



ART AND DOCUMENTARIES IN CLIMATE COMMUNICATION: EXPERIENCING THE REALITY OF CLIMATE CHANGE AND LEADING THE WAY TO CHANGE

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Liselotte J. Roosen recently completed a PhD in Environmental Psychology at the NTNU in Trondheim, Norway. The topic of her PhD was Environmental Art for Environmental Engagement, in particular exploring whether visual art can change the way we think and feel about global environmental issues. This article describes the findings of the first data collection of this project.

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Abstract: The purpose of this study was to explore which principles or characteristics of visual forms of climate communication have the potential to increase their perceived effectiveness in terms of triggering climate concern and engagement. This article details

the results of a case study based on an art exhibition and a shortened documentary with the topic earth/soil. Two focus group discussions were conducted in Brighton (UK) with a total of 20 participants who had seen both the documentary and the artwork. The transcripts of these focus groups were thematically analyzed to establish categories, themes, and subthemes from the data. Results show that art as well as documentaries have the potential to be an effective medium to convey climate change to audiences. Art may speak to the audience on a different (i.e. emotional rather than cognitive) level than documentaries, and therefore could be a helpful way to introduce the subject to an audience that may not yet be overly familiar with climate change. To further encourage behavior change, a solution should be presented that is novel, relatively easy to implement and impactful.

Keywords: visual art; documentaries; climate change; focus groups; thematic analysis

Within communication research, several challenges have been identified with the communication of climate change. Communication efforts so far have mostly focused on mass communications that aim to spread scientific information and rely on fear as a way to promote change and engage the public (Moser & Dilling, 2011). However, fear can also lead to disengagement (O'Neill & Nicholson-Cole, 2009) and people may need more than just additional information to care about climate change, such as a personal experience (McDonald et al., 2015) and raised mindfulness and awareness (Amel, et al., 2009). Research suggests that both documentaries (Russill, 2011) and artworks (Roosen et al., 2017) may be avenues that can be effective in filling these gaps of climate communication. Documentaries and artworks can bring the effects of climate change closer to the public and make it a part of everyone's reality, without exposing people to the real dangers of the effects of climate change, and with an opportunity to take meaningful action from a safe space to contemplate and to get involved in the solution.

Although previous research has identified some factors why visual communication can work well to convey messages and engage the public to embrace and support change, there has not yet been a study that identifies which characteristics of art and documentaries are seen to be important by the audience in changing attitudes and behavior in the face of climate change. Therefore, this paper will explore in a case study which these principles are contributing to increasing awareness, emotional, cognitive or behavioral engagement.

A Case Study: “Earth” Exhibition by Chris Drury (2016) and “The Soil Solution to Climate Change” (2011), directed by Jill Cloutier and Carol Hirashima

To study which aspects of artworks and documentaries audience members perceive as being effective (in terms of inspiring an increase in engagement), we decided to show focus group participants the art exhibition “Earth” by Chris Drury (Drury, 2016) and a shortened form of the documentary “The soil solution to climate change” (Cloutier & Hirashima, 2011). These works were chosen because they were thematically related (both pertaining to the subject “Earth”). Although these works were the main topic of discussion, they were also utilized to prompt discussion and comparison to other artworks and documentaries participants may have been exposed to, and thereby providing an opportunity to draw on an extensive library of works and characteristics of both art and documentaries.

Method

This case study was part of a larger research project about the psychological effects of visual, climate-related artworks (www.climart.info). The following sections describe the methods in detail.

The Documentary

The documentary that was shown to participants was a slightly edited version of “The Soil Solution.” (Cloutier & Hirashima, 2011) The documentary contains science-based information on the topic of topsoil and the importance of composting. The primary message of this 29 minute long documentary (edited down to 15 minutes for our study) is that the solution to climate change is beneath our feet: it tells the viewer about the importance of composting and about how (farm) animals and humans can work together to restore the topsoil and get carbon into the ground. It features several experts: researchers who talk about the problem of soil degradation and the importance of topsoil, and farmers who talk about ways in which they implement “the soil solution” on their own farms and in their lives, and why they believe this is important. This documentary was chosen because it was (a) relatively short (compared to other documentaries), (b) related to the topic of the exhibition (earth/soil), (c) related to climate change and (d) covered information about causes as well as solutions for climate change with the purpose to educate and prompt action (public support and/or involvement).

The Artworks

The exhibition employed in our case study (Drury, 2016) contained several artworks by the artist Chris Drury made of natural materials (see Figures 2-4). The different pieces exhibited are described in more detail in the captions of the images. The descriptions are based on the gallery’s listing for the exhibition. Some of the photos were taken on-site and some were found on the artist’s website; included here with permission.

Participants

The focus groups were conducted with 20 participants in total (11 and 9 participants respectively), lasting approximately 90 minutes each. The groups consisted primarily of females: the first group had one male participant and the second group had two. Both groups were mixed conditions groups: they consisted of participants who had seen the documentary and the art exhibition in a random order.

Participants were recruited through the gallery's website and mailing list and were informed about the research prior to visiting the gallery. All participants were residents of Brighton and most of them attended the ONCA gallery regularly. Not all participants were born and raised in Britain: there was one participant from each of the following countries: France, Spain, Latvia, Poland, and the United States. The estimated age range of participants in both groups was 30-55 years. The participants attended the gallery individually and watched the documentary on the second floor of the ONCA gallery either before or after visiting the exhibition. They were scheduled in for the focus groups either one or two days after their visit. Participants' visits of the art exhibition averaged approximately 20 minutes.

Focus Groups

The focus group discussions were extensive, remained on-topic, and included brainstorming, comparisons of the works to other artworks or documentaries that participants had seen and open exchanges of opinion. The focus groups were facilitated by the lead author, who kept the discussions as open and relaxed as possible, making sure that all members of the group felt safe to express their opinions and letting the conversations flow as freely as possible. The facilitator drew on her experience and communication training as a therapist and psychologist, and many years of mindfulness training, which focuses on developing an open and non-judgmental attitude.

Procedure

Prior to data collection, ethics approval was requested and provided by the Norsk Senter for Forskningsdata - Norwegian Centre for Research Data. Participants signed a consent form for the study upon arrival, which included the focus groups. The consent form informed participants about how the data would be used and stressed the voluntary nature of participation. In addition, participants received information verbally at the beginning of the focus groups about how the data would be processed.

The data was analyzed using deductive thematic analysis (Braun & Clarke, 2006) which included the following steps: Transcription of the focus groups, detailed reading of the data corpus, identification of initial themes from the data and further refinement of themes and subthemes, and clustering the themes into categories. Additionally, the co-author examined the data to cross-check the findings.

Material

The questions used to facilitate the focus groups were the following:

1. What did you experience while going through the exhibition (feelings, thoughts, behaviors, associations)?
2. What did you experience after?
3. How did you experience the short documentary? What did you get out of it
4. What could be the role of the documentary? How could it be used? And what about the art experience?
5. In what way does the artwork/ the documentary speak to you? How do you relate to it?
6. What emotional response, and what kind of emotions did the different experiences (documentary & art) trigger?
7. Did the documentary and the artwork provide a story? How did you interpret the story? What kind of themes did you recognize?
8. How compelling (and credible) was the story told by the scientists/documentary to you? And what about the story told by the artist/artwork?
9. Did any part of the documentary or artwork inspire a different perspective or a motivation to do something? (If not: what would need to change for this to happen?)
10. Are you planning to make changes because of this experience, and if so, what kind of changes, and why?

Results

Participants in the first focus group were generally very positive about the artwork as well as the documentary and highlighted mostly what was “working well” for them, whereas the second group focused mostly on what was “not working well enough,” what could have been better, or what would have contributed to a higher impact. This resulted in a balanced overview of potentially effective features for both artworks and documentaries.

The following themes were uncovered in thematic analysis: (1) presence of a narrative, (2) relatability, (3) emotional impact, (4) participation, and (5) re-connection. An overview of the themes and subthemes is provided below, in Table 1. The themes describe the element or principle that is considered important by participants and the subthemes provide details about how the principle can be incorporated into an artwork or documentary. The results are summarized in Figure 4. In the following sections, quotes from the respondents are presented to provide support for the findings.

Table 1*List of Themes Sorted by Section*

Themes	Subthemes
1. PRESENCE OF NARRATIVE	Art: Self-evident or flowing from contemplation Documentary: Interesting, compelling, credible
2. RELATABILITY	Art: Using natural materials Documentary: Following someone else's journey; taking the viewer through the process of change; demonstrating the consequences of daily behaviors
3. EMOTIONAL IMPACT	Art: Immersive, memorable qualities; (positive) emotional connection or response; using contrast Documentary: Hope, shock and surprise
4. PARTICIPATION	Art: Interactive/participatory element Documentary: Challenge
5. RE-CONNECTION	Demonstrating the connection between behaviors and consequences; connecting the dots; either explicitly connected in a documentary, or to be connected as a near-complete puzzle (artwork)

Narrative and Meaning

Participants in both focus groups related most to an artwork or documentary if it contained a story. The story or meaning should either be self-evident (which makes it appealing for a larger number of participants) or flow from contemplations or discussions. If a narrative was absent (or not understood), this had a disengaging effect on participants.

With the documentary, participants agreed that a general narrative and background stories of how presenters came to certain conclusions can add to credibility and make the story more interesting and convincing:

“A little bit more understanding of how they’d come to this conclusion would make it even more convincing to other people that have no prior knowledge, I think... Yeah. Because to just come to that completely dry I don’t think it did a very good job of really explaining how they had come to those conclusions. So some people may not take a huge amount away from the video.”

In the second focus group, two participants remarked that the information that was presented in the documentary seemed dated. The documentary was made in 2011. It was unfortunate that “The Soil Solution” (Cloutier & Hirashima, 2011) seemed to clash with the documentary “Cowspiracy” (Andersen & Kuhn, 2014) on some points (which was mentioned as inspirational by several participants), because “The Soil Solution” was emphasizing the beneficial impacts of cows on the soil. In “Cowspiracy” however, cows are seen as a major contributor to climate change while their beneficial effects on the environment (putting carbon back into the soil) are completely left out. This may have intensified some of the participants’ reactions.

“It seems dated, and I think visually it wasn’t presented.”

“That video was kind of like, these are the conclusions that we reached in our professional lives ten years ago. We’re just going to tell you them again.”

Some participants highlighted that they appreciated the information they received from the documentary, as it contributed to their understanding:

“The video evoked more feelings for me altogether than the art exhibition, because I was looking for some meaning.”

Some participants did not understand the story behind some of the artworks (in particular the ones displayed in Figure 1), which made it more difficult for them to relate to the works. When other participants shared more information about these works or explained what they saw in them, this instantly made the work more interesting for those who were not sure what they were looking at before. This indicates that sometimes artworks may benefit from additional information which tells the story behind the work; even if it was just to say where the materials came from or where the idea originated.

“Knowing this, it makes so much more sense and it appeals to me so much more than it did before. [...] it’s not like I didn’t like it. I just didn’t understand what it was

at first. But being given so much more information now and getting all different opinions about all the different pieces, it makes you feel like: oh, I actually like it, too.”

Figure 1

Artworks with Unclear or Ambiguous Meaning (According to Participants)



Note. (top left) The “Life in the field of death” series. It displays the gene sequences of proto-bacteria in Antarctica, an organism in a nuclear test site and a micro-organism that eats methane. (bottom left) These two works display an image of the Nevada Nuclear Test site from the air (left) placed next to an enlarged image of *Microcoleus vaginata*, an organism found in the soils of the test site where 100 atmospheric nuclear bombs were exploded. This is an ancient organism, which was the first plant that turned CO₂ into oxygen and paved the way for life on Earth. (top right) The two outer paintings represent an enlarged spore print from a *Boletus* mushroom. The one on black paper is made with porridge and the one on white paper is printed in Lake District soil. The one in the middle represents earth and contains a wave pattern left in sand by receding tides. (bottom right) This is an interactive wall drawing where visitors could leave their fingerprints with earth inside the structure, and the other work contains a found snake skin on Rhone mud.

There was one artwork in particular in the exhibition that all participants seemed to agree was the most interesting and powerful for them; it was the work that had small

bottles with earth collected from various places all over the world (see Figure 2). The reason it appealed to the participants is that it triggered their imagination and it was telling a story about where the various pieces of the artwork came from, and how and where they were collected. The story was self-evident, which made it easy for everyone to understand and instantly relate to it.

“I absolutely love this piece of collected earth; it’s just a really beautiful idea. Showing what the artist did and where he travelled and how he connected to the places he travelled. I really, really like it.”

Figure 2

Soil Samples Collected by the Artist From All Over the World During the Last 40 Years



Relatability

The second theme that manifested was that the participants sought to relate to the work in some way. Participants expressed that for this to happen it is not just important to them that the story is interesting and meaningful, but also that it somehow relates to their life and current situation, or to their innate nature.

One participant noticed the effect of the natural materials in the artworks and shared that she felt people naturally gravitate more towards natural materials rather than plastics and other man-made materials.

“The fact that so much of it is made from really natural materials, for me, that helped... that made me resonate more with it [...] You just feel a more natural connection to something that’s earth or wood or... you know, than you do to something that’s plastic.”

One of the ways in which participants felt the documentary could be improved was by making it easier to relate to by explaining why it matters to the viewer.

“Well, firstly why are you asking these questions? What’s the reason why it matters? Why does it matter to me? And then what were the questions, what were the answers and how did you get to the conclusions, rather than just presenting the conclusions. [...] Why does it matter to me as someone who maybe is completely detached from the soil?”

Another reason why the documentary that was shown was not as relatable for some of the participants was because the people featured in the documentary were researchers and farmers, and most participants were neither. In addition, the solution that was shown (composting) was implemented in the video on farms and did not demonstrate options for people who live in apartments.

“For me personally I think the video was very helpful to see how everything, you know, what are we doing on a global scale. But on a more personal scale I would have liked to, for it to show some ideas or some things that I could implement in my day to day life, because, like, I couldn’t really take anything away. Unless you’re a farmer you can’t really... I don’t have chickens, you know, so... I was like: I would like to, but it didn’t really... for me it didn’t really show what I could do.”

“Cowspiracy” (Director, YEAR) was brought up several times by participants in both focus groups. The main reason given to explain what made “Cowspiracy” so impactful was because it takes the viewer through the process of change in a relatable and non-threatening way. Participants perceived it as non-threatening because the story is about someone else: Someone who is interested in making a difference and went on a quest to find out how he could make the biggest positive impact on the environment.

“There was quite a build to it. It had a very clear structure... and it followed this one guy, and he was quite interesting to watch. He was very confident and had clear questions; had a sort of clear agenda about what he was trying to do, you could relate to him... and yeah, he just kept pushing through barriers. It was easy to follow what he was saying. His story. And the conclusions that he was coming to sort of making sense...”

Another participant added the following about “Cowspiracy”:

“[The entertainment factor] is high, yeah. Otherwise you won’t... that goes with it being powerful: good presenter, a nice story... it’s entertaining.”

Emotional Impact

Participants shared that they were also looking for an emotional connection to the artwork and documentary. Although some participants felt that any emotional response would allow for a deeper and longer-lasting processing of the message, some participants preferred a hopeful and positive message. For the documentary, shock and surprise were seen as positive elements that can help make the story more interesting and appealing. For the artwork, it seemed participants were describing the sense of “awe” as a potentially transformational emotion which could happen if the artwork was experienced as immersive, memorable and triggering a strong emotional response or connection.

According to participants, particularly in the second focus group, one of the attributes of an artwork that can contribute to emotional impact is when it has an immersive quality, for example an art installation that provide a structure that people can enter into, or displaying the artwork in a location that creates a suitable environment and immersive context. Immersion could also happen when the artwork draws the viewer in sufficiently so that it is completely absorbing or entertaining.

“Really good artwork makes you concentrate. So that if it’s really good, really powerful then you just sort of sink into that. What is around you disappears to a certain extent.”

For an artwork to be memorable, it should leave a powerful impression on the viewer. According to participants of the second group, the size of the work could make a big difference in this context; the bigger, the better. Because this exhibition was about earth (or dirt as some called it), a few of the participants suggested that the exhibition itself would have been more memorable if there had been more dirt around.

“We are all very close to dirt. We sort of grow up in it, clean it, eat it, walk on it, grow things in it... [...] The dirt in the bottles is... the thing that appeals to me. Big mount of dirt would be better.”

“If you come out covered in mud... People will be like: where have you been?”

Some participants experienced the documentary that was shown as quite hopeful, especially when watching it after the art exhibition.

“I think the video really helped in terms of understanding that the damage we are doing is recoverable in some way. Going around the exhibition actually made me feel quite sad. It sort of somehow connected to a vision of the future where this is like a Sand museum exhibit. The jars of soil for example, like those rare precious commodities; things that we’ve lost or destroyed. [...]The video put a hopeful end on it.”

“Yeah, it was good to end on a really hopeful note.”

“Seeing a video that shows there is a scientific way of improving our life... and also improving the future of the planet... I think it is very motivating.”

One participant described an “aha” moment that was due to the contrast between the way she experienced the artwork (Figure 3) and her interpretation of it when she figured out what it was:

“I got a big emotional response with this mushroom cloud because I had already sort of seen this one and I really just like it as an object and the fact that it’s magic mushrooms is quite exciting and that kind of thing, and when I read that these, the pieces that made this one were taken from a nuclear test site and then suddenly had that mushroom cloud moment of: I had seen it as a mushroom and

then it was like: oh, a nuclear mushroom cloud. That had a massive impact on me.”

Figure 3

“Destroying Angel Nevada” (left) and “Cloud 9” (right) from the Earth exhibit by Chris Drury



Note. Included with permission from Chris Drury. The two final artworks of the “Earth” exhibition: On the left, two related species of desert plant, *Lycium pallidum* and *Lycium andersonii*, which both grow on the Nevada Nuclear Test site, have been used in the construction of the artwork. Over 2000 pieces of this thorny plant are suspended on nylon thread. “Cloud 9,” on the right, is constructed from small mushrooms suspended on nylon thread.

Participation / Interaction / Engagement

Most of the participants did not feel actively (physically or behaviorally) involved while perceiving the artwork or watching the documentary. Some participants felt that having a participatory element may make the experience more fun and more engaging.

Artworks can include a participatory element by somehow involving the spectator in the creation, function or completion of the artwork. The artwork may also encourage interaction with nature by including natural materials (especially if they can be touched).

“To have something that people could be part of, like an artwork out of soil that is more... interactive and a bit messier.”

“And maybe trying to connect to people’s memories cause I certainly have memories as a child of making mud pies, and it would be really nice if you could make a mud pie..? (all laugh) It would just reconnect you to that sense of being a child again which I think is really important and might encourage people to kind of more fully come into the exhibition and what it’s trying to say.”

Other participants added that in determining whether an artwork was sufficiently engaging, one could wonder if children would enjoy the exhibition:

“I kept on thinking during this conversation something like: What if you took a kid in? How would they feel about it? And I just don’t think it would really take anything from this and yeah, I feel like a child can respond really well to a... to something about climate change. So that’s a lost opportunity.”

While brainstorming ideas to make an experience more engaging and enjoyable, one of the participants mentioned competition or prizes (challenge). An aspect of challenge can be added to documentaries by presenting a solution to the problem in the form of a challenge, perhaps even with a chance to win something.

“Competition. Prizes. [... games...]. Terrific fun for everyone. [...]... interactive, definitely.”

Re-connection

Reconnection can refer to a connection with nature (which many participants admitted they did not make enough time for), reconnecting with one’s childhood or demonstrating the connection between behaviors and consequences – cause and

effect; connecting the dots - either explicitly in a documentary, or presented as a near-complete puzzle in the form of an artwork.

Several participants mentioned they would enjoy being reconnected with childhood experiences through artworks, because it is fun and engaging and a positive reminder of human connectedness. The following quote demonstrates this and also links back to some of the previous points (emotional impact and participation):

“I always think good art is something that makes you feel emotional. Not necessarily happy, but just anything. Not neutral. [...] If you could feel more emotional and more connected and you think we are kind of all part of this, you know, we are all connected to it. And doing things like making mud pies would definitely have an emotional connection.”

One participant in the first group felt empowered by the documentary because it shows what humans are doing to the planet and how the collective damage can be reversed. She remarked:

“I think maybe involving people in watching the video and creating this sort of exhibition, that makes you think you are forced to consider what you are doing is harmful... even if you don't like it, at least you thought about it, because ignorance is the worst where you just don't even think about anything.”

Participants in the second focus group also mentioned that a documentary, or additional interactive questions, could provide a bridge to reconnect people with the consequences of their own behavior.

“Also maybe some questions of where you get put in charge of... I don't know... you have to make a decision about what do we do with all of the rubbish in your kitchen and then it tells you what the consequences are of the decisions you've made, to connect it to your life and to realize for example that, all of the compost that you maybe have in your kitchen, by putting it in your normal rubbish it actually does more harm and it creates methane rather than if you were to compost it, it would be good for the soil. Just things like that I think, personally I learn more by, like, answering a question, then maybe getting it right or wrong, and then that helps link it to your own experience and your own life, and makes it more kind of tangible, I think...”

Figure 4

Results from the Discussions on Documentaries vs. Art to Promote Pro-environmental Behavior

Visual Art	Documentaries & Visual Art	Documentaries
Emotional impact through immersion, memorability and striking form or presentation. A sensory experience which includes touch. Participatory element / learning by doing.	Triggering contemplation of the issue. Interesting, unusual story. Relatable Free interpretation	Interesting, compelling, structured storyline, relatable and easy to understand. Clearly outlining the problem and offering a solution. Taking the viewer through the process of change on all levels (mental, emotional, physical) and answering any questions the viewer might have along the way.
Solutions should be: <ul style="list-style-type: none"> • Easy to implement • Impactful • Novel, or presented in a new way 		

Note. These include suggestions for the presentation of solutions (see the next section: Additional Findings under *Solution*)

Additional Findings

In addition to the five themes mentioned, participants shared important insights regarding the presentation of solutions, the transformative effect of artworks and documentaries, and the expected relative effects on engagement.

Solution

If a solution was presented with either an artwork or a documentary, three important features were agreed upon by participants (in addition to being relevant to the artwork or information presented in the documentary): solutions should be easy to implement, mentioning something new or from a new perspective, and impactful.

When comparing “The Soil Solution” to “Cowspiracy,” several participants agreed that “Cowspiracy” was more interesting and powerful in terms of motivating change because the information presented was new to them: unexpected, and perhaps even shocking. It also provided solid step-by-step argumentation that supported the storyline.

“Yeah I think that was because it was kind of unexpected. When the people say about the climate change and pollution, we think like the smoke tower, but this guy was making the argument with this farmer, so that was shocking. It was unexpected.”

Transformation

Artworks. The transformative power of art was thought to result from art offering an (emotional) experience which involves most of the senses and being a way for participants to (potentially) learn through doing. Touch was mentioned in both groups as being the most powerful of the senses. Ideally the artwork would involve something that can be touched, or at least offer an experience that is more than just something visual.

“I would need to touch things.”

“To have things that you could touch and things that you can contribute to...”

As an additional suggestion, participants in the second group imagined that the use of sound might add a fascinating component to the visuals:

“It would be interesting to find the sounds that you can’t hear that are so quiet that microscopes.... You could have ear sets and depending on whereabouts you were standing in the room... so if you were standing near these then you’d find out that the bugs in that particular soil made a certain sound or you know, a frequency, or something magnified so that you could listen.”

When it comes to inspiring behavior change, participants wondered if it might be possible to create an art installation where visitors perform a certain action naturally as part of the exhibition; preferably a related, pro-environmental action that can be repeated outside the exhibition as well. Of course this is not always possible or appropriate in the context of an exposition, but if it were feasible it might be a valuable addition to an already impactful experience with art.

“I think generally people learn better through doing things.”

Documentaries. A powerful feature of documentaries that was mentioned in the context of transformation was that they can present information and guide a person through a process of change while leaving the decision to act completely up to the viewer, making any change that may result more powerful.

One of the things participants agreed was very pleasant about the art as well as the documentary was that the message was put across without making use of aggressive or violent images or forceful suggestions for change. This made it easier to absorb the message and to feel less coerced in the process.

“What I really liked, also about art and the video, I’m not sure that anyone can relate, but the message that would be considered as like: ‘This is super important, this is what you have to do’ was not aggressive in any way. So, for example, what it could have reminded me of was: if you see like any, against-animal-cruelty videos where you see: this is what the industry looks like and it’s very violent, very aggressive, it makes you really sad, and it sort of triggers really negative emotions that... they have positive impact afterwards, but it’s very aggressive; the message itself. But with the video, it was turning to a very scientific, educational piece; it didn’t feel like someone was shoving anything down your throat. Like: you have to do this, you have to do that. But they explain [...] They gave me more of a background of something that I never realized and it’s the same with art.”

Another participant agreed and added that the absence of forceful suggestions for change helped her feel more relaxed about the possibility of change, and therefore more open and accepting to what was being conveyed:

“Yeah, it’s a subtlety. There’s a subtlety to this exhibition and a gentleness... and the video kind of... tonally they almost match up in that sense. You’re absolutely right; I really hate those kinds of educational things that clobber you. And I don’t like art that’s the same... the same kind of thing. That kind of aggressive and forceful... I don’t like being told what to do.”

One participant (in the second focus group) also added the importance of a powerful message. He pointed to the multitude of information people receive in their lifetimes, including about climate change – and that any message or form of communication needs to compete with those other messages.

“We’re swamped with videos on climate change, so many of them... so.... Obviously they’re effective and people are afraid of climate change, or believe in it. It’s the most effective way of getting the message out. [...] Working on the

assumption that people are never going to see it again, and you've got one chance, that video isn't taking any chances. [...] As people say in here, it didn't actually grab their attention. They watched it, because they had to watch it. And if they were sitting at home watching it, they had been off. They wouldn't have seen it. So... it needs to have more of a focus. More of a power... powerful points."

Expected effects on engagement

Although participants agreed that artworks as well as documentaries generally can have an impact on the viewer, and the viewer is actively looking to be impacted, there were differences in the kind of impact that was expected. Art was expected to trigger initial engagement, such as triggering an interest in the topic or introducing the topic to a relatively new audience, and therefore could be a great first encounter for people who are not normally interested in climate change, or people who know little about the subject.

"[The artwork could work] possibly as an introduction to people you wanted to make interested in climate change and then progressing on from there."

Documentaries were thought to be able to offer a guide and motivation for people who are already more motivated and perhaps ready to make changes. The Soil Solution did trigger some motivation to make changes, even though some participants felt that the message could have been more practical and more convincing. Several of the participants commented that they were motivated to make changes after watching the documentary: four participants verbally expressed that they were considering composting more. The following comment illustrates this motivation to make changes:

"I think [the video] is very motivating and I think that that video in general, should have been shown to many, many more people, compulsory. Everyone sit down and watch it. At least you're given a chance to know. I have already made loads of changes in my life [...]. I don't compost but that's probably something to consider as the next step to basically improve. But it was a massive motivation; the video."

Another participant agreed that the documentary was probably more likely to bring about change, but also highlighted the beneficial effects of artwork in the process:

"I do feel like, having the exhibition as well as the video, that the video was more likely to give me sort of inspiration to actually make some changes, but for me there is something about seeing something that's artistic and creative that does

do something on a different level to make it kind of feel it in your heart a little bit more, than in your head. And make you feel slightly more sort of passionate about it.”

One participant brought up Cowspiracy once again in order to explain that it had a more powerful impact on her. Although the Soil Solution did not inspire her to compost more, she shared that watching Cowspiracy instantly persuaded her to become vegan:

“I’ve seen a few on climate change, and there’s a lot of them. And there are a few that really hit home, like Cowspiracy. That’s a really punchy one. So that’s like quite fresh in my mind, but I was like: oh okay, so I’m a vegan.”

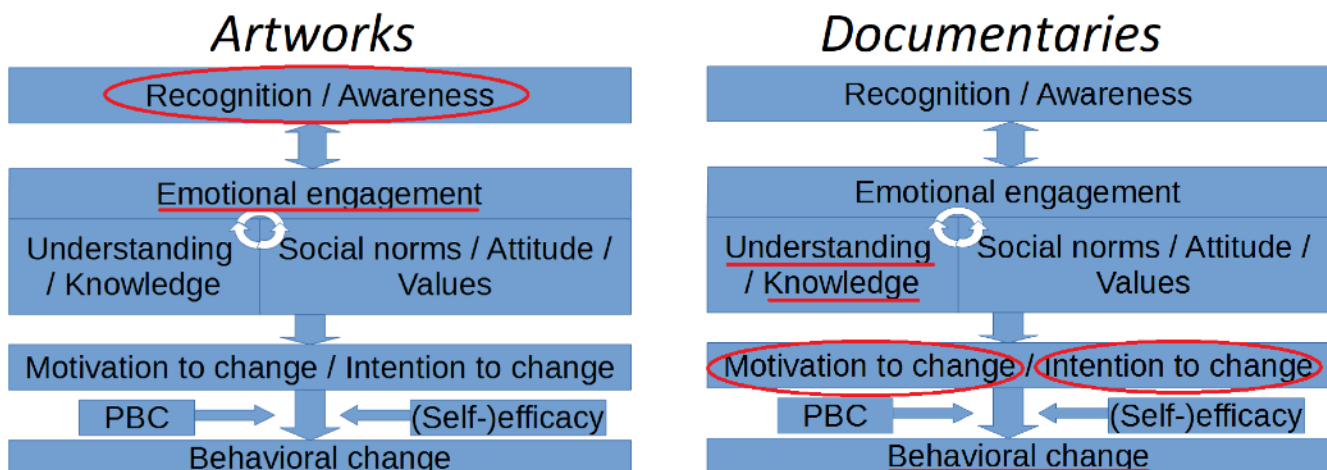
Compared to the documentary, the artworks impacted participants more on an emotional level rather than a cognitive / intellectual level. This difference was explained by one of the participants in the following way:

“It’s much more difficult to pin down. It’s more sort of an emotional response rather than a logical one so you can think about it’s just more difficult to quantify it. It is sort of an experience rather than a thought process. So it’s easier to answer the questions about the video than it was to answer the questions about the exhibition for me.”

These expected effects are summarized in Figure 5. The red ellipses and underlined concepts show in which stage of the motivation each type of communication was seen to be more effective. If a solution is included, this is expected to contribute to enhanced perceived behavioral control and (self-)efficacy, which can provide the final necessary impetus to behavioral change.

Figure 5

The Expected Potential Effects of Artworks Versus Documentaries on Engagement



Discussion

This article provides an analysis of aspects providing motivation for engagement with climate-related issues when using art or documentaries, which can be a helpful start for researchers to guide future research efforts, as well as for artists and documentary makers who intend to create works that can impact the audience and stimulate positive, pro-environmental change. Many of our findings resonate well with previously published studies which might explain why our participants emphasized these aspects in the discussions.

Previous research has, for example, shown that when a message is conveyed in the form of a story rather than direct instructions for behavior change, the message is perceived as less threatening and is less likely to evoke defensiveness (Otto, 2000), which explains why our participants prefer the works to have a rather self-explanatory **narrative**. Defensiveness in various forms can be an important barrier to engagement with climate change (Lorenzoni et al., 2007), and therefore needs to be taken into account when framing a message. Relevant examples of defensiveness and other barriers to engaging with climate change include distrust in informational sources, uncertainty and skepticism, externalizing responsibility and blame, prioritizing other pursuits and fatalism (Lorenzoni et al., 2007).

As our participants also acknowledged, narratives can be particularly persuasive when identification with a character happens (**relatability**), either on a situational or attitudinal level (Bex & Bench-Capon, 2010). When a role model or change agent is shown to face obstacles and difficult personal decisions, it may also help viewers overcome their own personal barriers (Meyers et al., 2009). Gaggioli (in Kitson et al. (2019)) also considers the art- or documentary-experience being self-relevant an important ingredient for transformation, along with active involvement in the generation of new meanings and interpretations. The latter is an aspect that art in particular tends to stimulate, as it actively encourages contemplation of meaning which was also highlighted by our respondents.

In line with our participants' preference for natural materials, it is suggested by several authors that natural materials are more appealing to humans because humans have evolved surrounded by nature (Burnard et al., 2017; Nyrud & Bringslimark, 2010), which is referred to as a general tendency of "biophilia." Wood as a material has also been reported to have restorative and stress-reducing effects on people (Fell, 2010).

Art and documentaries can trigger an **emotional response** rather than (and in addition to) just an intellectual reflection (Friedman, 2013). This is an important quality,

since the emotional component of climate communication is often overlooked, but is considered an important element for motivating change (Weber, 2006). Emotional reactions to environmental risks such as climate change can be a powerful driving force for behavior change and trigger a tendency to act (Böhm & Pfister, 2001; Böhm & Pfister, 2000; Klöckner et al., 2010a, 2010b). Soren (2009) linked transformation to powerful emotions and unexpected emotional responses such as shock and surprise. Several characteristics of artworks may create an emotional response, including the narrative, aesthetic elements and sensory experiences evoked by the artwork. Similarly, a documentary can provoke an emotional response, particularly if a narrative is present and empathic connections are encouraged with characters in the story (Bex & Bench-Capon, 2010).

For increased emotional impact, immersion and memorability were highlighted by participants as key factors. Taken together, these concepts seem closely related to “aesthetic awe,” which can result from exposure to vastness, threat, beauty, and overwhelming scenarios (Kitson et al., 2019; Pelowski & Akiba, 2011; Schubert et al., 2016; Pelowski et al., 2017; Konečni, 2015; Keltner & Haidt, 2003). This experience has been linked to transformation, especially when it also produces a sense of presence (Kitson et al., 2019).

The literature also points to many benefits of *participating* in the creation of art. Creating an environmental artwork in collaboration with others from scratch as well as contributing to an already (partly-)completed artwork can be an enriching and transformative experience and lead to a stronger connection (Song, 2009). Collaborative artworks can also help people to re-define and explicate their personal identities (see Veroff, 2002). Both aspects might explain why our participants expressed a desire for active participation.

Visual representations of climate change, including visual forms of art, may encourage the viewer to question their own behavior and the system, thereby *reconnecting* the viewer with the consequences of their behavior, even if those consequences are not normally visible to the person who causes them. This may lead to emotional connections to the consequences of climate change, especially when the context of the image is familiar (Thomsen, 2015). This is not always the case with images that are typically associated with climate change like the polar bear or the melting ice caps (Manzo, 2010). Personalizing imagery and showing those effects of climate change that are already happening close to people are therefore very important to get people’s attention (Smith & Joffe, 2009). Another way to personalize climate change is to show (future) impacts of climate change that affect the audience’s personal location or situation e.g. by demonstrating the impacts of climate change on someone similar to them (see Nicholson-Cole, 2005), which for example was expressed by our

participants through the wish for being presented with a character in the documentary more alike themselves.

Learning about ecological destruction without being given any suggestions on what one can personally do about it, was considered depressing by our respondents. It provokes feelings of hopelessness and feeling small. This is in line with previous research findings about issue saliency and self-efficacy in relation to climate change (see for example Hart & Feldman, 2014; O'Neill & Nicholson-Cole, 2009; O'Neill et al., 2013). Being aware of environmental problems without knowing what to do about it can easily lead to eco-despair (Chianese, 2015), which could lead to response skepticism (Capstick & Pidgeon, 2014). Therefore, it would seem advisable to follow any communication, whether in the form of art, a documentary or other, with a related, impactful and relatively easy to implement solution.

Our results show that participants believe artworks may be a great way to introduce a topic to people who may not (yet) be aware of a problem, especially through emotional engagement. Therefore, it would be interesting to see how different groups of people respond to environmental art: e.g. environmental activists, people who have no interest in environmental issues, and perhaps even climate change deniers. Follow-up focus groups with each of these populations may reveal additional, valuable characteristics of importance.

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