in the control group (7.7% and 38.5%, respectively). These prior differences may explain at least partly the fact that some of the respondents felt more concerned about environmental issues or more interested in art in the treatment group than in the control group.

Moreover, the treatment group consisted of individuals who deliberately chose to attend an art exhibition about climate change. These respondents were likely to possess a higher level of pre-existing interest, knowledge, and commitment to environmental issues and eco-friendly practices. As sociological research on cultural participation has repeatedly shown, attendance at such events is not determined only by demographic and socio-economic barriers but also by cultural dispositions or habitus that shape familiarity, ease, and a sense of belonging in high-cultural spaces. Individuals who lack these dispositions may experience a “barrier to entry,” perceiving themselves as “out of place” in artistic settings, regardless of the absence of monetary costs. This helps to explain why the exhibition, despite being free, failed to attract a broader or less culturally equipped audience (Bourdieu & Darbel, 1969 ; Heinich, 2000). Also, the reception and appreciation of the exhibition's content are likely conditioned by the visitor's existing « artistic skill » (« compétence artistique », Bourdieu, 1968), meaning the socially acquired capacity to decode and appreciate works of art. A less informed, engaged or culturally predisposed public toward art and climate change would likely possess different level of this competence, thus limiting the generalizability of the observed effects beyond a population already possessing the cultural tools necessary for full engagement.

Future research should explore creative strategies for engaging a wider and more diverse public, fostering curiosity and encouraging participation from those with limited prior exposure to these topics. A challenge would be to create the conditions for the proper implementation of our research protocol similar to ours, that would allow to get control and treatment groups comparable before the experiment, to strictly identify causality mechanisms.

Beyond the New Environmental Paradigm ?

Although the NEP remains one of the most widely used and recognized instruments in environmental and behavioral research, several conceptual limitations have been identified in the literature.

The even-numbered items of the scale primarily assess attitudes toward human intervention in nature; however, such intervention can also be conceived as serving ecological objectives. Support for human intervention may come from individuals who view climate change as an urgent issue but believe that technological innovation represents the most effective response. In this sense, these items may capture respondents' preferred policy approaches to addressing climate change rather than their overall level of environmental concern. For instance, endorsing technological progress as a necessary solution and advocating for sobriety or reduced consumption reflect two distinct yet equally legitimate orientations among individuals deeply concerned about environmental issues.

NEP items, therefore, do not measure environmental concern directly or linearly. A respondent may strongly agree that human intervention is essential for environmental protection, while another may favor restraint and reduced consumption; when aggregated, such contrasting positions may neutralize each other, masking the underlying intensity of concern. For this reason, items related to human ingenuity are particularly difficult to interpret as linear indicators of pro-environmental attitudes (Lundmark, 2007). The effect of art exposure on these items may thus manifest in either direction (an increase or a decrease in scores) both reflecting heightened awareness rather than simple attitude shifts.

The NEP also relies on a unidimensional model that frames anthropocentric and ecocentric worldviews as mutually exclusive, preventing respondents from expressing both orientations simultaneously. Yet individuals may support environmental protection while also recognizing the necessity of resource use, a stance that the NEP does not fully accommodate. Consequently, the framework overlooks the coexistence of preservationist and utilitarian perspectives, thereby obscuring meaningful variation in pro-environmental attitudes (Manoli et al., 2019).

In addition, several items have been perceived as outdated (e.g., the “spaceship Earth” metaphor) or ambiguous, raising concerns about their relevance for contemporary respondents (Lundmark, 2007). For instance, when responding to the statement “Humans will eventually learn enough about how nature works to be able to control it,” some participants struggled to distinguish between plausibility and desirability : they considered such an outcome possible but expressed reluctance toward it. Moreover, the NEP excludes justice-oriented, distributive,

and economic dimensions of sustainability, thereby neglecting key drivers of environmental engagement such as equity concerns and intergenerational responsibility.

Overall, while the NEP remains valuable for contrasting strongly divergent worldviews, it is less effective in capturing more nuanced or multidimensional positions toward the environment. These conceptual limitations have direct implications for the present study : the unidimensional scale may fail to reflect the diversity of motivational profiles, clustering individuals with mixed views on preservation and resource use toward the middle of the scale. Taken together, these limitations suggest that although the NEP provides useful comparative insights, future research would benefit from complementing it with alternative or multidimensional instruments better suited to capturing the richness and complexity of contemporary environmental attitudes (e.g. Environmental Attitudes Inventory (IAE) of Milfont & Duckitt, 2009) or actual behaviors (willingness to donate, eco-friendly practices, etc.).

6 Conclusion

In this study, part of the MIACE project (Measuring the Impact of Art on Environmental Consciousness), we draw on the results of a survey administered to 62 individuals, around an environmental art exhibition which took place in June 2025 in Excideuil (a small rural village in the South-West of France), titled The Art Trail L125.1, in reference to a municipal decree classifying a recent local cliff collapse as a natural disaster. Part of the 62 surveyed individuals (the treatment group) attended the exhibition, while the others (the control group) did not. The objective was to compare the level of environmental consciousness of individuals in both groups, to evaluate whether art can affect such environmental consciousness.

This work is noteworthy for several reasons. First, the artworks on display were the subject of two residencies in Excideuil in February and June 2025, which allowed the MIACE team, composed of artists and economists, to engage in an Arts and Sciences approach and produce works firmly grounded in the local context and in the ways climate change manifests within it. Second, the analysis follows an impact evaluation protocol which, despite implementation challenges, aimed for the identification of causality mechanisms, and allowed to draw preliminary conclusions, both in terms of the impact of art and of methodological concerns.

The works by Thibaut Honoré and Justine Maljak, Rafiy Okefolahan and Laurine Wagner appear to transform audience perception and enable us to draw the following tentative results:

- Exposure to the artwork is associated with some differences in environmental consciousness, as measured by NEP scores between the treatment and control groups.
- Participants in the treatment group also demonstrate greater commitment and produce more effective policy recommendations compared to the control group.

- Moreover, a higher proportion of participants in the treatment group have a more accurate appreciation of the actual (high) proportion of people supporting environmental policies in the general population.
- And finally, these participants in the treatment group are more likely to attribute the Excideuil cliff collapse to environmental causes.

However, these conclusions remain provisional, as the sample size was limited and the experimental protocol - especially the random allocation into treatment *vs* control groups - could not be carried exactly out as planned.

Nonetheless, the findings are highly promising and pave the way for future research avenues.

Appendix

A1 : Socio-demographic characteristics of participants across study groups

Table A1 : Socio-demographic characteristics of participants across study groups

Variable	Total		Control		Treatment		P-value Fisher
	N	Percent	N	Percent	N	Percent	
Gender	62		26		36		0.512
Other	2	3.2	0	0	2	5.6	
Female	37	59.7	15	57.7	22	61.1	
Male	23	37.1	11	42.3	12	33.3	
Age group	62		26		36		0.091*
18-29 years old	6	9.7	4	15.4	2	5.6	
30-39 years old	12	19.4	8	30.8	4	11.1	
40-49 years old	5	8.1	2	7.7	3	8.3	
50-59 years old	12	19.4	2	7.7	10	27.8	
60 old or older	27	43.5	10	38.5	17	47.2	
Area	60		26		34		0.163
Suburban	1	1.7	0	0	1	2.9	
Rural	49	81.7	24	92.3	25	73.5	
Urban	10	16.7	2	7.7	8	23.5	
Department of residence	58		22		36		0.044**
Dordogne(24)	39	67.2	11	50	28	77.8	
Other departments	19	32.8	11	50	8	22.2	
Number of children under 18	61		25		36		0.332
0	53	86.9	21	84	32	88.9	
1	6	9.8	2	8	4	11.1	
2	2	3.3	2	8	0	0	
Number of children over 18	61		25		36		0.312
0	30	49.2	14	56	16	44.4	
1	5	8.2	3	12	2	5.6	
2	23	37.7	7	28	16	44.4	

Variable	Total	Control	Treatment	P-value Fisher			
3	1	1.6	1	4	0	0	
4	2	3.3	0	0	2	5.6	
diploma	58		23		35		0.659
Lower Secondary School Certificate	3	5.2	2	8.7	1	2.9	
Vocational Training Certificate	5	8.6	2	8.7	3	8.6	
French Baccalaureate	8	13.8	4	17.4	4	11.4	
Two-year Technical Degree (BTS) / Bachelor's Degree	14	24.1	7	30.4	7	20	
Master's Degree	24	41.4	7	30.4	17	48.6	
PhD / Doctorate	4	6.9	1	4.3	3	8.6	
Occupation	61		26		35		0.342
Farming	2	3.3	1	3.8	1	2.9	
Craft workers ; small business owners ; company managers	8	13.1	4	15.4	4	11.4	
Managers and higher intellectual professions	15	24.6	5	19.2	10	28.6	
Not currently employed	2	3.3	1	3.8	1	2.9	
Employees	8	13.1	4	15.4	4	11.4	
Students	2	3.3	1	3.8	1	2.9	
Technicians and associate professionals	6	9.8	0	0	6	17.1	
Retired	18	29.5	10	38.5	8	22.9	
Political position	55		24		31		0.663
Center	11	20	6	25	5	16.1	
Left wing	31	56.4	12	50	19	61.3	
Far left	13	23.6	6	25	7	22.6	
Environmental Concern	61		25		36		0.053*
Not particularly concerned	2	3.3	2	8	0	0	
Neutral	2	3.3	2	8	0	0	
Concerned	23	37.7	10	40	13	36.1	

Variable	Total	Control	Treatment	P-value Fisher			
Very concerned	34	55.7	11	44	23	63.9	
Artistic sensitivity	61		25		36		0.004***
Not particularly sensitive	5	8.2	4	16	1	2.8	
Neutral	3	4.9	3	12	0	0	
Sensitive	25	41	12	48	13	36.1	
Very sensitive	28	45.9	6	24	22	61.1	

*Note : Values are presented as N, referring to the number of individuals in the given category, followed by the corresponding percentage. Percentages are calculated within each variable (excluding missing values). Sample size varies across variables due to item non-response. P-values are from Fisher's exact tests. Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.*

Table A1 presents the sociodemographic characteristics of participants in the control and treatment groups. The treatment group comprised a slightly higher proportion of women (61.1%, n=22) compared to the control group (57.7%, n=15). Notably, participants identifying as another gender category were present only in the treatment group (5.6%, n=2).

Age distribution differed markedly between groups. Younger participants (18–29 years) were underrepresented overall, particularly in the treatment group (5.6%, n=2). The 30–39 age bracket was more prevalent in the control group than in the treatment group (30.8%, n=8 vs 11.1%, n=4), whereas older age groups (50–59 and 60 years or above) were more frequent in the treatment group (27.8%, n=10 and 47.2%, n=17, respectively) than in the control group (7.7%, n=2 and 38.5%, n=10). This indicates an older demographic profile in the treatment group. The difference in age distribution between the treatment and the control group was marginally significant (Fisher's exact test, p=0.91).

The sample is largely rural (81.7%, n=49), with a higher share in the control group (92.3%, n = 24) than in the treatment group (73.5%, n = 25). Suburban areas are marginal and only in the treatment group (2.9%, n = 1).

The Department group varied quite largely between groups: In the treatment group a large majority of respondents lived in the Dordogne (77.8%, n=28) Department whereas in the control group respondents were equally distributed between Dordogne and other Departments of France. There was a statistical difference in the distribution of residence Departments between the two groups (Fisher's exact test, p=0.044).

The control and treatment groups did not differ significantly in terms of the number of children. Most participants had no children under 18 (86.9%, n=53) and zero or two children over 18 (respectively 49.2%, n=30 and 37.7%, n=23).

Educational attainment also varied slightly between groups. Participants with a Master's degree were more numerous in the treatment group (48.6%, n=17) compared to the control group (30.4%, n=7), and PhD holders appeared more frequently in the treatment group than in the control group (8.6%, n=3 and 3.8%, n=1 respectively). Conversely, individuals with BTS (vocational diploma two years after high school) or bachelor-level qualifications were more

common in the control group (30%, n=7) than in the treatment group (20%, n=7). Levels of lower qualifications (BAC and CAP) were similar across groups. The difference of distribution in diploma between groups was however not statistically significant (Fisher's exact test, p=0.6)

The sample is diverse in terms of occupations. Retirees are the largest group overall (29.58%, n = 18), particularly in the control group (38.46%, n = 10). Managers and higher intellectual professions represent 24.59% of the sample (n = 15), and were more frequent in the treatment group (28.57%, n = 10) than in the control group (19.23%, n=5). Intermediate occupations appear only in the treatment group (17.14%, n = 6). Craftsmen, shopkeepers, employees, unemployed respondents, and students are each relatively minor categories.

Political orientation was very similar between groups even though the treatment group had a slightly higher share of participants identifying with the left (61.29%, n=19) compared to the control group (50%, n=12).

The distribution of responses highlights clear differences between the control and treatment groups in terms of both environmental concern and artistic sensitivity. Regarding environmental concern, a majority of respondents in both groups report being either "concerned" or "very concerned." However, the proportion of participants identifying as "very concerned" is substantially higher in the treatment group (63.89%, n=23) compared to the control group (44%, n=11). This difference between the treatment and the control group was marginally significant (Fisher's exact test, p=0.053) This suggests that participants in the treatment group may exhibit a stronger orientation toward environmental issues.

A similar pattern emerges with respect to artistic sensitivity. While most respondents describe themselves as either "sensitive" or "very sensitive," the treatment group again shows a notably higher proportion of respondents reporting the highest category, "very sensitive" (61.11%, n=22 versus 24%, n=6 in the control group). In contrast, the control group contains a larger share of participants who identify as "not particularly sensitive"(16% ; n=4). The difference in distribution regarding artistic sensitivity between groups was statistically significant (Fisher's exact test, p=0.004)

A2 : Detailed results of the impact of the L125.1 exhibition on NEP statements

Table A2 (below) presents descriptive statistics for each item of the New Ecological Paradigm (NEP) scale, including frequencies, medians, and interquartile range across the full sample. Responses are coded on a Likert scale from 1 ("completely disagree") to 5 ("strongly agree"), with "neutral" assigned a value of 3. According to Dunlap et al. (2000), agreement with odd-numbered items and disagreement with even-numbered items reflect pro-environmental attitudes.

To compute mean NEP scores, even-numbered items were reverse-coded so that higher scores consistently reflected stronger pro-environmental orientations. Each participant's NEP score was then obtained by summing responses across the 15 items, yielding a possible range from 15 to 75, with 75 indicating the strongest endorsement of an ecological worldview. Missing values were excluded from the summation. Mean NEP scores were slightly higher in the

treatment group (61.13) than in the control group (59.04). To determine if the difference between groups was significant the following procedure was implemented : Normality was assessed using the Shapiro–Wilk test, which indicated no significant deviation from normality in either the Control or Treatment group ($p > 0.05$). Levene’s test revealed unequal variances between groups ($p = 0.022$), leading to the use of Welch’s t-test for group comparison. Results showed no statistically significant difference in mean NEP scores between the groups ($p = 0.256$), and the 95% confidence interval for the difference included zero. These findings do not provide sufficient evidence to conclude that the treatment influences the overall New Environmental Paradigm score.

Table A2 : Descriptive Statistics and Group Differences on NEP Items

NEP Items	Group	N	Strongly disagree (%)	Somewhat disagree (%)	Neutral (%)	Somewhat agree (%)	Strongly agree (%)	Mean (Recorded)	SD (Recorded)	p-value (Wilcoxon)
1. We are approaching the limit of the number of people the Earth can support	Control	25	4.0	16.0	20.0	32.0	28.0	3.64	1.19	0.102
	Treatment	35	20.0	17.1	25.7	14.3	22.9	3.03	1.44	
2. Humans have the right to modify the natural environment to suit their needs	Control	25	28.0	40.0	4.0	24.0	4.0	3.64	1.25	0.487
	Treatment	35	28.6	42.9	25.7	2.9	0.0	3.97	0.82	
3. When humans interfere with nature it often produces disastrous consequences	Control	26	0.0	0.0	11.5	53.8	34.6	4.23	0.65	0.297
	Treatment	35	5.7	0.0	5.7	37.1	51.4	4.29	1.02	
4. Human ingenuity will insure that we do not make the Earth unlivable	Control	26	26.9	38.5	23.1	3.8	7.7	3.73	1.15	0.621
	Treatment	36	19.4	44.4	16.7	19.4	0.0	3.64	1.02	
5. Humans are seriously abusing the environment	Control	26	0.0	0.0	3.8	11.5	84.6	4.81	0.49	0.526
	Treatment	36	2.8	0.0	0.0	19.4	77.8	4.69	0.75	
6. The Earth has plenty of natural resources if we just learn how to develop them	Control	25	20.0	16.0	8.0	24.0	32.0	2.68	1.57	0.734
	Treatment	36	13.9	16.7	11.1	25.0	33.3	2.53	1.46	
7. Plants and animals have as much right as humans to exist	Control	26	0.0	0.0	3.8	19.2	76.9	4.73	0.53	0.931
	Treatment	36	0.0	0.0	0.0	25.0	75.0	4.75	0.44	
8. The balance of nature is strong enough to cope with the impacts of modern industrial nations	Control	25	44.0	28.0	16.0	8.0	4.0	4.00	1.15	0.453
	Treatment	36	47.2	38.9	8.3	5.6	0.0	4.28	0.85	

9.Despite our special abilities, humans are still subject to the laws of nature	Control	26	0.0	0.0	11.5	42.3	46.2	4.35	0.69	0.12
	Treatment	36	0.0	0.0	2.8	33.3	63.9	4.61	0.55	
10.The so-called "ecological crisis" facing humankind has been greatly exaggerated	Control	26	69.2	15.4	0.0	3.8	11.5	4.27	1.37	0.377
	Treatment	36	77.8	13.9	5.6	0.0	2.8	4.64	0.83	
11.The Earth is like a spaceship with very limited room and resources	Control	24	8.3	12.5	4.2	41.7	33.3	3.79	1.28	0.937
	Treatment	36	2.8	13.9	19.4	27.8	36.1	3.81	1.17	
12.Humans were meant to rule over the rest of nature	Control	25	56.0	24.0	16.0	0.0	4.0	4.28	1.02	0.064*
	Treatment	36	77.8	13.9	8.3	0.0	0.0	4.69	0.62	
13.The balance of nature is very delicate and easily upset	Control	25	0.0	12.0	16.0	28.0	44.0	4.04	1.06	0.475
	Treatment	35	5.7	8.6	0.0	34.3	51.4	4.17	1.18	
14.Humans will eventually learn enough about how nature works to be able to control it	Control	25	40.0	24.0	8.0	20.0	8.0	3.68	1.41	0.497
	Treatment	34	47.1	17.6	20.6	11.8	2.9	3.94	1.20	
15.If things continue on their present course, we will soon experience a major ecological catastrophe	Control	25	4.0	0.0	0.0	20.0	76.0	4.64	0.86	0.658
	Treatment	36	0.0	0.0	2.8	16.7	80.6	4.78	0.48	

*Note : Response percentages (from Strongly disagree to Strongly agree) are calculated from the raw scores provided by participants. The Likert scale ranges from 1 (Strongly disagree) to 5 (Strongly agree). The Mean (Recoded), SD (Recoded), and p-value (Wilcoxon) columns are based on recoded scores to ensure consistent interpretation of adherence to the New Ecological Paradigm (NEP). Reverse coding was applied to the negatively worded (anti-NEP) items (2, 4, 6, 8, 10, 12, 14), such that a score of 5 consistently reflects strong pro-environmental orientation across all items. IQR refers to the InterQuartile Range. p-values are derived from the non-parametric Wilcoxon–Mann–Whitney test. Significance levels are indicated as follows: * difference significant at 10%; ** difference significant at 5%; *** difference significant at 1%.*

A3 : Answers to the open ended question "What are your personal thoughts on current environmental concerns, and on the role that everyone could play in environmental protection? "

Treatment group

Beaucoup de personnes sont sensibles et s'engagent mais le résultat ne semble pas visible. Il y a donc un sentiment général d'impuissance et d'inutilité pour certains.

Des effondrements irréversibles sont en cours. Le dérèglement climatique s'accélère en dépit des objectifs des COP qui ne sont pas atteints. L'humanité doit se préparer à survivre le reste est du jardinage n'en déplaie à Voltaire.

Beaucoup de gens ne se sentent pas concernés pas ces enjeux parce qu'eux mêmes ne sont pas respectés

dans leur vie, leurs choix

Ce sont les actions de chacun qui feront la cohérence de l'humain dans son élément naturel

Enjeu mondial, un peu désespérant : les gestes individuels ne pourront pas en l'état actuel, compenser le gâchis de certains états, de certaines puissances. On cherche à culpabiliser les "petits" (nous) sans demander aux "gros" (industries, capitalisme) de faire ou de payer ce qu'ils devraient.

Stupeur et tremblements

Effroi et sidération

Mais, Il nous faut être des citoyens totalement engagés pour préserver notre planète.

Nous avons fait le choix d'avoir des Enfants...un futur

*J'ai opté pour la décroissance(réduire nos impacts. Contrôler nos désirs. Réfréner nos caprices.) MOINS C'EST PLUS ! J'évite d'acheter le plastique, les déplacements non réfléchis, utiles nécessaires etc, etc
PS : je n'ai plus de frigo !*

Si les enjeux environnementaux sont un sujet majeur, ils engendrent beaucoup d'études, de publications, déclarations... et gesticulations! 10 ans après que penser de la COP21 ?!!! Chacun peut être plus attentif à son mode de vie mais sommes nous capables de renoncer à notre frénésie de changements, de déplacements, à nos écrans?

Bref, un certain pessimisme

Que chaque personne puisse agir à son niveau, même le moindre geste (trie poubelle, vélo/voiture). On a tous notre rôle à jouer. Réussir à convaincre et échanger avec les plus sceptiques...

Que nous puissions échanger, communiquer, pour connaître les enjeux. Tous les moyens sont bons (expos, conférences, théâtre... pour tout publics !) pour sensibiliser le maximum de personnes et ainsi nous aider à adopter des comportements plus justes et responsables.

Donner aussi une information simple, transmettre avec des mots simples pour donner le goût à tous de s'intéresser.

Arrêtons de détruire l'environnement pour le bien de la terre, et de la vie sur terre, pour avoir de l'eau potable et avoir une culture saine sans sulfate et que la vie soit pure c'est l'argent qui détruit la terre, et les humains qui en font n'importe quoi sans penser aux conséquences, il n'y a que le profit qui compte aux yeux de beaucoup d'humains

Commencer par réfléchir à cette notion d'"environnement" qui n'existe que si nous continuons à nous penser comme séparés du monde que nous habitons. Inverser, comme d'autres cultures nous le suggère. Dès lors, nous ne serions plus à débattre autour d'une "protection de l'environnement", mais à prendre simplement soin du vivant, nous y compris

Pessimiste à l'échelle mondiale.

Bientôt grand-parent et inquiet pour les jeunes enfants quant à l'état de la planète dans quelques années.

Respecter la flore et la faune

-trier ses déchets

- Planter - planter des fruitiers et de grands arbres - œuvre(???) de la biodiversité

Control group

J'aimerais tellement que les rapports de chacun à la nature soient plus intimes, plus liés à une expérience personnelle qui mènerait probablement à un plus grand respect et un plus grand désir de préservation.

"I recognize only one duty, and that is to love"

Camus

Les enjeux dépendent des politiques publiques et nationales mais chacun peut agir à son échelle dans

ses consommations et son mode de vie pour lutter pour la préservation du vivant.

L'écologie n'est pas possible/viable dans le capitalisme. Il faut changer de mentalité. Toutes décisions (politiques, économiques, sociales, culturelles, sportives...) doivent impérativement être prise à l'aune de l'enjeu écologique, si l'on veut s'en sortir.

Plus d'éthique

Moins de fric.

Bisous

Si déjà on arrêta de ... dans de l'eau potable ...

Stopper la guerre contre le vivant.

Calmer cette société de consommation capitaliste. Retourner à une vie simple en famille, à la ferme. Prendre conscience de manger sain et vivant pour stopper l'agro-chimie/ l'industrie. Et calmer ce système de consommation fou. Réapprendre l'usage des plantes sauvages/ comestibles pour se reconnecter au vivant. Que le confort est agréable mais fait de nous des faibles et consomme énormément (Nucléaire)

Et arrêter les voisins qui tondent dès qu'il y a un pissenlit BREF réfléchir. Exemple de lecture LES ENFANTS DE LA TERRE

La question est trop vague

Nécessité d'une prise de conscience individuelle accrue...

Une constatation évidente : une politique de l'environnement semble inséparable de la démocratie Bien que chacun.e, au quotidien, dans ses liens avec les mondes du vivant, ses gestes et sa conscience écologique, soit acteur.ice de la protection de l'environnement, les enjeux environnementaux doivent être appréhendés à un niveau collectif et politique. Ils sont fonction des capacités de transformation social et politique par la sortie d'un modèle extractiviste et pollueur. Pour agir véritablement sur l'environnement, il nous faut bâtir un monde par-delà le capitalisme.

Il faut faire attention de ne rien jeter dans la nature, faire attention à la provocation de feu de forêt ou autres

Chaque personne devrait y mettre du sien. Réduire les déchets comme acheter des cotons réutilisables, c'est pas grand-chose mais déjà un petit geste

Eu acredito que se os humanos nao comecarem (porque eu nao vento nem um comeco) seriamente a pensar numa forma de co-existencia justa e consciente com a natureza, fauna e flora, nos estaremos destinados ao fim da humanidade e do planeta, comprometendo outras formas de vida, e eu nem acho essa opniap tao catastrofique; e mais realista.

traduction : Je crois que si les humains ne commencent pas (car je n'en vois même pas le début) à réfléchir sérieusement à une manière de coexister, juste et consciente, avec la nature — la faune et la flore — nous serons voués à la disparition de l'humanité et de la planète, compromettant d'autres formes de vie. Et je ne trouve même pas cette opinion si catastrophique ; elle est plutôt réaliste.

Tout est circulaire et on devrait vivre avec cette idée.

Les industries doivent être responsables du traitement de leurs produits (fin de vie)

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