



Mediating Change; Culture and Climate Change

History: A History of Cultural Responses to Climate Change

Quentin Cooper

As climate change continues to alter our world and alter our place in our world it's an ever-greater challenge for scientists, for politicians, for industry leaders. But what about for artists, writers and performers? Like all of us they are affected by climate change but how have their responses to it made a difference and how can their responses to it make a greater difference in the future?

Welcome to the first of four discussions of different aspects of cultural responses to our changing climate. It's hoped that these mediating change discussions will help to build a framework for thinking about and improving these responses, making them more engaging, more wide reaching. And this being the first we are going to start by looking at how we got to where we are now at the recent history of using arts and culture to engage with climate change. What's been effective, what hasn't, what's raised awareness and if anything has changed policy, practice and behaviour. Now just before we hear from the first of our panel it's worth stressing that this isn't any kind of top down guide or set of rules. It's not designed to make campaigning points or get across facts about best practice. The whole idea is to create some thinking space where arts practitioners and researchers can make more sense of the broader cultural dimensions of climate change and why it's something that affects our entire planet, our entire species, calls for new kinds of artistic responses, new ways of evaluating them and arguably new ways of evaluating what it is to be human. And there is lots more I could say but I am going to leave the bulk of the talking to our panel. We have a social scientist, an academic in the field of environment and the arts, a choreographer and a geographer. And we are going to start with the science and Diana Liverman, Professor of Geography and Development and Co-Director of the Institute of the Environment at the University of Arizona. She's been working on climate change throughout her career as an environmental social scientist, right back from her PhD research in the early Eighties on how global warming might affect world food security.

Diana, can you recall since you were kind of in on the ground floor when climate change first emerged as an area of research and when you first became aware of how great the consequences might be?

Prof. Diana Liverman

Well I'd be about a hundred and fifty-years-old if I really went back to the ground floor. So, we've been increasing the greenhouse gas concentrations in the atmosphere since the Industrial Revolution. But I would really track the first interest in climate change, more broadly, would be the Stockholm Conference in 1972 and that's when I started to become aware about climate change as an issue. But then it sort of bubbles along. And then I think the really big news, at least in North America where I've been based for a lot of my career, was what happened in 1998 there was a massive heat wave. Jim Hanson, who is a famous climate modeller, got in front of the US Congress and said 'We're warming the planet, I am absolutely sure.' That then produced a lot of interest among scientists and policy makers and in a way led to the formation of the intergovernmental panel on climate change that produces all those reports that tells us what's happening. But also in 1992 to the UN Convention on climate change which is what gives us the policy framework. So I think that sort of '88/92 period was really important. And then along with that the arts community writers, artists, do start to get interested. And I would say that back even from 1972 with the sort of flowering of the environmental movement you start to get artists being interested in the environment.

Quentin Cooper

And was it just interest in the sense of "Oh this is an important issue" or were they actually grasping, here is something that is actually transforming our planet and if we don't do something about it we are going to be in trouble and we as artists may have the potential to affect decision making?

Diana Liverman

Well I'm going to defer to some of the artists I think on that. I certainly became aware of an artistic response to climate change but actually you know talking of history, going back a very long way artists have been important in relation to the climate. So even when I was an undergraduate I remember going to the Tate and seeing an exhibition of Turner's paintings and of Constable and seeing how amazingly well they portrayed weather and climate. And the history of climate change project at the University of East Anglia, they actually used the art of previous centuries to reconstruct what the climate was like.

Quentin Cooper

I suppose this is a point where we might come back to you later where the difference between art that is deliberately focused on raising awareness of climate change and art which you can think about in the context of climate change. Well see how that perspective compares with that of Wallace Heim who writes and teaches on performance in nature and has also been engaging with climate change for more than twenty years. Wallace – rather than attempt to sprint through your interesting and intricate CV it's probably better if you explain how you

came to be interested in thinking about art and ecology and performance in the environment, because you were doing this really ahead of a lot of people thinking like this.

Dr. Wallace Heim

Well I don't know. I think I got started in it because I fell in love, which is usually how you start things. My late partner had worked with Gregory Bateson in California so ideas in the eighties about co-evolution and about mixing both science, art and all of human culture – you sort of imbue things when you're in love with someone that you do in a different way. So that's how it started. Then I was working at the time as a set designer and I just got more interested in things ecological and there was nothing out there to see so I thought well it's a bit of a thought experiment. I'll change careers. I'll learn everything I can learn about environmental thinking and if I just kind of think it's going to happen it might happen. It's taken some time but it's happening.

Quentin Cooper

And were you specifically interested in the climate change aspect or was it the broader environment, its nature –

Wallace Heim

I think it was a much broader interest, certainly human relations with nature is a very big area to be considering. Climate change I think has come in as this concept which usurps or eclipses a lot of other interests that might be going on with the environment and I think one gets into it in whatever way one does.

Quentin Cooper

And you're particularly interested I think in taking performance arts of all kinds out of the normal context and putting them into a more everyday context. It's a bit like the Quakers you know, trying to get away from the restrictions around religion and putting them into the everyday. You want to take art out of the structures in which we perceive it.

Wallace Heim

Well I don't think I'd wait for the voices to come. But it's not necessarily what I want but that had to happen. I think you get to a point as a practitioner, as an artist where the conventions that are there are not good enough. So what do you do? You have to change the conventions. And I think this is what was happening in the eighties. Art was being redefined anyway. It was moving out of the gallery or the theatre or whatever because it had to. It was also engaging much more with activism and the role of the artist was being completely redefined. And some of that work really did have very strong connections to people's relations to the environment or with nature.

Quentin Cooper

And this comes full circle with climate change because the art is the everyday and it's changing everyday. Okay. At this point I'm going to turn gracefully to choreographer Siobhan Davies. Had her own company for twenty years. Long one of the leading independent dance companies in the UK. Several works on the school syllabus and studios in London are designed to encourage all sorts of interaction, interdisciplinary meetings and mixing and also very involved with the Cape Farewell arts, science education navigation projects that's voyage to the Arctic and beyond. Siobhan, we've heard from Wallace and Diana about their very long history of involvement with this, although Diana stresses she doesn't go back the full hundred and fifty years. Does the same go for you or are you a rather more recent on the climate change interest?

Siobhan Davies CBE

I'm a very recent apostle and about the same time I was invited by Cape Farewell to go to the Arctic I was building a studio in London and the idea behind the studio would be that I would find a place that was safe and exciting for dance artists to discover more delicacy, more sophistication, more methods of exploring the physical and the emotional and the thought. And then I went to the Arctic and my body was nowhere. There was no such thing as safety. I knew I wasn't going to die because I was being looked after but there was a moment in which I felt my life was suspended. My umbilical cord was non-existent. So there I was in tension between trying to create safety in order, I mean safety in the most exciting way I hope, in order to inform an art form to move forward into its new potential while at the same time my body was in danger and completely unsophisticated. I mean the costume comes half way down your crotch and you can't move and the film director was saying how would you move out here Sue and I hadn't got a clue.

Quentin Cooper

And did you feel that the reaction to this was that you had to make an artistic response rather than just a human response, that you someone were called upon to make something that commented on the situation and to turn it back into something on climate change?

Siobhan Davies

I had to use my intuition. I would normally want to be completely thoughtful and completely accurate and none of my old tools for making work were available to me. So it was intuition that drove me to make the two pieces and I'm kind of lucky that they worked.

Quentin Cooper

And is it different for somebody – there are artists out there who almost style themselves as climate change artists, for one reason or another they believe everything they do has to be channelled to, geared to, responding to, attracting attention to climate change. You're

somebody who has taken myriad influences and now you are just in there – does that make you uncomfortable? Does actually give you a bigger perspective?

Siobhan Davies

I think how I make work is different because of this experience. So I can't necessarily always produce the thing, the object which will help us transform and I become irritated with myself and concerned and I keep my thought processes there but I feel the object is not what I can do but the way of working, somehow more connectivity, somehow trying to work at an atomic level. In other words if we think of each of us as a form of atom that is going to evolve and coalesce together and over a period of time move gradually towards different kinds of solutions then I feel that's what I can work with.

Quentin Cooper

Is part of that de-cocoon-iness you know because you've been up to the Arctic and you've felt yourself – a lot of us talk about the environment and the power of the environment, we do it from the comfort of our climate controlled homes and our climate controlled city-scapes. We don't realise the rawness of what it is we are affecting and you're trying to get some of that across to us and make us feel more part of it.

Siobhan Davies

Isn't there something in which - there is a way of reaching our periphery. So in other words we are quite happy in our central ground but there is something about periphery feeling or periphery sensation or periphery understanding. And I think one of the things that the arts can do or a cultural shift can do is make us much more aware of our periphery understanding and bring that back into the centre and start using that knowledge in a more mainstream way.

Quentin Cooper

I should say one of the dangers of having a choreographer on the panel is Siobhan is talking very expressively with her hands. Which is not so good for a radio programme.

I am going to bring in the final member of our foursome, our token male, Dr Nigel Clarke, Senior Lecturer in Human Geography at the Open University and like most of our panel he can claim a long association with issues around environmental change. And in the early Eighties he wrote a Masters dissertation predicting that climate change would eventually bring down global capitalism. Nigel, do you stand by that or has global capitalism turned out to be a little more resilient than you previously thought?

Dr Nigel Clarke

Well I think it's more resilient, more devious and I think climate change is perhaps more indiscriminate than I thought so it's not quite been the magic bullet I was hoping for but I'm still hoping.

Quentin Cooper

But the serious point here is though do we need to take account of the cultural context into which all this research is appearing. We cannot pretend the fact that this is happening in a largely capitalist world –

Nigel Clarke

I think that's true but I think the whole thing about social context and cultural context that's something that I'm supposed to specialise in because I'm a social scientist. But one of the things that really surprised me when I first went to university and became a social scientist was just the kind of limited range of materials and ingredients that social scientists worked with. They like to talk about cultural processes. They like to talk about social processes. And I kind of put up with that for a few years and then I gradually started encountering artists who worked with this much broader kind of range of materials, of ingredients, who were allowed other things whether it's kind of pigments, or projections or living organisms, actually to do things to make a difference. And I found that made a huge difference to the way that I did social science. I found an opportunity really to let other things have all this action, and to do these things - really just talking about culture and social processes wasn't quite enough. So in a sense I'm supposed to be, in some ways as a social scientist, be the sort of voice of the social and the cultural. But I keep on finding that I really want to be the voice of a dynamic planner of organisms that run around and take us by surprise. So that's one of the things that I found that working with and talking with artists has helped me as a social scientist.

Quentin Cooper

You use that phrase 'dynamic planet', this idea that the earth has always changed, will always change in some ways but there are changes that are happening to the earth on top of this or annexed to this which are anthropogenic. Do we need to reflect this in our arts and cultural interactions in terms of what's us, what's happening anyway, what's within our control, what's beyond our control?

Nigel Clarke

Well I think one of the big questions is just what the planet can do by itself even without our help, even without this kind of surcharge that we bring to it. And again one of the things about social science is that most of the social science I'm kind of used to really works on about a three hundred, four hundred year time scale and increasingly sort of conversing with earth scientists I've got to get my head around things that happened on thousands or tens of thousands or even millions of year time scales and that I think is the real challenge for all us,

for artists, for social scientists. Earth scientists have kind of got a head start on that. They've got this long time frame that for me is incredibly important. When we are thinking about the really important things that are happening right now we are in the last sort of couple of hundred years is to think of those in the context of thousands of millions of years.

Quentin Cooper

Talking about the long context you're talking about the historical view and you're talking about things in the last couple of hundred years but I think you do have a date a little earlier – 1755 - that you think is significant.

Nigel Clarke

Well I think for a lot of the kind of the way that modern people thought about nature I think this moment that the Lisbon earthquake in 1755 when there was a kind of – one of the most frightening things that Europeans had ever experienced I think there was an awful lot of repression of that moment went on. An awful lot of thinking about what it is to be modern, thinking about what it is to be a modern subject is also kind of repressing this kind of phenomenal event that went on right at the time when kind of a certain sort of modern subject was new and fragile and nervous. There was this event, a tsunami and earthquake that pretty much wiped out a major European city and I think in some ways we are only just coming back to that moment. We've spent the last kind of couple of hundred years kind of repressing that and now we are gradually getting back to it.

Quentin Cooper

Thank you Nigel. I did want to have just a couple of questions from each in a row to establish where everybody is coming from this but since the focus here is the history of how arts and culture have engaged with climate change it would be good to get everyone's overview before we go much further. So this is a question for each of you. How much of a role do you think culture has played in the evolution of popular understanding of this issue and I stress popular understanding and how much impact do you think it's had on politicians, policy makers and others with the power to make a difference? Diana, I'll start with you.

Diana Liverman

Well I think not much yet to be honest, particularly if I think of the American public, the one I'm engaged with at the moment but also European publics. I think that their framing of climate change is so deeply informed by the media and the popular media and not what I think of as the sort of artistic media, that it's hard to see broadly in politics and in individual human behaviour yet the influence of art and culture and even the science that people know in relation to global warming is really pretty minuscule in terms of what's actually informing their understanding of the climate change issue or they're willing to respond to it. But I think that there are pockets of inspiration and I've certainly seen that over the last five years in my own

engagement with the arts community. So that there are moments where I do see hundreds and thousands of people inspired by art to think more deeply about the problem of climate change but when I actually think about the magnitude of the solution the politicians that must make the decisions, the millions of individuals that must change their behaviour I don't sense that the culture and the arts has really reached them yet.

Quentin Cooper

Right. Not that there's a shortage of it and it's just not as effective as it might be. Wallace –

Wallace Heim

There's part of me that wants to say that's the wrong question. Yes of course it's the right question, of course you want arts to influence everything and all of that but in a sense it's asking for a very instrumental view of the arts and I think if you start with that premise you are going to get a very different kind of art and cultural response to it. You're going to ask for education, you're going to ask for impact, you're going to ask for all those things that policy makers can hold on to and I'd rather give policy makers something that they can't hold on to.

Quentin Cooper

So we must not kind of get fixated on the didactic aspect. It's things that you might not even be aware that they're dealing with this but will have some influence or some things that actually become part of the broader culture and encourage us to think on these lines

Wallace Heim

Well I just want to keep sort of subtlety and nuance and complexity in there. I don't necessarily – I think we've learned that messages don't work. We've learnt all that. I think as a tangent to that a little bit I think what's interesting is that some artists are now starting to work within the legal system, or work within the judicial system, or directly within the political system and I find that expansion of where artists can work very interesting as well as just what's presented to the public. So it's a rather more subversive way of working.

Quentin Cooper

Siobhan do you want to take this on further because there is obviously - I have been rightly reprimanded for the notion that art that is deliberately setting out to change things is only a tiny subset of what's available. But do we actually need to have some kind of criteria to look at cultural responses to climate change and think about whether they are making a difference or is it just perfectly okay if there is a cultural response and it doesn't affect anyone at all?

Siobhan Davies

Well the word is urgency so we are under pressure and I suppose maybe being under pressure is a complexity for us so I love that idea that we might need a more nuanced or a

more complex response. There's one area where, I'm not convinced about this but I'm trying to think about it, is the gaps between disciplines, either different artistic disciplines or between the judicial or between the science and the arts. And if we are not too overly directed – so in other words the science must meet the artist and they must make something – the tension between the exactitude of those two forms and what happens in the gap between them makes me feel that that's the energy plain that we might be able to work on more. But we are not doing it yet and the urgency requires that we do.

Quentin Cooper

I'm paraphrasing but I think there is a Nobel prize winning cyberneticist Norbert Weiner who said all the most interesting development in science come in the no-man's land between disciplines and we need this same attitude to expand further. Nigel?

Nigel Clarke

I think art has had a huge impact but almost incidentally. I want to go back to earlier in the twentieth century when really what artists did was a whole lot of work, kind of breaking boundaries, opening up working within limits, breaking out of limits. And I think that then sort of fed eventually into consumer culture, helped turn us into the sort of people we became in the second half of the twentieth century and we are the sort of people that then confronted the climate change message. So I think in all sorts of ways the arts, the kind of avant-garde arts, prepared us for climate change. But one of the things that happened when environmental change became a problem was that early on there was a lot of talk about limits to growth, about restrictions, about belt tightening, about narrowing horizons. And in a lot of ways the arts already in the twentieth century had prepared us not to welcome those things. So we were kind of all geared up for something else. And then along came the environmental message about restriction limits, belt tightening and we kind of didn't really want to hear it and I think it's taken a long time for climate change to bring about a new message that isn't about restricting limits. It's about things we can't know and unpredictable things and then I think the arts and the sciences have kind of converged again and they're doing it now. They're coming together after the sort of earlier period of being drawn apart.

Quentin Cooper

Siobhan, for what we've said here do we need to actually, when we're thinking about these arts, think about climate change differently from any of the other subjects that you might have picked up on in a previous piece of choreography? Does it have its own rules? Does it have its own challenges? Is it different to other things as a subject matter because of the magnitude the intangibility, the time shifts that are involved in dealing with it?

Siobhan Davies

I wonder if it's that the human being is obviously central to climate change but when we first start to think about it do we think about it in terms of place and landscape? So then where is the human being part of the romance of it rather than the devil of it? So if we look at something like Bob Dylan - I was brought up with Bob Dylan and anti war stuff - and yet war, sex, death, have romance in them, if I'm using that word rather carefully. But it's a human practice and a human problem practice, and then suddenly you've got place and you've got vast sense of place and where do we fit in? And I think that's the dilemma for me as an artist, is suddenly it feels very small. If I make something, if I put a human being in a context, whereas the subject is vast. So for me it's the tension between the enormity and the single figure. And I'm finding that hard.

Quentin Cooper

Strangely enough, Bob Dylan, I remember one of the Cape Farewell voyages, on the 2008 voyage, Martha Wainwright saying she felt somebody needed to write the climate change protest song and she was going to try and write it –

Siobhan Davies

Which she did –

Quentin Cooper

Well she certainly had a go. Wallace and Diana, in terms of kind of a really huge popular response I suppose a landmark for some people for better or for worse would be the 2004 film The Day After Tomorrow. That certainly got to a lot of people but I also remember a lot of climate scientists in the UK scrabbling to say 'Look the climate science here is all over the place. This is all hopelessly exaggerated.' At the same time that the government's chief scientific advisor, Sir David King, said 'Look I'll endorse this film on condition we have screenings at which there are scientists present who can give people the actual facts.' Is this a better way forward – accept that the art may sometimes have to be compromised in order to reach a wide audience but you can then get to the science from it?

Diana Liverman

The Day After Tomorrow I think was actually more of a blip on the radar. I would say that Inconvenient Truth is far more important – Al Gore's film – even though it was quite deeply boring in places. But you know for me actually the most powerful moment in Inconvenient Truth was the end – the song – that made me weep. And - but Day After Tomorrow – yes I mean the problem for us was the science was sort of impossible and it was over dramatised. I don't think the great climate change movie has yet been made. But I think that –

Quentin Cooper

Can it be made?

Diana Liverman

Yes of course it can. I mean there have been movies made on other powerful social factors that change things so I think that the film has not yet been made and it's like people say well the climate change Guernica hasn't been made. But whether one piece of art can change things? I did want to mention something else that I was thinking about – I hear other people talking - it's because I do a lot of my work on how climate change will affect the developing world and the poor and the sort of groups that OXFAM is concerned about. I just thought, is anything going on there in terms of connecting art and culture in terms of those millions of people who are going to be affected by climate change? And the other issue that I'm not sure that scientists and artists are addressing together is the way in which the climate change issue has become commodified – it's all being sold through the market and carbon trading and all of those sorts of things. And that's sort of taken it away from these deeply human responses that maybe scientists and artists can have together.

Quentin Cooper

And of course the green bashing and green washing that comes with being made –

Diana Liverman

But I'm definitely worried about the rest of the world and what does the conversation that we are having between science and art really mean in terms of the millions who are going to be affected by climate change and don't have the resources to cope with it.

Quentin Cooper

Wallace, how important is it to reach that mass audience through cultural artistic responses or is it that just to be thinking about let's just get to the policy makers, let's get to the industry leaders? If we get one of them to come to a puppet show that happens to be about climate science that makes them think differently and they can make a different decision isn't that better than something that vaguely permeates the consciousness of millions of people when they go and see Avatar for a half an hour after the movie?

Wallace Heim

Well I think that might not be the right question –

Quentin Cooper

I'm spotting a pattern here – that's fine.

Wallace Heim

We're getting along fine. I wouldn't put it as either or. And I think something that needs to happen is with all these sort of manifestations of culture and climate change, I think we don't

really have very strong critical frameworks for looking at each of them within the context in which they happen. So I think it's quite unfair to compare *The Day After Tomorrow* or *The Age Of Stupid* or something with the puppet show. They're doing different things and I wouldn't want any of them not to be done. I think underneath that there is also the question does the science have to be right in order for this to be good and to be working. I'm kind of hesitating on answering that because I think there are so many other things that have to be right too. I think there is a lot thinking that can be done for example the ethical quality of a lot of these things and in a political analysis of them as well as just whether or not they got the science right. And I think one area of it we slightly touched on with Diana is that haven't been very well explored is much nuance emotional qualities in these works. So you get the big block busters but the emotional quality is really banal. So for me that's as probably as hard as saying well the science isn't right. So that would be my criticism of that.

Quentin Cooper

I'm using false dichotomies as a provocation and it's working nicely so –

Nigel Clarke

May I leap in and say something just between the *Day after Tomorrow* and I think Siobhan's point about romance because to me one of the things that that movie did do was to kind of bring in that whole story of abrupt climate change. It brought it in in a pretty dodgy, dubious way but it still put it on the agenda. And I thought, there was that amazing image of the earth from space and suddenly it's kind of fully glaciated. And what they did was, we'd had years and years of that whole earth image from space, which was really a kind of static image. It did some wonderful things but it really gave us a very static earth. And one image that *The Day After Tomorrow* brought us was suddenly a different perspective, which was a glaciated earth. That whole earth had kind of shifted. Okay it shifted a little bit too quickly – it shifted over night which was a little bit exaggerated but what we have been finding out for the last decade or so is that in fact climate change can happen very rapidly. It can happen in a life time. So in some respects the film was an exaggeration but it wasn't way, way off. And many people, human beings, hominids, have lived through very rapid changes in the past. So I'm just kind of thinking of Siobhan's demand to kind of bring it down to a personal level and we think that a lot of our ancestors, our deep ancestors way back in the past who were quite small bands of hominids, bands of humans, actually had to live through abrupt climate change. They had to make it through these episodes of very, very sudden climate change. And they were just small groups and if it wasn't for them making it through again and again, making it through these episodes of abrupt climate change none of us would be here. And it's actually kind of fairly unlikely that we made it through all those. So in some respects the fact that we are all here is kind of, you know, it's fairly unlikely.

Quentin Cooper

This is one of the challenges to get across isn't it, is that climate change is not unnatural. Something that affects a species on a remarkable scale is not unnatural. What we're after in some cases is a form of special pleading. We want to be actually be able to continue with our life styles as much as possible as we have in the past with the minimal change while nevertheless we are transforming our planet and our planet is making it impossible to do so. So we are actually trying to come up with something impossible aren't we?

Diana Liverman

I mean this is different because this is an ethical question now because we are creating this change which we didn't in the past. And in creating it we have to take more responsibility than just reacting. And also by creating it some people are much more vulnerable than others including many people that didn't cause it. So I think whilst the experience of the past may give us some guide lines about how to adapt and how we might survive I think that the deeper ethical emotional issue is that this is something we created. We can't sort of blame it on outside forces.

Quentin Cooper

How closely when we are talking about responses and communicating the sorts of things you are talking about, how closely do we need to get down to the nitty gritty of the science? Does it need to be – is it broad brush or is it quite important that in some areas, in some cases, scientists, artists, work closely together?

Diana Liverman

I think we need in some cases to get down to the nitty gritty. I'll pick two of the popular solutions. One is carbon offsetting and the other geo-engineering, both of which we can get terribly wrong. And both of which I think both communities could have something to think and say about, whether it's artists worried about fling around the world and whether they should offset their flights or whether it's engaging with artists to imagine a future where we geo-engineer the planet in order to cope with climate change. And that's sort of one of the new areas I think would be worth having a conversation about because we may get to the point where we are not going to do anything to reduce emissions so we've got to now start putting gases and sulphur dioxide into space. What are the impacts of that? What's the meaning of that?

Siobhan Davies

Artists – I think the art movement can help change, can they? Human understanding and human empathy and human engagement, so it may not be that we can only work because of what science is telling us. Science is telling us and we have to be open to receive it and I feel that's what an art knowledge can do is change or adapt some kind of receivership and by

being open and receiving it then we may be able to alter how we respond to what is happening to us.

Quentin Cooper

In the broadest sense the arts help us define who we are as humans and who we are as humans will decide how we respond to all these various situations. What about something, also within Diana's point there, she was talking about artists in terms of their emissions, the sustainability of the works they do, independent of what the subject is, how those works are constructed. Is that an important part of this that actually thinking about are we making sustainable art? Are we doing things in a carbon efficient way? Or is it in the end what ends up being presented to the audience that is paramount?

Siobhan Davies

It's got to be both. I mean certainly if I can't produce the object then how I am making it or how I'm not trying to expend energy is the thing I can do so then I'm going to try and work on that. Or how I can make connectivities that I might not have done before but now my community seems so much larger and so much more exciting because I've thought - I've tried to think horizontally rather than hierarchically. And if you are thinking hierarchically then maybe you are always trying to make the object. But if you are thinking horizontally then you are trying to link with different people and different practices and that has felt to me more inventive.

Quentin Cooper

I can tell you examples of people I know who have certainly engaged with this from a rock band touring in a carbon neutral way even though there might be nothing in any of the songs that's about that and the songs might be advocating all sorts of wild and crazy life styles but they'll pick up on, okay it is possible to do these things.

Siobhan Davies

It's practical and so possibly some people's response can be really practical and that's fantastic.

Quentin Cooper

Nigel do we have to in the end think about the – we've touched on this already - but the human induced versus the none human induced or is that because for a lot of people out there in the general public the big story is simply various climate change it is a bad thing. It is to a certain extent our responsibility. There are things we can do to offset it. There are things we can do to mitigate it. The idea of how much is us and how much isn't is almost taken out of the mix.

Nigel Clarke

I think being able to speak about what we've done and what the planet does itself in the same breath, we have to not think about it as an either or thing. I think that the whole sense that the reason why we can have such a massive impact on the planet is because in a sense it's kind of precarious. Its climate systems are poised. And if they weren't poised and precarious, if they weren't capable of tipping and shifting then we wouldn't be able to have the impact we have on the planet. So it's that sense of being able to think the two at the same time together. I think that kind of comes back to Diana's point about responsibility. I'm thinking particularly about the responsibility that artists have and the responsibility the policy makers have and I think in a sense they are different kinds of responsibility because I think one of the things that artists do, they, part of their response to the world is to experiment with materials, to experiment with different ways of bringing things together. But they tend - it's very hard to know what the ultimate outcome is, I think artists tend to work experimenting with things without really having to know what the ultimate outcome is. So it's an open ended process, whereas policy makers in particular kind of have this responsibility where they really have to deal with millions of lives and they really have to have a sense of what the outcomes or the results of the policies they're doing – they're dealing with. I think there is a different sense of responsibility and it's difficult to talk between art and policy making because artists have this open ended sense whereas policy makers are kind of responsible by virtue of the jobs they do to really kind of have a sense of the actual impacts of the policies they are making.

Quentin Cooper

Siobhan there's a lot of vigorous nodding there –

Siobhan Davies

No – there was just vigorous nodding.

Quentin Cooper

We are nearly out of time for this but I do want to come back to a couple of big overview themes. We keep hearing and plenty of people keep emphasising that climate change has no single cause. There is no single solution. Do we need to take the same approach with artistic responses? By all means, by any means direct, didactic, subtle, intangible all of these alongside each other are what we need or should we attempt to focus our attentions on particular areas where we seem to gain most ground? I know this will chime most with you Wallace so I will ask it you first.

Wallace Heim

Well I wouldn't want to say there had to be any prescriptive limit on what could be done. I don't see the point of that. I think that pretty well sums it up. I think there are infinite ways of

expressing things. There is infinite room for redeveloping and re-imagining and coming up with new forms of art.

Quentin Cooper

And they are all of equal merit?

Wallace Heim

Well that's where I think again quite strong critical frameworks come in because in a way we are talking about okay here's art and science. Well there's a lot of other people involved as well. It's not just artists and scientists. And in developing, I suppose, these critical frameworks, if you want to call it that it's a way of not just focusing on the art but focusing on the fact that the artwork is also made in its relation with its audience. It's not just the object. It's the relation it creates within the public realm. And I think there is much more scope for thinking about that as well as just thinking about what that particular artwork was. Where does it fit? How does it work? Who does it speak to? And each form is going to come up with something different.

Quentin Cooper

Diana?

Diana Liverman

I think that there's a parallel in that whilst it's good to have a diversity of responses the research that I've done looking at how everybody else's responding to climate change cities, states, individuals, suggests that yes, you want a lot of different actions but actually networks make a massive difference. So I think my suggestion is however diverse the artistic response is the power of networks to link people together, to share best practice, to inspire each other and to influence policy and the public. So, I think that individuals linked into networks is what could make a difference.

Quentin Cooper

Nigel?

Nigel Clarke

I think that whole thing about networking to transform us is incredibly important. I still want to come back to the kind of the unknowing-ness of doing art. I mean I come from a part of the world where for various, often for aesthetic reasons, an awful lot of organisms were introduced to help transform the landscape and some of these introduced organisms completely transformed entire continents. Rabbits got let loose and look what they did to Australia and New Zealand. They completely transformed the landscape. And part of the introduction was quite aesthetic and I think that there is a sense in which a lot of aesthetic

practices we just do not know where they're going to go and what they're going to lead to. And just thinking about geo-engineering who knows that there is not going to be a kind of coming together of artists, scientists, policy makers to start really experimenting with, in an aesthetic and a scientific sense, with what the earth can do. We don't know. That may be the sort of art and science collaboration that happens in the future.

Quentin Cooper

This is an argument effectively for blue skies arts the same as blue skies science. You should be allowed to have arts, which don't have a defined goal.

Nigel Clarke

I mean a lot of artists have always wanted to transform the world and I'm not suggesting that the geo-engineering is the way to go but it's there on the agenda. And I'm not just sure where art and science and social science and policy making is going to converge in the next twenty or thirty years but it's going to be interesting.

Diana Liverman

We could join together to paint roofs white.

Quentin Cooper

That's a start but wait until the end of the programme.

Siobhan?

Siobhan Davies

I think it's something to do with the language in which what we are doing is made common to a larger group of people, so I think we need more commentary. I think there needs to be more people who are looking at this and making comment on it and giving language to people who might not be involved in the arts and science a way of feeling included in this.

Quentin Cooper

And finally and briefly one cruel question but I want you to give it your best shot. If there is one lesson from the history of cultural responses to climate change that can usefully inform what we do now and in the future what is that lesson? Nigel –

Nigel Clarke

Well I would say that an awful lot of culture going back over tens, hundreds, thousands of years is already a response to climate change. It's how we got through climate change in the first place. So I think the massive lesson of the last decade or so is learning just how sort of uncertain the planet can be and we've responded before and we are going to have to respond again quite quickly I think.

Quentin Cooper

Siobhan?

Siobhan Davies

I'm not quite sure if this is a cultural response. I've been looking at how the brain works. There have been studies on neurological pathways and we have quick hard drives to things like anger, jealousy, sex and territory, but we do have empathy and compassion and thought and feeling within us and we don't expose ourselves to that. So there has been this practice and I am wondering if we can use that practice to develop our thinking and our responses in a different way

Quentin Cooper

So maybe to use the scientific understanding for the generation of art forms?

Wallace?

Wallace Heim

I'm not sure if it's a lesson from history but it's an idea from history and that Aristotle came up with, the idea of phronēsis which is a kind of an ethical knowledge in a very particular situation and it's knowing what that situation calls for in terms of right action when you don't know what right action would be. When you've got no idea. There's no beliefs. There's no principles. There's no precedent. So it's a description of how you respond in that situation which Aristotle went on at great length about. And what it is, it's a reason that shows itself in the ability to improvise.

Quentin Cooper

Okay. We did say historical and we've gone right back to Aristotle.

Diana?

Diana Liverman

I think it's probably a lesson about seizing the moment. When I get desperate about responding to climate change I think it's going to take disasters to change it, which I don't want to happen but I think they will happen. And at that point there are ways in which we can respond that could change things whether we are artists or scientists and so it's really being ready for those moments that will happen over the next twenty years.

Quentin Cooper

So for all this incredible human ability to see into the future before it gets here we have to actually wait for it to whack us before we really respond properly?

Diana Liverman

I suppose that's where I'm at right now.

Quentin Cooper

Okay. Well fair enough. I did say that was a final cruel question but thank you for at least attempting it. Thank you for everything we've heard from our panel. Environmental scientist, social scientist, Professor Diana Liverman, Geographer Dr Nigel Clarke, Choreographer Siobhan Davies and, hard to label her, Wallace Heim.

I hope this, one of four Mediating Change discussions that are being recorded has proved as stimulating listening as it has been hosting. The other three are Publics, which looks at popular culture and mass media and considers the origins outcomes and all too frequently absence of concern. Anatomy, which attempts to plot the cultural responses to climate change from polemic to experiment and to at least sketchily categorise this broad spectrum of responses. And Futures, which considers the way that culture, politics and science interact as we try to anticipate and respond to climate scenarios.