1.5°C Climate Change and Social Transformation - Special Issue in COSUST, Issue 2: 2018
Galafassi et al. 'Raising the Temperature': The Arts in a Warming Planet
Supplementary material

Supplementary Material

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1. Methodological considerations

1.1. Method for mapping art and climate transformations literature

The first part of the article outlines the current perception across various literatures of the links between art and climate transformations. We used a number of approaches to identify relevant literature. First, a Web of Science (WoS) search was conducted using the search terms "art*" AND "transform*" AND "climate* change*". Most of the search results did not relate to art and after a screening process, the remaining 25 articles did not capture the linkages we were searching for. Second, we complemented this approach by developing a reference list compiled by the co-authors. All co-authors have worked within the field of art and sustainability, and some have focused on climate change in the North and the South. Finally, further references were found during the compilation of the climate-related art database (see below). Ultimately, the works selected for this study provide a thorough, though not complete, list of climate change-related art that reflect central arguments about art and climate transformations.

1.2. Definitions of climate-related art

Although the term climate-related art is not defined in art literature, we found it useful for this particular review. The term emphasises the attribution of "meaning" to a specific work. In art, the question "what is it about?" is often challenging. To define the term "climate-related art," we focused on activities, gestures, and interventions conducted through an art practice (such as performance, installation, music, film, theatre, and others) that are not necessarily nor exclusively aimed at communicating climate change, but are inspired or catalysed by the general discourse or scientific findings on climate change. We take climate-related artworks to be those whose content and themes are centred on climate change or those works the artists themselves define as being related to climate change.

1.3. Method for development of the climate-related art catalogue

We separated climate-related art into *artworks*, i.e. singular creations or events, and *projects*, i.e. long term initiatives, networks and projects.

The process for building the catalogue is described in Table 1. Two primary sources were used: expert consultation and web searches. We recognize that a significant number of climate-related art is not shown on websites, and that our methodological approach (Google searches) favours works from English-speaking countries. We sought to complement this by consulting with experts. Expert consultation supports the trends identified in the quantitative analysis.

Table 1. Process for the development of the catalogue

Step	Task	Description
1	Author and expert consultation	As a starting point for the catalogue, all co-authors were asked to identify climate change-related art projects/artworks that they were aware of.
2	General Google keyword search	Google keyword search (including "climate change" AND "art", etc.). This allowed for more specific art form searches: "climate change" AND "film" OR "theatre" OR "installation" OR "music" OR "photography" OR "drawing" OR "plastic arts" OR "sculpture" OR "street art" OR "game" OR

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		"performance". These searches turned up specific examples of artworks and projects, as well as websites that featured various collections of works.
3	Tracing the path from artworks to exhibitions and projects	After identifying the most important projects that address climate change, we researched whether these had been part of any exhibitions in order to trace whether they were part of larger climate art projects.
4	Targeted Google keyword searches	These included searching the largest and most prestigious art museums. In addition, since initial Google searches returned projects mostly from the Western world, we searched specific countries (e.g. South Africa, Brazil, China) to broaden our scope.

1.4. Selection criteria

We have included artworks that address climate change in their content, and artworks where the artists themselves considerer the work to be about climate change. To further guide our project selection, we used three sub-criteria that relate to the projects' or artworks' entry point in relation to climate change.

1) **Climate-related themes:** Projects dealing with a specific climate change-related theme, like sea level rise, water scarcity, etc.
2) **Climate change discourse:** Projects inspired by climate change discourse and ideas around urgency, unequal effects, etc.
3) **Place-based:** Projects that explore a particular place, e.g. the Arctic, the city of Maputo, Mozambique, etc. Some projects might have a mix of different approaches and entry points.

To be included in the catalogue, at least one of the criteria needed to be met.

1.5. The architecture and development of the catalogue

Each *artwork* and *project* was classified according to the fields in Table 2.

Table 2. Catalogue fields

Field	Description
Identifier	Incremental number
Artwork or project name	Identification name
Project relationship	Internal link between artworks and projects
Institution/Initiator	Name of those conducting the project or artwork
Type	Artwork or Project (see Table 3 for further details)
Key narrative	Narrative description of the artwork or project as stated in artists or key reference
Art form	The artistic practice
Detailed art form	For those that have multiple art forms we listed which
Number of people involved	Estimate of engagement
Country	Country(ies) involved
Publication	If any publication has been done about it
Web link	Web page address

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Key contact	Contact of the initiators
Date	Year(s) of activity

Table 3. Types of projects or artworks

Type	**Dimensions**
Project	A project is a carefully planned undertaking that is often designed to last over a period of time.
Platform	A platform provides an online space for exchange and dialogue.
Campaign	A campaign is instrumental and wants to achieve a specific goal (usually not long-term).
Exhibition	Exhibitions are presentations of more than one artworks organized by an institution. We only included exhibitions that explicitly had climate change as a main theme.
Network	Networks are collaborative initiatives.
Festival	A festival is an organized series of special events taking place during a rather short period of time.

1.6. Analysis

We conducted a qualitative analysis with a thematic analysis approach of the narrative statements available online used by initiators to describe artworks and projects. The goal was to identify climate-related themes and main goals (general orientations). Two of the authors identified climate-related themes (Table 4) and principal orientation of the (Table 5) by reading narratives independently and discussing definitions. Two authors coded the statements separately. Inter-coder reliability was addressed by discussing discrepancies (less than 10%).

Table 4. Climate related themes found in the project and artworks narratives

Climate related theme	**Description**
Futures	Seeking to identify desirable futures. Exploring multiple possible futures including dystopian ones.
Making phenomena visible	Representation of the biophysical impacts of climate change; Making problems visible across scales, developing networks; Visualizing planet's changing ecosystems
Human-nature relations	Finding novel ways to address how humans perceive and interact with nature
Climate responses	Identify, inspire and catalyse climate action
Risks	Raising awareness of risks and impacts of climate change, not only biophysical but in other domains
Place-based stories	Centred around local narratives of climate change

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Table 5. Final list of core orientations of projects

Goal	Description
Risk perception and awareness	To raise awareness about phenomena, risks and solutions. Information sharing and dealing with emotional responses.
Future scenarios	To develop visions of the future or explore a range of imaginative futures.
Dialogue	To foster dialogue and facilitate interactions among various actors; knowledge integration.
Emotional and personal connection	To encourage emotional connection to a particular cause or place. Bringing climate change near.
Networks	To support climate action and connections.

1.6.1 Countries

We used the country where the artwork or project was presented. The artist's country of residence was not taken into consideration. Focusing on the presenting country may indicate where climate-related art is institutionalized and where funding is available.
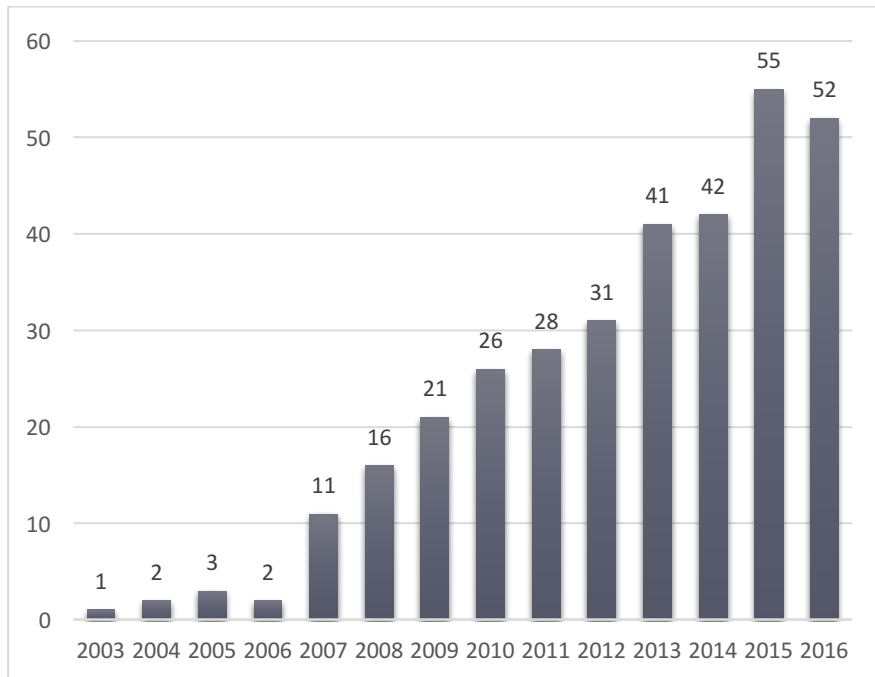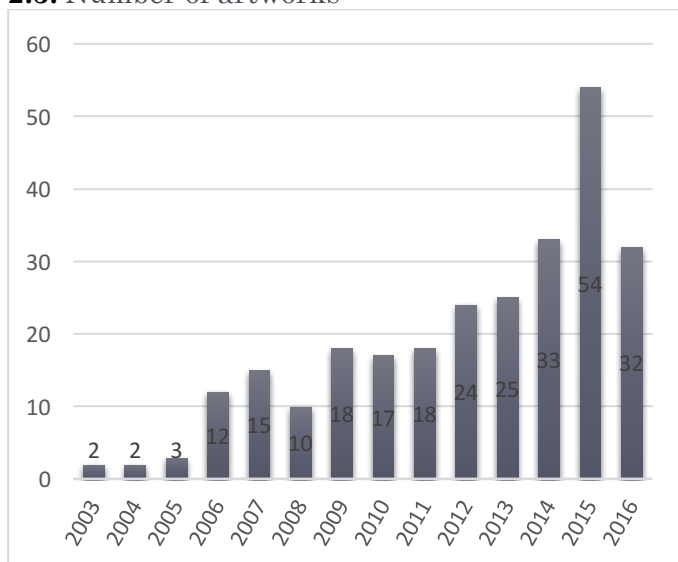
2. Supporting results

2.1. Totals

We have identified 199 artworks. Some artworks have been presented over the course of more than one year, therefore the total adds up to a number greater than 199.

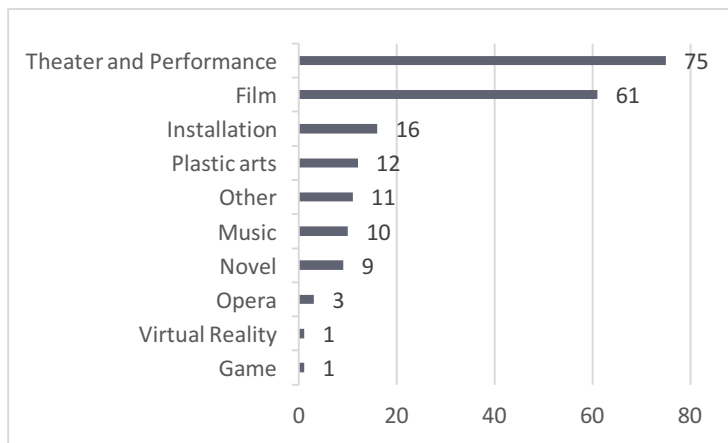We have identified 102 climate projects.

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2.2. Number of projects

2.3. Number of artworks

2.4. Artistic disciplines

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2.5. Project orientation

We acknowledge that these five categories overlap. Our objective with these was not to create a framework for future analysis but to give the reader an idea of the range of goals artists have expressed. Projects tend to fit into more than one category but were categorized according to what we identified as being the main goal of the project. For instance, a project might use a participatory approach to explore possible futures, and through that process create networks. In that case, if the main goal of the project was to create a set of possible futures, we classified it as "Futures." If dialogue was framed as the most important aspect, we categorized it as "Dialogue."
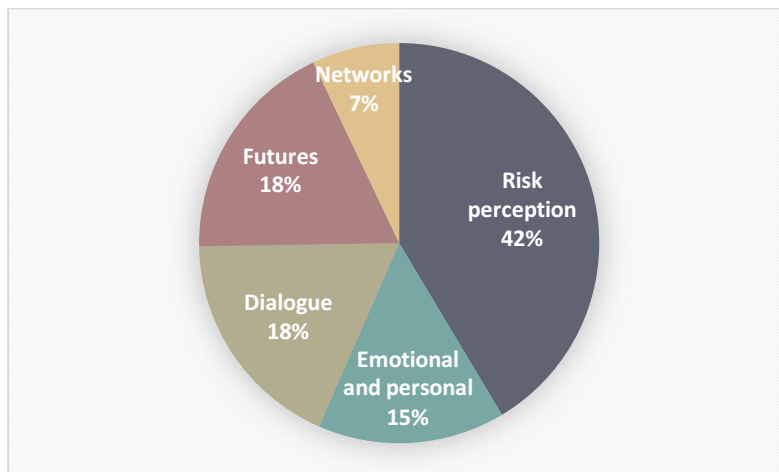
3. Other climate change reviews

Climate-related art in specific disciplines has been reviewed by other studies. Climate change literature was reviewed by Trexler (2015) and Johns-Putra (2016). According to Johns-Putra (2016), climate change has emerged in the last five years as a dominant theme in literature, primarily in fiction. Other fields of literature also engaged are theatre and ecopoetry.

We added the number of novels mentioned by the Johns-Putra (2016) study to the catalogue. This data was used to analyse the number of artworks (Figure 3 in the main text). Up until 2011, Johns-Putra

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(2016) found "about 30 novels" that fit the climate change fiction definition: "Fiction concerned with anthropogenic climate change or global warming as we now understand it." In the past five years, another "20 or so climate change novels [have appeared] that have gained significant critical and public attention". Their definition matches our definition of climate-related art.

4. References

Johns-Putra, A. (2016). Climate change in literature and literary studies: From cli-fi, climate change theater and ecopoetry to ecocriticism and climate change criticism. *Wiley Interdisciplinary Reviews: Climate Change*, *7*(2), 266-282.

Trexler, A. (2015). Anthropocene Fictions: The Novel in a Time of Climate Change. Charlottesville: University of Virginia Press.