HUMAN IMPACTS INSTITUTE

REPORT

Sparking Environmental Justice Action

A Review of Literature on the Impact and Power of *Arts and Culture*

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Tara originated the idea for this research project and played an important role in conceptualizing its main objectives and focus.

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Sparking Environmental Justice Action

A Review of Literature on The Impact and Power of Arts and Culture

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Acronyms

CAL	Climate Advocay Lab
CCA	Creative Climate Awards
CPR	Common Pool Resources
C4AA	Center for Artistic Activism
HII	The Human Impacts Institute
IPCC	The International Panel of Climate Change
TPB	Theory of Planned Behaviour

About the Human Impacts Institute (HII)

The Human Impacts Institute (HII) is a dynamic non-profit organization dedicated to fostering environmental justice, sustainability, and community engagement through innovative educational programs, creative communication strategies, and community-driven environmental initiatives. By integrating arts and culture into its approach, HII aims to inspire diverse communities to take action and advocate for equitable environmental policies and practices, ensuring a healthier, more sustainable future for all. Our mission is to build a global cultural movement to inspire BIG, BOLD, and BEAUTIFUL climate action.

This research was conducted through two programs at HII, which are described below.

About the Urban Environmental Health Lab (UEHL)

The Urban Environmental Health Lab is designed to empower under-represented communities in New York City by addressing urban soil, water, and air pollution. Through collaboration with environmental health experts, artists, and youth leaders, fellows engage in innovative projects aimed at tackling environmental health threats and promoting pollution prevention tools.

About the Creative Climate Communications (C3) Lab

Dedicated to experimenting with innovative, community engagement methods for driving climate action and enhancing community resilience. This initiative aims to build the capacity of climate and health-focused, community-based organizations in environmental justice communities. C3Lab seeks to empower local communities to effectively address environmental challenges.

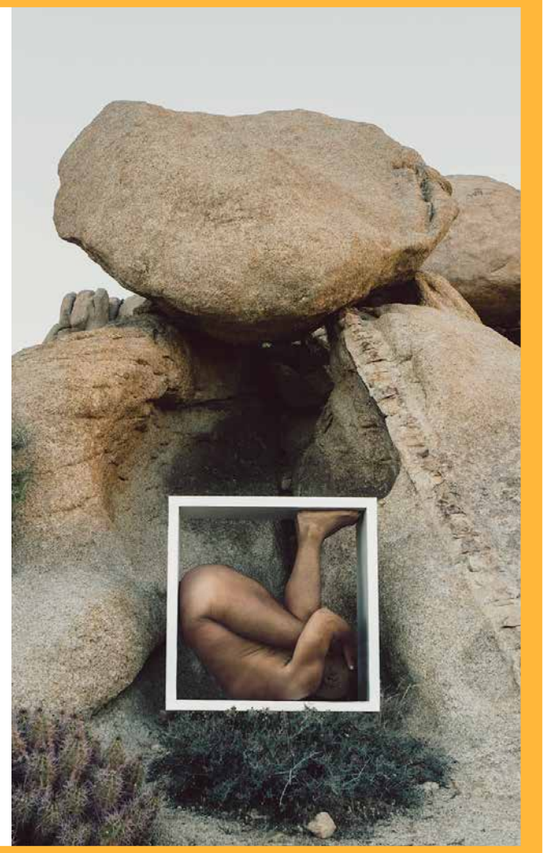
NEW YORK STATE | Department of Environmental Conservation

These programs are supported with funding from the New York State Department of Environmental Conservation's Office of Environmental Justice.

▶ Environmental Justice and Climate Action

Environmental justice addresses the fair treatment and involvement of all people in environmental decision-making regardless of race, ethnicity, income, or other social factors (Diezmartínez & Gianotti, 2022).

It recognizes that certain communities, often marginalized or economically disadvantaged, bear disproportionate environmental hazards and pollution burdens. Environmental justice and climate action are closely intertwined, as marginalized communities often bear the greatest burden of climate change impacts and environmental hazards. Efforts to address one often complement and reinforce efforts to address the other. Both aim to promote equity, resilience, and sustainability, recognizing the interconnectedness of social, economic, and environmental factors in shaping the well-being of communities worldwide. Environmental justice is integral to climate action by addressing social inequalities exacerbated by climate change.



Executive Summary

It has become increasingly evident that relying solely on scientific information to communicate climate change and inspire societal and behavioral change is insufficient. The Human Impacts Institute is grounded in the belief that arts and culture are essential elements in fostering effective climate action. This conviction drives this study, which seeks to explore the factors that motivate climate action and assess the impacts of arts and culture in this crucial challenge.

Environmental justice action can have different motivations, each with unique impacts for varying audiences. This action can be individual or collective and has the potential to grow into a large-scale movement. Collective action and participatory arts are key to addressing all three of this study's research questions, as described later. Collective action is the most effective at driving real change, as social norms and community belonging are crucial factors that influence behavior. Social amplifiers are the most interesting individual drivers that help affect action.

Emotions and Cognitive Processes are potent motivators for sparking action. From hope to anger and fear, emotions stemming from reactions to experiences and communications

can shape individual and collective responses. Emotions should have space to co-exist and develop into a more discrete inclination for long-term action. Similarly, developing an understanding of and appreciating climate change impacts through communications, social norms, shared values, and educational content can also spur action. An interplay of emotions and cognitive processes is what drives action most effectively.

The power of artistic expression and cultural engagement can shape and give space to emotions and perceptions, conveying nuanced messaging through sensory and metaphorical experiences. The contributions of artistic and cultural forces help shape perspectives, dismantle barriers, and instigate and propel societal shifts. Arts and culture have the power to influence imagination, wonder, and most importantly, make the intangible tangible. This makes climate change a personal, relevant, and emotional cause to fight for, rather than a complex, undefeatable phenomenon for communities directly affected and an abstract and distant phenomenon for more privileged communities. The arts help in eliciting emotions for a deeper understanding of climate change, facilitating behavior change, personalizing and localizing climate issues, and fostering the imagination of alternative futures.

A cultural shift is essential for fostering environmental justice action, as this requires adopting new behaviors and transforming hegemonic paradigms. The interdisciplinary nature of exploring what sparks this action urges continued collaboration and research across diverse domains, including the transformative realms of arts and culture, to address the urgent challenges of this shared environmental future. From challenging societal norms to fostering inclusivity and community, arts and culture are powerful catalysts of change on many levels. They can respond to many barriers to sparking environmental justice action.

Assessing the impact of the arts is a complicated and multifaceted endeavor, differing significantly from conventional evaluation practices. Typical evaluation frameworks are not always successful when applied to the arts due to the different types of impact to be measured, the relevance of metrics available for assessment, and the need for process-based rather than output-driven evaluation. Methodologies for measuring the impacts of arts and culture should be process-driven, participatory, qualitative, and long-term. Assessing arts and social justice work warrants a uniquely relevant, ethical, equitable, and realistic approach.

As we move forward, let us embrace the lessons learned from this exploration into the role of arts and culture in climate action. It is clear that a cultural shift, driven by emotional engagement and creative expression, is vital for achieving meaningful environmental justice. We hope that the evidence-based insights from this study will guide future efforts and inspire collective action towards a more just and sustainable world.

Introduction

The Human Impacts Institute's (HII) work and theory of change is founded on the belief that arts and culture are essential in driving climate action in a meaningful and impactful way. This study explores the impact of arts and culture in detail, considers differing academic opinions, and evaluates best practices to measure this impact. **It is based on three primary research questions:**

- **What sparks environmental justice action?**
- **How do arts and culture impact environmental justice action and communication?**
- **How can this impact be measured?**

HII is a group of connectors utilizing their varied expertise to build stronger and more impactful communities. Therefore, this study has been conducted to provide a useful resource for any community interested in better understanding and implementing arts and culture in environmental justice action. It is important to note that this report reflects the beginning of a longer process that entailed collaborations with environmental justice groups in New York City to gain insights from their experience and knowledge in the field. Finally, by identifying gaps in the available literature, this research hopes to spark interest amongst other researchers and actively point experts to collaborate with HII's community and direct their efforts and energy into building a global cultural movement that inspires **big**, **bold**, and **beautiful** climate action.

Results and Findings

The findings included in this report stem from an in-depth review of more than 150 articles.

The results herein follow these questions and are categorized by academic discipline or subject. It is important to note that these insights are a higher-level summary of the information retrieved; please refer to the resource library for a wider list of articles.

The articles referenced in this study were in large part retrieved from primary research and from sources including independent research institutes and non-profit organizations.

PART 1. Understanding the Drivers of Environmental Justice Action: Key Takeaways

Behavioral change is a key driver of environmental justice action.

- Social norms hugely influence our capacity for behavioral change.
- Raising self-efficacy (an individual's belief in their ability to successfully accomplish a specific task or achieve a particular goal) helps overcome barriers to behavioral change.

Emotions play a bigger role in climate change communication than we initially thought.

- Hope, fear and anger are difficult to research effectively, but are identified as the most potent emotional motivators for behavioral change.
- For long-term action, one should consider the "moral battery" (positive and negative emotions, creating tension or contrast that demands attention and spurs action) of an individual.

Framing an issue by a trusted messenger is the most effective for driving climate action.

- One-on-one conversations are the most effective for driving change.
- Trusted messengers are essential for effective message framing, making an issue personal and local, which are crucial elements for driving behavioral change.
- People take action more easily when it is directed related to intrinsic values.

Collective action is the most effective action.

- Collective action is motivated by strong relationships that entail a feeling of belonging, understanding, self-efficacy, self-enhancement, trust, reciprocity and cooperation.
- Expressing anger is an effective motivator for building social identity and driving collective action.

It is crucial to engage the youth in taking climate action.

- For motivating youth to take action, self-efficacy is even more important.
- Space for negative emotions is a necessary step for youth to take action. The role of teachers regarding this is crucial.
- Constructive hope, which is realistic, solution-oriented, and action-linked rather than based on mere optimism, is the most effective emotion for motivating youth to take action.

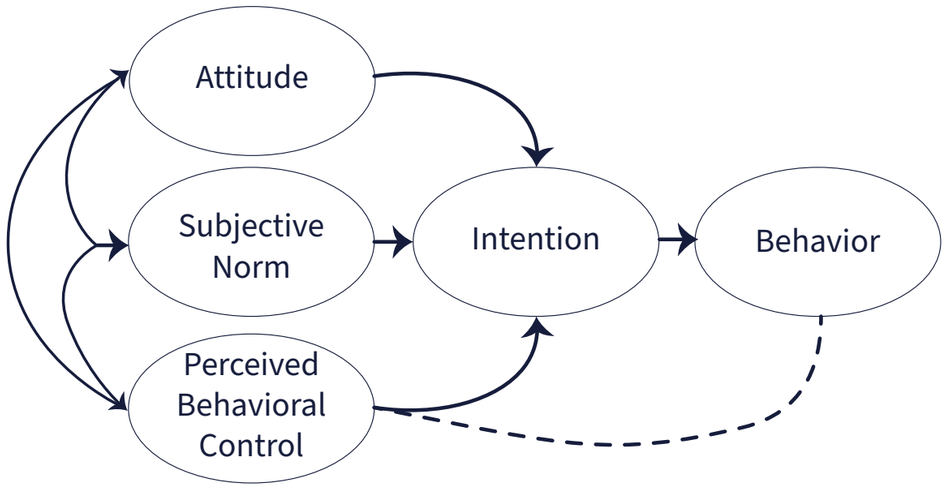
To answer the overarching question, each section delves into a distinct facet of this vast question, revealing the complexity of emotions, psychological factors, collective dynamics, and educational influences.

1. Social and Cognitive Psychology

The discipline of psychology provides valuable insights into the mechanics of behavioral change, with Azjen's (1991) Theory of Planned Behavior (TPB) standing out as an early cornerstone of this understanding. Despite it being rather dated, TPB remains a solid foundation for understanding behavioral change, as evidenced by its widespread influence in subsequent research.

The theory demonstrates three key factors that influence behavioral change intentions: attitudes, reflecting a person's judgment of the actions and their results; subjective norms, involving social influences and perceived expectations from others; and perceived behavioral control, relating to a person's belief in their ability to perform the behavior[1]. Together, these factors shape an individual's intention to perform a specific action, with stronger intentions correlating to a higher likelihood of actual behavior execution[2] (see figure 1).

Figure 1. *Factors influencing behavioral change intentions (Orzanna, 2015).*



[1] In the psychology literature, perceived behavioral control is also referred to as *self-efficacy*, see Bandura (1982) for a broader understanding of this concept.

[2] A comprehensive explanation of this theory can be found in a video on YouTube named Theory of Reasoned Action and Planned Behavior from the channel "LearnPsychology".

Building on the TPB framework, the American Psychological Association's Task Force in their report on Global Climate Change (Swim et al., 2009) identifies barriers to climate change actions. These barriers encompass both structural factors, such as economic and cultural barriers (for further understanding we recommend consulting the literature on risk-decision making), as well as psychological factors, including ignorance, uncertainty, mistrust, denial, habit, discounting importance of climate change, and weak place attachment. Kollmuss & Agyeman (2002) echo the research of Swim et al. (2009) in pro-environmental behavior albeit with a slightly different categorization, additionally emphasizing intrinsic values and worldviews as drivers or barriers of climate change action. The latter is confirmed by Whitmarsh & O'Neill (2010) as they dive deeper into the importance of self-identity for pro-environmental behavior, underlining the importance of value-based systems in climate change action.

However, the literature mentioned above is based on the understanding of behavioral *individual* change, and has the underlying assumption that humans make choices in a *rational* way (especially for the TPB Azjen, 1991). It is, hence, not surprising that TPB has been widely used in consumer behavior theory and marketing. As Swim et al. (2009) note, the frameworks of scientific research have a tendency to give more space to rationality rather than emotions, even though the fields of risk-decision making and climate change communication (from which the discipline of Psychology draws significant research) highlight the role of emotions for environmental justice action (Li & Su, 2018; Loewenstein, et al., 2001; Weber 2006). Despite recognizing the significance of emotions, these studies predominantly explain them through cognitive processes rather than delving deeper into affective understanding.

Moreover, even though psychology (and many other fields) emphasize that collective action yields the most impactful results for climate change (Clayton et al., 2015; Li & Monroe, 2017; Ojala, 2023; Spitzer & Fraser, 2019), the research mentioned above is usually focused on individual action.

As has already been hinted at, psychology literature points significantly toward social and cultural barriers in leveraging action. It is, therefore, interesting to mention the research of the Climate Advocacy Lab (CAL) that gathered evidence-based approaches to identify three practices to foster deep change in people. *Deep canvassing* (open, vulnerable, intuitive, one-on-one conversations), *relational climate conversations* (enhanced by relational organizing), and *cultural strategy*. This is also confirmed by the field of Climate Change Communication, which explains that face-to-face communication is generally more persuasive and engaging as it allows for personalization, non-verbal cues, real-time feedback, and dialogue. Interactive communication, whether in person or online, has been shown to be more effective in driving behavior change (Moser & Dilling, 2011). These approaches underscore the influential role of like-minded communities and shared identity in driving impactful actions. Moreover, the importance of perceived majority support surfaces as individuals are more likely to engage when they believe they are part of a majority – a concept pivotal in cultural change and norm shift. Cultural shifts occur when norms change, leading to transformed actions and engagements.

2. Climate Change Communication

The field of Climate Change Communication has witnessed significant growth in the past decade, underscoring the need for a strategic approach to effectively convey the urgency and complexity of climate-related issues (Li & Su, 2018). Indeed, climate change is a challenging issue to convey as its prime offenders like carbon dioxide are invisible gasses, and long-term climate change effects are only now emerging slowly in the Global North. Many communicators assume that a lack of information and understanding is the primary reason for the lack of public concern and engagement – also known as the knowledge deficit model. However, this model has flaws as it assumes that more *information automatically leads to action*. Instead, factors like personal values, incentives, social support, and practical assistance play a more significant role in motivating behavior change related to climate change, while excessive information can sometimes have the opposite effect by overwhelming or disempowering individuals (Moser & Dilling, 2011).

To have people engage in climate change action, a feeling of personal and local relevance is needed.

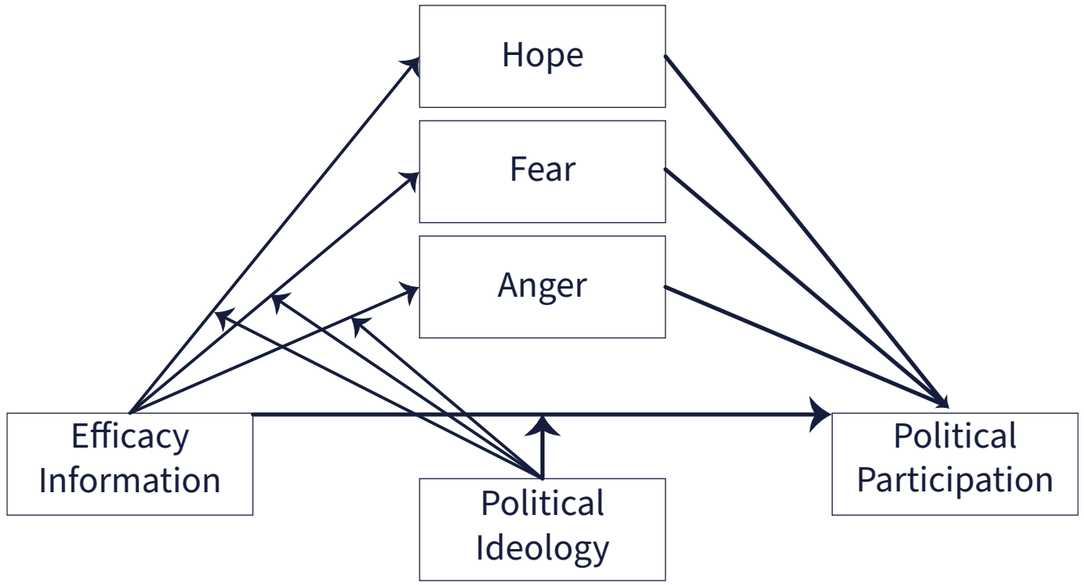
As mentioned in the section above, this interdisciplinary domain intersects notably with psychology. Additionally, Climate Change Communication is pivotal in understanding how emotions shape individual and collective responses. Notably, emotions such as hope, fear, anger, and worry have been extensively researched, forming the bedrock of effective climate change communication. However, current research is not specific nor complete enough to be conclusive, partly because it is essential to consider the audience's needs, values, and beliefs. Audience segmentation is crucial as a one-size-fits-all approach often fails (Moser & Dilling, 2011). Framing the issue is vital and should align with the audience's worldview and concerns (Burke et al., 2018). Messengers play a key role, and they must be trustworthy and consistent with the message's framing. The credibility of the messenger depends on the audience, context, and message, and trust can be built through positive experiences or expectations. Trust in the messenger is particularly crucial for complex, uncertain, and invisible issues like climate change. In summary, understanding the audience and tailoring the message and messenger to their needs and beliefs is essential for effective climate change communication (Filho et al., 2018; Burke et al., 2018).

What the discipline of Climate Change Communication does tell us with assurance is that to spark environmental justice action, emotions are crucial. As the Center for Artistic Activism puts more simply: "(...) ideas move people to action when they are *felt*, not just understood." (Duncombe, 2018). What has been witnessed over the last decades in climate change communication is a focus on explaining the science of this phenomenon (IPCC, 2022). This approach's consequence is a state of distanced understanding regarding climate change, a phenomenon identified by Psychology literature as a barrier to behavioral change (Swim et al., 2009). To have people engage in climate change action, a feeling of personal and local relevance is needed (Gustafson, 2020). In conclusion, effective climate change communication goes beyond simply relaying scientific knowledge. Emotions are necessary for actions. However, this depends on the type of emotions triggered and the audience they are being communicated to (Burke et al., 2018; Feldman & Hart, 2015; Lorenzoni et al., 2007).

Delving deeper into specific emotions that have been researched in this field, a study of note is conducted by Feldman & Hart (2015), wherein they establish connections between pivotal concepts such as efficacy[3], fear, anger, and hope, with political ideology and participation as factors influencing emotions (see Figure 2).

It is essential to highlight that this research primarily focuses on short-term outcomes; thus, it exclusively investigates whether individuals express an intention to engage politically. It does not address the long-term aspect of whether individuals follow through with these intentions. As demonstrated by insights from Psychology, intentions and emotions are intermediate steps, and the presence of one does not necessarily guarantee behavioral change. In this context, emotions are perceived to play a mediating role between message, action, and political affiliation, or, in broader terms, worldview.

Figure 2. *Conceptual model of the mediating role of emotions in efficacy information (Feldman & Hart, 2015).*



[3] Efficacy messages are categorized here as internal, external and response efficacy information. Internal being focused on self-efficacy messages, external as system-efficacy messages and response as policy efficacy messages.

Results vary based on political ideology (in the context of politics in the United States): moderates demonstrated an increase in hope and a decrease in fear in response to internal and external efficacy information. Liberals, on the other hand, displayed increased hope in response to both external and internal efficacy information. Interestingly, Conservatives showed increased hope and fear in response to efficacy messages. Notably, no statistical significance was observed regarding anger despite other literature suggesting its potential importance in the context of climate engagement (Gregerson et al., 2023). The article concludes by posing the question of how to construct balanced messages that encompass both fear and hope. The latter conclusion is why it is interesting to delve deeper into those two emotions.

Moser & Dilling (2011) provide a deeper understanding of fear. Alarming imagery and fostering fear are useful in capturing public attention and might, as the research of Feldman & Hart (2015) demonstrates, spark the intention to engage in climate change action. However, they often fall short of fostering long-term action. Such approaches can result in denial, desensitization, or apathy, particularly among conservative audiences as well as younger audiences (the latter is explained more in detail in the section Education & Youth). Effective communication strategies should avoid excessive negativity and provide practical solutions that align with people's values and aspirations. It is crucial to strike a balance between conveying risk information and offering specific, pragmatic assistance to address the issue, thereby establishing a sense of collective responsibility. Furthermore, facilitated dialogue and structured deliberation can enhance understanding and trust among individuals with differing values, facilitating decision-making rather than impeding it (CAL, n.d.; Moser & Dilling, 2011).

Research regarding the impact of hope is also important to nuance. Ojala (2023) discusses how hope is often mistakenly conflated with optimism in research; however, they emphasize that hope incorporates uncertainty, whereas optimism involves believing strongly in a better future. An interesting suggestion Ojala makes is that it may be action that serves as a catalyst for hope, rather than hope driving action. In line with findings from other literature, this could be collective action in particular. While prior research has explored the possibility of hope being a motivator for taking action, Ojala emphasizes the reciprocal relationship by highlighting how engagement itself also brings about hope.

While fear and hope contribute to the development of self-efficacy and sustained activism, anger emerges as a powerful initial catalyst, with a tendency to fade more swiftly.

The significance of anger as a powerful emotional motivator is underscored in the research conducted by Gregerson et al. (2023), specifically in activist practices. The study's findings indicate that anger surpasses hope as a driving force for climate activism. While it is acknowledged that anger can be a potent catalyst, it is important to recognize its tendency to operate more short-term.

In conclusion, exploring emotions in the context of environmental justice action reveals the nuanced role of strong and intricate emotions such as fear, hope, and anger as potent motivators. While fear and hope contribute to the development of self-efficacy and sustained activism, anger emerges as a powerful initial catalyst, with a tendency to fade more swiftly.

More attention should be paid to discrete emotions such as doubt, concern, and worry. The literature shows that they should not be overlooked, as these emotions are usually developed in the longer term and have, as a consequence, a longer-lasting impact in the context of climate change engagement compared to more intense but transient emotions like fear or anger (Brosch, 2021; Lu & Schuldt, 2015). However, understanding the intricacies of these emotional dynamics poses a challenge, as research often focuses on short-term intentions of behavioral change, and individuals may struggle to identify and express the emotional triggers for their engagement (Ojala, 2023).

Climate change communication has often relied on mass media to reach wide audiences, but this approach may not be as effective as initially thought. Research from the health field suggests that media campaigns have limited success in changing behavior. Being, for some communities, less personal than health issues, climate change may face even greater challenges in engaging audiences through media channels (Moser & Dilling, 2011). That is why the role of culture, particularly in the realm of social media and the arts, stands out as a pivotal factor in shaping emotions and perceptions (Yale, 2023). Even more so, when recognizing the importance of discrete and ambiguous emotions, the potential of the arts becomes undeniable since they have the power to convey nuanced emotions through sensory and metaphorical experiences (Le Grelle, 2022). Both the fields of psychology and climate change communication call for a shift toward more experiential knowledge, such as participatory arts and collective creative engagement, to instigate a cultural shift and foster a worldview change (Burke et al., 2018). This approach invites the imagination of new worlds and aesthetics, aligning with the idea that cultural and experiential shifts are crucial in shaping attitudes toward climate change and driving meaningful action (Rolfe-Redding, n.d.).

3. Social Movement Theory

In the field of Climate Change Communication, it is acknowledged that communication alone has limitations in effecting actual behavioral change and environmental justice action. The focus often turns to collective action, considered the most impactful by these academic disciplines (Clayton et al., 2015; Spitzer & Fraser 2020). A deeper dive into Social Movement Theory is warranted as it has been historically crucial for instigating change. Jaspers (2011) combines Social Movement Theory with the analysis of emotions in Climate Change Communication to understand the drive of collective action. One particularly interesting aspect is the development of what the author calls a “Moral Battery,” highlighting the importance of combinations and interactions of emotions in motivating action. One such category involves positive and negative emotions, creating tension or contrast that demands attention and spurs action. A generic moral battery combines hope for future change with present suffering, creating a compelling contrast that motivates protest and political action. This understanding of emotions in social movements provides a good visualization of the points discussed in the previous section.

In a more classic fashion, Sen & Avci (2016) provide an interesting outline of various theories explaining the emergence of social movements. The Deprivation theory posits that movements arise from a lack of something, such as low salaries for example. Resource mobilization theory suggests that available resources drive movements, with human resources sometimes even outweighing economic resources. Political process theory emphasizes a receptive political landscape, while structural strain theory lists six factors influencing a movement’s success. The factors include deprivation, recognition of the issue, an ideology that provides a solution to the issue, an event that boosts the issue into greater mobilization, a receptive political landscape and enough resources. Sen & Avci underline that, sometimes, research intriguingly shows that none of these theories can explain the emergence of social movements, as cultural factors are seen to outweigh the factors of each theory.

In the context of environmental movements, Stern et al. (1999) integrate psychology and social movement theory to propose a theory highlighting the significance of intrinsic altruistic values. This aligns with Climate Change Communication and Psychology findings, emphasizing that individuals engage more specifically in behavioral change when based on values, beliefs, and personal norms. Bunnage (2014) provides additional insight by examining individual engagement in social movements over an extended period. Three axes—individual characteristics (resources, biographical identity, commitment, and efficacy), identity characteristics (collective identity and social network embeddedness), and organizational structures (organizational characteristics and capacity)—are identified as influential factors. The study concludes that interactive relations between the organization and participants, as well as among participants, contribute to sustained engagement. Activist identity, the dynamics of commitment and efficacy, and individual perceptions of political work and its meaning also play influential roles.

4. Collective Action Theory

Current literature in the field of Collective Action contends that this work often goes unnoticed despite its crucial role in effective environmental justice initiatives. The research identifies a gap, indicating an excessive focus on individual action thereby neglecting social aspects (Bamberg et al., 2015; Heiskanen et al., 2010). This aligns with previously mentioned findings, highlighting that collective action is the most impactful form of environmental engagement (Clayton et al., 2015).

Two pivotal figures in Collective Action Theory, Elinor Ostrom and Mancur Olson, have made substantial contributions to the field. Their studies focus on managing common pool resources (CPRs), such as rivers or mountains, demonstrating globally how trust, reciprocity, and cooperation are crucial for optimal CPR management (Ostrom, 1990; 2010). Ostrom’s research highlighting trust, reciprocity, and cooperation as key collective action strategies aligns with findings from Olson. Olson calls these ‘core relationships’ and says they are the main reasons people become involved in environmental actions. This refutes the neoliberal economic idea which suggests that CPRs can only be managed through privatization. Notably, in contrast with modern worldviews, Ostrom’s research underscores human adaptability and the capacity to envision alternative worlds. She emphasizes the importance of experimental research in testing various variables at different levels. It is important to note that subsequent researchers have reevaluated their studies (Cox, 2010), raising questions about viewing nature merely as ‘goods’ with ‘services for humans,’ and cooperation through the lens of ‘games’ with winners and losers.

Considering that social aspects play a crucial role in collective action, it is intriguing to delve into how that interaction is articulated. Geiger & Brick (2023) present the core social motives model, categorizing social psychological theories into five fundamental motives.

- ***Belonging*** emerges as a key factor, supported by research demonstrating that conformity becomes the option with the least social risk when individuals lack strong motivation from other factors. Building on Ostrom’s research, another vital way in which belonging can drive collective action is that cooperation occurs within groups that uphold norms supporting collaboration.

- ***Understanding*** is identified as another core social motive integral to engaging in collective action. This understanding, however, is not superficial; it must be shared with other people they value and trust. Barriers to this understanding can exist particularly in the context of climate change. An example of this is the tendency of individuals to avoid existential threats: people are more motivated to comprehend the world in a way that feels safe, reducing anxiety around their mortality. Given that issues like pandemics and climate change that require collective action to be addressed represent existential threats, (mis) information and narratives downplaying their severity can be psychologically appealing.

- A factor shown in the previous sections on Psychology and Climate Change Communication is self-efficacy, described by Geiger and Brick (2023) as ***control***.

- Another potent social factor identified in this work is ***self-enhancement***. Self-enhancement can be understood as individuals striving toward self-improvement. This motive can drive action on issues collectively valued by society. However, the risk here is that individuals may also boost self-esteem by rejecting threatening information.

- Lastly, ***trust*** (mostly of in-group elites and one's social network) is a pivotal factor emphasized by Geiger and Brick (2023) and also seen in Climate Change Communication and Ostrom's research.

The realm of Collective Action has also witnessed an exploration of emotionality, with contributions from scholars such as Bamberg et al. (2015), Lu (2021), and Stollberg & Jonas (2021). These researchers delve into the interplay of psychological factors and emotionality, particularly in the context of collective action. While significant overlap with the other fields is noticed here, *social identity* and *moral outrage* emerge as the most prominent factors that exert substantial influence within the collective action framework.

Building on this foundation, within the domain of Climate Change Communication, anger is highlighted as a crucial factor driving climate change activism, demonstrated by Gregerson et al. (2023). Della Maggiore (2023) corroborates this assertion by identifying anger as a predictive force behind activism. The research underscores the recent surge in climate change movements and draws connections to historical social movements marked by tactics such as civil disobedience and sabotage, seemingly propelled by a profound sense of rage. While acknowledging the potential of anger to mobilize action, Della Maggiore (2023) emphasizes a nuanced perspective. The author contends constructive change cannot be sustained solely on blind and uncompromising rage. Instead, the emphasis is placed on *shared anger* rooted in the violation of *shared values*. It is posited that this shared anger grounded in a collective feeling of values being compromised may serve as the most potent catalyst for driving meaningful collective action. This nuanced perspective recognizes the potential of anger as a powerful force for change, while underlining the importance of a collective and constructive approach required to address complex issues.

5. Education and Youth

The younger generation is a leading force in advocating for environmental justice (Chazan & Baldwin, 2019). Consequently, it is imperative to explore the factors that ignite environmental justice action among youth, examine the role of education in shaping these actions, and understand the impact of role models.

Maria Ojala has extensively explored emotions within the realms of Psychology and Climate

Change Communication, as mentioned in the earlier section. Ojala's research from 2012 and 2015 also delves into the disparities in the influence of emotions on adults and adolescents. Ojala demonstrates how the younger generation copes differently, establishing a relationship between emotions and engagement. Notably, fear, previously considered a potential driver of action, is identified as more paralyzing for adolescents than for adults. This observation can be rationalized by previously mentioned insights: the idea that worldviews wield immense influence on engagement, and younger individuals may possess less firmly established worldviews, necessitating a greater emphasis on existential and constructive hope (Baker et al., 2021; Ojala, 2012).

Notably, fear, previously considered a potential driver of action, is identified as more paralyzing for adolescents than for adults.

Moreover, self-efficacy emerges as a critical driver for youth, since adolescents often grapple with self-doubt and may distance themselves from fearful issues (Cherry, 2021). The literature proposes to foster an increase in self-efficacy among young people through the use of imagery, through association with role models (Cherry, 2021), and using community engagement and participation as tools within educational initiatives (Li & Monroe, 2017).

Vandaele and Stalhammer (2022) underscore the significance of constructive hope among the youth. They also emphasize the importance of overcoming the binary classification of emotions into positive and negative. They highlight the nuanced and ambiguous nature of emotions, stressing the crucial role of negative emotions. Particularly noteworthy is the role of teachers and educators, which is identified as essential in supporting youth in processing these emotions; they should acknowledge and accept negative emotions rather than attempt to counter them exclusively with positive messages of optimism. Vandeale and Stalhammer emphasize the need to create educational spaces for processing emotions evoked by climate change information. In their research, teachers emerged as influential factors in the understanding and engagement of climate change, especially when trust is cultivated in collective potential and external actors, thereby enhancing students' perceived self-efficacy. Also demonstrated in the research of Ojala (2023), Vandeale and Stalhammer emphasize how engagement itself plays a role in fostering hope among the youth.

Building on the acknowledgement of educators as crucial in the processing of emotions among youth, Baker et al. (2021) underline the need for resources and guidance for parents and teachers to discuss climate change with children. Their research advocates for integrating emotional aspects of climate change into educational curricula, promoting constructive hope. Avoiding dismissal of children's concerns and engaging in honest, age-appropriate discussions is important. This emphasis on creating space for emotions is further underscored by Campbell (2008), who suggests that making room for open discussions in the classroom is a strong factor for civic engagement.

PART 2.
The Impacts of Arts and Culture: Key Takeaways

Paradigm shifts are leverage points for systemic change. Arts and Culture are crucial tools and practices for paradigm shifts.

- Historically, the role of arts in social movements has been huge.
- Imagination, wonder and metaphorical experience is what makes the arts and culture necessary for the start of cognitive and emotional processes leading to action.

Artivism is effective in driving action.

- Artivism works simultaneously on two fronts: emotions and direct action.
- Artivism makes art political and recognizes the symbols and stories in politics.

The impact of imagery and visual arts is intense and intuitive.

- Imagery and visual arts raise saliency, not necessarily self-efficacy.
- Imagery and visual arts create a distant feeling and are important for memory.

Storytelling is an important tool for the construction of new paradigms.

- Storytelling should be included in scientific reports. More people would read it.
- Storytelling should not focus on how the world should look after being destroyed by climate change, as it normalizes the end state of the world.
- In the context of Environmental Justice, storytelling is crucial but more powerful if it changes its narrative structures to more unheroic and everyday life narrative structures.

Music has been an historically important art form for social movements.

- Music is a potent motivator for social identity, feelings of belonging and awareness and hence collective action.
- Music has always been present in protests and social movements.

Participatory arts is the most effective for action in the context of Environmental Justice, as it impacts and raises trust, collaboration, community and social innovations.

The previous section explored a holistic understanding of what is driving meaningful environmental justice action through diverse disciplines. This included the identification of the gaps and barriers currently required to be addressed to foster environmental justice engagement. Within these barriers, the potential of arts and culture becomes apparent (Roosen et al., 2018). Indeed, the diverse fields themselves point to more collective, creative, and experiential environmental engagement. For this reason, this section will explore what impacts of arts and culture can potentially help overcome these barriers, and ultimately foster environmental justice action.

1. Art-based knowledge

Literature based on knowledge coming from the arts brings together a broad understanding of the power and potential of arts and culture in climate change engagement. The question asked above already underlines the need for deep structural cultural changes. Indeed, climate change is not merely one of the various issues facing society; rather, it is a symptom of systemic structures that are broken (Scanlan, 2017). Consequently, change is needed at the level of worldviews and underlying paradigms embedded within society. This realization underscores the need to reframe climate change as "...an ethical, societal, and cultural problem that poses new questions and reconfigures the geographic imaginaries of the world" (Yusoff & Gabrys, 2011).

Before diving into more art-centered literature, it is valuable to look at how the idea of deep cultural changes necessary for environmental action is shared by another discipline used in Environmental Sciences: Systems Thinking. Systems Thinking emphasizes the interconnectedness of elements within a system and identifies specific points where small interventions can lead to significant and sustainable changes, known as leverage points. Cultures encompassing shared beliefs, values, and behaviors serve as integral components of social systems. Altering cultural elements is deemed a high leverage point due to the profound influence of cultural norms on individual and collective behaviors. Changes in culture often have cascading effects across various sectors of society, from education to politics and beyond. Changes in cultural values hence support abrupt shifts in social norms, leading to behavioral change (Meadows, 2009). The theory behind culture as a powerful tool for societal change can also be found in studies of art theory and even in history. "Both historical examples (such as the Civil Rights Movement in the United States) and research have shown that social norms can shift abruptly with small changes in cultural values." (Bentz & OBrian, 2019). David and McCaughan (2006) utilize art theory and history to demonstrate the arts as a means of dissent and a core element of revolutionary strategies. Moreover, art used for education and communication is also a great source of memory for preservation and creative ways of understanding the world.

Research by Bentz (2020) provides a practical application of these notions in the context of climate change. Their proposed framework distinguishes three levels of arts-based engagement with climate change: integrating climate change *in* arts, expressing **with** art, and learning *through* art. Each level offers a unique depth of engagement, from using art as a communication tool to fostering dialogue, and ultimately employing art as a transformative process. These three methods have different functions, yet all contribute to engaging in and with emotions (shown as crucial in the section on Education and Youth), stimulating community (identified as essential in Social Movement Theory and Collective Action), and expanding imaginaries of the future which is necessary for socio-ecological transformation.

Bentz and O'Brian (2019) also underline the importance of art-based methodologies in education and propose to shift the sender-receiver relationship towards co-production. Integrating the arts in a collective way can open up doors for a safe and trusting space of experimentation and imagination in complex issues. Yusoff and Gabrys (2011) also underpin the power of imagination in arts. They probe the research terrain of imagination through literature and film to demonstrate how artistic practices are critical for the representation of environmental change. Their work emphasizes that imagination is important for envisioning alternative futures, adapting to change, and challenging dominant scientific paradigms. Art has the power to make the intangible tangible. It has the power to visualize an ideal world. Moreover, the imaginative aspect of art can also enhance scientific understanding, bridging the gap between the often-disconnected spaces of sciences and arts. Kagan (2015) advocates for creating what they call *spaces of possibilities*, fostering spaces for artists and scientists to co-create, where artists can leave behind their traditional role as "heroes of independence" and scientists can recognize the value of knowledge in metaphorical, sensorial, phenomenological, and aesthetic form.

While wonder and creativity are not guarantees of successful social change, they empower individuals and communities, expand imaginations, and offer the possibility for change by raising more questions and perspectives to contemplate.

Knowledge created through artistic form brings a sense of wonder and imagination (Glaveanu, 2017). Creativity, particularly in the form of creative activism using public and socially engaged art, plays a crucial role in social change. Wonder as an emotion and experience is central to this process as it fosters creative action. This experience comprises two aspects: "wondering at" and "wondering about," which together stimulate creative action. This phenomenon has social, cognitive, and emotional implications for individuals and communities. Glaveanu (2017) uses examples of street art to illustrate how art can create collective experiences that bring wonder, contributing to social change, challenging normative views and inspiring reflection. While wonder and creativity are not guarantees of successful social change, they empower individuals and communities, expand imaginations, and offer the possibility for change by raising more questions and perspectives to contemplate.

More broadly, Roosen et al. (2018) highlight a simple but significant facet of art—when individuals observe artistic creations, a natural inclination toward mindfulness ensues, surpassing levels experienced during other moments. The act of viewing art prompts heightened attention, leading individuals to actively seek hidden meanings and associations within the artwork (Kaczmarczyk, 2014). Art, particularly in the context of highly original and memorable works, serves as a catalyst for individuals to engage in the process of (re-)constructing the intended meaning behind the artwork or the artist's intention. This process is especially pronounced when the social value of the artwork is acknowledged. However, it is key to note that different social backgrounds, perspectives, and life experiences can lead to different individual reactions to the same artistic creations. There is no one formula to guarantee the same reaction

of all individuals in a diverse group to art; similarly, the same communication piece can speak differently to different individuals. When creating communication around climate change, it is critical to curate the content towards the intended audience for maximum influence.

2. Artivism

Literature in art-based knowledge demonstrates that socially engaged art, particularly in the form of activism, plays a crucial role in social change. It is, therefore, interesting to look more particularly at the practice of artivism, which unites art and activism.

The Center for Artistic Activism (C4AA) has conducted extensive research on the landscape and meaning of artivism (Duncombe, 2018). Their research aligns with the literature mentioned in the previous section, that arts and culture contribute significantly to cultural transformation and gradual paradigm shifts. Consequently, artistic activism has a lasting impact, even if progress may be perceived as slow. C4AA emphasizes the crucial role of "artivism", drawing on cognitive psychology research that highlights how people understand the world through stories and symbols. This comprehension influences our behavior, challenging the conventional belief that politics are solely rational. In reality, politics are laden with symbols and stories that shape our understanding. Recognizing politics as a facet of culture opens up a new realm of action potentially more accessible than traditional avenues such as rallies or galleries.

Artivism, in its inherent multivalence, can resonate with diverse audiences, making its practice effective in crossing boundaries. It proves advantageous for media outreach, appeals to a broader audience, and fosters a more accessible avenue for taking action. The universality of culture and creativity underscores the shared foundation that connects us all, providing a common ground despite differences in building blocks. A beautiful example of this is the artivist intervention "Un violador en tu camino". This performance, mixing song and dance, was invented by Chilean feminists to demonstrate the violence of the patriarchal state (Guardian News, 2019). This performance resonated globally, resulting in women performing "Un violador en tu camino" in France as well as Mexico, Colombia, The United States, and Spain, just to name a few[4].

Shank (2004), in perhaps a more poetic manner, describes artivism as a means to change the hearts of people and also their minds. To initiate action, emotions—the effects—serve as the catalyst for change. However, for lasting impact, the cognitive aspect cannot be disregarded. Artivism becomes particularly intriguing as it operates on both the affective and cognitive dimensions, leveraging emotions (by using the arts to touch the affects) while also inducing cognitive understanding (by effective action) (Shank, 2004). C4AA refers to this as an "Æffective'' practice. This also emphasizes the importance of dialogue, talkback sessions, and distributing flyers either during or after artistic or cultural interventions to enhance cognitive understanding (Shank, 2004; Stammen, 2024).

In addition, the literature also underscores the innovative and disruptive force of artivism (Jordan, 2016). When artivist interventions are employed in the struggle against oppressive forces, it is the impact of surprise and originality that proves thought-provoking and has the potential to destabilize the audience. Perhaps this is why, as early as 1984, feminist, art critic, and activist Lucy R. Lippard described the wooden Trojan horse created by the Greeks as possibly the first documented artivist

[4] https://www.youtube.com/watch?v=s5AAscy7qbI

intervention. While this example may seem a bit extreme, it vividly illustrates the essence of what artivism can achieve: utilizing creativity and artistic forms in a disruptive manner entailing effective action.

Artivism is, therefore, an artistic tool deeply rooted in political engagement, provoking thought among those who witness it. Additionally, Jordan (2016) characterizes artivism as a potential cathartic and regenerative practice, which can be both beneficial and detrimental. It serves as a benefit by releasing psychological and emotional tensions, thereby enhancing well-being. However, relying solely on artivist practices for their cathartic effects might diminish the crucial political aspect of advocating for a cause. The artivist theater troupe, Lab of Rooted Imaginations (LRI), views it from both perspectives, describing their practice as "beautifying survival" (LRI, 2023). By this, they refer to reclaiming and enhancing survival and resistance strategies to respond both philosophically and practically to emotions that arise from living in times of collapse.

The universality of culture and creativity underscores the shared foundation that connects us all, providing a common ground despite differences in building blocks.

Sommer & Klöckner (2018) conducted research on the impacts of artistic interventions in policy spaces, incorporating psychological factors and emotions. The outcome of this study revealed that artworks with the most significant effects were those that addressed a relevant topic already present in people's minds. These artworks presented the subject in a surprising and engaging manner while simultaneously aligning with generally accepted values. The researchers also concluded that activist art should shift away from dystopian narratives and instead emphasize the interconnectedness of nature. They highlighted the importance and challenge of striking a balance between aesthetics and dystopian elements as well as conveying hope and happiness. This delicate balance evokes positive and negative emotions as well as cognitive factors, fostering a personal connection with the audience.

Ryan's (2014) research on artivist interventions nuances the balance between cognitive and emotional aspects in artivist literature, focusing on street art and stenciling during the 2001 crisis in Argentina. Ryan's case study intriguingly describes arts and culture as practices capable of "cognitively liberating" a society in times of collapse. This implies that in moments of total crisis and destruction, cognitive liberation is necessary before constructing new frames of thinking and new forms of organization. This aligns with the thesis of Bleiker (2009) that points to a gap in understanding a temporary crisis due to moral shock. In these moments, arts become crucial because of their non-verbal communication.

Furthermore, Ryan (2014) highlights the lack of research on the role of art in social movement building and its success. Questions such as those around the significance of songs during protests (e.g. the civil rights movement) remain underexplored. Academic research in social movement theory often leans towards cognitive and rational approaches despite the prevalence of non-rational behaviors during rallies and protests.

Raaber's (2022) comprehensive report on *environmental artivism* offers valuable insights for this literature review. The study underscores the necessity for a transformative shift in environmental artivism from a dystopian focus to a more sustainable and solution-oriented approach. Even though Sommer & Klöckner (2021) also affirm the imperative to shift away from dystopian artivism, the Center for Artistic Activism introduces a crucial nuance to this assertion. First, it emphasizes that existing research lacks conclusive evidence on this matter, with some studies presenting contradictory findings. Second, C4AA suggests caution in exclusively focusing on solution-oriented art. It contends that the creation of art involves not only the pursuit of solutions but also using it as a medium for expression – a vision to encompass both creativity and the darker emotions experienced in times of despair. Stripping away this duality may inadvertently stifle creativity. It implies the importance of avoiding overly rigid definitions of "good" and "useful" art, recognizing that art's inherent nature lies in its ability to transcend boundaries, fostering creativity, ingenuity, and imagination. Additionally, Raaber's research draws intriguing parallels between artivism, propaganda, and advertising, highlighting the historical roots of propaganda in communication and marketing research. It raises a pertinent point about the clearer goals and societal recognition enjoyed by marketing and propaganda professionals compared to artists working on environmental issues, emphasizing a financial disparity in the realms of activism. The report stresses the lack of societal recognition for art as a changemaker and calls for improved collaboration among environmental artivists to reinforce belief in the significance of their work. Ultimately, the thesis underscores the critical need to dispel negative framing, positioning environmental artivism as a positive tool driving social change, democracy, and sustainability.

The findings from Raaber's research also indicate potential health benefits, particularly for the younger generation grappling with ecological and climate anxiety. Raaber positions environmental artivism as an empowering tool for action, suggesting that understanding it in this light can help address and alleviate mental health concerns associated with environmental challenges.

In this uncertain future, embracing practices that allow for play, learning from mistakes, and creatively caring for our environment might be the non-violent approach necessary to ignite environmental justice action (C4AA, n.d.). The contagious dramaturgical talent of Martin Luther King and the innovative tactics of Cindy Sheehan[5] have demonstrated that infusing arts and culture into activism can regenerate the world during fearful and daunting times, as well as present an effective practice to connect with a diverse audience.

[5] Cindy Sheehan, a mother who lost her son in the Iraq war, gained widespread attention for her impactful protest outside the president's vacation home. While millions participated in street demonstrations against the American War in Iraq, it was Cindy Sheehan's innovative and creative approach that significantly contributed to shifting public sentiment against the war (C4AA, n.d.).

3. Imagery and Visual Arts

The emphasis on the potency and impact of imagery and visual art in the section on Education & Youth set the stage to delve further into this artistic practice that holds a pervasive presence in contemporary society.

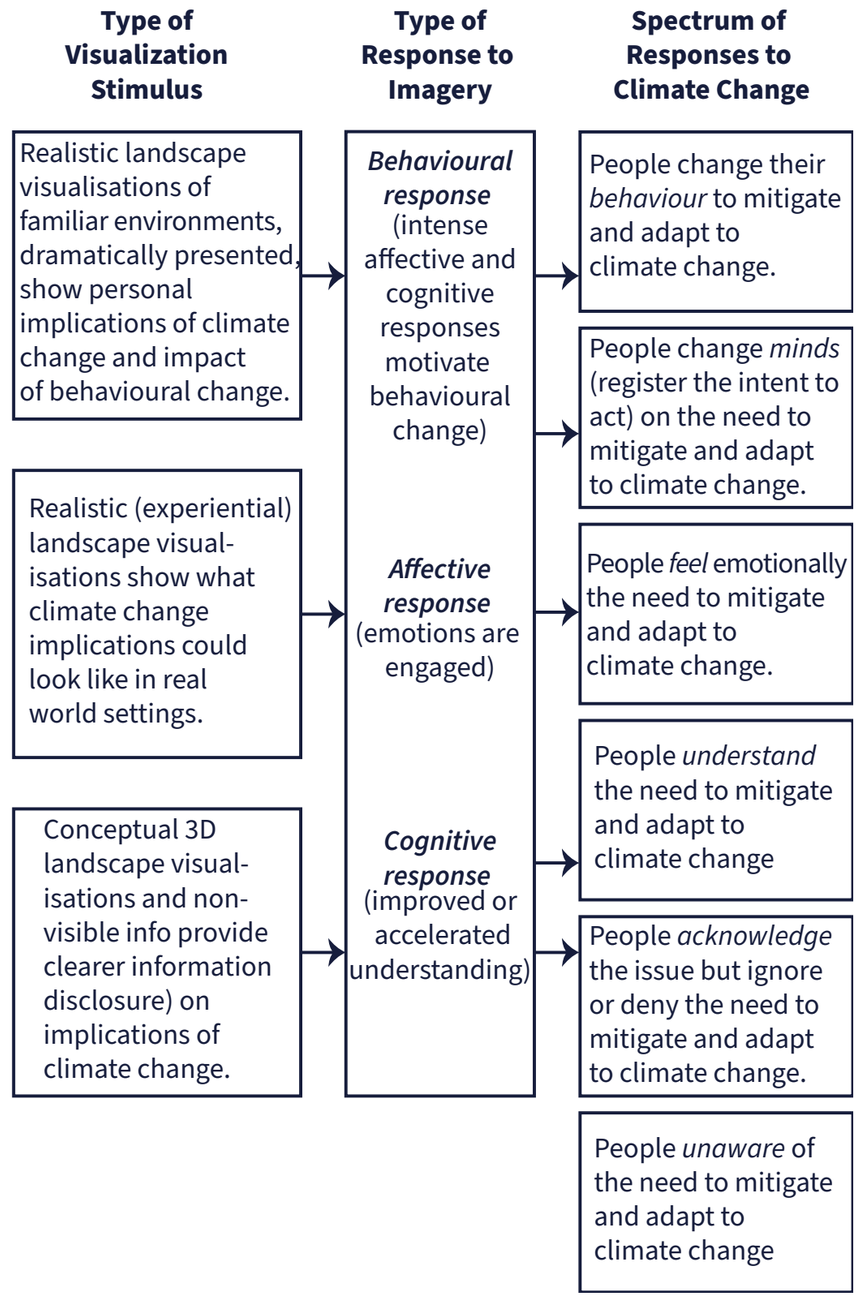
Sheppard's extensive research in 2005 demonstrates and establishes that visuals do indeed influence behavioral change. Furthermore, the research explores the visuals of climate change in detail, particularly focusing on 3D visualizations of landscapes. The statement, "We can envisage the range of perceptual and behavioral responses to visual information in the form of an ordered categorization moving from a low state of awareness through to action, which corresponds generally with a progression from cognitive processing of information, through emotional responses, to behavior change," (Sheppard, 2005) initially appears contradictory to the preceding literature that identifies emotions as a primary driver of behavioral change. However, these two perspectives can collide when considering that for profound change, both cognitive and emotional processes work like a ping-pong game, and are mutually inclusive factors. A better understanding of these types of processing might be found in the research of O'Neill (2013), who describes affects and cognition in climate change imagery as the following: "Whilst the cognitive processing system is rational, analytic, logical and deliberative, encoding reality in abstract terms; the experiential processing system is holistic, affective, fast and intuitive, encoding reality through imagery and metaphors." O'Neill (2013).

Furthermore, something noteworthy in the literature is the swift and intense immediate impact of imagery, surpassing other forms of art. However, Sheppard (2005) interestingly points out that while imagery may have a profound effect on understanding, this immediate impact does not necessarily translate to a quick effect on behavior. To better understand how to depict climate change disasters/content, Sheppard (2005) created a typology, as shown in figure 3.

Computer aid visualizations for the communication of climate change have been studied by Nicholson-Cole (2005). Their exploratory and qualitative study on the impact of images in climate change communication identified several factors affecting fostering environmental justice engagement. Meaningful visualizations depicting climate change futures could help bridge the gap between what may seem an abstract concept and everyday experience, making its local and individual relevance clearer. However, the representation of information affects an individual's interpretation and uptake, and how they see their present choices affecting their future and that of others.

Hart and Feldman (2016) and O'Neill (2013) researched the impact of images in newspapers regarding climate change. Their focus centered on the specific impact of saliency and self-efficacy, recognizing the crucial role of images in facilitating meaning-making for complex and for some abstract issues like climate change. The study sheds light on the political and contested nature of climate change images in newspapers, emphasizing their tendency to portray the issue as distant rather than a social and cultural phenomenon. Notably, the research suggests that while climate change images contribute to increasing saliency, they may not necessarily enhance self-efficacy. Interestingly, featuring politicians and celebrities in these images showed no discernible impact and, in some cases, even diminished the perceived importance of climate change. The explanation posited is a potential shift towards important local figures who inspire trust, contrasting with distant and high-profile celebrities.

Figure 3. *Typology visualization of climate change content (Sheppard, 2005).*



Hawkins and Kanngieser's (2017) research builds on Moser's contributions in Climate Change Communication literature, focusing specifically on the sensory and experiential impact of audio-visual arts. Their work aims to address the challenges of anthropocentrism, the perceived distance between the causes and effects of climate change, and the often intangible nature of climate change. Their research concludes that incorporating sounds can enhance the experiential foundation of art consumption. It suggests that even works with intriguing and somewhat complex elements can be effective at communicating the message. A related study exploring multispecies futures investigated a combination of audio, virtual reality, and live performance to gauge its resonance with individuals. Le Grelle's (2022) research found that the amalgamation of visuals, audio, and live interactive performance had a robust and enduring impact on people. While acknowledging that art alone may not spur people into action, these studies emphasize the potential of immersive and interactive arts, highlighting the importance of a dialogic practice proven by the literature in the Climate Change Communication section.

> ***Notably, the research suggests that while climate change images contribute to increasing saliency, they may not necessarily enhance self-efficacy.***

4. Narrative and Storytelling

The findings presented up till now, along with everyday intuition, underscore a key takeaway - *communicating on climate change solely through scientific reports is not enough for the audience to grasp and internalize the impacts of this crisis, let alone encourage engagement in environmental justice action*. It is therefore interesting to explore the discipline of storytelling and understand the power of narratives in conveying the complexities of climate change.

As the Climate Journal (2023) states, climate storytelling is a powerful tool for driving change by making climate impacts relatable, visualizing solutions, transcending political divides, and envisioning collective action. These narratives must remain truthful and grounded in scientific fact but these facts need to be turned into stories to make them relatable and connect with shared values. Moreover, emotional elements like drama and hope resonate more deeply with audiences, while imagery and metaphors make stories memorable and actionable.

While the exclusive reliance on scientific reporting for climate change communication has faced opposition, it remains a delicate subject. In an era of conspiracy theories and climate skepticism, there is a prevailing concern about maintaining objectivity, often favoring a strictly rational, dry, and scientific communication approach (Le Grelle, 2022). For example, Bloomfield and Maktelow (2021) advocate for increased storytelling in the reports of the Intergovernmental Panel on Climate Change (IPCC). Their argument gains credence from extensive research supporting the effectiveness of storytelling in climate change communication, potentially leading to significant behavioral changes. Bloomfield and Maktelow propose incorporating relatable characters in IPCC reports, including everyday individuals, admired celebrities, and more abstract characters such as "humanity". However, they caution against portraying characters as overly heroic, emphasizing the importance of making the narrative accessible to encourage the belief that regular people can achieve significant progress. They also advocate for incorporating metaphors and analogies to enhance understanding of data-centric scientific material.

Character building is a topic that often comes to light in Storytelling literature. The literature offers diverse perspectives regarding the journeys of characters within narratives. For instance, The Climate Journal (2023) introduces the Hero's Journey narrative structure, evident in climate documentaries and youth climate movements. This approach seeks to empower audiences by framing climate action as a personal journey with a hopeful resolution. In contrast, Veland et al. (2018) contend that to bring about profound cultural shifts, narrative structures should aspire to the co-creation of new stories and challenge existing character-building strategies. Veland et al. (2018) thus advocate for new narrative structures that truly transform existing perceptions of the world. This is inspired by Le Guin's disruptive essay, "The Carrier Bag Theory of Fiction" (1996), which challenges traditional narrative structures by advocating for an alternative approach that centers on the "carrier bag" rather than the hero's journey. The carrier bag symbolizes a more communal and nurturing approach to storytelling. Le Guin suggests that instead of narratives driven by conflict, conquest, and a hero's individual triumph, stories can be seen as containers, like bags, that hold a diverse array of elements and experiences. These elements include not only heroic deeds but also the everyday, the mundane, and the collective aspects of life.

Aside from character-building, the incorporation of imagery, symbols, and iconography is highlighted as a potent element in storytelling literature. Otto (2017) underscores the significance of this addition, particularly when integrating images into storytelling. Otto believes in the potential of digital storytelling as it offers a lived and experiential approach to understanding climate change. Moreover, Otto underscores it as a vital interdisciplinary and participatory educational tool.

In a different light, Jackson (2015) offers a distinctive focus on the narratives surrounding glaciers, particularly in the context of *ruin*. This exploration extends beyond traditional mediums, with cinematic portrayals, performing arts, and paintings. The overarching thesis posits that narratives depicting glaciers' melting contribute to the normalization of a world without these icy formations. Jackson contends that *ruin* narratives, while prevalent, tend to normalize and desensitize audiences by projecting a future state devoid of glaciers. Jackson emphasizes the need to shift focus to their present state and their condition before the onset of melting. Similar to findings in artivism and art-based knowledge, Jackson also highlights the transformative power of the arts, suggesting that what is imagined can be materialized, providing a tangible form to the imagination. Jackson introduces a more cynical note by using the narrative of melting glaciers as a broader representation of the climate change narrative, with the reminder to avoid the ability of storytelling to normalize a world without humans.

5. Musical Art

The findings presented up till now, along with everyday intuition, underscore a key takeaway - *communicating on climate change solely through scientific reports is not enough for the audience to grasp and internalize the impacts of this crisis, let alone encourage engagement in environmental justice action*. It is therefore interesting to explore the discipline of storytelling and understand the power of narratives in conveying the complexities of climate change.

Several major studies demonstrate that music brings people together with similar emotional reactions, cultivating group identity (Flacks, 1999). In other words, participating in musical events brings about common reactions, physical movements, and bonding among group members by connecting individuals to a higher purpose than oneself (Andreoni, 2020). Therefore, when considering climate change issues, the role of music remains significant for social bonding to raise awareness for environmental justice and foster action.

Music may not be constrained to specific genres, such as jazz, rap, hip-hop, or classical music; rather all types of music-related activities may carry the same effects and creativity in relation to environmental justice action. It is, however, possible to distinguish between verbal (i.e., songs with lyrics) and non-verbal (i.e., instrumental music), though both types hold the power to spread the message concerning climate-related issues. Verbal music may have a greater impact on carrying and spreading a message since lyrics can be understood easily and increase one's emotional involvement (Zbikowski, 2002). A remarkable series of musicians engage in this and push for change through their work. Looking at some of the greatest recent examples, "Feels Like Summer" by the artist "Childish Gambino" (Donald Glover) comes to mind, given that it has more than 600 million views on YouTube and Spotify combined since 2018. The song stands out for underlining environmental effects that can be felt in daily life: *"You can feel it in the streets/On a day like this, the heat/It feels like summer/ Every day gets hotter than the one before/Running out of water, it's about to go down/Air that kill the bees that we depend upon/Birds were made for singing, wakin' up to no sound"* (n.d, 2023). Meanwhile, the music video of this song presents numerous celebrities in animation, which contrasts with the environmental message the lyrics carry. Yet, some consider this dissonance as intentional, suggesting that the video's focus on celebrities diverts attention from the song's message; much like how people's fixation on celebrities can overshadow more urgent global concerns like climate change in the current social realm.

Another great example is the "Beethoven Pastoral Project" which took place in Germany in 2020 during the UN's Environment Programme's World Environment Day (Schild, 2019). Based on Beethoven's "Pastoral", this piece was publicly dedicated to nature as an expression of emotions and country life. Meanwhile, under the Pastoral Project, the song became a starting point and a symbol for a worldwide art project for environmental justice (Fulker, 2017). As a result, the project's most important goal is to create a space for communication between the participants through a new work of art allowing them to express ideas and emotions toward climate change through music (Andreoni, 2020).

Aside from raising awareness, can music also be a catalyst for action? As Pieri suggests (2024), music plays a crucial role in identifying clear grievances of environmental deterioration and governmental inaction regarding the climate emergency. For instance, the role of music during Extinction Rebellion (XR) protests highlights how music articulates solutions by stressing the vital importance of respecting scientific findings and promoting the involvement of citizens' assemblies in shaping governmental decisions (Pieri, 2024). Music advocates for direct action and rebellion to address these issues in social movements by amplifying specific feelings such as belongingness, therefore, it may inspire action to tackle climate change issues (Pieri, 2024).

As Pieri suggests (2024), music plays a crucial role in identifying clear grievances of environmental deterioration and governmental inaction regarding the climate emergency.

As seen in the protests under the XR movement, music is a potent tool for evoking emotions and bringing different communities together to share a collective identity. In this analysis, XR's music serves two functions: first, as a deliberate strategy (i.e., a framing mechanism) for expressing fundamental grievances and proposing corresponding solutions, and second, as a unifying mechanism fostering solidarity and collective identity among its members. (Rosenthal, 2008, p. 12). According to Bernstein (1997) and Whittier (1995), the boundaries of social movements evolve as their collective identity is negotiated, as movement actors often reach beyond their own identity groups. For example, music in drag queen performances plays a crucial role in shaping collective identity but also reaching out beyond its identity groups. As analyzed by Myers and Reger (2008), these musical performances are used to create solidarity and collective agency among queer communities and to forge connections with people who have a heterosexual identity. The unified sense of "us" and "them" is employed in addition to the music as a means to express their marginalized identity.

To illustrate, the Stonewall Riots in 1969 galvanized marginalized communities and led to the emergence of activist organizations defending the LGBTQ+ rights movements in the USA (Garcia, 2018). These riots also paved the way for the discovery of disco music that transcended racial and sexual boundaries. In the 1970s, nightclubs or discotheques with disco music emerged as places where people could express themselves freely and distance themselves from discrimination such as poverty, racism, and homophobia, especially in cities like New York and Philadelphia. As seen in future riots and the years since, disco music and other genres have the capacity to foster a sense of community and challenge discrimination within communities (Kopaniecki, 2022)

This historical example underscores the power of building community and resistance in effecting social and cultural shifts, a lesson applicable to contemporary challenges in climate action. These marginalized communities gathered around music to advocate for their rights and find solace in shared spaces, fostering a sense of belonging and empowerment. Similarly, community-driven climate action can amplify diverse perspectives and foster collaboration toward more just futures.

Music also can serve as a platform for environmental advocacy itself, urging artists and organizers to form collective action in the music industry. Concerts and tours can inadvertently contribute to the climate crisis, necessitating advocacy for sustainability among musicians, organizers, and fans to drive progressive change (UNEP, 2022). Recent initiatives by notable singers such as Billie Eilish, Lorde, and Jack Johnson have pushed organizers to consider the environmental effects of concerts and events. Another interesting initiative is DJ's 4 Climate Action – a group of DJs worldwide using music and DJ culture to raise awareness and mobilize action on climate change. This group organizes events, produces music inspired by nature sounds, and collaborates with environmental movements, leveraging the power of music to inspire environmental activism and promote eco-friendly events such as Earth Night (Hicks, 2021).

These examples demonstrate the potential of music to amplify environmental messages, engage diverse audiences to create shared values, and work toward environmental justice. This perspective resonates strongly with the interdisciplinary nature of Climate Change Communication, emphasizing the significant role of emotions in shaping individual and collective responses to climate-related issues. With its ability to evoke emotions and create shared experiences, music aligns seamlessly with these effective communication principles, making it a potent force in mobilizing communities towards climate action.

6. Participatory Arts

The previous sections in this study consistently highlight the positive effects of participatory arts as crucial for change. However, specific research on the impact of participatory arts is currently lacking. Existing literature emphasizes its potential and importance without offering clear and specific insight into the subject.

As contained earlier in this report, Burke et al. (2018) advocate for increased involvement in the arts, specifically participatory arts, to bridge the affective gap identified in Climate Change Communication. Their research demonstrates that participatory arts have the potential to bring people closer together, fostering shared values and community. Moreover, participatory arts enable people to engage more intimately with artwork compared to exhibitions where observers maintain a distance from the art.

Munshi et al. (2020) reach a similar conclusion, although they employ different argumentative pathways. As climate change is to become more locally and personally relevant, the key pillars of value, place, and agency must be addressed through deliberative and participatory artistic processes. While the framework offers valuable insights into structuring civic engagement efforts in the context of participatory arts for climate action, it primarily serves as a conceptual foundation and may require further exploration to understand its practical implications.

This is where case studies can provide additional value. For example, Curtis's (2006) case study looks into the impacts of the Bungawalbin Wetlands Festival organized by the Bungawalbin Catchment Management Group in Australia to conserve the wetland system. The arts played an important role in creating an atmosphere that enhanced the overall wetlands experience, with music and performances playing a particularly significant role. Artwork created collectively by school children facilitated learning about the

wetlands' importance. The arts introduced an affirmative and celebratory component to the event, fostering a sense of cooperation and connection among different communities and building a shared narrative of the wetlands. Engaging in participatory arts as a way to foster a sense of community and shared values also means reinforcing community-led initiatives. As mentioned by the IPCC (IPCC, 2022), community-led initiatives are at the forefront of environmental justice understanding and action, known for their social innovation and imagination. Arts and culture can play a role in strengthening these communities, fostering cooperation, and enhancing understanding within and between communities and their environments.

Curtis et al. (2014) demonstrate that arts and culture, when practiced collectively, can have a significant impact on morals, beliefs, and community engagement.

Ryan (2016) draws on emotional geography, social aspects of climate change, and public participation literature to demonstrate how emotions played a role in a public participation initiative in the town of Londonderry as it recovered from Tropical Storm Irene. The study introduces "emotive-physical storytelling," which involves storytelling, emotion, and body movement. This exercise fostered trust and interpersonal connections among facilitators and residents, laying the foundation for flood resilience planning. The paper argues that innovative public participation methods can evoke positive emotions like hope, responsibility, care, and solidarity, which, in turn, have the potential to inspire adaptive action and spark transformative change.

A long-term beneficial effect of arts is the regeneration and fostering of human connections. Curtis et al. (2014) demonstrate that arts and culture, when practiced collectively, can have a significant impact on morals, beliefs, and community engagement. When individuals feel deeply connected and learn experientially rather than solely through cognitive or individual means, collective engagement tends to be much higher in the long term.

Marginalized communities that have endured oppression for decades, standing, fighting, and remaining resilient offer a lot to learn. The practices of these people often put arts and community at the forefront. Monet and Agnew (2018) provide a compelling example in their discussion of their love story intertwined with their life's work. Working at the core of their African American community, they have utilized participatory arts as a means to build a social movement, illustrating the power of the Black community to promote community engagement, forge ties, and contribute to participatory arts and social movements.

In conclusion, participatory arts emerge as a prominent means to foster engagement in environmental justice action. The literature is limited perhaps because participatory arts are inherently multifaceted. Participatory arts are a form of artistic expression wherein the audience or community actively engages in the creation or experience of the art itself, with direct involvement, collaboration, and interaction between artists and audience or community members. This engagement can manifest in various forms, from interactive installations to community-based projects, workshops, and performances that invite active participation in the creative process.

PART 3.
Measuring the Impact of Arts and Culture: Key Takeaways

Rethink Metrics and Expectations.

- Metrics for the impact of arts and culture cannot be measured in the same way as other fields; evaluation expectations need to lower.
- Alternative metrics should be multi-level, process-based, and iterative.

Adopt Process-Driven Methodologies.

- Methodologies should focus on the process rather than outcomes, emphasizing the journey over the destination.
- Best practices should be context-specific, combining various methods and considering long-term effects.

Gather Data in a Participatory Manner.

- Organizations would develop best practices by gathering data in a participatory manner, involving stakeholders throughout the evaluation process.

Numerous entities, including the Arts and Humanities Research Council, Animating Democracy, C4AA, Climate Advocacy Lab, Learning for Action, ORS, and The Culture Group, along with scholars like Belfiore & Bennett (2007), Reed et al. (2022), and Stern & Seifart (2009), have delved into the intricate challenge of assessing impact in the realms of arts and culture. The ongoing debate surrounding the feasibility of capturing artistic and cultural impact through evaluation methods reflects a lack of consensus, as emphasized by the Center for Artistic Activism: "The truth is that there is not a unified opinion when it comes to a theory of change, nor how artistic activism works, nor if one can even measure its impact," says Duncombe (2018).

The intricate, individual, psychological, and emotional nature of the "aesthetic experience" may render it impossible to accurately demonstrate impacts. According to Belfiore & Bennett (2007) and Duncombe (2018), developing a rigid protocol for assessing the impacts of the aesthetic experience, simplified into a few bullet points as a user-friendly "evaluation toolkit" may not be feasible. However, certain organizations have sought to provide such toolkits, offering reports on their evaluation experiences and creating applicable templates, worksheets, and guidelines for diverse aspects of arts and culture impact measurement (Dwyer, 2008; Korza & Bacon, 2011; Kingston, 2020; Learning for Action, 2013; Reisman & Olazabal, 2016 ; Stern & Seifart, 2009). However, despite the challenges, measuring cultural impact from the arts is considered a worthwhile task. As highlighted by Osborne (2014), there is a sentiment that "Culture is too potent a force to go unorganized and be allowed to slip through the cracks between arts funding and social justice funding." The following section explores current trends and recommendations derived from multiple perspectives.

1. Metrics

Many organizations and scholars discuss the challenge of defining metrics to adequately assess the success of artistic and cultural initiatives. Metrics used in other evaluations are typically less relevant to this work. More commonly, the success of an initiative is determined through financial analysis (Reisman & Olazabal, 2016) or single-factor accountability measures from funders (Crossick & Kaszynska, 2016). More multifaceted evaluation metrics not based on profitability or funder accountability can also miss the mark when it comes to arts and culture impact. In a recent work attempting to bridge the gap between climate scientists and climate change activists/practitioners, the authors discuss the inadequacy, unavailability, or inappropriateness of the metrics utilized by each group for the other (Reed et al. 2022). For example, while it may be appropriate for scientists to document climate change by examining yearly local rainfall patterns, the same metric is not as impactful to convey the urgency of climate change and spur climate action in the same community (Reed et al. 2022).

> ***Adopting appropriately scaled expectations in arts and culture is pivotal, as expecting causal or more typical outcomes can undermine evaluators' ability to effectively showcase the impact of the arts (Animating Democracy, n.d.).***

Overall, the impacts of arts and culture are not readily quantified via traditional measures. As the Kingston (2020) expresses "Where do wonder, awe, emotion, learning, influence and change fit on the spectrum?". Artistic and cultural activities are unique in their emotional, creative, and transformative qualities. Rather than deny this fact, the literature argues that they should be evaluated by recognizing these aspects (Animating Democracy, n.d.; Crossick & Kaszynska, 2016; Duncombe, 2018). Consequently, many organizations advocate for a reconceptualization of evaluation metrics, goals, and expectations of arts and culture. Rather than assigning value to certain kinds of metrics, practitioners and employers of arts and culture should "right-size expectations" (Animating Democracy, n.d.) that relate directly to the type of work being done.

Animating Democracy underscores the significance of establishing relevant and feasible expectations, noting that arts practitioners and funders often set unrealistic expectations for social outcomes, especially at the project level. This tendency creates conditions for "failure" and complicates proving causal relations between the outcomes and impact of arts and social justice work. Adopting appropriately scaled expectations in arts and culture is pivotal, as expecting causal or more typical outcomes can undermine evaluators' ability to effectively showcase the impact of the arts (Animating Democracy, n.d.). The formulation of metrics should be tailored to the initiative's specific context, approach, and content, as advocated by Belfiore & Bennett (2007) and Gienapp et al. (2021). For example, a successful climate justice initiative may entail changing cultural norms (Conrey, 2018) or shifting the narrative around a particular topic (Climate Advocacy Lab and Gienapp et al., 2021), rather than directly reducing greenhouse gas emissions.

2. Levels of Impact

While the literature points to a necessity for re-calibrating goals, expectations, and metrics, this process introduces fresh challenges. In the absence of conventional evaluation metrics, what alternatives do exist? For example, what metrics characterize things like narrative change or cultural norm movement? (Climate Advocacy Lab, n.d.; Conrey, 2018) And where should practitioners and employers of arts and culture draw metrics from? As the Animating Democracy guide indicates, demonstrating causal impact and distinct outcomes is often difficult in arts evaluation (n.d.). While organizations often rely on engagement data as a convenient and accessible method to gauge impact, it is crucial to recognize the limitations of such metrics in providing a comprehensive understanding of the true effectiveness of artistic initiatives (Conrey 2018; Kingston 2020; Learning for Action Report 2013). To develop meaningful metrics, there is a need to go past surface-level engagement statistics and examine more nuanced indicators (Conrey, 2018; Kingston, 2020; Learning for Action Report, 2013).

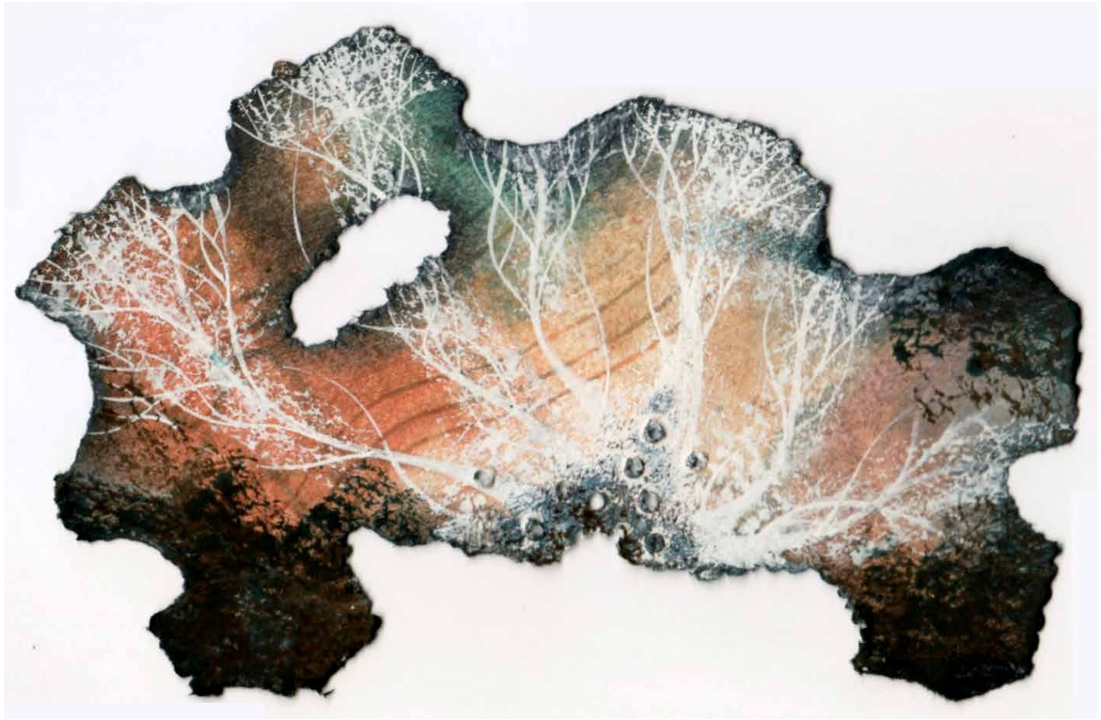
To do so, several sources suggest that arts and culture evaluation should consider many different levels of impact, and utilize an iterative, process-based assessment (Animating Democracy, n.d.; Dwyer, 2008 ; Gienapp et al. 2021, Kingston, 2020; Stern & Seifart, 2009). This approach helps to go beyond simple engagement statistics and grasp the wide range of potential impacts of arts and culture. This impact can originate in and permeate through many different levels of society (Korza & Bacon, 2011; Crossick & Kaszynska, 2016; Kingston, 2020; Stern & Seifart 2009). Sources like the Arts and Humanities Research Council discuss how cultural and artistic value is often found in "spillover" effects (Crossick & Kaszynska, 2016). They argue that, to accurately assess arts and culture, the focus should shift investigation into how to capture these indirect impacts.

The existing literature provides several frameworks outlining the varied impacts of "spillover" effects. Te Papa's Audience Impact Model encourages evaluators to examine impact at many levels – personal engagement and reactions, information spread through friends and family, group and community action, and national impact (Kingston, 2020). A similar model asks evaluators to consider change at the individual level, new ideas introduced into common spaces, collective action, and high-level, systematic change (Climate Advocacy Lab, n.d.). Others suggest a model that examines engagement not just at the participant and the organization levels but also considers colleagues, partners, community, and neighborhood trends, ultimately resulting in the development of a shared, comprehensive regional database (Stern & Seifart, 2009). Finally, one model focuses on the development and depth of impact by examining change across various sectors (Korza & Bacon, 2011). "The continuum of impact" proposes a range of categories to inform evaluation indicators and metrics: knowledge,

discourse, attitudes, capacity, behavior and actions, conditions, systems, and policies (Korza & Bacon, 2011). These sources all present different strategies and frameworks for impact. Nevertheless, a common thread among them is the need to consider levels of impact and derive metrics from various sectors, audiences, and depths of engagement to comprehensively capture impact.

3. Process-Based Evaluation

In addition to looking at different levels of impact, the literature reviewed here suggests *process-driven* assessment, rather than *outcome-driven*, to mirror the artistic process itself (Animating Democracy, n.d.). A study of nearly 60 artivists echoed this statement (Duncombe, 2018), advocating for a collaborative, process-based evaluation style that invites practitioners, funders, and stakeholders to consider value and impact *throughout* the artistic process. They assert that evaluating artistic work is more effective when it involves artists *during* the creative process, rather than external evaluators assessing impact *after* the work is completed. They argue that arts practitioners are best equipped to understand and evaluate the impact of their own work as they create it, as opposed to relying on external judgment post-completion. Evaluating the impact and effectiveness of activities throughout the artistic process also allows its influence to be strengthened as it happens, rather than making corrections after the fact (Duncombe, 2018). Impact goals can be revised incrementally by "real-time" assessment in this process-based evaluation style (Gienapp et al., 2021). By focusing on iterative evaluation, evaluators can be more aligned with the way arts and culture actually function, rather than imposing an outcome-based structure incongruent with the artistic process (Animating Democracy, n.d.; Duncombe, 2018).



4. Methodological Suggestions

To complement reimagining the evaluation process to align more with the nature of arts and culture, existing literature offers numerous methodological insights. These practical strategies can assist evaluators in gathering nuanced data and effectively assessing the impact of artistic initiatives. The use of qualitative and mixed-methods data collection is suggested: "We, therefore, call for a broad approach to evaluation and research methodologies, one that does not presume a hierarchy in which quantitative evidence and methods are necessarily more rigorous than qualitative, or in which controlled experiments are necessarily more convincing than richer multi-variable studies." (Crossick & Kaszynska, 2016).

Combining methods allows evaluators to ground numeric information, such as engagement data, in detailed, rich, and contextual insights that may more effectively capture transformational impact (Crossick & Kaszynska, 2016). Animating Democracy emphasizes how qualitative data can enrich complementary numerical measures. Measurable metrics can be problematic as they may lead to the measurement of transactions. This, while easier to capture, may not reveal important transformational outcomes that are better understood through qualitative research.

Rather than striving for unilateral scientific objectivity in assessment, the literature demonstrates the value of implementing context-specific, reflexive, and participatory research methods (Crossick & Kaszynska, 2016; Reisman & Olazabal, 2016). By using reflexive, qualitative approaches the evaluation process itself can be used to intensify impact. Keeping in mind findings from Part I, allowing individuals to reflect on their experiences more deeply within the assessment process adds a cognitive aspect to the artistic experience that might at first be more emotional. This is potentially true for both the audience and participants of arts programming as well as creators and employers (Crossick & Kaszynska, 2016). Participatory research methods are highlighted by many sources as a major way to increase the utility of assessments (Crossick & Kaszynska, 2016; Duncombe, 2018; Reisman & Olazabal, 2016). Eliminating power differentials and involving staff, artists, and practitioners directly in the evaluation process increases ownership and accuracy, builds capacity, and can help organizations improve by implementing changes as a result of the assessment (Crossick & Kaszynska, 2016; Reisman & Olazabal, 2016). Direct involvement of the work's owners and implementers in its assessment is doubly valuable, as having an on-ground perspective helps develop more contextual and relevant metrics and goals (Duncombe, 2018; Osborne, 2014).

It is also important to use both short-term and long-term research in arts and culture assessment. Animating Democracy recommends examining a variety of intermediate effects, enumerating a range of impactful outcomes in line with the findings in preceding sections (Dwyer, 2008). These include cultivating and deepening awareness and knowledge regarding specific issues, developing a nuanced understanding of diverse perspectives, honing facilitation skills, evolving attitudes, expanding the quantity and diversity of engaged individuals, fortifying relationships, establishing connections transcending boundaries, constructing groups and networks, and building coalitions (Dwyer, 2008). Creating impact on multiple different levels often requires patience and time, and these intermediate indicators can provide evidence of movement in the right direction (Dwyer, 2008; Reisman & Olazabal, 2016; Gienapp et al., 2021) Investing in longitudinal, long-term research can fully demonstrate the far-reaching impact of programming related to arts and culture and more accurately illuminate the occurrence of changes in engagement (Reisman & Olazabal, 2016; Gienapp et al., 2021).

Discussion and Conclusion

Exploring what **sparks environmental justice action** provided a better understanding of barriers and facilitators of behavioral change, the complexity of emotions concerning climate change, the impact and facilitators of collective action, and the specificity of emotions concerning climate change action of a younger generation.

An important aspect to address, particularly in the realm of Psychology and Climate Change Communication, is the presence of modern epistemological biases that underpin much of the reviewed research. Shaped by the philosophies of the Enlightenment, Western science has witnessed an intense rationalization and individualization of society rooted in a robust Cartesian binary. This binary leads to the differentiation between object/subject or emotion/rationality, forming the basis of many assumptions in Western science (Le Grelle, 2022). This paradigm may also be one of the reasons why the discourse on climate change has predominantly remained scientific. Given the clear ineffectiveness of the scientific discourse in bringing about behavioral change and recognizing that cognitive and rational explanations alone are proven insufficient, this work focuses deeper into emotions. Disciplines entrenched in strong Western science, such as Psychology or Communication, still face challenges in overcoming these biases.

Despite acknowledging that collective action is the most impactful, nearly all research relies on the Theory of Planned Behavior, which is grounded in individuality. The bias of individualism may serve as another barrier to fostering action since collective action also reinforces and prolongs engagement among individuals. This may also be why Ostrom and Olson's research was pivotal in Collective Action Theory, as it dismantled the epistemological assumption of individualism, demonstrating that CPRs do not necessarily succumb to the "tragedy of the commons", the economic idea that CPRs could only be managed through privatization.

Despite recognizing that a more large understanding of emotions is essential, Psychology often tends to interpret emotional factors through cognitive processes. However, gaining insight into the underlying effect first might be more illuminating. Some literature does acknowledge this need and expresses a willingness to transcend binary thinking, recognizing the interconnection of cognitive and emotional processes. For instance, the common categorization of emotions into negative and positive is challenged, particularly in discussions about hope. In this context, the positive aspect of hope for fostering environmental justice action is nuanced, and the understanding that hope can coexist with negative emotions such as worry and fear is considered more effective in promoting action.

Additionally, the literature, particularly on Education & Youth, emphasizes the importance of allowing space for a range of emotions related to climate change, highlighting the need to move beyond binary distinctions and appreciate the nuanced and complex interplay of emotions. In conclusion, balancing different impactful emotions is a recommended approach to communicate effectively about climate change and to promote environmental justice action. Fear, anger, and hope are potent motivators, but their impact is contingent on moderation, as pushing them too far or relying on them in isolation can have drawbacks. While it may seem evident, the literature does not explicitly express the necessity for a balanced approach to evoking emotions. Rather, some suggest that recognizing the impact of more subtle emotions may be equally, if not more, important.

An intriguing aspect that emerged from this work and is worth exploring further is the ineffectiveness of relying on mass media in Climate Change Communication. This perspective, coupled with recognizing the pivotal role of social norms within communities, prompts a reconsideration of what truly drives change. It suggests that communication strategies on large media platforms may reach a broad audience but may not be as impactful as engaging with targeted individuals in a deep and qualitative manner to promote environmental justice action.

"Targeted individuals" in this context alludes to individuals who may hold significant influence in their communities on social norms or are what is described by HII as *social amplifiers*. The thesis of John Paul Lederach is an intriguing insight that is worth mentioning here. He introduces the concept of "critical yeast," to explain how a minimal percentage of a community can possess the leverage to catalyze a disproportionately significant shift in the entire community's behavior. This concept suggests that targeting influential individuals within a community can serve as a catalyst for fostering substantial environmental behavior change.

Looking at these perspectives side by side challenges the traditional emphasis on using mass media to reach a wide audience and instead underscores the importance of targeted and meaningful engagement with key influencers. The potential for driving environmental justice action may be significantly amplified by strategically engaging with individuals with the capacity to shape social norms.

Comprehending the **impacts of arts and culture on promoting environmental justice action** provided insight into their influential role in engaging audiences – a gradual yet significant impact that can contribute to paradigm shifts. Pairing this with the discussion above, the predominance of rationality and individualism, especially in Western science, emerge as barriers to the creation of action inspired knowledge as well as to the pursuit of environmental justice.

The research demonstrates solutions to several barriers identified in the preceding section, particularly to Climate Change Communication. It highlights the efficacy of the arts in eliciting emotions for a deeper understanding of climate change, facilitating behavior change, personalizing and localizing climate issues, and transforming the intangible into tangible elements, thereby fostering the imagination of alternative futures. Interestingly, the importance of integrating cognitive processes into artistic interventions for environmental justice is emphasized, reinforcing the interconnectedness of cognitive and emotional processes and underscoring their combined necessity for maximal impact.

A noteworthy conclusion drawn from this section is the recognition of participatory arts as the most impactful form of practice to enhance environmental justice action. Despite its diverse nature, this aligns with the previous section emphasizing collective action as the most effective approach. Participatory arts enable collective action and create a sense of community crucial in the face of existential threats (such as climate change). The practice enhances self-efficacy by leveraging collective power to effect change. Moreover, participatory arts provide a space for the expression and sharing of the complexity of emotions, reinforcing the notion that vulnerability expressed through art can be subversive and disruptive, thereby resonating powerfully with the audience.

Measuring the impact of arts and culture reveals an ongoing and nuanced debate that questions and goes beyond mere metrics to encompass value-laden, ethical considerations. At its core, there is a fundamental question about whether the impact of arts and culture can be adequately evaluated. Nevertheless, it is unequivocally evident that the arts possess the capacity to drive societal change and wield a transformational influence. In response to this recognition, numerous proposals emerge to develop specialized approaches to capture the unique impact of these sectors.

Measuring the impact of arts and culture is crucial because, unfortunately, this sector is often underfunded, and funders increasingly demand tangible results. Demonstrating these impacts not only secures necessary funding but also engages and motivates people to take action by showcasing the real-world benefits and transformations driven by arts and culture.

The research underscores the necessity of reimagining and restructuring the underlying assumptions and processes to evaluate the impact of arts and culture. The literature suggests that a process-driven evaluation, characterized by participation, may be the most relevant for assessing this impact. This approach implies a shift away from traditional engagement metrics towards a more comprehensive understanding of the context and influence of arts and culture programming.

The research advocates for a broader scope in data collection, emphasizing the need to go beyond participant experiences. Qualitative methods are highlighted as essential tools for gathering data that can offer a richer understanding of the multifaceted impact of arts and culture. Additionally, this evaluation should extend beyond short-term considerations and encompass long-term impact. This temporal perspective is deemed crucial for capturing the comprehensive impact of the work being undertaken in these sectors. In essence, a thoughtful and inclusive approach to data collection and evaluation is imperative for uncovering the true depth and breadth of the impact of arts and culture.

Limitations of this study

The scope of this research was limited to a comprehensive overview of the prevalent literature in this area. Consequently, this literature review primarily concentrates on academic works in the English language. This focus represents a noteworthy limitation, as it implies that the authors were predominantly from the Global North, thereby overlooking the literature produced by Global South authors, which would have been an undoubtedly valuable addition to addressing the questions posed in this report. As a result, this report lacks the diversity of artistic and cultural practices that could enhance the understanding of factors influencing environmental justice action. Furthermore, given that the Global South is currently experiencing more severe impacts of climate change, its perspectives and insights into environmental justice action hold particular relevance.

The participatory arts section would specifically have benefited from incorporating Global South perspectives, given the deeper roots of decolonial and indigenous philosophies in collective and community practices. Notably, Rodríguez-Labajos (2022) observes, “The rise in academic literature about environmental artivism occurred in higher income countries.” Apart from the valuable insights these perspectives could have provided, the outcome of the participatory art section is also incomplete due to other factors. A more thorough exploration of interactive arts, such as 3D or 4D arts or theater, would have been beneficial.

Another limitation concerns the literature on behavioral change. Many of the sources mentioned only research the intention of changing behavior, but do not explore whether this behavior actually changes in the future. This also points to the need for more long-term studies.

The literature exploring the impact of arts and culture in fostering environmental justice action proved challenging to categorize. Academic sources on this subject are limited, and the knowledge derived from diverse practices often overlaps. This challenge is somewhat less pronounced but still applicable to the first question on the catalysts for environmental justice action. Furthermore, given the expansive and multifaceted nature of arts and culture, characterized by myriad definitions and overlapping practices, obtaining a clear understanding was complicated. A more diligent approach to research and analysis would be valuable in this context, perhaps focusing solely on case studies that could provide more real world insights.

An evident limitation emerges in the diverse strategies of assessment when measuring the impact of arts and culture. Some sources in this study delve into the assessment of *arts*, while others focus on *culture*, lacking a clear distinction or definition of both. Given the expansive nature of these concepts, understanding the authors’ precise intention becomes challenging. Notably, the literature reviewed in this section predominantly aims to assess *culture*. Despite the emphasis in much of the literature on evaluating higher levels of impact, such as norm change, there is a scarcity of concrete pathways provided on how to precisely achieve this.

Consequently, the question arises:

are there other disciplines or institutions that delve more deeply into assessing these levels of impact?

Scope for Future Work

As outlined in the limitations, the literature reviewed in this report predominantly originates from authors in the Global North and consists mainly of scientific, peer-reviewed research. Broadening the scope to include more literature in the Spanish, French or Asian languages could introduce greater diversity. Additionally, incorporating non-academic sources such as newspaper articles, interviews, novels, science fiction, and the shared experiences of artists, activists, and cultural strategists would enrich the knowledge currently lacking in this review.

As this report reveals the power of participatory arts, exploring Global South perspectives would be a good starting point for investigating this further, given the community-centered nature of decolonial and indigenous philosophies. Additionally, delving more deeply into artistic practices, especially interactive ones, would warrant further research. Furthermore, exploring forms of art grounded in socially engaged theories, such as Augusto Boal’s Theater of the Oppressed (1970) or theatrical methods employed in conflict-resolution mechanisms (Shank, 2004) could offer valuable insights.

An avenue for enhancing the understanding of participatory arts lies in the Art-based knowledge section, which repeatedly alludes to the significance of historical social movements in comprehending the impact of arts and culture on cultural paradigm shifts. Incorporating case studies that examine the influence of arts and culture in movements such as the Civil Rights Movement or the fight for marriage equality would be highly relevant additions. Arts and culture practices of more marginalized communities is identified as a relevant point for further research considering their resilience, and their longstanding struggles for equal rights.

As exemplified by Monet and Agnew (2018), the African-American community provides a prime example of a community that skillfully integrates art, community practices, and the building of social movements. A deeper investigation into their practices could yield novel and intriguing results. **A plausible hypothesis is that the resilience of marginalized communities is rooted in their strong community and art practices, implying a form of participatory arts.**

Further exploration could extend to the activism of the queer community, such as the AIDS Coalition to Unleash Power (ACT UP) campaigns that extensively utilized the arts. Delving into the history and influence of the arts in historical movements would be a fruitful area for case studies on the impact of arts and culture in fostering action. This approach aligns with the observations in artivism, which notes that research in Social Movement Theory often focuses on cognitive and rational approaches to movement building, while non-rational behaviors during rallies and protests are prevalent. Consequently, intriguing research questions could explore the role of songs during protests or the importance of singing during the civil rights movement.

On another note, the impacts of arts and culture are prominently evident in realms like advertising and, at another extreme, propaganda. While Raaber’s (2022) research touches on this, delving deeper into specific propaganda mechanisms employed would be helpful to expand the understanding of the significant influence arts and culture can exert.

A more nuanced exploration would involve asking questions such as:

What distinguishes socially engaged art from propaganda and advertising?

Is it ethically justifiable to employ propaganda mechanisms in the creation of socially engaged art?

Are artists already utilizing these techniques, and if so, what is their stance on this ethical dilemma?

These questions underscore the need for a deeper examination of the ethics of the use of persuasive and manipulative techniques in artistic endeavors. Understanding the distinctions and potential overlaps between socially engaged art, propaganda, and advertising can contribute to a comprehensive understanding of these ethical considerations.

There are numerous avenues for further research on measurement and assessment, not necessarily in exploring additional literature but in testing tools described in the existing body of work. **While there might not be a one-size-fits-all assessment technique, there is potential to derive a general understanding of impact**. Tailored measurement approaches could be implemented for events, utilizing methods such as fill-in surveys at the entrance, short interviews upon arrival and departure, or constructing metrics based on literature on climate change communication, particularly focusing on emotions, including those expressed on social media. Polls in Instagram stories or online surveys through newsletters are additional methods that could be explored.

Some sources mention that funders and stakeholders often rely on specific statistics or accountability measures to decide if something is a "success." For instance, they might want a certain number of people to attend events or meet other quantitative or financial targets. However, these measures don't always align well with evaluating arts programs. **It's important to demonstrate value and success using different kinds of metrics**, especially to stakeholders who are used to traditional metrics and may not see qualitative measures as rigorous enough. This raises the question of how we can show success without sticking to the usual norms set by stakeholders.

A recurring theme in the literature is the need for more longitudinal studies since environmental justice engagement can only truly be measured in the long run. Furthermore, it is the importance of collaboration between disciplines, extending beyond interdisciplinary research that is frequently mentioned (Kagan, 2015; Monroe et al., 2017). This collaboration is emphasized in the context of the questions posed in this research. Experimental and exploratory research is highlighted as an intriguing avenue, providing an opportunity to test impact at various levels and uncover new insights (Ostrom, 2010).

Glossary

Affect refers to the physiological level of emotions. Whereas emotions are culturally specific, affects are a response to external stimuli that is rather similar for everyone. The expression of affects, emotions, are different for everyone. There are two types of affects. Ones that will make you move towards something (like excitement or joy), and others that will make you move away from something (like disgust or fear). (Bernard Center for Research on Women, 2019).

Aeffect is a term coined by the Center for Artistic Activism. They define it as the following.

> Effect (v.) "To bring about (an event, a result); to accomplish (an intention, a desire)."
> Affect (v.) "To have an effect on the mind or feelings of (a person); to impress or influence emotionally; to move, touch." (Oxford English Dictionary)
>
> "When it comes to bringing about social change, effect and affect are intertwined. Artistic activism aims to bring about demonstrable change through moving people viscerally and emotionally. We might think of this as: Affective Effect. Or, if you prefer: Effective Affect. Or, as we've come to call it: Æffect."

Cli-Fi is short for climate fiction, is a genre of literature that explores the impacts of climate change on individuals and societies. It often addresses environmental issues and the potential consequences of human actions on the planet.

Cognitive refers to processes related to knowledge, perception, memory, and problem-solving. Cognitive functions involve mental activities such as learning, reasoning, and decision-making.

Emotions are culturally specific, based on one's identity or personality. What triggers an emotion for someone and how they express it (Bernard Center for Research on Women, 2019).

Epistemology is the branch of philosophy that deals with the questions science poses. It explores questions related to belief, justification, and the ways in which we acquire and understand knowledge.

Leverage points are places within a complex system (a corporation, an economy, a living body, a city, an ecosystem) where a small shift in one thing can produce big changes in everything (Donella Meadows Institute, 2017).

Narrative refers to the description of a series of events.

Ontology is a branch of philosophy that examines the nature of existence or being. It explores questions about what entities exist, how they are related, and the nature of their existence.

Paradigm is a society's deeply ingrained set of beliefs about how the world works (Resilience Earth, 2023).

Rationality refers to the quality of being reasonable, logical, and consistent in thought and action. It involves making decisions based on careful consideration of information and goals.

Saliency refers to the quality of being particularly noticeable, prominent, or significant in a given context. It is often used in the context of perception and attention, describing the degree to which something stands out.

Self-efficacy refers to an individual's belief in their ability to successfully accomplish a specific task or achieve a particular goal. It is a key concept in psychology, particularly in Albert Bandura's social cognitive theory.

Storytelling is the art of using words, images, or other mediums to convey a narrative. It plays a crucial role in human communication and has been a fundamental part of culture and tradition throughout history.

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Images

COVER IMAGE.
Fractal Thinking 1
Artist: Kelsey Ann Kasom
Size: 24” x 36” unframed prints
Medium: Photographs

IMAGE 1.
Re-birth
Artist: Sarah Pezdek
Medium: Photography
Size: 40” x 30”

IMAGE 2.
Nurture Nature
Artist: Arrianna Santiago
Medium: Digital Print
Size: 36” x 48”

IMAGE 3.
Anahi and the Coral Tree, 2019
Artist: Lucia Warck-Meister
Medium: Installation

IMAGE 4.
In Extremis, 2024
Artist: Claudia O’Steen
Medium: Installation

IMAGE 5.
Waste I
Artist: Emma Windsor-Liscombe
Size: H: 167.64 cm W: 139.7 cm D: 0.25 cm
Medium: Ink on Paper Bags

IMAGE 6.
Inequality of Air
Artists: Thomas Fucaloro and Kim Tyre (USA)
Medium: Poetry and Activism

IMAGE 7.
The Forest, 2023
Artist: Chantal Westby
Medium: Sculptural Installation

IMAGE 8.
The Origin Of The Phrase, 2020
Artist: Jahtiek Long
Medium: Photography
Size: 16” x 20”

IMAGE 9.
The Plastic Bag Tent, 2016
Artist: Anna Borrie
Medium: Photograph
Size: 40” x 40”

IMAGE 10.
Sow the Seeds
Artists: Dario Mohr and Jalisa Gilmore (USA)
Medium: Mural

IMAGE 11.
Daughterland Series: Seed
Artist: Meesha Goldberg
Size: Framed 24” x 12”
Medium: Oil on Canvas

IMAGE 12.
The Air Quality Dress Under the Bruckner with Ora and Xul, South Bronx
Artist: Dominique Paul
Medium: Photography, Archival Pigment Print

IMAGE 13.
OmniPresent Future
Artist: Natalya Khorover Aikens
Medium: Sculpture Installation

IMAGE 14.
Coral Reef 5
Artist: Karl Lorenzen
Medium: Watercolor on Torn Paper
Size: 5” x 8.5”

IMAGE 15.
Drift 1
Artist: Roos van Geffen
Size: 24” x 11”
Medium: Photograph of Site-Specific Installation

IMAGE 16.
Greta’s Truth No. 2, 2022
Artist: Rhonda Babb
Medium: Screenprint on Paper

IMAGE 17.
Green
Artist: Julie Bahn
Size: 11” x 8.5“
Medium: Collage on Board

BACK COVER IMAGE.
Fractal Thinking 2
Artist: Kelsey Ann Kasom
Size: 24” x 36”
Medium: Reclaimed Bamboo Sculpture and Photographs


big,
bold,
and
beautiful
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