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Plan(T)ing for the future: using socially engaged climate art to mobilize change agents

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ABSTRACT

As scientists, politicians, and non-profit organizations struggle to meaningfully promote the salience of the climate crisis in the public sphere, socially engaged art continues to be a severely underutilized resource. This art form is recognized as a creative process that works across disciplines in an effort to engage communities in problem-solving. Beyond science communication or community organizing, a science-based socially engaged art practice aims to utilize the public as participatory agents, an effective transformation of those not normally involved in political or environmental efforts. Although social practice has gained popularity in recent decades, there is little research on the efficacy of the artistic medium with respect to generating sustained social change. This paper examines the methodology and results of a socially engaged art project, Xavier Cortada's *Plan(T)*, and argues that the project's impact lies in unquantifiable incremental changes and the creation of a preliminary model for developing interdisciplinary partnerships, effectively engaging communities, and ultimately mobilizing agents of change. As the deadline for adequately addressing climate change and limiting warming to 1.5° degrees above pre-industrial levels quickly approaches, this paper describes how socially engaged art can be a promising approach for effectuating significant changes on a societal level.

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Often referred to as "ground zero for climate change," Miami-Dade County is facing a future characterized by sea level rise, saltwater intrusion, and strengthening hurricanes. Given the considerable social and economic ramifications of these climate-related impacts, the issue's low salience within the local public sphere does not match the gravity of the situation. Socially engaged artist Xavier Cortada created *Plan(T)*, a participatory eco-art project, to address this discrepancy. *Plan(T)* encourages community members to plant a red mangrove propagule alongside a white flag (denoting their property's elevation above sea-level) in their front yards to catalyze conversations with family and friends, help sequester carbon dioxide, and grow the local salt-tolerant native tree canopy that will survive saltwater intrusion. In addition to the observable success the *Plan(T)* project has achieved across Miami-Dade County, the process of conceptualizing and implementing the project resulted in a preliminary social practice model for developing interdisciplinary partnerships, effectively engaging communities, and mobilizing agents of change.

This paper begins by reviewing relevant climate change communication and social practice literature. We proceed to contextualize the *Plan(T)* project by providing background information on Cortada's socially engaged art practice. A description of *Plan(T)* is then introduced, followed by its associated conceptual and aesthetic considerations. The paper continues with a presentation of the project's methodology, the resulting artistic model, and concludes with a discussion of the effort's outcomes and challenges, ultimately arguing for socially engaged art as an untapped resource in effectuating societal change.

Climate change communication

Improving the global response to climate change and heightening the sense of urgency within the general public requires improved communication strategies; however, the complexity of the climate crisis has made it a particularly difficult problem to communicate. Because global warming is commonly perceived as temporally distant, its consequences are heavily discounted by many. This phenomenon is known as "hyperbolic discounting" in behavioural economics, whereby "individuals place very large importance over short-term horizons and very low importance over long-term horizons." (Bushell et al., 2017) This difficulty of accurately conceptualizing climate change mirrors the "construal level" theory in social psychology (Spence & Pidgeon, 2010). The theory suggests that humans are better at predicting and making decisions about events that are psychologically closer to ourselves compared to those that are psychologically distant. The construal level theory represents a problem for climate change temporally, but also spatially as the consequences of a warming world are frequently portrayed by melting glaciers and distant, drought-stricken lands.

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The complexities associated with communicating climate change emphasize the need for framing. Conceptual frames are tools that help negotiate meaning through the lens of existing cultural beliefs and worldviews (Nisbet, 2009). Nisbet explains how frames "simplify complex issues by lending greater weight to certain considerations and arguments over others, translating why an issue might be a problem, who or what might be responsible, and what should be done." (Nisbet, 2016) Framing, as a science communication strategy, has generally replaced the glaringly ineffective information-deficit model of science communication. This model claims that scientific controversies, such as those over evolution or vaccines, are caused by a deficit of scientific understanding, therefore the required remedy is the transmission of scientific facts (Suldovsky, 2017). As it is now understood that people see information through the lens of their pre-existing norms and values, the field of science communication is actively seeking new methods for shifting public opinion, advancing global cooperation, and promoting governance structures that are capable of effectively addressing climate change.

Social practice

Social practice is a process that uses art's elasticity to work across disciplines in an effort to engage localized communities in problem solving. In an attempt to move past the layer of passivity inherent to "relational aesthetics," (Bourriaud, 2002) which often falls victim to the esotericism it yearns to separate itself from, came reinvigorated artistic effort aimed towards the public sphere. These processes were first described as "new genre public art" by artist and writer Suzanne Lacy, who suggests that "The source of these artworks' structure is not exclusively visual or political information, but rather an internal necessity perceived by the artist in collaboration with his or her audience." (Lacy, 1996) This requires that socially engaged artists be community oriented, infiltrating non-traditional art spaces to produce actionable responses to a perceived issue. A perspective of "radical proximity" towards variegated institutions has produced "new aesthetic categories that can problematize the relationship of the social, political, and formal," (Cruz, 2012) acknowledging the importance of localized, relevant, intervention by the artist.

However, analyzing this type of work requires a reevaluation of traditional standards of artistic critique. Social practice relies on its indifference to categorization, as its approach is not one of movement or medium, but of "cultural practices that indicate a new social order; ways of life that emphasize participation, challenge power, and span disciplines." (Thompson, 2012) Yet this type of work, in line with traditional art forms, still retains, and often relies on, the ability to produce symbolic gestures in its attempt at crossing perceived social and institutional boundaries. Similar to that of conceptual art, new genre public art is idea driven, the intellectual values of the work being more important than the aesthetic. This makes it difficult to classify, and thus difficult to understand or even critique. Interdisciplinary collaborations as well as the scope of new genre public art projects make for increasing problems in criticism as "meaning in this art is so dependent upon context." (Cartiere et al., 2008) Likewise, the quantifiable impact of social engagement is often irrelevant in comparison to its greater conceptual output, the contextual significance of an interdisciplinary practice towards its local environment being of the most importance. Process is the most essential aspect of socially engaged art, the success of which is heavily reliant on a shared vision of intervention. For this reason, these projects can easily become problematic, as conflicting interests between artists and community (including collaborative partners) often negate the project's intended purpose.

Cortada's previous socially engaged art

Xavier Cortada (Mirow et al., 2021) developed the *Plan(T)* project to address a future with rising seas by focusing on present-day saltwater intrusion into Miami's freshwater aquifer (Braddock & Ater, 2014). *Plan(T)*'s success comes from Cortada's deep-rooted connections to the community (Cortada, 2012) and his reputational success and experience as an engaged environmental artist with a long-term approach to participant-driven problem-solving (Bower, n.d.). More importantly, the artist's projects use art intuitively to create a sense of place, to exchange ideas, to build community (Cortada, 2011c) and to allow participants to think in more creative ways (Cortada, 2012).

Trained as an attorney, Cortada began his community work in the early-90s focusing on violence, mental health, and substance abuse. In the mid-90s, he introduced message murals (Cortada, 2011a) to his work to amplify marginalized voices and engage communities in addressing local issues (Cortada, 2012). Through time, the participatory work became more conceptual in nature, focusing on site-specificity, context and process.

His practice took a more environmental focus in response to the destruction of mangrove forests along an 18-mile stretch of a highway leading to the Florida Keys (Aagerstoun, 2018). Cortada's work with scientists (Boettger, 2008) and his installations during a 2006–2007 National Science Foundation residency in Antarctica (Fugmann, 2017) served as the catalyst for a social practice focused on a future with climate change (Cortada, n.d.) and rising seas (Mirow et al., 2021). Today, the crux of Cortada's work finds itself rooted in a deep conceptual engagement of his participants. Particularly environmentally focused, the work Cortada develops is intended to reframe perspectives (Cortada, 2011a), generate awareness (Cortada, 2011b), and spur action around environmental and social justice (Bublitz et al., 2019). It is critical to detail the trajectory of Cortada's career over time as the *Plan(T)* project, and its significance in Miami-Dade, was produced as a result of decades of community organizing, collaborations with scientists, and project iterations.

Plan(T) description

Plan(T) is a participatory eco-art project aimed at helping South Florida residents learn about and plan for a future impacted by climate change, sea level rise, and saltwater intrusion. Through a combination of installations, presentations, and outreach events, community members are encouraged to

plant a red mangrove propagule alongside a white flag (denoting their property's elevation above sea-level) in their front yards (see Figure 1). This process advances the project's goals of educating a broad audience about and preparing them for the consequences of a rapidly changing climate by catalyzing conversations with family and friends, helping sequester carbon dioxide, and growing the local salt-tolerant native tree canopy that will survive saltwater intrusion.

Conceptual and aesthetic considerations

Plan(T), while rooted in localized history, differs from its precursor the *Reclamation Project* in its focus (see Figure 2), as the earlier iteration stresses the importance of planting what was before, promoting an almost nostalgic reaction to a present problem. The themes present in the current project focus on planting for what will be and the importance of future oriented problem-solving. Because of this forward-facing perspective, there is a strong sense of urgency present within *Plan(T)*, a sentiment which reverberates amongst its participants. This is an effect of the conceptuality inherent to the operation of these artistic efforts, the elasticity of the work allowing for a reevaluation of environmental discourse and expectations.

The grid exhibitions function in this way, with their placement in libraries, public schools, and businesses within Miami-Dade County being an introduction to the project and working to educate the public on the issue (see Figure 3). In both *Plan(T)* as well as the *Reclamation Project*, public exhibitions occur with the installation of mangrove propagules inside clear water-filled cups composed into a geometric grid that sits upon the windows of community spaces. The implementation and function of the grid offers a strong contrast from the natural qualities of the mangroves, effectively allowing for the mangroves to be placed into an aesthetic context of "art." These exhibitions are very temporal in function, coextensive with their intention, the mangroves being living plants, and thus require human attention to survive. This conceptuality is furthered through the presence of time, the longevity of such an installation depends entirely on the ability to welcome nature into an urban habitat, as well as the temporal realization that climate change is already upon us.

However, the large scale of a project such as *Plan(T)* allows for the implementation of conceptuality through the inclusion of participatory components, the project existing in a space between creative and collaborative participation (Helguera, 2011). This works as an externality of previous aesthetic considerations, as the symbolic gesture of the installations prompts further involvement, effectively making the invisible visible. Those interested in collaboration take part in an effort of individualized performance, as participants are asked to plant a mangrove propagule in their front yard alongside a white flag that is emblematic of surrendering an outdated way of thinking. The tree functions both as a literal act against climate change, specifically sea level rise as the planting of mangroves promotes increased carbon sequestration (albeit minimally at this scale), as well as a visualization of the growing problem. Over time, as the tree is nurtured and grows (see Figure 4), so does the vulnerability of that home to rising seas, the beauty of the tree juxtaposed with the threat its growth represents. The subversiveness of the mangrove contradicts its ubiquity across South Florida coastlines, as once the mangrove is planted it is illegal under Florida law to remove it, an allusion to the permanence of the issue at hand.

Figure 1. Plan(T) flag and mangrove planted in a resident's front yard.

Figure 2. Volunteers planting Reclamation Project mangroves along Bear Cut, Key Biscayne in 2007.

Figure 3. Plan(T) installation at Pinecrest Gardens' Hibiscus Gallery.

Figure 4. Red mangrove forest in Key Biscayne, Florida.

Plan(T) methodology

Once Xavier Cortada conceptualized *Plan(T)*, it was imperative to assess the foundational science that underlaid the project's assumptions. He began by conducting critical research on saltwater intrusion in South Florida and the viability of red mangrove trees in urban habitats. With promising initial findings, Cortada identified and consulted with local subject matter experts. The selected scientists and practitioners were assembled into a science advisory board that proceeded to confirm the validity of the assumptions Cortada made; saltwater intrusion will negatively impact local drinking water, septic tanks, landscaping, and agriculture (Prinos et al., 2014), and red mangroves can grow in urban environments without salt water.

Satisfied with the artistic and scientific elements of his *Plan(T)* idea, Cortada (who serves as Pinecrest Gardens' Artist-in-Residence) met with officials from the Village of Pinecrest and proposed having the participatory eco-art project be Pinecrest Gardens' main cultural event for Miami Art Week in December 2019. The Village approved the proposal and allocated partial funding (materials and publicity) for the project's implementation, just as it had the year before with Cortada's *Underwater Homeowners Association* (Cortada et al., 2022). In addition to this funding, Pinecrest Gardens provided Cortada with a free tent space at their weekly Farmers Market and commissioned Cortada to create *Planting for the Future: Pinecrest Mangrove Forest*, a 200-foot-long mangrove forestation effort (the County's first urban mangrove forest) and mural.

With the intent of developing interdisciplinary partnerships, Cortada proceeded to leverage the resources from the Village of Pinecrest by contacting desirable collaborators (e.g. Miami-Dade Public Library System, University of Miami Abess Center for Ecosystem Science & Policy, and Frost Science), gaining their support, and growing the scope of the project from Pinecrest to all of Miami-Dade County. Well-established relationships with these institutions from previous projects and engagements aided Cortada's ability to quickly and effectively create renewed partnerships around *Plan(T)*. Through this process, the County's public library system agreed to have every branch library that was not under renovation (45 out of 50 branches) host a *Plan(T)* installation and presentation over the span of several months. Importantly, Cortada hired Adam Roberti, then University of Miami Master of Professional Science student, to help him oversee the *Plan(T)* project.

With scientific-merit, funding, partnerships, and his project manager secured, Cortada worked to strategically plan out the successful development and implementation of the *Plan(T)* project so as to effectively engage his community. The first step was obtaining permission to collect red mangrove propagules (a protected species) from the Miami-Dade County Parks, Recreation and Open Spaces department. While waiting on the collection permit, Cortada concurrently worked on developing and purchasing materials, recruiting and training interns, and preparing for the upcoming library installations and presentations. Writing the verbiage and creating the design for digital (e.g. web pages and PowerPoint

presentations) and printed (e.g. palm cards and retractable banners) materials were integral components of this preparation phase. Upon completion, all materials necessary for collecting mangroves, creating installations, and facilitating outreach events were purchased and organized. Roberti was simultaneously recruiting undergraduate and graduate students to be *Plan(T)* interns by posting flyers around campus and giving brief presentations to classes and clubs about the opportunity to help implement *Plan(T)* across Miami-Dade County. Interested students were interviewed and then subsequently taught about topics relevant to the project such as climate change, socially engaged art, and Cortada's history as a social practitioner.

The interns' earliest moments of experiential learning coincided with the necessity of collecting red mangrove propagules. Cortada organized multiple mangrove collection events at Crandon Marina and Matheson Hammock Marina with Roberti, project interns, and additional volunteers (see Figure 5). Cortada led each group through the collection process by explaining the guidelines specified in the permit (e.g. propagules harvested shall not have germinated or be rooted at the time of collection), educating about the importance of mangrove ecosystems, and critically, urging everyone involved to better understand their connection with nature. After each collection event, interns counted the number of new propagules, organized them to be standing vertically in water-filled buckets, and stored them in the *Plan(T)* nursery at Cortada's studio in Pinecrest Gardens.

Preparations continued as Cortada coordinated the installation and presentation of the *Plan(T)* project at almost every branch library in Miami-Dade County (see Figure 6). As part of the planning process, two interns were directed to visit each branch, take pictures of the windows approved for installations, talk to the head librarians, and note where the presentations would be given. Once the participating branches had been inspected and documented, they were divided into regional groupings and assigned to interns as the branches where they would create installations and deliver presentations.

Cortada's 20-year history of bringing eco-art projects to local schools, coupled with his position as Pinecrest Gardens Artist-in-Residence, allowed for *Plan(T)* to be quickly embraced by teachers, principals, and educational organizations. The Village of Pinecrest invited Cortada to attend monthly Education Advisory Council meetings with each of the local schools' principals and PTA presidents, effectively developing relationships that resulted in the schools' eagerness to participate in *Plan(T)* and the organization of in-person professional development teacher trainings. Cortada was also contacted by the University of Florida's Thompson Earth Systems Institute to collaborate with their "Scientist in Every Florida School" programme by hosting virtual *Plan(T)* workshops for teachers across South Florida.

As the project's planning and preparation phase was completed, *Plan(T)* installations began to be created across Miami-Dade County in pursuit of mobilizing "agents of change." Suction cups with hooks were placed on windows in a perfect grid design. Compostable cornstarch cups were individually filled with a mangrove propagule and water, and then hung from the suction cups with binder clips. Lastly, *Plan(T)* palm cards were hung throughout, and placed beside, the installation to provide the viewer with information about the project. Library installations also included signage to notify visitors about the upcoming presentation at each branch, as well as the eventual countywide mangrove giveaway/deinstallation. In addition to public libraries and schools, major

Figure 5. Plan(T) interns collecting red mangrove propagules.

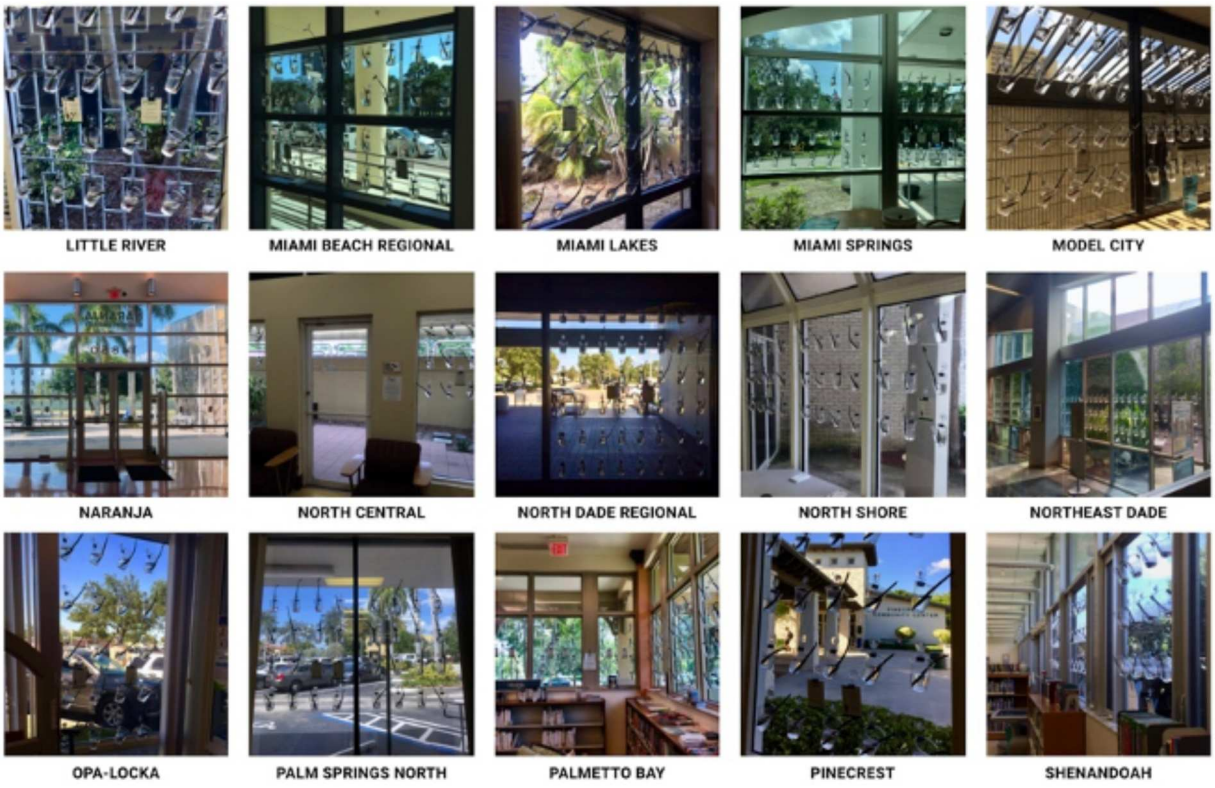

Figure 6. 15 of 45 Plan(T) library installations.

installations were created in Pinecrest Gardens, the University of Miami (Richter Library, Law School Library, and Storer Auditorium), the Frost Science Museum, and local businesses along Lincoln Road. The creation of these installations then generated a feedback loop prompting requests for more installations from schools and businesses that wanted to be involved in the initiative.

Upon completion of the school and library installations, the *Plan(T)* team proceeded to conduct in-person presentations with students, teachers, and library patrons (see Figure 7). The presentations were focused on the anthropogenic drivers of the greenhouse effect, the expected local consequences of climate change, the importance of mangrove ecosystems, and the overall concept of the *Plan(T)* eco-art project. At schools, the presentations would end by letting the students know that they would each be receiving one of the mangrove propagules installed on their campus to plant at home. At libraries, the end of the presentations involved attendees looking up their homes' elevation above sea level, using a Sharpie marker to draw their number on a white flag (see Figure 8), and selecting a mangrove to take home. Participants were also encouraged to take a picture of their planted mangrove and flag and share them on social media with the #PlantOurFuture tag. While the majority of library presentations were solely hosted by core team members, some were hosted in partnership with the Miami-Dade County Office of Resilience and/or ProjectArt.

Outside of scheduled presentations, the majority of engagement with *Plan(T)* came in the form of tabling at the Pinecrest Gardens Farmers Market and various community outreach events. Every Sunday from 9:30 am to 2:30 pm, Roberti and the team of interns facilitated the *Plan(T)* project with dozens of Farmers Market visitors (see Figure 9). The project also engaged community members at local conferences, museums, and summits. The participatory components at these events mirrored those of the library presentations, with the addition of incentivizing participants to post a picture with their mangrove and flag immediately on social media in exchange for a free *Plan(T)*-branded shovel. *Plan(T)* largely culminated during a 2019 Miami Art Week that saw the dedication of *Planting for the Future: Pinecrest Mangrove Forest* with representatives from local schools, the planting of a mangrove tree at Miami Beach Senior High (where students had previously installed 2,500 propagules and written essays about the project), and an exhibition at the UNTITLED, ART fair in partnership with the Facebook Art Department.

Results

The process of conceptualizing, developing, and implementing the *Plan(T)* project resulted in the engagement and education of thousands of Miami-Dade County residents, and importantly, it led to the formulation of a preliminary social practice model for developing interdisciplinary partnerships, effectively engaging communities, and mobilizing agents of change. Thus far, *Plan(T)* has been hosted by 45 public library branches, 15 local schools, the Pinecrest Gardens Farmers Market (30 consecutive weeks), and other institutions. These nodes of activation have collectively engaged over 4,000 residents in planting mangroves in their yards, over 500 residents in creating elevation-marked flags, tens of thousands who have witnessed the installations, and at least a dozen media outlets.

Figure 7. Roberti giving a Plan(T) presentation to students at Southside Elementary.

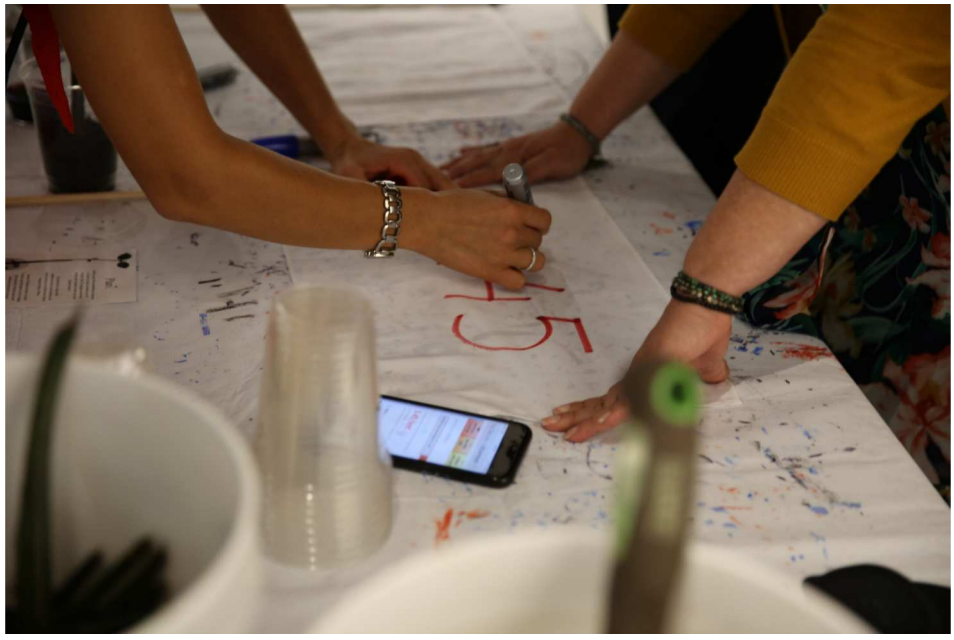

Figure 8. Participant drawing their elevation on project flag.

The following paragraphs outline an artistic model, a conceptual framework detailing key elements of creating a successful participatory eco-art project, that was produced as a result of *Plan(T)*.

Developing interdisciplinary partnerships: Coalescing and activating an interdisciplinary team of local partners is a crucial component of *Plan(T)'s* approach to effectuating change in the community. Xavier Cortada's reputation as an established artist and community leader, coupled with the endorsement of an advisory board comprised of scientists and practitioners, allowed *Plan(T)* to gain a wide range of support from and entry into cultural, environmental, civic, and public institutions. The effective implementation of such an extensive eco-art project across these institutions and stakeholders required strategic and collaborative planning. As the responsibilities of project partners became clearly defined, core team members, such as project interns and volunteers, were educated about the local ramifications of climate change and the role of social practice, and importantly, inspired by mangroves through their immersion into a mangrove forest.

Figure 9. Plan(T) at the Pinecrest Gardens Farmers Market.

Effectively engaging communities: With partners and team members engaged, *Plan(T)* uses visual art to attract attention, pique curiosity, and garner media coverage. Whether the project's mangrove propagules are installed in a geometric grid on the windows of local community spaces or planted next to elevation-marked flags in residential yards, they stand out as unexpected, unusual, and often surprising enough to attract the attention of passersby. The objectively unconventional placement of cigar-shaped seedlings either hanging on windows in water-filled cups or growing beside mysteriously numbered flags works to not only pique the curiosity of people walking by, but to also spur questions and conversations about the project's purpose and significance. The unique visual art components of *Plan(T)*, paired with the project's ambitious goals, further engage audiences by providing aesthetically and conceptually interesting content to news and media outlets in exchange for greater exposure.

Mobilizing agents of change: Ultimately, *Plan(T)* works to transform project participants into eco-emissaries by using experiential learning to reframe their urgency and agency with respect to the climate crisis. Through outreach events and presentations, core team members educate residents about the local impacts of a changing climate (e.g. saltwater intrusion, sea level rise, strengthened hurricanes, etc.) and subsequently direct them to discover their homes' elevation above sea level by using the "Eyes on the Rise" online application. This process reveals the vulnerability of participants' homes and source of fresh water, effectively localizing pertinent issues, making them personally relevant, and providing an impetus for a heightened sense of urgency. Capitalizing on this newfound motivation, the *Plan(T)* project mobilizes participants by providing actionable steps for climate change mitigation and adaptation. Particularly motivated individuals then have the ability to take advantage of *Plan(T)'s* online resource page for supplementary information and use social media (#PlantOurFuture) to increase the project's reach and impact.

Discussion

The impact of the *Plan(T)* participatory eco-art project is difficult to quantify as it constitutes a form of slow activism. While the amount of carbon sequestered, trees planted, and people engaged are important metrics, the significance of this type of work lies in the production of incremental change within a community. This social practice process of gradually shifting perspectives and developing eco-emissaries is particularly relevant to the field of science communication, as the target audiences themselves actively become the purveyors of knowledge. Individuals become exposed to climate science through unexpected eco-art installations and, through their participation in the project, are given a sense of agency as they learn they are joining a collective effort to address sea level rise. The experiential learning that takes place with *Plan(T)* not only reframes the climate crisis to be personal and urgent, something that the field of climate change communication has struggled with, but it encourages deeper inquiry and civic engagement. Furthermore, the artistic methodology described differentiates itself from standard project management and marketing in that it is not quantitatively results-oriented but rather people-oriented, focused on the transformation of participants with actions

that can ultimately transform their communities. Understanding that there are no established standards or criteria by which to assess the outcome of a process-based art project, the basis for analysis lies within the insights that can be drawn at this intersection of community engagement, environmental education, and participatory art. The initiative's interdisciplinary nature allows scholars to assess its success through the lens of various fields, ranging from social practice and sociology to education and science communication.

As a studio-based volunteer initiative and not a funded programme based in an institution, *Plan(T)* built upon Cortada's 25-year interdisciplinary, multisystemic, and multicultural socially engaged art practice. Inherent in its countywide design, *Plan(T)*, like the *Native Flags* project (programmed in every single Miami-Dade County public school for a decade), engaged Miami-Dade County residents at the ground level, across social, racial, and cultural sectors. By utilizing extremely accessible institutions, such as the public library system, the artist attempted to reach every demographic across the County. Although he often provides bilingual programming for his projects, the limitations surrounding the implementation of *Plan(T)* prevented the artist from including special presentations or outreach to non-English speakers. Given that Miami-Dade County has large populations of monolinguistic Spanish and Haitian Creole residents, future initiatives should plan for proper language accommodations.

Further examination of the local context surrounding this project necessitates a focus on Miami's vibrant art scene, the ubiquitous presence of social media, and the city's rapid pace of urban development. In the Miami art scene, community members often assume passive roles as consumers, where the majority remain disconnected from the tangible benefits generated by the estimated $400 – $500 million of annual economic impact from Art Basel and Miami Art Week (Rojas, n.d.). In stark contrast, *Plant(T)* seeks to actively engage and involve these individuals in the very process of artistic creation. By fostering direct participation, the project transforms them from mere spectators to essential contributors. Miami has also emerged as a prominent hub for social media influencers spanning a wide spectrum of domains, from fashion and culinary pursuits to travel and beauty. However, the essence of *Plan(T)*'s strategy diverges from the typical social media narratives that revolve around branding and commercial interests. Instead, *Plan(T)* employs social media platforms as vehicles for authentically raising awareness about the climate crisis, subverting the norm by prioritizing environmental education over product sales or trending dances. Outside of the digital landscape, Miamians watch as skyscrapers increasingly rise along their city's skyline, providing a sense of assurance in the stability of the real estate market. *Plan(T)* questions this confidence by prompting locals to shift their perspective beyond the immediate changes and contemplate a future besieged by rising seas and saltwater intrusion. The project attempts to stimulate a dialogue about the nuances of Miami's urban development, sparking a collective recognition of the impending challenges that demand both immediate action and long-term planning.

A project of this magnitude, spearheaded by a single artist, didn't come without its fair share of obstacles. Working with a variety of collaborators and across multiple institutions, Cortada needed a nimble and adaptable approach to handling the inevitable miscommunications that arose, such as with librarians who weren't aware of the installation coming to their libraries. Similarly, flexibility is a necessary requirement when implementing a project through unpaid student interns whose reliability may vary due to their academic commitments and shifting priorities. Other than issues pertaining to personnel and partners, the team would occasionally be met with participants who complained that their mangroves were dying or had died. In these circumstances, it was prudent to compare a mangrove tree to an apple tree, whereby not all of the apples that fall from the tree are meant to survive – some turn into new trees while the majority decompose into the ground.

Although the *Plan(T)* project represents a unique approach to generating awareness and action around the climate crisis, it also highlights some of the limitations inherent in addressing such complex issues within the context of prevailing systemic and economic structures. The project's focus on grassroots engagement and individual actions, while essential for fostering community involvement, could inadvertently contribute to the larger narrative of individual responsibility that neoliberal climate governance often promotes. Blühdorn and Butzlaff discuss how the responsibilization of consumer citizens "instrumentalizes citizens for purposes which are not their own, assigns responsibilities to them which they cannot meaningfully take and reduces political issues to economic issues." (Blühdorn & Butzlaff, 2020) By emphasizing small-scale actions, the project risks diverting attention away from the more significant systemic contributors to climate change, such as corporate emissions, government policies, and global economic systems. As described in the Routledge Handbook of Global Sustainability Governance, "neoliberal governments are keen to open up new markets and stimulate green growth, while trying to offload their eco-political obligations to responsible consumers." (Blühdorn & Deflorian, 2021) Moreover, the financial model of the project, reliant on student interns and volunteer efforts, sheds light on the broader challenges of sustaining climate-related initiatives without adequate funding. In a neoliberal framework that often privileges economic growth over environmental sustainability, projects like *Plan(T)* can struggle to secure the necessary resources to enact meaningful change. While *Plan(T)* succeeds in engaging local communities and sparking vital conversations, it also underscores the need for systemic shifts and robust policy changes to effectively address the root causes of the climate crisis. Looking ahead, the strategy employed through this countywide initiative should be further examined and future discussions on climate resilience, public engagement, and science communication should embrace socially engaged art as an untapped resource.

Conclusion

Conceptualized, developed, and implemented in response to the climate crisis, the *Plan(T)* participatory eco-art project not only engaged and educated thousands of Miami-Dade County residents, but prompted the creation of a preliminary

social practice model for developing interdisciplinary partnerships, effectively engaging communities, and mobilizing agents of change. *Plan(T)* leverages affordable materials and addresses a crucial issue for coastal communities globally, underscoring its potential for replication and scalability. Both the project and its resulting social practice model provide artists and academics with fertile ground for exploration, adaptation, and further research. As the window of opportunity shrinks for meaningfully limiting global warming to 1.5° degrees above pre-industrial levels, it is imperative that communities and governments are quickly and sufficiently motivated to transform the interconnected systems (e.g. energy, agriculture, transportation, infrastructure, etc.) that fuel global climate change. With this understanding, socially engaged art appears to be an underutilized and promising approach to effectuating real change in an imperilled and polarized world.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Notes on contributors

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Xavier Cortada, M.P.A., J.D. is an artist and Professor of Practice at the University of Miami Department of Art and Art History and School of Law. Cortada uses art's elasticity to work across disciplines to engage communities in problem solving. Particularly environmentally focused, his work generates awareness and action around climate change, sea level rise, and biodiversity loss. Over the past three decades, the Cuban-American artist has created art at the North and South poles and across 6 continents, including more than 150 public art projects, site-specific installations, collaborative murals and socially engaged projects.

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